

Time Warner Cable San Antonio, L.P.
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PETITION OF CPS ENERGY FOR §
ENFORCEMENT AGAINST AT&T §
TEXAS AND TIME WARNER CABLE §
REGARDING POLE ATTACHMENTS §
§
§
BEFORE THE STATE OFFICE OF
ADMINISTRATIVE HEARINGS

REDACTED
SUPPLEMENTAL PRE-FILED TESTIMONY OF PATRICIA D. KRAVTIN
ON BEHALF OF TIME WARNER CABLE SAN ANTONIO, L.P.

Table of Contents

	<u>Page</u>
I. INTRODUCTION	4
II. SUMMARY OF TESTIMONY	6
III. MR. WATSON HAS NOT ESTABLISHED THAT CPS's DEPRECIATION-RELATED INPUTS ARE REASONABLE	12
A. Mr. Watson Cannot Validate the Accuracy of CPS's Depreciation-Related Inputs Because He Lacks Personal Knowledge of CPS's Retirement Experience for Poles and CPS Cannot Produce the Necessary Records	12
B. The Anomalies in CPS's Depreciation-Related Inputs Are Caused by Structural Problems With CPS's Alleged Net Salvage Amounts	13
C. The Exceptionally Large Negative Net Salvage Amounts Alleged by CPS Affect Its Rate Calculations by Overstating Both Its Depreciation Rate and Its Net Pole Investment	16
D. CPS Has Not Produced Any Data or Testimony to Support the Exceptionally Large Negative Net Salvage Amounts Alleged in Its 2002 Study	18

E.	Subject to a Minor Correction, Staff’s Calculation of the Depreciation Reserve Input Using Theoretical Reserve Percentages Derived From CPS’s 2007 Study Is an Appropriate Correction for CPS’s Depreciation Anomalies	24
F.	The Appropriate Depreciation-Related Inputs for CPS Should Be Calculated in the Manner Set Forth in My Direct Testimony or, Alternatively, Using Staff’s Theoretical Reserve Approach or the FCC’s Proration Methodology	28
IV.	MR. FAIRCHILD CANNOT JUSTIFY CPS’S PROPOSED RATE OF RETURN	31
A.	CPS’s Rate of Return Input Should Be Calculated Using CPS’s Actual Average Cost of Debt, Not the FCC’s Default Rate for Investor-Owned Utilities	31
B.	Imposing a Surcharge on the Pole Rate Based on the City Payment Is Inconsistent with the FCC’s Formula and Would Result in a Double Recovery for CPS	38
V.	MR. ARNETT AND MR. LOPEZ DO NOT OFFER ANY VALID CRITICISMS OF STAFF’S PROPOSED POLE COUNT ADJUSTMENT	40
VI.	MR. ARNETT’S AND MR. GUO’S SURVEY IS FLAWED AND UNDERSTATES THE NUMBER OF ATTACHING ENTITIES	43
VII.	CONCLUSION	47

Attachments

Attachment PDK-1	Excerpts from CPS Responses to AT&T (6th RFI, 1 st RFA)
Attachment PDK-2	Confidential – Excerpts from Watson Deposition, dated 11/10/10.
Attachment PDK-3	Highly Sensitive, Confidential – Exhibit DAW-3 of the Rebuttal Testimony of Dane Watson
Attachment PDK-4	Highly Sensitive, Confidential – Excerpts from 2007 Depreciation Study Workpapers
Attachment PDK-5	Excerpts from CPS Depositions (Watson 11/10/10, Fairchild 12/28/10, Arnett 11/11/10, Lopez 6/4/10, and Greiner 6/1/10)
Attachment PDK-6	Highly Sensitive, Confidential – Staff Pole Attachment Rates With Corrected Theoretical Reserve %
Attachment PDK-7	Highly Sensitive, Confidential – Pole Attachment Rates Based on Prorated Accumulated Depreciation

Attachment PDK-8 Highly Sensitive, Confidential – Pole Attachment Rates Excluding
RMR Offset using Staff Pole Counts
Attachment PDK-9 Calculation of Average Maximum Just and Reasonable Rates
Attachment PDK-10 Highly Sensitive, Confidential – Excerpts from CPS Response to
AT&T 1st RFIs

1 **I. INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND OCCUPATION.**

3 A. My name is Patricia D. Kravtin. My business address is 57 Phillips Avenue,
4 Swampscott, Massachusetts. I am an economist in private practice specializing in the
5 analysis of telecommunications, cable, and energy regulation and markets.

6 **Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY IN THIS**
7 **PROCEEDING?**

8 A. Yes. I submitted direct pre-filed testimony on July 23, 2010, on behalf of Time Warner
9 Cable San Antonio, L.P. (“TWC”) addressing matters pertaining to the calculation of
10 pole attachment rental rates that CPS Energy (“CPS”) may charge TWC.

11 **Q. AS PART OF THAT TESTIMONY, DID YOU PROVIDE A DETAILED**
12 **SUMMARY OF YOUR EDUCATIONAL AND PROFESSIONAL**
13 **BACKGROUND?**

14 A. Yes, I did. A detailed resume summarizing my training, previous experience, prior
15 testimony and reports was provided as Attachment PDK-1 to my July 23, 2010 direct
16 testimony.

17 **Q. SINCE THE FILING OF YOUR JULY 23, 2010 DIRECT TESTIMONY, HAVE**
18 **YOU SUBMITTED ADDITIONAL TESTIMONY OR REPORTS CONCERNING**
19 **POLE ATTACHMENT MATTERS?**

20 A. Yes, I have. On August 16, 2010, I submitted a report on behalf of the National Cable
21 and Telecommunications Association in the current pole rulemaking proceeding before
22 the Federal Communication Commission (FCC), *In the Matter of Implementation of*
23 *Section 224 of the Act; Amendment of the Commission’s Rules and Policies Governing*
24 *Pole Attachments*, WC Docket No. 07-245, GN Docket No. 09-51. On October 12-13,
25 2010, I gave live expert testimony before the Superior Court of the State of Washington
26 for the County of Pacific in litigation involving Comcast, Charter, and CenturyTel (co-
27 defendants) and the Pacific Utility District No. 2 of Pacific County (a non-profit,
28 consumer-owned utility) in Case No. 07-2-00484-1. On October 20, 2010, I submitted an
29 expert report before the General Court of Justice, Superior Court Division, of the State of
30 North Carolina, Country of Rowan, in pole attachment litigation involving Time Warner

1 Entertainment and the municipally-owned utility of the Town of Landis, North Carolina
2 (10 CVS 1172).

3 **Q. WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL TESTIMONY?**

4 A. I was asked by TWC to respond to CPS's September 27, 2010 filing, and in particular the
5 testimonies of additional witnesses submitted by CPS including Dane Watson, Bruce
6 Fairchild, Wilfred Arnett, and Clark Guo, as they pertain to rate formula inputs addressed
7 in my direct pre-filed testimony. More specifically, my supplemental testimony will
8 respond to Mr. Watson's testimony regarding depreciation-related inputs, Dr. Fairchild's
9 testimony regarding the rate of return and the city payment, and the testimonies of
10 Mr. Arnett and Mr. Guo regarding pole counts and the number of attaching entities.

11 **Q. DO THE TESTIMONIES OF THESE ADDITIONAL CPS WITNESSES CHANGE**
12 **ANY OF YOUR ULTIMATE CONCLUSIONS CONCERNING THE**
13 **REASONABLENESS OF CPS'S FORMULA INPUTS AND RESULTING RATE**
14 **CALCULATIONS?**

15 A. No, they do not. My ultimate conclusion that CPS's rate calculations exceed the
16 maximum levels permitted by PURA (by as much as three to four times) remains
17 unchanged. In response to the testimony submitted by these additional CPS witnesses
18 and other parties in this proceeding, I do however present some supplemental calculations
19 of maximum just and reasonable pole rates. As explained fully below, these
20 supplemental calculations apply two alternative approaches for calculating a reasonable
21 input for accumulated depreciation for account 364 for poles. These supplemental
22 calculations corroborate my earlier opinion that the rates CPS proposes to charge third
23 party attachers far exceed the statutory maximum. They also confirm that just and
24 reasonable rates for CPS, i.e., those based on a reasonable set of calculated inputs, should
25 be in the range of \$7 to \$9, consistent with the findings of Staff and the other major
26 parties to this proceeding and in contrast to the unreasonably high rates *****BEGIN**
27 **CONFIDENTIAL*** ***** **END CONFIDENTIAL***** that
28 CPS has proposed.

1 **II. SUMMARY OF TESTIMONY**

2 **Q. PLEASE SUMMARIZE YOUR SUPPLEMENTAL TESTIMONY RESPONDING**
3 **TO MR. WATSON CONCERNING DEPRECIATION-RELATED INPUTS.**

4 A. Mr. Watson's testimony concerning CPS's accumulated depreciation for poles addresses,
5 but does not meaningfully refute, the numerous anomalies identified in my direct
6 testimony. Even if Mr. Watson had been personally involved in the earlier depreciation
7 study or had first-hand knowledge of CPS's retirement experience for poles – neither of
8 which he has – his testimony is unable to meaningfully back up any assertions made in
9 support of CPS's proposed accumulated depreciation figures. The primary reason for this
10 is that CPS is apparently unable to provide the underlying historical records relating to
11 pole retirements for the relevant period. Moreover, having had the opportunity to review
12 Mr. Watson's pre-filed testimony, exhibits, and deposition transcript, I have been able to
13 gain additional insight into the true nature of the problems with CPS's Retirement Master
14 Record (RMR) accounting for poles. It is now clearer that the true nature of the problem
15 is not a data recording, accounting or estimation error per se. Rather, it is a more serious
16 structural problem with the underlying cost of removal (or net salvage) amounts that CPS
17 alleges – but has still yet to provide information to validate – were incurred in connection
18 with pole retirements. In particular, for the years 1987 to 2001, CPS recorded some
19 exceptionally high costs of removal and low salvage amounts. While year to year
20 variations in this kind of cost data is not exceptional in and of itself, what is exceptional,
21 is the magnitude of the variations, the pattern of the variations, and the fact that CPS is
22 unable or unwilling to provide underlying historical records and personnel with first-hand
23 knowledge that could provide specific explanation and justification for retirement-related
24 depreciation costs for poles for this period that on their face appear unreasonable.

25 **Q. PLEASE SUMMARIZE YOUR SUPPLEMENTAL TESTIMONY RESPONDING**
26 **TO DR. FAIRCHILD CONCERNING THE RATE OF RETURN AND CITY**
27 **SURCHARGE.**

28 A. Mr. Fairchild's testimony on the rate of return only serves to reinforce the fundamental
29 economic basis for my conclusion that the FCC's default rate of 11.25% – based on a
30 weighted average of the actual equity and debt costs facing investor-owned utilities
31 (IOUs) subject to FCC regulation (as determined in a rate of return investigation two

1 decades ago) – is not a reasonable input for CPS’s pole rate formula. As Mr. Fairchild
2 acknowledges, CPS does not have an explicit equity component to its cost of capital
3 analogous to an IOU. Moreover, the figure Mr. Fairchild presents as “the rate of return
4 that CPS Energy was allowed on its rate base ...imputed based on the information
5 contained in CPS Energy’s TCOS filing”¹ is a contrived figure that has no economic
6 connection to CPS’s true economic cost of money equivalent, and does not serve to
7 validate CPS’s use of the 11.25% figure. Mr. Fairchild’s testimony inappropriately
8 confuses the opportunity cost to the citizens of San Antonio as a collective unit, with the
9 opportunity cost to the citizens of San Antonio as individuals. In the case of CPS, any
10 such “equity capital” stays with the collective unit; it does not vest to the individual.
11 Individual customers have no choice but to keep their dollars “invested” in the municipal
12 utility as a condition of being served, nor do they have any claim for paid dividends
13 analogous to IOU shareholders or for any other compensation for “equity capital” in the
14 form of retained earnings (i.e., the excess of revenues generated through the rates CPS
15 charges its customers over utility expenses). While CPS may use generated cash to
16 finance investments, debt financing is the only source of capital that has an *actual* cost to
17 CPS. Contrary to claims by Mr. Fairchild, the use of a rate of return based on the actual
18 average costs of debt financing incurred by CPS is very consistent (if not generous) with
19 the economic principle of cost causation underlying the pole attachment formula.

20 In addition, Mr. Fairchild’s suggestion that CPS would be entitled to a higher rate
21 of return should city payments be excluded from the rate calculation is totally without
22 merit. For the same reasons explained in my direct testimony as to why CPS’s proposal to
23 impose a surcharge on the pole formula rate is totally inconsistent with the FCC’s
24 methodology, any “back door” approach to use the city payment to justify unreasonable
25 pole costs (such as through the use of a higher rate of return input) should similarly be
26 rejected. Because the city payment is a means by which the City of San Antonio can
27 recapture excess cash flow generated from the city’s utility operations and redirect its use
28 toward general funding of city services, it would be double recovery to allow a gross-up
29 to the pole rate for the city payment *in addition* to a rate of return in the carrying charge

¹ Bruce H. Fairchild Rebuttal Testimony, Sept. 27, 2010 (“Fairchild Rebuttal”), at 7.

1 factor, the latter already building into the pole rate additional (non-cost causative) cost
2 recovery for CPS relating to the opportunity cost of generating and/or retaining capital.

3 **Q. PLEASE SUMMARIZE YOUR SUPPLEMENTAL TESTIMONY RESPONDING**
4 **TO MR. ARNETT AND MR. GUO CONCERNING POLE COUNTS AND THE**
5 **NUMBER OF ATTACHING ENTITIES.**

6 A. Given the inability to verify and reconcile CPS's historical pole count figures with the
7 most recent publicly released figures, Staff's proposed upward adjustment to CPS's pole
8 count input is in my opinion a reasonable one. Mr. Arnett argues that Staff's adjusted
9 pole count figures are unreasonable, because in his opinion they imply an unrealistic
10 growth in the number of poles installed by CPS between 2007 and 2009, and an
11 unrealistically low cost per pole during that period vis-à-vis CPS's booked cost in 2005
12 and 2006. However, the "unreasonable" growth and cost figures alleged by Mr. Arnett
13 are merely an artifact resulting from Mr. Srinivasa's decision to adjust upward only the
14 last three years in the series of CPS pole counts, a decision that worked to CPS's
15 advantage. As discussed in my direct testimony, CPS witness Martinez acknowledged
16 there was a period in which the company's information on its distribution assets was not
17 well organized, and it needed to be "enhanced and improved" through a field inventory.²
18 There is no reason therefore to have faith in the average installed cost of poles or the
19 units of installed poles from the earlier years that Mr. Arnett is using to attempt to
20 disprove the reasonableness of Mr. Srinivasa's pole count adjustment for the later years.
21 Indeed, it is the apparent disorganization of CPS's pole-related figures in the first
22 instance that led to the need for an adjustment to the pole count input, such as proposed
23 by Staff. It would seem CPS is attempting to play it both ways by using a higher pole
24 count figure for purposes of garnering public support for its proposed rate increases, but a
25 lower pole count for purposes of calculating a higher pole formula rate.

26 Mr. Arnett's testimony on the number of attaching entities input does little more
27 than to describe the process involved in the recent statistical survey performed by
28 Mr. Guo, although Mr. Arnett appears to have had little if any direct involvement in the

² Patricia D. Kravtin Direct Testimony, July 23, 2010 ("Kravtin Direct"), at 40, citing Gonzalo Martinez Deposition, May 27, 2010, ("Martinez Deposition") at 22-24, 32.

1 statistical aspects of the survey. While my testimony does not address the manner in
2 which Mr. Guo appears to have used standard statistical sampling software, my testimony
3 does address some aspects of the survey process that in my opinion serve to understate
4 the number of attaching entities measured by the survey. In particular, my testimony
5 addresses the flawed manner in which the survey treated affiliate attachments. For the
6 reasons discussed in my direct and supplemental testimony, CPS has not in my opinion
7 satisfied its burden in supporting the use of three attaching entities vis-à-vis the FCC
8 presumptive value of five for urban areas such as San Antonio.

9 I also take issue with the general philosophy underlying Mr. Guo's view as to his
10 role as statistician and that pervaded the approach he took in sampling CPS poles.
11 Mr. Guo notes that, as a philosophical matter, he "did not question the accuracy of the
12 data," provided by CPS, consistent with his belief that "the statistician, which role MCG
13 undertook with the CPS Energy survey, does not review the accuracy of the data."³
14 While this detached view of the statistician may be appropriate for certain academic
15 exercises, in my opinion, it is a highly inappropriate view to take in the present context
16 where the reasonableness of the underlying inputs to the rate formula are integral to
17 ensuring that the rates being set are just and reasonable. The results found by the
18 statistician are only as good as the underlying data with which the statistician is working.
19 Significant inaccuracies in the data provided to Mr. Guo from CPS – likely the case given
20 the acknowledged disorganization in the company's information on its distribution assets
21 – will render the statistical results based on that data inaccurate and unreliable as well.

22 **Q. PLEASE SUMMARIZE THE SUPPLEMENTAL RATE CALCULATIONS YOU**
23 **PRESENT IN THIS TESTIMONY.**

24 A. In my direct testimony, I proposed maximum just and reasonable pole attachment rates
25 that adjusted CPS's unsupported depreciation inputs in the following two ways: First,
26 my calculations excluded the problematic Retirement Master Record (RMR) offset from
27 the input for accumulated depreciation for poles used in the calculation of the net
28 investment per bare pole component of the formula. Second, for the depreciation rate

³ See CPS Response to AT&T's Sixth Request for Information, 6-175 (Attachment PDK-1).

1 input used in the calculation of the carrying charge factor component of the formula, my
2 calculations relied on, for all years 2004 through 2009, the current 4.37% rate as
3 determined by the 2007 Depreciation Study and based on CPS's more recent pole
4 retirement experience.

5 As described in this supplemental testimony, the source of the problematic
6 retirement-related components to pole removal costs for several of the years covered by
7 the 2002 Depreciation Study can now be more specifically pinpointed. Based on my
8 review of Mr. Watson's testimony, as well as of Staff's testimony on the subject, I would
9 also support the calculation of the depreciation reserve input for poles using an
10 alternative method suggested by Staff, which substitutes imputed accumulated
11 depreciation reserve amounts derived from calculated Theoretical Reserve (TR)
12 percentages using depreciation parameters from the 2007 Depreciation Study.

13 Another method for calculating a reasonable accumulated depreciation input for
14 poles that I would also support, is the FCC's proration approach. As described in my
15 direct testimony, under the FCC methodology, a percentage of the aggregate accumulated
16 depreciation for electric plant is assigned to individual plant accounts on the basis of the
17 relative gross investment in each account as compared with total electric plant.
18 Following the FCC's proration methodology would correct for the anomalies in the RMR
19 account for poles, by assigning to poles an amount of accumulated depreciation
20 proportional to its relative share of gross electric plant.

21 The table on the following page summarizes the maximum just and reasonable
22 rates calculated using (1) the FCC proration methodology for accumulated depreciation,
23 (2) Staff's calculated TR approach, and (3) excluding the RMR offset, as proposed in my
24 direct testimony. For comparison purposes, CPS's proposed rates are also presented. As
25 shown below, pole rates calculated using either the FCC proration approach or the
26 corrected Staff TR approach, similar to the rates I calculated by excluding the RMR
27 offset, are significantly lower than CPS's proposed rates. Moreover, while using the FCC
28 proration method or Staff's TR approach produces maximum rates somewhat higher than
29 rates calculated by excluding the RMR offset, all of the calculated rates fall within the \$7
30 to \$9 range as compared with CPS's proposed rates which fall in the range of *****BEGIN**
31 **CONFIDENTIAL*** ***** ***END CONFIDENTIAL***** All rates shown

1 below are calculated using CPS’s proposed pole counts. As noted above, CPS’s proposed
2 pole counts would appear to be understated, particularly for the later years. If Staff’s
3 adjusted pole counts are used instead, the maximum just and reasonable rates for 2007 to
4 2009 will fall even lower, i.e., in the \$6 to \$8 range.⁴

5 **Table 1**

Comparison of Maximum Just and Reasonable Pole Attachment Rates Under Alternative Methods to Correct Anomalies in CPS’s Accumulated Depreciation for Poles (Calculated Using CPS Proposed Pole Counts) (\$ per pole/yr)						
Data for fiscal yr ending	2004	2005	2006	2007	2008	2009
Excludes RMR Offset (As Proposed in Direct)	\$7.14	\$7.19	\$7.27	\$7.44	\$8.22	\$ 8.10
FCC Proration Method (Other Inputs per Direct)	\$7.86	\$8.04	\$8.43	\$8.80	\$9.55	\$9.18
Corrected Staff Theoretical Reserve Approach (Other Inputs per Staff Direct ex. CPS Counts)	\$8.81	\$9.03	\$8.88	\$8.77	\$9.26	\$8.78
Average Maximum Just and Reasonable Rates	\$7.94	\$8.09	\$8.19	\$8.34	\$9.01	\$8.69
CPS Proposed Rates w/city payment surcharge	***BEGIN CONF.*** *****	*****	*****	*****	*****	***** ***END CONF.***

6 **Q. PLEASE SUMMARIZE YOUR ULTIMATE CONCLUSIONS REGARDING THE**
7 **MAXIMUM JUST AND REASONABLE POLE ATTACHMENT RATES THAT**
8 **CPS SHOULD BE PERMITTED TO CHARGE THIRD-PARTY ATTACHERS.**

9 A. As the Commission’s ruling in its *Order on Reconsideration* acknowledges, with any
10 formulaic approach, the accuracy and reasonableness of CPS’s pole rates depends on the
11 accuracy and reasonableness of the underlying data inputs. For this reason, it is very
12 important that the data inputs are subjected to careful scrutiny and held to a high standard
13 as to their reliability, accuracy, consistency, and ability to be independently verified. In
14 my opinion, as an economist with experience in determining just and reasonable rates for

⁴ The average calculated maximum just and reasonable rates using Staff’s proposed counts are as follows: 2004:\$7.94; 2005:\$8.09; 2006 \$8.19; 2007 \$7.50; 2008 \$ 7.20; 2009: \$6.17. See Attachments PDK-6, PDK-7, PDK-8, and PDK-9 for supporting rate calculations.

1 third-party pole attachment rentals, the various inputs addressed in my direct and
2 supplemental testimony require modification if the derived rates are to satisfy the
3 standard of reasonableness set by the PUCT, and pursuant to the language in PURA
4 § 54.204 and 47 U.S.C. § 224(e) upon which it relies. Rates that fail to correct for the
5 anomalies in CPS's retirement-related component of depreciation costs for poles
6 (impacting both the accumulated depreciation and depreciation rate inputs), as well as to
7 correct for other unreasonable inputs used in CPS's rate calculation (i.e., rate of return,
8 number of attaching entities, and application of city payment surcharge) do not, in my
9 opinion, constitute just and reasonable rates and fail to serve the purposes of effective
10 pole rate regulation.

11 **III. MR. WATSON HAS NOT ESTABLISHED THAT CPS'S DEPRECIATION-**
12 **RELATED INPUTS ARE REASONABLE**

13 **A. Mr. Watson Cannot Validate the Accuracy of CPS's Depreciation-Related**
14 **Inputs Because He Lacks Personal Knowledge of CPS's Retirement**
15 **Experience for Poles and CPS Cannot Produce the Necessary Records**

16 **Q. DOES MR. WATSON'S TESTIMONY CONCERNING CPS' ACCUMULATED**
17 **DEPRECIATION FOR POLES MEANINGFULLY REFUTE THE NUMEROUS**
18 **ANOMALIES YOU IDENTIFIED IN YOUR DIRECT TESTIMONY?**

19 **A.** No, it does not. As explained in my direct testimony, the fundamental problem
20 concerning CPS's depreciation-related inputs is the inability to independently validate the
21 accuracy of the recording of the various retirement-related components of CPS's
22 accumulated depreciation for poles. These components include the cost of removal
23 charges, salvage proceeds, and any remaining book value related to retired assets which
24 CPS recorded in a subset of accumulated depreciation referred to as the "Retirement
25 Master Record" or so-called "RMR"⁵ As confirmed in discovery, Mr. Watson was not
26 personally involved in the 2002 depreciation study, nor did Mr. Watson conduct his own

⁵ See Confidential Kravtin Direct, at 18-20. As described in my direct testimony, these RMR entries appeared in CPS workpaper calculations as unexplained adjustments to the accumulated depreciation amounts, and had the effect of significantly increasing the net bare pole cost component of the rate formula, which in turn directly increased the pole rate derived from the formula. The RMR entries also impact the depreciation rate input as described further below in this supplemental testimony.

1 analysis of the anomalies in CPS's cost of removal figures.⁶ Mr. Watson's lack of first-
2 hand knowledge regarding CPS's retirement-related costs for poles is also confirmed in
3 deposition questioning.⁷ Perhaps even more revealing is the fact that there were
4 apparently no detailed historical records of CPS's pole retirements for the period in
5 question available for Mr. Watson to review, since according to CPS, it is unable to
6 locate such records.⁸ Absent the underlying historical records, neither Mr. Watson, nor
7 any other person, including someone who may have been personally involved in the
8 earlier depreciation study, would be able to meaningfully explain the numerous
9 anomalies in the retirement-related data for poles identified in my direct testimony.⁹ In
10 the face of these significant anomalies, and absent historical records for the period in
11 question, in my opinion as an economist with significant experience determining just and
12 reasonable rates for pole attachments, even with Mr. Watson's additional testimony on he
13 subject, CPS has yet to present sufficient tangible evidence to demonstrate the
14 reasonableness of the depreciation-related inputs used in the calculation of the pole rate.

15 **B. The Anomalies in CPS's Depreciation-Related Inputs Are Caused by**
16 **Structural Problems with CPS's Alleged Net Salvage Amounts**

17 **Q. NOTWITHSTANDING MR. WATSON'S LACK OF FIRST-HAND**
18 **KNOWLEDGE, DOES HIS TESTIMONY PROVIDE ANY CLARIFYING**
19 **INFORMATION AS TO THE TRUE NATURE OF THE OBSERVED**
20 **ANOMALIES IN CPS'S DEPRECIATION INPUTS?**

21 **A.** Yes, it does. Based on the fragmented information CPS had provided concerning its
22 RMR accounting for poles, I had originally concluded that the nature of the problem was
23 likely of a data entry or recording nature and/or due to inaccuracies in the simulated plant

⁶ See Response of CPS to AT&T's Sixth Request for Information, No. 6-13 (Attachment PDK-1).

⁷ See Confidential Portion of Dane A. Watson Deposition, November 10, 2010 ("Watson Deposition"), at 51-52, 70-71, 73, 76-78 (Attachment PDK-2).

⁸ See *id.* at 73.

⁹ These anomalies included, among others, retirement-related costs for account 364 for poles that are unreasonably high relative to the accumulated depreciation booked to account 364 for poles and also relative to similar RMR amounts booked to related distribution accounts 365 and 369 ; a relatively high amount of net investment remaining in the pole plant account even in the face of relatively high annual depreciation expenses associated with CPS's relatively high depreciation rates for much of the relevant

1 program used to estimate CPS's retirement-related components of accumulated
2 depreciation for poles. As stated in my direct testimony:

3 There appears to be nothing inherently wrong per se with CPS's introduction of
4 a new accounting system that separately tracks the various components of
5 accumulated depreciation...The problem, however, is that in the process, a
6 number of significant anomalies in the data have arisen that CPS has been
7 unable to adequately explain or reconcile. Absent clear and reasonable
8 explanations for the observed anomalies, it is also as likely that the observed
9 anomalies may be attributable to errors in the underlying data, the introduction
10 of a new accounting system and the glitches in recording that can accompany
11 such transitions rather than to actual plant or cost experience, and/or be the
12 result of an unverified simulated plant life representation of CPS's actual
13 retirement experience for pole plant in account 364.¹⁰

14 Given Mr. Watson's pre-filed testimony, exhibits and deposition questioning on the
15 subject, and in particular, the detailed retirement-related data provided in Mr. Watson's
16 exhibit DAW-3 (Attachment PDK-3), it is now clearer that the true nature of the problem
17 is not a data recording, accounting or estimation error per se. Rather, there appears to be
18 a more serious structural problem with the underlying cost of removal (or net salvage)
19 amounts that CPS alleges, but still has provided no information that can validate, were
20 incurred in connection with the retirement of pole plant.

21 **Q. WHAT EVIDENCE IS THERE TO SUPPORT YOUR CONCLUSION THAT THE**
22 **OBSERVED ANOMALIES IN CPS'S DEPRECIATION ACCOUNTING ARE**
23 **DUE TO A STRUCTURAL PROBLEM WITH CPS'S NET SALVAGE COSTS?**

24 A. Exhibit DAW-3 of Mr. Watson's Rebuttal Testimony provides detailed amounts of
25 salvage, cost of removal, and net salvage for the years 1987 to 2001 associated with
26 account 364 for poles. These amounts were relied upon in the 2002 depreciation study,
27 and provide the foundation for both the very high 8.16% depreciation rate used by CPS
28 for the years 2004 to 2007, and also the anomalous RMR accounting entries used by CPS
29 in the calculation of the net bare pole cost component of the rate formula. Both of these
30 questionable inputs have the effect of unjustifiably increasing the pole rate calculated

period; erratic year-over-year ratios of retirements to negative net salvage. See Confidential Direct Testimony of Patricia D. Kravtin, at 20-27.

¹⁰ *Id.* at 20.

1 under the FCC formula. As revealed in Exhibit DAW-3, for the years 1987 to 2001, CPS
2 recorded what, in my opinion, any reasonable standard of review (and relative to its own
3 experience in years preceding and following) would find to be some exceptionally high
4 costs of removal and some exceptionally low salvage amounts.¹¹

5 Taken together, the high costs of removal and the low salvage values produced an
6 average negative net salvage ratio (i.e., salvage minus cost of removal) of *****BEGIN**
7 **CONFIDENTIAL*** ***** ***END CONFIDENTIAL***** for the period 1987 to
8 2001. While the cost of removal ratios had their highest values in the period 1992 to
9 1996, the cost of removal ratios over the time frame associated with the 2002
10 Depreciation Study (1987 to 2001) are inexplicably higher than amounts recorded in the
11 later time period covered by the 2007 study. Workpapers from the latter (excerpts
12 reproduced in Attachment PDK-4), show that for the years 2002 to 2007, the average cost
13 of removal ratio fell to only *****BEGIN CONFIDENTIAL*** ***** ***END**
14 **CONFIDENTIAL***** Combined with an average salvage value for this period of
15 *****BEGIN CONFIDENTIAL*** ***** ***END CONFIDENTIAL*****, the negative
16 net salvage for poles (salvage less cost of removal) was shown as *****BEGIN**
17 **CONFIDENTIAL*** ***** ***END CONFIDENTIAL***** – almost two-thirds less
18 negative than the *****BEGIN CONFIDENTIAL*** ***** ***END**
19 **CONFIDENTIAL***** shown for the 1987 to 2001 period.

20 Such year to year variations in this kind of cost data is not exceptional in and of
21 itself. However, what is exceptional in the case of CPS is the magnitude of the
22 variations, the pattern of the variations (i.e., concentrated in the early to mid 1990s), and
23 most importantly, the fact that CPS has not been able or willing to provide any historical
24 records or personnel with first-hand knowledge of this period, that could provide specific

¹¹ For example, CPS recorded cost of removal amounts ranging from *****BEGIN**
CONFIDENTIAL* ***** ***END CONFIDENTIAL***** (expressed as percentages of
retirements), notwithstanding prior and later years' experiences of well below *****BEGIN**
CONFIDENTIAL* ***** ***END CONFIDENTIAL***** as well as salvage amounts of
*****BEGIN CONFIDENTIAL*** ***** ***END CONFIDENTIAL***** notwithstanding prior and later
years' experience in the *****BEGIN CONFIDENTIAL*** ***** ***END CONFIDENTIAL*****
range. Attachment PDK-3.

1 explanation and justification for retirement-related depreciation costs for poles that on
2 their face, and based on other utility benchmarks, do not appear reasonable.

3 **C. The Exceptionally Large Negative Net Salvage Amounts Alleged By CPS**
4 **Affect Its Rate Calculations By Overstating Both Its Depreciation Rate and**
5 **Its Net Pole Investment**

6 **Q. MS. KRAVTIN, CAN YOU EXPLAIN HOW THE EXCEPTIONALLY LARGE**
7 **NEGATIVE NET SALVAGE AMOUNTS CPS RECORDED IN THE PERIOD**
8 **COVERED BY THE 2002 STUDY ACTUALLY IMPACT THE POLE RATE?**

9 A. Yes. Notwithstanding the fact the depreciation study team selected a lower negative net
10 salvage parameter of *****BEGIN CONFIDENTIAL*** ***** ***END**
11 **CONFIDENTIAL***** as more representative of CPS's prospective experience going
12 forward, the higher negative net salvage recorded by CPS during the 2002 study period
13 does indeed impact the pole rate in a number of ways. First, net salvage enters into the
14 depreciation rate setting process through its impact on any alleged deficits between
15 booked depreciation reserve (amounts actually booked by CPS) and the theoretical
16 depreciation reserve (amounts that would have been required based on updated
17 retirement-related experience for the utility). CPS, like many utilities, uses a remaining
18 life method for calculating prospective depreciation rates that builds into future
19 depreciation accruals the recovery of costs that were under-recovered in past depreciation
20 accruals. Such under-recovery is measured by the difference between actual booked
21 reserves and a theoretical reserve calculated using the updated depreciation parameters.

22 Thus, the higher negative net salvage amounts allegedly incurred by CPS in the
23 earlier years (which included amounts as high as negative *****BEGIN**
24 **CONFIDENTIAL*** ***** ***END CONFIDENTIAL***** were a factor in the
25 depreciation rate setting process by virtue of its impact on alleged deficits in CPS's
26 depreciation reserve. This process is confirmed in Mr. Watson's testimony and related
27 deposition questioning:¹² Accordingly, to the extent CPS's cost of removal expenditures

¹² See Dane A. Watson Rebuttal Testimony, Sept. 27, 2010 ("Watson Rebuttal"), at 12-13. See also Watson Confidential Deposition, at 56-57 (excerpts reproduced in Attachment PDK-2):

1 The ultimate effect of this chain of events is a higher net pole investment input to the rate
2 formula and a correspondingly higher pole rate.¹⁵

3 Moreover, despite the fact that the net salvage rate of *****BEGIN**
4 **CONFIDENTIAL*** ***** ***END CONFIDENTIAL***** selected by the 2002
5 depreciation study team (based on the most recent three year band) was less negative than
6 the average rate experienced over the entire fifteen year study period, even that negative
7 net salvage rate is significantly more negative than CPS's recorded experience in the
8 periods both before and after the 2002 study. The net salvage rate incorporated in the
9 depreciation rate prior to the 2002 study was only *****BEGIN CONFIDENTIAL*****
10 ****** ***END CONFIDENTIAL***** and the net salvage rate set incorporated in the
11 depreciation rate set in the 2007 (based on CPS's experience in 2007) study was
12 *****BEGIN CONFIDENTIAL*** ***** ***END CONFIDENTIAL***** In fact,
13 CPS's 2007 study workpapers (excerpts reproduced in Attachment PDK-4) show CPS's
14 most recent net salvage experience based on the most recent 3 year band 2005 to 2007 to
15 be even less negative at *****BEGIN CONFIDENTIAL*** **** ***END**
16 **CONFIDENTIAL*****. Mr. Watson testifies that "depreciation professionals" typically
17 rely on "rolling or shrinking bands in their net salvage analysis to smooth the indications
18 due to timing differences."¹⁶ It is therefore at odds with Mr. Watson's testimony that the
19 2007 depreciation study team, of which Mr. Watson was part, selected a net salvage rate
20 apparently based on only one year's experience versus the most recent rolling band.

21 **D. CPS Has Not Produced Any Data or Testimony to Support the Exceptionally**
22 **Large Negative Net Salvage Amounts Alleged in Its 2002 Study**

¹⁵ See Kravtin Direct at 18-20.

¹⁶ See Watson Rebuttal at 21-22; see also Watson Confidential Deposition at 74 (excerpts reproduced in Attachment PDK-2):

*****BEGIN CONFIDENTIAL*** *******

******* ***END CONFIDENTIAL*****

1 **Q. MR. WATSON ASSERTS (ON PAGE 12) THAT THE “PRIMARY CRITICISM”**
2 **OF THE PARTIES “WAS THAT THE DEPRECIATION RATE WAS TOO HIGH**
3 **COMPARED TO OTHER UTILITIES,” RATHER THAN TO “DISPUTE THAT**
4 **CPS ENERGY WAS INCURRING THAT LEVEL OF REMOVAL COST OVER**
5 **MANY YEARS?” DO YOU AGREE?**

6 A. No, I do not. Mr. Watson’s claim is simply untrue with respect to my direct testimony,
7 which devoted no less than thirteen pages to a discussion of the problems with CPS’s
8 accumulated depreciation data involving retirements.¹⁷ After articulating the numerous
9 anomalies and irregularities with that data, including “*erratic changes in the year-over-*
10 *year ratio of retirements to negative net salvage*,”¹⁸ I concluded that “CPS has not
11 satisfied the standard of reasonableness established by the Commission for the RMR
12 offset,” and that “[t]o do so, would require CPS to provide supporting back-up
13 documentation for a much longer period of time and at a sufficiently granular level that
14 would permit the replication and verification of the dollar amounts identified in the RMR,
15 and that tie those dollar amounts directly to the various vintages of the pole plant in
16 service that have experienced premature retirement.”¹⁹

17 That I did not target my criticisms strictly on removal costs, but rather identified
18 numerous related anomalies in the retirement-related components of CPS’s depreciation
19 reserve *including* negative net salvage ratios, is a consequence of the fragmented nature
20 of CPS’s testimony and discovery responses on this issue. It was clear to me from the
21 outset, based on my extensive experience working with pole formula cost data, that
22 CPS’s accumulated depreciation reserve figures for poles were out of line with general
23 industry experience and that the source involved the initially undefined “RMR” offset.
24 Serious questions by the parties concerning the “RMR” surfaced as early as the first
25 technical conference in early December 2009. Those questions remained largely
26 unanswered until CPS’s Supplemental Response to Staff’s 4th RFI filed with the
27 Commission on June 18, 2010 just weeks before other party direct testimony was due.

¹⁷ See Kravtin Direct at 18-30.

¹⁸ *Id.* at 26.

¹⁹ *Id.* at 30.

1 Until CPS offered Mr. Watson as a “rebuttal” witness in November 2010, the parties had
2 no meaningful opportunity to question CPS on the late-provided RMR detail.

3 However, while Mr. Watson is clearly more knowledgeable and articulate on
4 depreciation issues than the earlier CPS witnesses, in my opinion, Mr. Watson’s
5 testimony does not substantively respond to the very serious questions raised in
6 connection with CPS’s relatively large, and on their face, unreasonable, negative net
7 salvage ratios for poles. Like the previous CPS witnesses who addressed this issue,
8 Mr. Watson was not involved in the 2002 Depreciation Study, and lacks first-hand
9 knowledge of the problematic negative net salvage amounts that were a core component
10 of my criticisms of CPS’s depreciation-related inputs to the pole formula.

11 **Q. MR. WATSON ASSERTS (ON PAGE 12) THAT “GIVEN THE LEVEL OF**
12 **REMOVAL COST DURING THAT TIME, NO DEPRECIATION**
13 **PROFESSIONAL WOULD COME TO ANY OTHER CONCLUSION EXCEPT**
14 **TO MOVE THE NET SALVAGE RATE MUCH MORE NEGATIVE THAN ... IN**
15 **EXISTENCE PRIOR TO 2002.” HOW DO YOU RESPOND?**

16 **A.** Mr. Watson confuses the fact that CPS recorded and carried on its books for a number of
17 years very high levels of removal costs for poles with the relevant question in this
18 proceeding, namely whether those recorded removal costs as inputs to the pole rate
19 formula satisfy the reasonableness standard required by the PUCT. In my experience as
20 an economist with expertise in setting just and reasonable rates for poles, I have
21 participated in cases where utility accounting records reflect errors or inappropriate cost
22 allocations. These can occur, for example, as a result of something as simple as an
23 inadvertent misallocation of costs among the various types of distribution plant involved
24 in a work order, or as the result of a mistake in either the recording or the categorization
25 of costs. These errors can also occur as a result of a mismanagement of costs. None of
26 these possible explanations, however, would justify the inclusion of the anomalous net
27 salvage amounts in the calculation of a just and reasonable pole rate.

28 I don’t take issue per se with Mr. Watson’s testimony that it would have been
29 logical for someone conducting a depreciation study to decide to move the net salvage
30 rate to a more negative number based on the observation of higher removal costs
31 recorded by the utility in the years following the previous study. Where I do strongly
32 disagree with Mr. Watson, however, is his implicit assumption that just because the large

1 removal costs for poles were “the actual recorded” costs by CPS in an accounting
2 context, that they must reflect the true or economically reasonable costs for the period.
3 Based on my extensive experience working with pole cost data, as well as my
4 observation that CPS’s own recorded removal costs are significantly lower *both* in the
5 years before and after the anomalous cost entries, there is a legitimate basis to question
6 the reasonableness of CPS’s very high removal costs. Indeed, the depreciation study
7 team itself noted the variation in CPS’s net salvage experience over time as a basis for its
8 recommendation for a shorter time interval between the next CPS depreciation study.²⁰

9 Similarly, I do not take issue per se with Mr. Watson’s testimony that, under the
10 remaining life method, any deficit in the utility’s actual or booked depreciation reserve
11 relative to the “theoretical reserve” that would be required to make the utility “whole” for
12 retirement-related depreciation would “have to be recovered over the remaining life of
13 the assets in addition to the normally expected depreciation expense ([by] increasing the
14 depreciation rate).”²¹ What I am strongly questioning, however, is the accuracy and/or
15 reasonableness of the net salvage costs recorded by CPS and that form the basis of the
16 “large deficit” in CPS’s depreciation reserve that have to be recovered through an
17 increase in the depreciation rate. It is instructive that the net salvage costs and
18 depreciation rates for poles deemed sufficient to make CPS whole for retirement-related
19 depreciation costs *both* for the years prior to the 2002 study and for the years following
20 the 2007 study were in a range fully consistent with the experience of other benchmark
21 utilities. This fact, which was noted by the depreciation team in the 2007 study,²² along
22 with the aberrational nature of the net salvage rates CPS recorded it experienced during
23 the early to mid 1990s, further confirms my opinion that the “large deficit” in CPS’s

²⁰ See Watson Confidential Deposition at 50 (Attachment PDK-2), citing to the second recommendation of the 2002 Depreciation Study *****BEGIN CONFIDENTIAL***** *****

***** *****END CONFIDENTIAL***** See also 2002 Study provided in CPS Response to RFI NS1-4 at 000024.

²¹ Watson Rebuttal at 13.

²² 2007 Depreciation Study at Bates No. 87 *****BEGIN CONFIDENTIAL***** *****

***** *****END CONFIDENTIAL***** (Attachment PDK-10).

1 booked depreciation reserve for poles was the *artificial* creation of unreasonable amounts
2 of recorded salvage costs. Whether these high salvage costs were recorded in error or
3 were actually incurred by CPS is not germane to the relevant question of whether they are
4 reasonable inputs into the pole rate formula used to determine just and reasonable pole
5 rates – the answer to which is no.

6 **Q. WHAT ABOUT MR. WATSON’S CLAIM THAT THE DATA UPON WHICH**
7 **CPS’S 2002 DEPRECIATION STUDY RELIED HAD BEEN AUDITED?**

8 A. Whether or not the data relied on in the 2002 Depreciation Study had been audited is not
9 the issue here (although to my knowledge CPS has provided no evidence that the salvage
10 costs in question had been subject to a detailed investigation by its auditors). Contrary to
11 Mr. Watson’s assumption,²³ errors or problems with the data such as identified above
12 would not necessarily be detected by auditors in the normal course of their work, in that
13 the auditing process would not have focused on questions of cost allocation and/or
14 categorization from the same perspective as would be involved in a rate setting process.
15 In the latter, even a relatively minor misallocation of costs among plant accounts, could
16 have a significant impact on the rate for a given plant account. Similarly, the
17 depreciation rate setting process would not be expected to have focused on the allocations
18 of costs among accounts from the same perspective as an investigation focused on the
19 setting of a just and reasonable rate for one particular plant account, as is the case in this
20 proceeding. As Mr. Watson testified, the depreciation study team merely proceeded on
21 the *assumption* that CPS’s data was reliable or accurate because of their understanding
22 the data had been audited.

23 In addition to Mr. Watson not being personally involved in the 2002 Study, he
24 appears to have limited experience with account 364 pole formula cost data.²⁴ Consistent

²³ See Watson Confidential Deposition at 77-78 (Attachment PDK-2).

BEGIN CONFIDENTIAL

END CONFIDENTIAL

²⁴ See Response of CPS Energy to AT&T’s Sixth Request for Information 6-1 (Attachment PDK-1);
see also Watson Deposition at 12-14 (Attachment PDK-2).

1 with his professional background, Mr. Watson’s testimony, at best, can only validate, in
2 his own words, that the “output of those [Deloitte & Touche depreciation]
3 programs...were correct based on the data input.”²⁵ By his own admission, he does not
4 appear to have done the investigation necessary to actually validate the data input.²⁶ As
5 discussed in my direct testimony, and as recognized by the PUCT in its *Order on*
6 *Reconsideration*, the just and reasonableness of the rates derived using the FCC formula
7 methodology is only as sound as the reasonableness of the underlying data inputs.²⁷

8 Again, in my opinion, CPS has not presented the underlying data that would be
9 needed to demonstrate the reasonableness of the very high salvage costs that it recorded
10 during the period covered by the 2002 study, and by extension, the validity of (and
11 entitlement by CPS to recover through third-party pole rates) any depreciation reserve
12 deficiency created as a direct consequence. Mr. Watson’s argument that the higher
13 depreciation rate for poles during the 2003 to 2007 period was a necessary correction
14 action for deficits in the depreciation reserve associated with the large negative net
15 salvage rates for poles during the preceding years is based on what remains an unproven
16 assumption by Mr. Watson that “the depreciation reserve in 2002 was significantly lower
17 than it should have been.”²⁸ To prove this assumption requires information and/or a
18 witness who can support the reasonableness of the very large pole removal costs that CPS
19 is of yet unable or unwilling to provide. That the depreciation expenses recorded on
20 CPS’s books may have been reviewed by auditors, does itself demonstrate the
21 reasonableness of those costs.

²⁵ *Id.* at 20.

²⁶ *Id.* at 18-26.

²⁷ *See* Kravtin Direct at 4, 11, and 16.

²⁸ *See* Watson Rebuttal at 9. Mr. Watson is totally off the mark in insinuating that it was a “mistake” that I left out of my “calculation the reserve deficit that the [depreciation] rate is designed to recover over the remaining life.” Far from a mistake, it was an appropriate assumption on my part given what is, in my opinion, a clear failure by CPS to demonstrate the reasonableness of a depreciation reserve deficiency for poles in the first instance. *See* Watson Rebuttal at 15.

1 **E. Subject to a Minor Correction, Staff’s Calculation of the Depreciation**
2 **Reserve Input Using Theoretical Reserve Percentages Derived from CPS’s**
3 **2007 Study Is an Appropriate Correction for CPS’s Depreciation Anomalies**

4 **Q. HOW DO YOU RESPOND TO MR. WATSON’S TESTIMONY (AT PAGE 22)**
5 **THAT STAFF WITNESS MR. SRINIVASA “VALIDATED CPS ENERGY’S**
6 **RESERVE, WHICH INCLUDES THE RMR”?**

7 A. In his direct testimony, Staff witness Srinivasa accepts the use of CPS’s proposed
8 accumulated depreciation.²⁹ His recommendation appears based on two sets of
9 calculations. The first is his replication of CPS’s proposed depreciation reserve “for most
10 of the years except for one.”³⁰ The second is his calculations of CPS’s theoretical
11 reserve (TR) percentage,³¹ using the depreciation parameters recommended by CPS in its
12 2007 study,³² and his finding that his calculated TR percentage of *****BEGIN**
13 **CONFIDENTIAL*** ***** ***END CONFIDENTIAL***** came close to the CPS
14 reported book reserve ratio of *****BEGIN CONFIDENTIAL*** *******
15 ****** ***END CONFIDENTIAL*****

16 As to Mr. Srinivasa’s ability to replicate CPS’s proposed depreciation reserve for
17 poles “for most of the years,” the ability to replicate CPS’s figures, while a threshold or
18 necessary condition for validating CPS’s proposed depreciation reserve, it is not a
19 *sufficient* condition for doing so. The depreciation reserve, also known as “accumulated
20 depreciation” is, as that latter name suggests, an accumulation of various components
21 which are either debited or credited to that account. These components include the
22 annual depreciation expense, cost of removal, salvage value, and any reversal of
23 accumulated depreciation for retired assets and remaining (un-depreciated) book value
24 related to those retired assets. All that Mr. Srinivasa’s first set of calculations
25 demonstrate is that “for most of the years,” the figures CPS identifies as the individual

²⁹ See Srinivasa Direct at 15.

³⁰ *Id.*

³¹ The Theoretical Reserve (TR), expressed as a percentage, is derived as follows: $TR = (1 - ARL)/ASL * (1 - NS)$, where ARL = Average Remaining Life of the Plant, ASL = Average Service Life of the Plant, and NS = Net Salvage Ratio of the Plant.

³² These parameters include a *****BEGIN CONFIDENTIAL*** *******
******* ***END CONFIDENTIAL***.**

1 components being posted to the accumulated depreciation in a given year, when
2 combined, do in fact reconcile to the figure identified by CPS as the starting balance of
3 for the following year's depreciation reserve. As with an audit, Mr. Srinivasa's
4 reconciliation of the various components of CPS's recorded accumulated depreciation
5 does not in any way demonstrate the reasonableness of those figures, just that the basic
6 accounting "math" works as it should.³³

7 As to Mr. Srinivasa's theoretical reserve calculations, I agree with him that the
8 theoretical reserve offers another alternative method to address the anomalies due to the
9 RMR adjustment to Accumulated depreciation.³⁴ As defined by Mr. Srinivasa, the TR is
10 "the calculated balance that would be in the accumulated depreciation account at a point
11 in time using the current depreciation parameters, such as average service life, average
12 remaining life and net salvage."³⁵ Thus, by definition, the theoretical reserve in effect
13 provides a benchmark indicator of a reasonable and sufficient value for a utility's
14 accumulated depreciation relative to the population of assets remaining on the utility's
15 books as of a given point in time, and assuming appropriate (updated) values for
16 depreciation parameters such as net salvage.

17 In particular, a calculation of the TR using alternative, reasonable depreciation
18 parameters (such as those from the 2007 Depreciation Study that Mr. Srinivasa used)
19 could, in my opinion, provide a reasonable basis upon which to validate the
20 reasonableness (or show the unreasonableness) of CPS's accumulated depreciation
21 numbers for poles, and also to calculate a reasonable imputed value to use as an
22 alternative to CPS's figure. However, upon examination of the workpapers underlying
23 Mr. Srinivasa's calculations, I discovered those calculations contained a mismatch
24 between the underlying time period of the plant data for 2007 and the average remaining

³³ There was reason to question whether the accounting "math" worked. As noted in my direct testimony, CPS controller, Shannon Albert, in earlier deposition testimony, had been unable to replicate the depreciation reserve calculations for all of the identified years. *See* Kravtin Direct at 27, citing Deposition of Shannon Albert, at 110-111, 133-138.

³⁴ Srinivasa Direct at 15.

³⁵ *Id.* at 16.

1 life parameter used by Mr. Srinivasa³⁶ that had the effect of understating the calculated
2 theoretical reserve for CPS for 2007.

3 **Q. HAVE YOU RECALCULATED THE THEORETICAL RESERVE TO**
4 **ACCOUNT FOR THE MISMATCH?**

5 A. Attachment PDK-6 replicates Staff’s pole attachment rate calculations using the TR, but
6 with the mismatch corrected. As shown in Table 1 on the following page, when the
7 mismatch is corrected, Mr. Srinivasa’s conclusion that the calculated TR is “close” to
8 CPS’s booked reserve for 2007³⁷ (and that therefore no adjustment for CPS’s RMR
9 adjustment was warranted in his opinion) no longer holds true. The corrected TR is in
10 fact several percentage points *greater* than CPS’s proposed depreciation reserve rather
11 than nearly identical as suggested by Staff’s calculations.³⁸ This result provides further
12 evidence supporting my testimony that CPS’s proposed depreciation reserve input is
13 unreasonably low relative to what would have been expected, had CPS experienced
14 reasonable retirement-related (e.g., net salvage) depreciation parameters, consistent with
15 findings of the 2007 Depreciation Study, CPS’s experience in most of the years preceding
16 and after the 2002 study period, and the experience of other benchmark utilities.

³⁶ Specifically, based on information provided in the 2007 Depreciation Study, Mr. Srinivasa’s calculations assume the ARL for account 364 is *****BEGIN CONFIDENTIAL*** ***** **END CONFIDENTIAL***** in 2008, from which he derives an ARL for the 2007 of *****BEGIN CONFIDENTIAL*** ***** **END CONFIDENTIAL***** (since the plant would be approximately one year older). In fact, the 2007 Depreciation Study reflects data “as of January 31, 2007,” (see Attachment PDK-4) and not the more typical year end December 31, 2007 as Mr. Srinivasa assumed. Accordingly, the ARL figure of *****BEGIN CONFIDENTIAL*** ***** **END CONFIDENTIAL***** identified in the 2007 study is in fact the ARL applicable for 2007, without the one year shift Mr. Srinivasa applies.

³⁷ As noted above, Mr. Srinivasa calculated a TR of *****BEGIN CONFIDENTIAL*** ***** **END CONFIDENTIAL***** as compared with CPS’s booked reserve (including the RMR) of *****BEGIN CONFIDENTIAL*** ***** **END CONFIDENTIAL*****

³⁸ The corrected TR percentage, as shown in Table 1 is *****BEGIN CONFIDENTIAL*** ***** **END CONFIDENTIAL***** as compared with CPS’s proposed booked reserve (including the RMR) of *****BEGIN CONFIDENTIAL*** ***** **END CONFIDENTIAL***** Moreover, even without the correction, the calculated TR% for 2008 and 2009 exceeds CPS’s proposed book reserve.

1

Table 2

Comparison of CPS's Proposed Booked Depreciation Reserve for Pole Account 364 with Original and Corrected Staff Calculated Theoretical Reserve (as Percentage of Gross Pole Investment)						
Data for fiscal yr ending	2004	2005	2006	2007	2008	2009
CPS's Proposed Book Reserve	***BEGIN CONF.*** *****	*****	*****	*****	*****	***** ***END CONF.***
Original Staff Calculated TR%	23.5%	27.8%	32.0%	36.3%	40.5%	44.8%
Corrected Staff Calculated TR%	27.8%	32.0%	36.3%	40.5%	44.8%	49.0%

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Mr. Watson interprets the lower Theoretical Reserve (vis-à-vis CPS's proposed book reserve) as evidence of a "deficit" in CPS's booked reserve. To the contrary, as explained above, any such observed "deficit" is an artifact of CPS's unreasonably high pole removal costs throughout a good part of the early to mid 1990s that were booked by CPS to the so-called RMR account and that created large "write-offs" to the booked accumulated depreciation for poles, bringing those latter values to unreasonably low levels. CPS's proposed accumulated depreciation reserve inputs, as is the case with CPS's proposed 8.16% depreciation rate input for the years 2004 – 2007, are in effect contaminated by the unsupported net salvage amounts recorded by CPS in the years covered by the 2002 study. For the same reason, Mr. Watson's claim that the higher calculated TR is evidence that CPS's proposed depreciation rate if anything is not high enough (so as to recover the alleged deficit),³⁹ has no validity. The more appropriate use of the TR percentage in this proceeding, as Mr. Srinivasa considered,⁴⁰ is as an alternative method to address and correct for the anomalies due to the RMR adjustment.

³⁹ See Watson Rebuttal at 24.

⁴⁰ As noted above, Mr. Srinivasa appeared to reject this alternative methodology based upon an erroneous conclusion that the calculated TR was almost equivalent to CPS's proposed depreciation reserve for the year 2007.

1 **F. The Appropriate Depreciation-Related Inputs for CPS Should Be Calculated**
2 **in the Manner Set Forth in My Direct Testimony or, Alternatively, Using**
3 **Staff’s Theoretical Reserve Approach or the FCC’s Proration Methodology**

4 **Q. GIVEN THE PRECEDING DISCUSSION, WHAT ARE YOUR ULTIMATE**
5 **RECOMMENDATIONS REGARDING THE APPROPRIATE DEPRECIATION-**
6 **RELATED FORMULA INPUTS FOR CPS?**

7
8 A. For the reasons discussed above, and notwithstanding the additional testimony by
9 Mr. Watson on the subject, CPS has not adequately supported the reasonableness of the
10 retirement-related components of its depreciation costs for poles (account 364).
11 Accordingly, my recommendation, as set forth in my direct testimony,⁴¹ namely that a
12 just and reasonable pole rate for CPS should not be based on these unsupported
13 depreciation inputs remains unchanged. Specifically, I proposed the accumulated
14 depreciation reserve for poles (used in the calculation of the net investment per bare pole
15 component of the formula) be calculated without the RMR offset, and that the
16 depreciation rate input (used in the calculation of the carrying charge factor component of
17 the formula) be set (for all of the years 2004 through 2009) at the current 4.37% rate
18 determined by the 2007 Depreciation Study based on CPS’s more recent pole retirement
19 experience.

20 However, given Mr. Watson’s testimony, the source of the problematic
21 retirement-related components can be more specifically pinpointed to pole removal costs
22 for several of the years covered by the 2002 Depreciation Study. Based on my review of
23 Mr. Watson’s testimony, as well as my review of Staff witness Mr. Srinivasa’s testimony,
24 I would also support, as an alternative recommendation, pole rates calculated based on
25 Staff’s alternative method. This method substitutes imputed accumulated depreciation
26 reserve amounts derived from calculated Theoretical Reserve (TR) percentages using
27 depreciation parameters from the 2007 Depreciation Study in lieu of CPS’s proposed
28 values. In addition, I would also support the use of an alternative approach compatible
29 with the FCC formula, and that would be to apply the FCC proration methodology.

⁴¹ See Kravtin Direct at 30, 34.

1 **Q. COULD YOU DESCRIBE THE FCC PRORATION METHODOLOGY AND**
2 **HOW IT CAN BE USED TO CORRECT FOR THE ANOMALIES IN CPS'S**
3 **ACCUMULATED DEPRECIATION RESERVE?**

4 A. Yes. As described in my direct testimony,⁴² under the FCC methodology, the
5 accumulated depreciation input for poles does not rely on data tracked at the detailed
6 individual account level. Rather the accumulated depreciation for the individual plant
7 accounts required by the formula (i.e., account 364 for poles, account 365 for overhead
8 conductors and devices, and account 369 for services) is based on the aggregate
9 accumulated depreciation for total electric plant. Specifically, a percentage of that
10 aggregate accumulated depreciation is assigned to each individual plant account on the
11 basis of the relative gross investment in each account as compared with total electric
12 plant.⁴³ Following the FCC's proration methodology would correct for the anomalies in
13 the RMR account for poles in a manner totally consistent with the FCC formula
14 approach, by assigning to poles an amount of accumulated depreciation proportional to
15 its relative share of gross investment.

16 **Q. HAVE YOU DETERMINED MAXIMUM JUST AND REASONABLE RATES**
17 **UNDER THE VARIOUS ALTERNATIVES DESCRIBED ABOVE FOR**
18 **CALCULATING A REASONABLE DEPRECIATION RESERVE FOR POLES?**

19 A. Yes. I have. Maximum just and reasonable rates calculated using the FCC proration
20 methodology for accumulated depreciation, Staff's Theoretical Reserve approach
21 (corrected per above), and excluding the RMR offset as proposed in my direct, are

⁴² *Id.* at 24-25.

⁴³ Applying the FCC proration approach to CPS's pole data for 2007 is expressed formulaically as follows:

$\text{Accumulated Depreciation Prorated to Pole Plant (for 2007)} =$ $\frac{[\$Gross Pole Plant / \$Gross Electric Plant]}{[\$Gross Electric Plant]} \times [\text{Accumulated Depreciation for Electric Plant}] =$ <p>***BEGIN CONF.*** ***** ***** ***END CONF.***</p>

1 presented in Table 3 below⁴⁴ For comparison purposes, Table 3 also shows CPS's
2 proposed rates. As shown below, pole rates calculated using either the FCC proration
3 approach or the corrected Staff TR approach, similar to the rates calculated by excluding
4 the RMR offset, are significantly lower than CPS's proposed rates. While using the FCC
5 proration method or Staff's TR approach produces rates somewhat higher than the rates
6 calculated excluding the RMR offset, they are all within the \$7 to \$9 range as compared
7 with CPS's proposed rates which fall in the range of *****BEGIN CONFIDENTIAL*****
8 ******* **END CONFIDENTIAL*****

9 **Table 3**

Comparison of Maximum Just and Reasonable Pole Attachment Rates Under Alternative Methods to Correct Anomalies in CPS's Accumulated Depreciation for Poles (Calculated Using CPS Proposed Pole Counts) (\$ per pole/yr)						
Data for fiscal yr ending	2004	2005	2006	2007	2008	2009
Excludes RMR Offset (As Proposed in Direct)	\$7.14	\$7.19	\$7.27	\$7.44	\$8.22	\$ 8.10
FCC Proration Method (Other Inputs per Direct)	\$7.86	\$8.04	\$8.43	\$8.80	\$9.55	\$9.18
Corrected Staff Theoretical Reserve Approach (Other Inputs per Staff Direct, except Counts)	\$8.81	\$9.03	\$8.88	\$8.77	\$9.26	\$8.78
Average Maximum Just and Reasonable Rates	\$7.94	\$8.09	\$8.19	\$8.34	\$9.01	\$8.69
CPS Proposed Rates w/city payment surcharge	***BEGIN CONF.*** *****	*****	*****	*****	*****	***** ***END CONF.***

10
11 The rates in Table 3 are all calculated using CPS's proposed pole counts. As discussed
12 further below, CPS's pole counts appear understated, particularly for the later years.

⁴⁴ See Attachment PDK-6 for supporting rate calculations using the TR approach and Attachment PDK-7 for rate calculations using the FCC Proration method.

1 Using Staff's adjusted pole counts in lieu of CPS's, the maximum just and reasonable
2 rates for 2007 to 2009 are even lower, falling in the \$6 to \$8 range.⁴⁵

3 **IV. MR. FAIRCHILD CANNOT JUSTIFY CPS'S PROPOSED RATE OF RETURN**

4 **A. CPS's Rate of Return Input Should Be Calculated Using CPS's Actual**
5 **Average Cost of Debt, Not the FCC's Default Rate for Investor-Owned**
6 **Utilities**

7 **Q. DOES MR. FAIRCHILD'S TESTIMONY ON CPS'S RATE OF RETURN**
8 **SUBSTANTIVELY REFUTE THE PROBLEMS YOU IDENTIFY IN YOUR**
9 **DIRECT TESTIMONY WITH CPS'S USE OF THE FCC DEFAULT RATE?**

10 A. No, it does not. If anything, Mr. Fairchild's testimony only serves to reinforce the
11 fundamental economic basis for my conclusion that an 11.25% rate of return is not a
12 reasonable input for CPS's pole rate formula. As explained in my direct testimony, the
13 FCC default value of 11.25% is a weighted average of the actual equity and debt costs
14 facing communications carriers subject to FCC regulation, as determined by the FCC in a
15 rate of return investigation two decades ago.⁴⁶ It is incontrovertible that CPS has no
16 equity component to its cost of capital analogous to an IOU, as acknowledged by
17 Mr. Fairchild.⁴⁷

18 **Q. HOW DO YOU RESPOND TO MR. FAIRCHILD'S CLAIM THAT THE LOWER**
19 **RATES OF RETURN THAT YOU, STAFF WITNESS BRYANT, AND AT&T**
20 **WITNESS RHINEHART RECOMMEND, "ARE WELL BELOW THE**

⁴⁵ The average calculated maximum just and reasonable rates using Staff's proposed counts are as follows: 2004:\$7.94; 2005:\$8.09; 2006 \$8.19; 2007 \$7.50; 2008 \$ 7.20; 2009: \$6.17. See Attachments PDK-6 through PDK-9.

⁴⁶ See Kravtin Direct at 35-36.

⁴⁷ Fairchild Rebuttal at 6-7 ("As explained in the testimony of Paul. A. Escamilla, because CPS Energy's rates are determined using the Cash Flow Method, it does not have an authorized rate of return *per se*, nor does it have shareholders with a cost of equity like an IOU"); see also Response of CPS to AT&T Sixth Request for Information, 6-85, Attachment PDK-1 ("There is no return on equity component *per se* included in CPS Energy's revenue requirement because its rates are determined using the Cash Flow Method."); and Bruce H. Fairchild Deposition, Dec. 28, 2010 ("Fairchild Deposition"), at 21, ("for a municipal-owned utility, the rate of return component, although there's really not a rate of return component as we think of it for an investor-owned utility – they're calculated differently because for a municipal-owned utility, typically the cash flow method is what's used to calculate the revenue requirements"); at 46 ("Those capital costs tend to be different in terms of they use bond interest and principal, debt services"); and at 96 ("That's it's only source of equity, is by retaining earnings above its costs, or on a cash-flow basis, within the entity). All reproduced in Attachment PDK -5.

1 **EFFECTIVE RATE OF RETURN THAT THE COMMISSION FOUND FAIR**
2 **AND REASONABLE FOR CPS ENERGY IN ITS LAST TRANSMISSION COST**
3 **CASE”?**⁴⁸

4 A. The transmission case cited by Mr. Fairchild is simply irrelevant to the subject of this
5 proceeding, i.e., the determination of a just and reasonable rate for pole attachments.
6 First, as Mr. Fairchild readily acknowledges, the cited case was a stipulated case, and the
7 Commission did not adopt, approve, or make any finding concerning a rate of return or
8 rate of return methodology.⁴⁹ The figure Mr. Fairchild presents as “the rate of return that
9 CPS Energy was allowed on its rate base ...imputed based on the information contained
10 in CPS Energy’s TCOS filing”⁵⁰ is a contrived figure that has no economic connection to
11 CPS’s true economic cost of money equivalent. His assertion that the “rates of return”
12 figures he derives from the TCOS filing “represent the annual percentage cost that
13 customers of CPS Energy are paying on the capital invested in utility assets”⁵¹ is totally
14 without merit.

15 CPS’s customers make no payment to the utility other than through the rates they
16 pay for service. They have no claim, analogous to shareholders in the investor-owned
17 utilities (IOUs) regulated by the FCC to any excess of current or past revenues relative to
18 the expenses of the utility such as through paid dividends, nor does CPS have to
19 compensate its customers for any “equity capital” in the form of retained earnings (i.e.,
20 the excess of revenues generated through the rates CPS charges its customers over utility
21 expenses).⁵² Mr. Fairchild argues that debt financing through the issuance of tax-
22 exempt bonds “is not the only source of capital CPS Energy uses to finance its
23 investments”⁵³ – that CPS also uses cash generated “through current revenues and
24 retaining earnings within the system.” While that may indeed be the case, the former

⁴⁸ Fairchild Rebuttal at 5.

⁴⁹ See Fairchild Rebuttal at 7; see also Fairchild Deposition, at 42 (Attachment PDK-5). See also Response of CPS Energy to AT&T’s First Set of Requests for Admission, 1-19 (Attachment PDK-1).

⁵⁰ Fairchild Rebuttal at 7.

⁵¹ Fairchild Rebuttal at 8.

⁵² Fairchild Deposition at 95 (“Fundamentally, the equity capital for CPS comes from the excess of charges over expenses that are retained within CPS Energy.”) (PDK-5).

⁵³ Fairchild Rebuttal at 12.

1 (i.e., debt financing) is the only source of capital that has an *actual* cost to CPS.⁵⁴
2 Whether or not CPS has “equity” in its capital structure, and if so, how much equity it has
3 relative to debt,⁵⁵ is a red herring argument. The relevant issue in the context of setting
4 a just and reasonable pole rate is what the true economic opportunity cost of capital is for
5 CPS. For the various reasons discussed in both my direct and supplemental testimony (in
6 particular, there is no meaningful rate of return figure for CPS, and both the type of
7 equity and the effective cost of that equity are quite different for MOUs than for IOUs),
8 the most reasonable proxy is CPS’s actual average cost of debt.

9 **Q. HOW DO YOU RESPOND TO MR. FAIRCHILD’S REBUTTAL TESTIMONY**
10 **(AT PAGES 5-6) THAT “THE ULTIMATE OWNERS OF CPS ENERGY, WHO**
11 **ARE THE CITIZENS OF SAN ANTONIO HAVE AN OPPORTUNITY COST**
12 **ASSOCIATED WITH THE MONEY THEY HAVE INVESTED IN THE UTILITY**
13 **AND SHOULD BE COMPENSATED FOR BEARING THE RISKS OF THE**
14 **SYSTEM.”**

15 A. Mr. Fairchild inappropriately confuses the opportunity cost to the citizens of San Antonio
16 as a collective unit with the opportunity cost to the citizens of San Antonio as individuals.
17 He argues, for example, that “by having capital invested in the CPS Energy system, its
18 owners do not have that money available for other things,” such as being “able to pay
19 down a balance on his credit card because his money is tied up in CPS Energy.”⁵⁶ On
20 that basis, Mr. Fairchild asserts that the “cost of equity” to that customer “is likely north

⁵⁴ Indeed, Mr. Fairchild in deposition testimony at 46 contrasts the “cash requirements” for capital costs of a MOU like CPS from an IOU, describing the former as being “different in terms of they use bond interest and principal, debt services.” (Attachment PDK-5). It is also important to distinguish between the overall cost of capital used as the basis of the rate of return input, and any assumption about the utility’s capital structure (i.e., relative percentages of debt and equity capital). Using the cost of debt as the appropriate rate of return input is not the same as assuming there is no equity component of the utility’s capital structure. Rather, it implicitly assumes that the cost of debt is the relevant cost of equity as well. In other words, the cost of debt is effectively weighted at 100%, which is the same mathematically as valuing an implicit equity component of the capital structure at the cost of debt. For example, if we assume a 50%/50% capital structure between debt and equity capital and a 5% average cost of debt: 50% debt x 5% debt cost + 50% equity x 5% equity cost = 100% x 5% = 5% overall cost of capital.

⁵⁵ See Fairchild Rebuttal at 16-17 (“Like Dr. Bryant, Ms. Kravtin overlooks the fact that CPS Energy relies on equity to finance a significant portion of its past and ongoing investment in property, plant and equipment.”); see also Paul A. Escamilla Rebuttal Testimony, Sept. 27, 2010, at 9-11, where he argues that CPS has equity in its capital structure.

1 of 20%.”⁵⁷ However, as Mr. Fairchild acknowledges, the citizens of San Antonio cannot
2 refuse to pay the rates charged by CPS “and continue to get service.”⁵⁸ Nor do they have
3 any ability to take out any such “equity capital” and either invest it in alternative
4 investment vehicles analogous to shareholders of IOUs or pay down credit card bills.
5 Rather, any such “equity capital” stays with the collective unit; it does not vest to the
6 individual. Individuals have no choice but to keep their dollars “invested” in municipal
7 utility as a condition of being served.

8 Accordingly, it makes no economic sense to talk in terms of any opportunity cost
9 to the individual “associated with the money they have invested in the utility” or any
10 actual cost requirement to CPS associated with compensating individuals for “the money
11 they have invested in the utility” or “for bearing the risks of the system”⁵⁹ as
12 Mr. Fairchild has done.⁶⁰ There is simply no economic or actual cost of equity capital to
13 CPS remotely analogous to that incorporated in the FCC’s default rate of 11.25%
14 calculated for IOUs – a rate Mr. Fairchild defines as “the return that is regarded as fair
15 compensation to investors for the use of their equity capital given the risk to which it is
16 exposed.”⁶¹ By contrast, even Mr. Fairchild, during his deposition testimony, identifies
17 the “return” under the cash flow method of revenue requirements applicable to CPS in
18 terms of only debt-financed capital expenditures.⁶² Accordingly, as detailed in my direct
19 testimony, it is economically appropriate and reasonable to calculate a rate of return input

⁵⁶ Fairchild Rebuttal at 13.

⁵⁷ *Id.* at 13-14, *see also* Fairchild Deposition at 81 (Attachment PDK-5).

⁵⁸ Fairchild Deposition at 81 (Attachment PDK-5).

⁵⁹ Fairchild Rebuttal at 5-6.

⁶⁰ Mr. Fairchild appears to acknowledge this key point himself in deposition testimony when he concedes there are “no *specific* opportunity costs” for the citizens of San Antonio associated with CPS Energy (*see* Fairchild Deposition at 81) and that he has performed no studies of any such opportunity costs of either a specific or non-specific nature (*see* CPS Energy Response to AT&T’s Sixth Request for Information, 6-80) (Attachment PDK-1).

⁶¹ Fairchild Deposition at 95 (Attachment PDK-5).

⁶² *See* Fairchild Deposition at 20 “(The return, if you will, or the dollars in the cash method, which consists of principal and interest, which those obviously go to paying principal and interest.”). (Attachment PDK-5).

1 for the pole attachment formula applied to CPS based on the actual computed average
2 cost of debt for CPS.⁶³

3 **Q. ARE YOU FAMILIAR WITH OTHER COST ANALYSES FOR POLES,**
4 **CONDUITS AND RIGHTS OF WAY PERFORMED ON BEHALF OF**
5 **MUNICIPALLY-OWNED UTILITIES OR MUNICIPALITIES THAT USE THE**
6 **COST OF DEBT AS THE BASIS FOR AN OVERALL COST OF CAPITAL, OR**
7 **RATE OF RETURN?**

8 A. Yes, I am currently involved in two such proceedings where the cost of debt financing
9 has been used by municipal entities as the basis for calculating a rate of return component
10 in cost studies relating to pole, conduits, or rights or way.

11 **Q. MR. FAIRCHILD TESTIFIES THAT POLE ATTACHMENT FEES**
12 **CALCULATED USING A RATE OF RETURN LOWER THAN HIS IMPUTED**
13 **RETURN PRODUCES SUBSIDIZED RATES AND IS “NEITHER FAIR NOR ...**
14 **CONSISTENT WITH THE POLE ATTACHMENT FEE FORMULA.”⁶⁴ DO YOU**
15 **AGREE?**

16 A. No, I do not. There is nothing unfair or inconsistent with the pole attachment fee formula
17 with using a rate of return for an MOU based on the actual cost of money equivalent for
18 the MOU. Mr. Fairchild’s statement would appear to reflect his own inexperience with
19 the FCC pole attachment formula and Section 224 upon which it is based.⁶⁵ Pursuant to
20 Section 224, just and reasonable rates are defined as those within a range defined at the
21 low end by the “the additional costs of providing pole attachments” (i.e., the marginal or
22 incremental costs), and at the high end, by fully allocated costs, defined as a
23 proportionate share based on occupancy of the “the sum of the operating expenses and
24 *actual* capital costs of the utility attributable to the entire pole.”⁶⁶ Any rate falling within
25 this range, by definition, as recognized repeatedly by the FCC and the courts, is more

⁶³ Kravtin Direct at 36.

⁶⁴ Fairchild Rebuttal at 11.

⁶⁵ See Response of CPS to AT&T’s Sixth RFI 6-1 (Attachment PDK-1); see also Fairchild Deposition at 109 (witness acknowledges this is first pole attachment proceeding in which he has participated); and 39-40 (witness indicates belief that maximum rate set by the formula is the “fair” share of the costs, and that any rate lower than that maximum rate “wouldn’t be a full fair share.”) (Attachment PDK-5). Such a belief is in direct contradiction to the just and reasonable standard set by Section 224.

⁶⁶ See 47 U.S.C. § 224(d) (emphasis added).

1 than compensatory to the pole owner and results in no subsidy to the utility, its
2 customers, or other attachers.⁶⁷

3 It is a central tenet of economics that rates that recover the marginal costs of
4 production are economically efficient and subsidy-free.⁶⁸ For a subsidy to occur, the
5 utility must have unrecovered costs that *but for* the attacher would otherwise not exist. This
6 is decidedly *not* the case with the FCC cable rate formula, or especially the existing FCC
7 telecom rate formula (which generally produces rates between two or three times the cable
8 formula) where rental rates, especially in combination with make-ready charges (i.e.,
9 charges by a utility designed to recover any actual out of pocket costs incurred by the utility
10 in connection with making space on a pole to accommodate a third-party attachment) *much*
11 *more* than cover the incremental cost of attachment. From an economics standpoint, where
12 rates cover the incremental cost of attachment, neither the utility nor any of the other
13 parties sharing the pole will bear a higher cost as a result of the attachment (than they
14 would absent the attachment).⁶⁹ Under these conditions, *there can be no valid claim of*
15 *subsidy* or specific cost burden borne by the utility company, its ratepayers, or any other

⁶⁷ See, e.g., *Alabama Power v. FCC*, 311 F.3d 1357, 1363, 1369-70 (11th Cir. 2002) (“Based on these guidelines [47 U.S.C. § 224(d)(1)], the FCC promulgated regulations that focused on the upper end of this range...the fact [is] that much more than marginal cost is paid under the Cable Rate”) also (“The known fact is that the Cable Rate requires the attaching cable company to pay for any make-ready costs and all other marginal costs (such as maintenance costs and the opportunity cost of capital devoted to make-ready and maintenance costs), in addition to some portion of the fully-embedded cost...In short, before a power company can seek compensation above marginal cost, it must show with regard to each pole that (1) the pole is at full capacity and (2) either (a) another buyer of the space is waiting in the wings or (b) the power company is able to put the space to a higher-valued use with its own operations.” Without such proof, any implementation of the Cable Rate (which provides for much more than marginal cost) necessarily provides just compensation.”)

⁶⁸ See, e.g., Paul A. Samuelson, *Economics*, Tenth Edition, McGraw-Hill Book Company, 1976, at 462-3.

⁶⁹ See, e.g., Bridger M. Mitchell, “COSTS AND CROSS-SUBSIDIES IN TELECOMMUNICATIONS,” *The Changing Nature of Telecommunications/Information Infrastructure*, National Academy Press, Washington, DC, 1995. “A group of customers is being subsidized if their price is so low that the service supplier and its other customers would be better off if the service were discontinued. This circumstance occurs only when the increase in revenues to the [telephone] company from offering the service is less than the increased costs of providing it.”

1 attacher as a result of the attachment, provided the rental rate exceeds the marginal cost
2 of attachment as is indisputably the case with the existing FCC formula rates.⁷⁰

3 Indeed, because the telecom rate formula provides for additional cost recovery
4 *over and above* the utility's actual costs of providing pole attachments, the FCC has
5 recently proposed the elimination of the rate of return component going forward.⁷¹ Using
6 a rate of return input therefore based on the actual average costs of debt financing
7 incurred by CPS could not be more consistent (if not generous) with the economic
8 principle of cost causation underlying the pole attachment formula and its application by
9 the FCC and state regulatory agencies who have self-certified to regulate pole attachment
10 rates. Conversely, the use of a rate of return input of the order of magnitude proposed by
11 CPS (11.25%) and as imputed by Mr. Fairchild *****BEGIN CONFIDENTIAL*****
12 ********* *****END CONFIDENTIAL***** results in a pole attachment fee for
13 CPS that is far outside the range of reasonableness.

14 **Q. DO YOU HAVE ANY FINAL OBSERVATION REGARDING THE USE OF THE**
15 **COST OF DEBT AS CPS'S RATE OF RETURN INPUT?**

16 A. Yes. While Staff witness Bryant⁷² and I recommend the use of CPS's actual average
17 cost of debt, AT&T witness Rhinehart performs a comprehensive "assessment of the
18 appropriate weighted average cost of capital" using three standard methods for
19 computing a company-specific cost of equity.⁷³ I would note, notwithstanding the

⁷⁰ The economist's notion of cross-subsidy avoidance is consistent with the legal principle in takings law for just compensation "This takings principle is a specific application of the general principle of the law of remedies: an aggrieved party should be put in as good a position as he was in before the wrong, but not better." See *Alabama Power*, 311 F.3d at 1369. Indeed, if CPS Energy were an IOU, TWC would be paying the much lower cable rate, which is fully compensatory. It is only because PURA references the FCC's telecom rate that TWC must pay the much higher telecom rate.

⁷¹ See *In the Matter of Implementation of Section 224 of the Act, WC Docket No. 07-245, Order and Further Notice of Proposed Rulemaking*, FCC 10-84, at para. 135 ("Under our proposal, however, capital costs would be excluded for purposes of identifying a lower bound for the telecom pole rental rate.... As a result, under a cost causation theory, where there is space available on a pole, an attacher would be required to pay for none, or at most a *de minimis* portion, of the capital costs of that pole.")

⁷² See Mark T. Bryant Direct Testimony, August 23, 2010 ("Bryant Direct"), at 13.

⁷³ See Daniel P. Rhinehart Direct Testimony, July 23, 2010 ("Rhinehart Direct"), at 18, 24. These include a "1) single-stage DDM [Dividend Discount Model]; 2) a bond yield plus risk premium model based on treasury yields and industry-specific risk adjustment; and 3) the CAPM [Capital Asset Pricing Model]."

1 different, very detailed analysis Mr. Rhinehart uses to estimate an appropriate cost of
2 capital for CPS, his ultimate conclusion, i.e., a rate of return input of 4.65%, is totally
3 consistent with the cost of debt proxy recommended by myself *****BEGIN**
4 **CONFIDENTIAL*** ***** ***** ***END CONFIDENTIAL***** and
5 Mr. Bryant (4.748%).

6 **B. Imposing a Surcharge On the Pole Rate Based on the City Payment Is**
7 **Inconsistent With the FCC’s Formula and Would Result in a Double**
8 **Recovery for CPS**

9 **Q. MR. FAIRCHILD PRESENTS TWO SETS OF IMPUTED RATE OF RETURNS;**
10 **THE FIRST ASSUMES CITY PAYMENTS ARE NOT INCLUDED IN THE**
11 **CALCULATION OF POLE RATES, AND THE SECOND ASSUMES THEY ARE.**
12 **DO YOU AGREE WITH MR. FAIRCHILD’S PREMISE THAT THE**
13 **EXCLUSION OF CITY PAYMENTS WOULD ARGUE FOR A HIGHER RATE**
14 **OF RETURN?⁷⁴**

15 A. No, I do not. First, as discussed above, the rate of return imputations performed by
16 Mr. Fairchild based on CPS’s stipulated TCOS case are contrived figures that have no
17 economic connection to CPS’s true economic cost of money equivalent. Second,
18 Mr. Fairchild’s suggestion that CPS would be entitled to a higher rate of return should
19 city payments be “disallowed’ or not included in the calculation of [pole] rates,” is
20 totally without merit.⁷⁵ For the same reasons explained in my direct testimony as to why
21 CPS’s proposal to impose a surcharge on the pole rate is totally inconsistent with the
22 FCC’s formula methodology and should be rejected,⁷⁶ any “back door” approach to use
23 the city payment to justify unreasonably high pole costs – such as through a higher rate of
24 return input – should similarly be rejected. As explained in my direct testimony, the
25 § 224(e) formula contains no provision for an additional surcharge of this kind, nor
26 would it be appropriate given the rate formula is based on a fully allocated cost approach
27 which allows the utility to recover from the attacher the very high end of the range of just

⁷⁴ See Fairchild Rebuttal at 9.

⁷⁵ *Id.* at 6-8, showing a rate of return of *****BEGIN CONFIDENTIAL*** ***** ***END CONFIDENTIAL***** assuming city payment included in pole rates, and rate of return of *****BEGIN CONFIDENTIAL*** ***** ***END CONFIDENTIAL***** assuming the city payment is not included.

⁷⁶ See Kravtin Direct at 43-45.

1 and reasonable costs (especially when make-ready charges paid in addition to the formula
2 rate are taken into account).

3 **Q. ARE THERE OTHER REASONS WHY IT MAKES NO ECONOMIC SENSE TO**
4 **ARGUE FOR A HIGHER RATE OF RETURN BASED ON THE CITY**
5 **PAYMENT?**

6 A. Yes, there are. Mr. Fairchild himself testifies that the only source of “equity capital” for
7 CPS “comes from the excess of charges over expenses that are retained within CPS
8 Energy,” so-called retained earnings.⁷⁷ The city payment, in essence, is a means by
9 which the City of San Antonio can recapture excess cash flow generated from the city’s
10 utility operations and redirect its use toward the general funding of city services. As
11 such, it would be clear double recovery to allow a gross-up to the pole rate for the city
12 payment *in addition to* a rate of return mark-up in the carrying charge factor, the effect of
13 which is to already build into the pole rate additional (non-cost causative) cost recovery
14 for CPS relating to the opportunity cost of generating and/or retaining capital.

15 Mr. Fairchild’s assertion that inclusion of both a rate of return and a city payment
16 surcharge does not constitute a “double-dip compensation to the City,” because the
17 former is directed toward a “specific purpose” for the utility (referring to debt financing
18 costs) “whereas the city payment is for a different purpose”⁷⁸ is nonsensical. How the
19 funds are earmarked does not matter. From an economic perspective, what is important
20 for purposes of applying the pole rate formula is that both provide additional cost
21 recovery to the utility related to the same fundamental opportunity cost of generating
22 and/or retaining capital. Neither is related to the actual costs incurred by the utility in
23 connection with poles. As noted above, the FCC has gone so far as to recommend the
24 exclusion of such capital-related costs from the telecom formula going forward, because
25 of the lack of a cost-causative connection to poles. In this context, it would be
26 particularly unreasonable to allow CPS to build into the pole rate additional cost recovery
27 from *both* a rate of return component in the carrying charge factor (even one set at the
28 reasonable levels proposed by the other parties), and a gross-up for the city payment. It

⁷⁷ See Fairchild Deposition at 95 (Attachment PDK-5).

⁷⁸ *Id.* at 20-21.

1 would also be unreasonable to allow CPS to use a rate of return input set at an
2 excessively high level in part justified on the basis of the city payment as Mr. Fairchild
3 seems to be advocating in his testimony.

4 **V. MR. ARNETT AND MR. LOPEZ DO NOT OFFER ANY VALID CRITICISMS**
5 **OF STAFF'S PROPOSED POLE COUNT ADJUSTMENT**

6 **Q. MR. ARNETT'S TESTIMONY TAKES ISSUE WITH STAFF WITNESS**
7 **SRINIVASA'S USE OF DIFFERENT POLE COUNTS THAN THOSE**
8 **IDENTIFIED IN CPS'S CONTINUING PROPERTY RECORDS. WHAT IS**
9 **YOUR OPINION?**

10 A. While for purposes of the rate calculations presented in my direct testimony I relied on
11 CPS's pole count figures, I agree with Mr. Srinivasa's testimony "that CPS's proposed
12 pole count is inconsistent and unreliable."⁷⁹ Indeed, I similarly found the number of
13 distribution poles CPS used as the basis of its pole rate calculations was not "a verifiable
14 number."⁸⁰ I also noted in my direct testimony the varying numbers of distribution poles
15 identified by different CPS witnesses and in CPS's workpapers,⁸¹ as well as the
16 significantly higher number of distribution poles identified by CPS in a February 5, 2010,
17 presentation to the Greater San Antonio Chamber of Commerce.⁸² While in my direct, I
18 did not propose a specific adjustment to CPS's pole count figure such as proposed by
19 Mr. Srinivasa,⁸³ I specifically noted that the observed discrepancy in CPS's pole count

⁷⁹ Srinivasa Direct at 13.

⁸⁰ Kravtin Direct at 39.

⁸¹ *Id.* at 41, citing Ricardo Lopez Direct Testimony, Nov. 30, 2009 ("Lopez Direct"), at 5 (identifying 315,000 distribution poles) and Paul A. Escamilla Direct Testimony, Nov. 30, 2009 ("Escamilla Direct") at Exhibit PAE-1 (identifying 283,465); *see also* Attachment PDK-5, Deposition Testimony of Ricardo Lopez, at 101 (identifying the pole count as being closer to 290,000).

⁸² *Id.*, citing the presentation and memorandum (provided in Attachment PDK-8 to my direct testimony), in which CPS identifies the number of distribution poles as being in excess of 400,000 (*see* 2/25/10 Memorandum at 3), or 408,349 (*see* 2/5/10 Presentation at 2), a figure *****BEGIN CONFIDENTIAL***** *****
***** *****END CONFIDENTIAL*****

⁸³ For 2009, Staff uses the pole count of 408,349 identified in CPS's presentation to the Chamber; for 2007, Staff uses the pole count of 315,000 identified by CPS witness Lopez in his calculation of the average number of attachers; and for 2008, Mr. Srinivasa uses a pole count of 359,239, which he describes as "an interpolated count...derived from the incremental per pole investment." *See* Srinivasa Direct Testimony at 5-6, 13-14.

1 figures “suggests a pole rate calculated based on the lower number of distribution poles
2 identified in CPS’s workpapers (as my calculations rely on as well) may be substantially
3 overstated (since the net pole cost component of the rate formula is derived by dividing
4 net pole investment by the number of distribution poles).”⁸⁴ In addition, I calculated the
5 lower formula rate for 2009 that would result had I used the higher distribution pole
6 count of 408,349 identified in the 2/5/10 Chamber of Commerce presentation.⁸⁵ My
7 testimony identified that rate as *****BEGIN CONFIDENTIAL***** *****
8 ***** *****END**
9 **CONFIDENTIAL*****.

10 **Q. DO YOU AGREE WITH MR. ARNETT’S CRITICISMS OF STAFF’S**
11 **PROPOSED POLE COUNTS?**

12 A. No, I do not. As described above, Staff’s proposed pole count adjustment is consistent
13 with my direct testimony. Staff’s adjustment is a reasonable one, in my opinion, given
14 the inability to verify and reconcile CPS’s historical pole count figures with the most
15 recent publicly released figures. Similarly, I find Mr. Arnett’s criticisms of Staff’s
16 adjustment, as well as his explanations of the discrepancies in CPS’s pole count figures,
17 to be without merit. In criticizing Staff’s adjustment, Mr. Arnett argues that Staff’s
18 adjusted pole count figures are unreasonable, because in his opinion they imply an
19 unrealistic growth in the number of poles installed by CPS between 2007 and 2009, as
20 well as an unrealistically low cost per pole during that period vis-à-vis CPS’s booked cost
21 in 2005 and 2006. This argument is another red herring. The “unreasonable” growth
22 and cost figures as alleged by Mr. Arnett are merely an artifact of Mr. Srinivasa’s
23 decision to adjust only the last three years in the series of CPS pole counts. The numbers
24 have no intrinsic meaning in and of themselves. Had Mr. Srinivasa instead chosen to
25 interpolate CPS’s pole counts back over the entire time series, it would have smoothed
26 the growth and per unit cost figures. Had he done so, however, it would have increased
27 CPS’s pole counts for the years 2005 and 2006, which in turn would have had the effect
28 of actually lowering CPS’s pole rates for those years. Instead, Staff made the decision to

⁸⁴ Kravtin Direct at 41.

1 “hesitantly recommend[] using CPS proposed pole counts for 2004 through 2006.”⁸⁶
2 Again, all else being equal, Staff’s decision to accept CPS’s pole count figures for the
3 earlier years worked to the benefit of CPS.

4 As discussed in my direct testimony, *****BEGIN CONFIDENTIAL*****
5 *****
6 *****
7 ***** *****END CONFIDENTIAL*****⁸⁷

8 Accordingly, there is no reason to have faith in the average installed cost of poles or the
9 units of installed poles from the earlier years that Mr. Arnett is using to try and disprove
10 the reasonableness of Mr. Srinivasa’s pole count adjustment for the later years. Indeed, it
11 is the apparent disorganization of CPS’s pole-related figures in the first place that
12 underlies the need for Staff’s proposed pole count adjustment.

13 **Q. DOES THE CLAIM BY MR. LOPEZ THAT THE HIGHER “POLE COUNT OF**
14 **APPROXIMATELY 408,000 REPRESENTS THE TOTAL OF ALL POLES**
15 **TRACKED IN THE CPS ENERGY SYSTEM, INCLUDING THOSE NOT**
16 **OWNED BY CPS ENERGY”⁸⁸ AFFECT YOUR OPINION ON THIS ISSUE?**

17 A. No, it does not. I do not find Mr. Lopez’s rebuttal testimony on this point to be credible.
18 The Chamber of Commerce presentation by CPS identifies 408,349 as the number of
19 Distribution Poles on a slide labeled “CPS Energy Statistics” under the category header
20 “Electric Distribution and Transmission: \$2.4-billion in net assets” along with miles of
21 Overhead, Underground, and Transmission Lines.⁸⁹ In an associated memorandum to the
22 Chamber Board of Directors from the Executive Committee recommending that Board’s
23 support of “CPS Energy Proposed Rate Adjustment,” it is noted that “[i]n its Distribution
24 System, CPS Energy has more than 400,000 distribution poles used to provide service”

⁸⁵ *Id.*

⁸⁶ Srinivasa Direct at 6.

⁸⁷ See Kravtin Direct at 40, citing Attachment PDK-4, Gonzalo Martinez Deposition, May 27, 2010 (“Martinez Deposition”), at 22-24, 32.

⁸⁸ See Ricardo Lopez Rebuttal Testimony, Sept. 27, 2010 (“Lopez Rebuttal”), at 26.

⁸⁹ See Kravtin Direct, Attachment PDK7.

1 and that “[t]he average age of CPS Energy’s distribution poles is 27 years.”⁹⁰ In neither
2 CPS’s presentation to the Chamber, or the associated memorandum of the Chamber, is
3 there any suggestion of the ownership of any portion of these assets identified as net
4 assets of CPS to any other entity. It would thus seem CPS is attempting to use the higher
5 400,000 plus pole count for purposes of garnering support for its proposed rate increases,
6 but a lower pole count for purposes of calculating a higher pole formula rate.

7 **VI. MR. ARNETT’S AND MR. GUO’S SURVEY IS FLAWED AND UNDERSTATES**
8 **THE NUMBER OF ATTACHING ENTITIES**

9 **Q. MR. ARNETT ALSO TAKES ISSUE WITH STAFF’S PROPOSAL (SIMILAR TO**
10 **YOUR OWN) TO USE THE FCC PRESUMPTIVE VALUE FOR URBAN AREAS**
11 **OF FIVE ATTACHING ENTITIES. DOES MR. ARNETT PRESENT ANY NEW**
12 **INFORMATION TO SUPPORT CPS’S PROPOSED NUMBER OF THREE?**

13 A. No, he does not. While Mr. Arnett endorses CPS’s use of three attaching entities, his pre-
14 filed testimony does little more than describe the process involved in the recently
15 completely statistical survey performed by Mr. Guo. Mr. Arnett, however, appears to
16 have had little if any direct involvement with the statistical aspects of the survey.⁹¹ My
17 testimony does not address the manner in which Mr. Guo appears to have used standard
18 statistical sampling software. My testimony does however address some aspects of the
19 survey process that in my opinion serve to understate the number of attaching entities as
20 measured by the survey, in particular, those aspects of the survey process dealing with the
21 treatment of affiliate attachments.

22 **Q. WHAT ASPECTS OF THE SURVEY PROCESS ARE YOU REFERRING TO?**

⁹⁰ See Attachment PDK-7.

⁹¹ See Wilfred Arnett Rebuttal Testimony, Sept. 27, 2010 (“Arnett Rebuttal”), at 19. As indicated in my direct testimony, at the time CPS filed its direct case, it had not conducted either a full audit of its poles, or a statistically valid sampling of poles, as required of the utility under FCC rules in cases where the utility puts forth an alternative to the proposed use of the FCC presumptive value. See Kravtin Direct Testimony at 40, citing FCC, *In the Matter of Teleport Communications Atlanta, Inc. Complainant, v. Georgia Power Company, Respondent Application for Review, Order on Review*, File No. PA 00-005 Adopted: September 27, 2002.

1 A. Mr. Arnett testified in deposition that the survey treated the attachments of CPS and those
2 of the City of San Antonio traffic cable as one entity.⁹² Similarly, CPS fiber (that could
3 potentially be used to provide broadband services) was not counted as a separate entity.⁹³
4 As noted in my direct testimony,⁹⁴ and as confirmed by CPS witness Lopez in his
5 rebuttal testimony,⁹⁵ certain types of attachments on CPS poles, in particular, those by the
6 City of San Antonio (e.g. traffic-related attachments including signals, cameras, banners
7 etc), were excluded from the attachments included in CPS's original calculation of the
8 average number of attaching entities based on "invoiced" attachments. Failing to count
9 City traffic attachments and CPS fiber attachments as separate entities in the survey
10 suffers from the same basic flaw as CPS's original invoice method, i.e., to understate the
11 number of attaching entities. For the reasons discussed in my direct testimony and
12 further below, CPS has not in my opinion satisfied its burden in supporting the use of
13 three attaching entities vis-à-vis the FCC presumptive value of five for urban areas such
14 as San Antonio.

15 **Q. DOESN'T MR. LOPEZ ADDRESS CPS'S TREATMENT OF AFFILIATED**
16 **ATTACHMENTS IN HIS REBUTTAL TESTIMONY?**

17 A. Yes, he did, but his arguments are flawed in several respects. According to Mr. Lopez,
18 the fact that "the City owns CPS" means that "this relationship meets the definition of
19 being affiliated and, as such, allows CPS Energy to exclude the City from being invoiced
20 for attachments."⁹⁶ However, just because the relationship between the City and CPS
21 may meet the definition of being affiliated pursuant to PURA § 54.204(c) does not
22 necessarily mean CPS should exclude municipal attachments from the count of attaching
23 entities for purposes of calculating the FCC formula rate. In my opinion, these are two

⁹² See Wilfred Arnett Deposition, Nov. 11, 2010 ("Arnett Deposition"), at 97-98 (Attachment PDK-5).

⁹³ See *id.* at 116 ("Q: So if there were a pole out there and it had CPS power, had City traffic light, and CPS fiber, that still would be counted as one entity A: Yes, sir.").

⁹⁴ See Kravtin Direct at 40, citing Technical Conference Transcript, December 9, 2009, at 46-47, *see also* Jennifer Greiner Deposition, June 1, 2010 ("Greiner Deposition") at 115-117 (Attachment PDK-5).

⁹⁵ See Lopez Rebuttal at 20.

⁹⁶ *Id.* at 21.

1 entirely distinct matters. The language in PURA § 54.204(c) cited by Mr. Lopez pertains
2 to the applicability of the uniform pole attachment rate to the affiliate and is a legal
3 distinction. By contrast, the question of how the attachments associated with the affiliate
4 should be counted for purposes of calculating the number of attaching entities in the rate
5 formula is an economic or market distinction. As to this question, whether or not the
6 service (e.g., traffic signal, or fiber) is offered directly by the utility or through an affiliate
7 of the utility is less relevant than the nature of the underlying service, i.e., whether the
8 service pertains to the provision of the core electric services of the utility, or whether the
9 service pertains to the provision of a municipal function or *****BEGIN**
10 **CONFIDENTIAL***** *****
11 *****
12 *****
13 ***** *****END CONFIDENTIAL*****⁹⁷

14 Moreover, Mr. Lopez’s conclusion that *****BEGIN CONFIDENTIAL***** *****
15 ***** *****END**
16 **CONFIDENTIAL*****⁹⁸ is based on a number of erroneous assumptions.⁹⁹ Similarly,
17 Mr. Lopez’s conclusion that “CPS Energy’s average number of attaching entities would
18 be less than Austin Energy’s due to our much lower population density, and thus is
19 consistent with the FCC’s concept that the average number of attaching entities is directly
20 related to the urban characteristics of the area in question,” reflects a very superficial
21 understanding of the FCC’s findings on his part.¹⁰⁰ The cited difference in population
22 density between the service areas of Austin Energy and CPS Energy is immaterial

⁹⁷ See Kravtin Direct at 9, citing Gonzalo Martinez Response to Subpoena Duces Tecum, TWC Request 2d, at Bates No. 830.

⁹⁸ See Lopez Rebuttal at 21-22.

⁹⁹ For one, Mr. Lopez divides the number of attachments grossed up to include COSA attachments by the total CPS pole count, whereas the smaller number of joint use poles should have been used. In addition, his calculation only includes City attachments for traffic cables, cameras and wi-fi antennas, whereas there are a number of other attachments relating to municipal functions that could also be present on CPS poles such as for street lights, banner cables, and other city-owned/leased cable, as well as attachments relating to CPS fiber used for non-utility purposes.

¹⁰⁰ See Lopez Rebuttal at 23-24.

1 compared with the population density of areas considered rural by the FCC.¹⁰¹
2 Accordingly, it is not meaningful to extrapolate the average number of attaching entities
3 for CPS based on the Austin Energy number, all the more so since the latter was the
4 result of a negotiation process among the parties, and not a litigated one such as in this
5 case.

6 **Q. MS. KRAVTIN, IS THERE ANY OTHER ASPECT OF THE SURVEY PROCESS**
7 **AFFECTING ITS ACCURACY YOU WOULD LIKE TO COMMENT ON?**

8 A. Yes. I also take issue with the general philosophy underlying Mr. Guo's view as to his
9 role as statistician and that pervaded the approach he took in sampling CPS poles.
10 According to Mr. Guo, as a philosophical matter, he "did not question the accuracy of the
11 data," provided to him by CPS, consistent with his belief that "the statistician, which role
12 MCG undertook with the CPS Energy survey, does not review the accuracy of the
13 data."¹⁰² While this detached view of the statistician may be appropriate for certain
14 academic exercises, in my opinion, it is a highly inappropriate view to take in the present
15 context where the reasonableness of the underlying inputs to the rate formula are integral
16 to ensuring that the rates being set are just and reasonable. The results found by the
17 statistician are only as good as the underlying data with which the statistician is working
18 with. Significant inaccuracies in the data provided to Mr. Guo from CPS, which are likely
19 given the disorganization in the company's information on its distribution assets as
20 acknowledged by Mr. Martinez, will render the statistical results based on that data
21 inaccurate and unreliable as well.

¹⁰¹ The FCC allows for a different number of attaching entities for rural and urban areas, because of significant distinctions between rural and urban areas nationwide. *See FCC Consolidated Partial Order on Reconsideration*, CS Docket 97-98, 97-151, FCC 01-170, May 25, 2001, ¶67 ("we provide utilities the option of using our presumptive averages [3 for rural and 5 for urban]... or developing averages for two areas: (1) urbanized (50,000 or higher population), and (2) non-urbanized (less than 50,000 population)"). In the case of Austin and San Antonio, from an economic and public policy perspective, there is no such significant distinction.

¹⁰² *See* CPS Response to AT&T's Sixth Request for Information, 6-175 (Attachment PDK-1).

1 **VII. CONCLUSION**

2 **Q. MS. KRAVTIN, COULD YOU PLEASE SUMMARIZE YOUR ULTIMATE**
3 **CONCLUSIONS REGARDING THE MAXIMUM JUST AND REASONABLE**
4 **POLE RATES FOR CPS?**

5 A. Yes. As the Commission's ruling in its *Order on Reconsideration* acknowledges, with
6 any formulaic approach, the accuracy and reasonableness of CPS's rate calculations
7 depends on the accuracy and reasonableness of the underlying data inputs. For this
8 reason, it is very important that the data inputs are subjected to careful scrutiny and held
9 to a high standard as to their reliability, accuracy, consistency, and ability to be
10 independently verified. In my opinion, rates that fail to correct for the anomalies in CPS's
11 retirement-related component of depreciation costs for poles as well as to correct for
12 other unreasonable inputs in CPS's rate calculation as discussed in my direct and
13 supplemental testimony (i.e., rate of return, the number of attaching entities, and the
14 application of the city payment surcharge) would not constitute just and reasonable rates
15 and would fail to serve the ultimate purposes of effective pole rate regulation. In my
16 opinion, as an economist with experience in determining just and reasonable rates for
17 pole attachment rentals, these identified inputs require modification to satisfy the
18 standard of reasonableness set by the PUCT, and pursuant to the language in PURA
19 § 54.204 and 47 U.S.C. § 224(e) upon which it relies.

20 **Q. DOES THIS CONCLUDE YOUR SUPPLEMENTAL TESTIMONY?**

21 A. Yes.



Control Number: 36633



Item Number: 703

Addendum StartPage: 0

SOAH DOCKET NO. 473-09-5470
PUC DOCKET NO. 36633

PETITION OF CPS ENERGY FOR
ENFORCEMENT AGAINST AT&T
TEXAS AND TIME WARNER CABLE
REGARDING POLE ATTACHMENTS

§
§
§
§

BEFORE THE STATE OF TEXAS
ADMINISTRATIVE HEARINGS

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**TIME WARNER CABLE SAN ANTONIO, L.P.'S
MOTION FOR LEAVE TO FILE SECOND SUPPLEMENTAL
PRE-FILED TESTIMONY OF PATRICIA D. KRAVTIN**

Time Warner Cable San Antonio, L.P. ("TWC") respectfully submits this Motion for Leave to File Second Supplemental Pre-Filed Testimony of Patricia D. Kravtin in the above captioned proceeding. Good cause exists for this Motion, and in support hereof TWC states as follows:

1. The Federal Communications Commission ("FCC") recently reinterpreted its rules regarding the maximum rate that an entity may charge under 47 U.S.C. § 224(e), materially affecting the previous rate calculations performed by Patricia D. Kravtin and submitted in this proceeding. *See Implementation of Section 224 of the Act*, WC Docket No. 07-245, Report and Order & Order on Reconsideration, FCC 11-50 (rel. Apr. 7, 2011) ("*Report and Order*"). TWC seeks leave to file further supplemental testimony from Ms. Kravtin to explain the effect of the FCC's recent order on her prior calculations and to provide revised rate calculations.

2. PURA § 54.204(c) prohibits a municipality or municipally owned utility ("MOU") from charging a "pole attachment rate . . . that exceeds the fee the municipality or [MOU] would be permitted to charge under rules adopted by the [FCC] under 47 U.S.C. Section 224(e) if the municipality's or [MOU's] rates were regulated under federal law and the rules of the Federal Communications Commission."

3. The FCC's rules specify a formula for calculating the maximum rate an entity may charge under section 224(e) for pole attachments used by a telecommunications carrier or cable operator to provide telecommunications services (the "telecom rate formula"). See 47 C.F.R. § 1.1409(e)(2).


4. On April 7, 2011, the FCC revised the "costs" that are used in calculating the "just and reasonable" telecommunications rate under Section 224(e). See *Report and Order* ¶ 146. In particular, the FCC defined "cost" for the new just and reasonable telecom rate in urban areas as "66 percent of the fully allocated costs" calculated by multiplying the net cost of a bare pole by the carrying charge rate. *Id.* ¶ 149, n. 448. The FCC's new rules take effect 30 days after publication in the Federal Register. *Id.* ¶ 243. As of the date of this filing, the rules have not yet been published in the Federal Register.

5. Because of the changes to the FCC's Section 224(e) formula, which governs the rates at issue in this case, it is necessary for Ms. Kravtin to revise her previous rate calculations. For this reason, TWC requests leave to file further supplemental testimony from Ms. Kravtin, attached to this Motion as Attachment A, explaining the effect of the FCC's *Report and Order* on her prior calculations and updating those calculations to provide corrected just and reasonable rates as calculated under the proper formulas.¹

¹ This matter is currently set for hearing beginning May 10, 2011. TWC does not believe that the current procedural schedule needs to be abated in light of the FCC's revision of the Section 224(e) rate. The FCC's definition of "cost" does not substantively alter the inputs to the telecommunications rate formula, and the parties can adequately address the impact of the revisions within the context of the current schedule. Indeed, the FCC intended its revised formula to yield "a readily administrable approach." *Report and Order* ¶ 149.

Respectfully submitted,

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**ATTORNEYS FOR TIME WARNER
CABLE SAN ANTONIO, L.P.**

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing pleading has been served on all parties of record via hand delivery, facsimile, or electronically this 22nd day of April, 2011.


Valerie P. Kirk

ATTACHMENT A

Time Warner Cable San Antonio, L.P.
April 22, 2011

SOAH DOCKET NO. 473-09-5470
PUC DOCKET NO. 36633

PETITION OF CPS ENERGY FOR §
ENFORCEMENT AGAINST AT&T § BEFORE THE STATE OFFICE OF
TEXAS AND TIME WARNER CABLE § ADMINISTRATIVE HEARINGS
REGARDING POLE ATTACHMENTS §

**SECOND SUPPLEMENTAL PRE-FILED TESTIMONY OF PATRICIA D. KRAVTIN
ON BEHALF OF TIME WARNER CABLE SAN ANTONIO, L.P.**

Table of Contents

	<u>Page</u>
I. INTRODUCTION AND SUMMARY	2
II. SUMMARY OF THE FCC'S APRIL 7, 2011 REVISIONS	3
III. UPDATED MAXIMUM JUST AND REASONABLE RATES FOR CPS	6

Attachments

Attachment PDK-1	Highly Sensitive, Confidential – Staff Pole Attachment Rates with Corrected Theoretical Reserve % (Revised Supplemental Attachment PDK-6)
Attachment PDK-2	Highly Sensitive, Confidential – Pole Attachment Rates Based on Prorated Accumulated Depreciation (Revised Supplemental Attachment PDK-7)
Attachment PDK-3	Highly Sensitive, Confidential – Pole Attachment Rates Excluding RMR Offset (Revised Supplemental Attachment PDK-8)
Attachment PDK-4	Calculation of Average Maximum Just and Reasonable Rates for CPS (Revised Supplemental Attachment PDK-9)
Attachment PDK -5	Section 1.1409(e) of the FCC Pole Attachment Rules as revised April 7, 2011

1 **I. INTRODUCTION AND SUMMARY**

2 **Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND OCCUPATION.**

3 A. My name is Patricia D. Kravtin. My business address is 57 Phillips Avenue,
4 Swampscott, Massachusetts. I am an economist in private practice specializing in the
5 analysis of telecommunications, cable, and energy regulation and markets.

6 **Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY IN THIS**
7 **PROCEEDING?**

8 A. I previously submitted direct pre-filed testimony on July 23, 2010, and supplemental pre-
9 filed testimony on March 17, 2011, on behalf of Time Warner Cable San Antonio, L.P.
10 ("TWC") in this proceeding. A detailed resume summarizing my training, previous
11 experience, prior testimony and reports was provided as Attachment PDK-1 to my July
12 23, 2010 direct testimony.

13 **Q. WHAT IS THE PURPOSE OF YOUR SECOND SUPPLEMENTAL**
14 **TESTIMONY?**

15 A. My pre-filed testimonies in this proceeding address matters pertaining to the calculation
16 of pole attachment rental rates that CPS Energy ("CPS") may charge TWC pursuant to
17 PURA § 54.204 and in compliance with the Commission's *Order on Reconsideration of*
18 *Certified Issues* in this proceeding. At its April 7, 2011 Open Meeting, the FCC formally
19 adopted revisions to its rules for pole attachments, including those related to calculating
20 the telecom rate under Section 224(e).¹ TWC asked me to update the pole rate
21 calculations presented in my supplemental testimony to comply with these revisions to
22 the Section 224(e) telecom rate formula.

23 **Q. PLEASE SUMMARIZE YOUR UPDATED POLE RATE CALCULATIONS.**

24 A. The updated rate calculations are summarized in Table 1 below, for the year 2007. Three
25 sets of rates are presented, corresponding to the three alternative methodologies identified

¹ See *Implementation of Section 224 of the Act; A National Broadband Plan for our Future*, WC Docket No. 07-245, GN Docket No. 09-51, Report and Order and Order on Reconsideration, FCC 11-50 (rel. Apr. 7, 2011) ("R&O").

1 in my supplemental testimony for correcting CPS’s retirement-related depreciation costs
2 recorded in CPS’s so-called “Retirement Master Record” (“RMR”). Updated maximum
3 just and reasonable pole rates for all the years for which CPS has provided data (2004
4 through 2009) are presented in Section III of this second supplemental testimony, with
5 supporting calculations provided in Attachments 1 to 4.

Table 1 Comparison of Maximum Just and Reasonable Pole Attachment Rates for CPS Pre and Post FCC Revisions to § 224(e) Telecom Rate (\$ per pole/year)		
Based on data for FY Ending 6/30/07	Pre-FCC 4/7/11 Revisions	Post-FCC 4/7/11 Revisions
Excludes RMR Offset (As Proposed in Direct)	\$7.44	\$4.91
FCC Proration Method (Other Inputs per Direct)	\$8.80	\$5.81
Corrected Staff Theoretical Reserve Approach (Other Inputs per Staff Direct ex. CPS Counts)	\$8.77	\$5.79
Average Maximum Just and Reasonable Rates	\$8.34	\$5.50
CPS Proposed Rates w/city payment surcharge	\$28.20	\$18.61

6 **II. SUMMARY OF THE FCC’S APRIL 7, 2011 REVISIONS**

7 **Q. DID THE FCC EXPLAIN WHY IT SOUGHT TO REVISE THE SECTION 224(e)**
8 **TELECOM RATE FORMULA?**

9 **A.** Yes. In its March 16, 2010 National Broadband Plan (“NBP”) and as further articulated
10 in its May 20, 2010 Further Notice of Proposed Rulemaking (“FNRPM”), the FCC
11 proposed specific revisions to the Section 224(e) telecom formula designed to produce a
12 telecom rate “set as low and as close to uniform (in the vicinity of the current cable rate)

1 as possible.”² In particular, the FCC proposed to amend the telecom formula to provide
2 for a range of just and reasonable rates, with the existing telecom rate serving as the
3 “upper bound” of the range. The FCC proposed a new “lower bound” rate, calculated
4 using the existing telecom rate formula, but excluding the capital-related elements of the
5 carrying charge factor (i.e., depreciation, taxes, and rate of return) following economic
6 principles of cost causation. The new lower bound telecom rate would be closer to, but
7 still exceed the incremental costs of pole attachments (the lower bound of the range of
8 just and reasonable rates prescribed under Section 224(d) for cable). Accordingly, even
9 the lower bound rate would be sufficient to prevent subsidization of attachers and provide
10 just compensation to utility pole owners. As defined, the existing cable rate would likely
11 fall in between the proposed upper and lower bounds of just and reasonable rates for
12 telecom.³

13 As explained by the FCC in the NBP and FNPRM, such revisions to the telecom
14 rate formula were necessary in order to achieve the vital national public policy goals of
15 promoting broadband deployment and competition in telecommunications throughout all
16 areas of the country. The pre-April 7, 2011 formulation of the telecom rate generally
17 produced rates much higher than the current cable rate.⁴ Because pole attachments are a
18 vital input to broadband providers, the FCC found the significant price differential
19 between the cable and telecom rates to discourage investment in broadband infrastructure
20 and to raise the costs to end users of broadband services. In addition, as found by the
21 FCC, a higher telecom rate serves to deter cable companies from offering new and
22 advanced services that could potentially be classified as telecom, since those companies

² See FCC, *Connecting America: The National Broadband Plan*, 110 (rel. Mar. 16, 2010), available at <http://www.broadband.gov/plan/#read-the-plan> (“NBP”); *Implementation of Section 224 of the Act, A National Broadband Plan for our Future*, WC Docket No. 07-245, GN Docket No. 09-51, Order and Further Notice of Proposed Rulemaking, 25 FCC Rcd 11864, ¶¶ 6-7, 110-118 (2010) (“FNPRM”); Kravtin Direct Testimony at 3, 5, 34; Kravtin Supplemental Testimony at 37. As identified in Attachment PDK-1 to my direct testimony, and in the introductory section of my supplemental testimony, I have been an active participant in both the current (2010) and prior (2008) phases of the FCC’s pole rulemaking investigation.

³ See FNPRM ¶ 140.

⁴ Under FCC presumptions, the cable formula allocates to an attacher 7.41% of the fully allocated costs of pole attachments, whereas the pre 4/7/11 telecom formula allocated 11.2% of these same costs in urban areas and 16.89% of these costs in rural, resulting in telecom rates generally in the range of 50% to 130% higher than cable rates.

1 would risk paying higher pole rental fees across their entire network. Under PURA, the
2 Section 224(e) rate applies to all services provided over attachments to CPS Energy's
3 poles.

4 **Q. PLEASE DESCRIBE THE FCC'S REVISIONS TO THE SECTION 224(e)**
5 **TELECOM RATE FORMULA.**

6 **A.** In its April 7, 2011, Report and Order ("R&O"), the FCC formally adopted revisions to
7 the telecom rate formula consistent with those outlined in the FNPRM. These included
8 formal adoption of the proposed range of just and reasonable rates, with the higher bound
9 rate set equal to the preexisting telecom rate and the lower bound rate set equal to a new
10 fully allocated rate limited to recovery of operating costs of pole attachments (i.e.,
11 maintenance and administrative). The FCC affirmed its prior finding that capital costs
12 attributed to pole attachments under the preexisting cable and telecom formulas (i.e.,
13 depreciation, taxes, and rate of return) are properly excluded from the lower bound rate
14 for telecom, in that attachers are "not the 'cost causer' of these costs," as they "cause
15 none or no more than a de minimis amount of these costs other than those that are
16 recovered up front through the make ready fees."⁵

17 The FCC further "adopt[ed] a particular definition of cost" "from within the range
18 of possible interpretations of the term 'cost' for purposes of Section 224(e)" to ensure a
19 just and reasonable telecom rate.⁶ Specifically, the FCC adopted a definition of cost for
20 urban areas such as San Antonio as "66% of the fully allocated costs used for purposes of
21 the pre-existing telecom rate," and a definition of cost for rural areas as "44% of the fully
22 allocated costs," where fully allocated cost is defined as net bare pole cost times carrying
23 charge factor (i.e., the first two components of the rate formula for both cable and
24 telecom formula).⁷ Under this definition of cost and using FCC presumptions (most
25 significantly the presumptions of 5 attaching entities in urban areas and 3 in rural), which
26 remain unchanged under the new rules, the percentage of fully allocated costs allocated
27 under the telecom rate approximately equals that allocated under the cable rate, i.e.,

⁵ R&O ¶ 144.

⁶ *Id.* ¶ 146.

⁷ *Id.* ¶ 149.

1 7.41%.⁸ Under the revised FCC rules (a copy of which is provided in Attachment 5 to
2 this declaration), this definition of cost would be used to calculate the telecom rate, unless
3 it produced a rate that fell below the FCC's lower bound rate, in which case, the lower
4 bound formula as described above would apply.⁹

5 **III. UPDATED MAXIMUM JUST AND REASONABLE RATES FOR CPS**

6 **Q. DOES THE FCC'S REVISED SECTION 224(e) TELECOM RATE FORMULA**
7 **AFFECT THE RATES CPS MAY CHARGE?**

8 A. Yes. Pursuant to PURA § 54.204(c), CPS, as "a municipally owned utility may not
9 charge . . . a pole attachment rate or underground conduit rate that exceeds the fee the
10 municipality or municipally owned utility would be permitted to charge under rules
11 adopted by the [FCC] under 47 U.S.C. Section 224(e) if the municipality's or municipally
12 owned utility's rates were regulated under federal law and the rules of the Federal
13 Communications Commission."

14 **Q. HOW DID YOU RECALCULATE THE RATES CPS MAY CHARGE USING**
15 **THE FCC'S REVISED SECTION 224(e) TELECOM RATE FORMULA?**

16 A. I recalculated three sets of maximum just and reasonable rates for CPS pursuant to the
17 revisions to the telecom rate formula adopted by the FCC on April 7, 2011. These three
18 sets of rate calculations correspond to the three alternative methods for correcting CPS's
19 unsupported retirement-related depreciation costs – associated with the so-called RMR
20 accounting – which I present in my supplemental testimony. All supporting calculations
21 are presented in Attachments 1-4 to this declaration.

22 As detailed in my supplemental testimony, the first set of updated rate
23 calculations adjust for CPS's problematic RMR figures by excluding the dollars booked
24 to the RMR subaccount from the calculation of CPS's depreciation reserve for pole
25 account 364 (the method originally proposed in my direct testimony). The second set of
26 updated rate calculations adjust for CPS's problematic RMR figures by using an

⁸ For urban areas: $.66 \times 11.2\%$ (based on the presumption of 5 attaching entities) = 7.39%; for rural areas: $.44 \times 16.89\%$ (based on the presumption of 3 attaching entities) = 7.43%.

⁹ Based on calculations performed by FCC staff in the FNRPM, which I have also corroborated in my own rate calculations, the lower bound rate (calculated by including only operating cost elements of the

1 alternative method suggested by Staff witness Srinivasa in his direct testimony, which
2 substitutes imputed accumulated depreciation reserve amounts derived from calculated
3 Theoretical Reserve (“TR”) percentages using depreciation parameters from the 2007
4 Depreciation Study. The third set of updated rate calculations adjust for CPS’s
5 problematic figures by substituting accumulated depreciation reserve amounts for poles
6 calculated using the FCC’s proration methodology, which assigns to poles an amount of
7 accumulated depreciation proportional to its relative share of gross electric plant.

8 **Q. PLEASE DESCRIBE THE UPDATED RATES YOU CALCULATED.**

9 A. The updated just and reasonable rates for CPS for the years 2004 to 2009 conforming to
10 the new FCC rules, and calculated in the manner described above, are identified in
11 Table 2.

Table 2						
Comparison of Maximum Just and Reasonable Pole Attachment Rates Under Alternative Methods to Correct Anomalies in CPS’s Accumulated Depreciation for Poles, Updated for FCC’s 4/7/11 Revisions to the Section 224(e) Telecom Rate Formula (Calculated Using CPS Proposed Pole Counts)						
(\$ per pole/yr)						
Data for fiscal yr ending	2004	2005	2006	2007	2008	2009
Excludes RMR Offset (As Proposed in Direct)	\$4.71	\$4.75	\$4.80	\$4.91	\$5.42	\$5.35
FCC Proration Method (Other Inputs per Direct)	\$5.19	\$5.31	\$5.56	\$5.81	\$6.30	\$6.06
Corrected Staff Theoretical Reserve Approach (Other Inputs per Staff Direct ex. CPS Counts)	\$5.81	\$5.96	\$5.86	\$5.79	\$6.11	\$5.79
Average Maximum Just and Reasonable Rates	\$5.24	\$5.34	\$5.41	\$5.50	\$5.94	\$5.73
CPS Proposed Rates (Pre-revision) w/city payment surcharge	\$15.22	\$18.02	\$27.44	\$28.20	\$25.09	\$25.62
CPS Proposed Rates (Post-revision) w/city payment surcharge	\$10.05	\$11.89	\$18.11	\$18.61	\$16.56	\$16.91

carrying charge factor) is unlikely to be higher than the new just and reasonable telecom rate defined by the FCC.

1 As shown in Table 2, just and reasonable rates for CPS calculated in conformance with
2 the revisions to the Section 224(e) telecom rate formula adopted by the FCC on April 7,
3 2011 average in the range of \$5 to \$6, as compared to pre-revision rates, which averaged
4 in the range of \$7 to \$9 (as presented in Table 1 of my Supplemental Testimony). Using
5 pole counts proposed by Staff, the just and reasonable rates for CPS under the FCC's
6 revised rules are even lower, averaging in the \$4 to \$5 range. Moreover, just and
7 reasonable rates calculated using the FCC's lower bound formula – a level that would be
8 sufficient to ensure no subsidy to attachers and just compensation for the pole owner –
9 fall in the \$2 to \$4 range.

10 For comparison purposes, I have also recalculated CPS's proposed rates under the
11 revised rules, and provide those in Table 2 above. Although CPS's proposed rates would
12 be lower in absolute value under the FCC's revised rules, they still exceed the maximum
13 just and reasonable rates by approximately the same, unacceptably high percentages as
14 before.

15 **Q. DOES THIS CONCLUDE YOUR SECOND SUPPLEMENTAL TESTIMONY?**

16 **A. Yes.**

**SECOND SUPPLEMENTAL TESTIMONY
ATTACHMENT PDK-1**

Staff Pole Attachment Rates with Corrected Theoretical Reserve Percentage

**HIGHLY SENSITIVE CONFIDENTIAL PROTECTED MATERIALS
PDK-1-1 – PDK-1-2**

**SECOND SUPPLEMENTAL TESTIMONY
ATTACHMENT PDK-2**

Pole Attachment Rates Based on Prorated Accumulated Depreciation

**HIGHLY SENSITIVE CONFIDENTIAL PROTECTED MATERIALS
PDK-2-1 – PDK-2-6**

**SECOND SUPPLEMENTAL TESTIMONY
ATTACHMENT PDK-3**

**Pole Attachment Rates Excluding RMR Offset
HIGHLY SENSITIVE CONFIDENTIAL PROTECTED MATERIALS
PDK-3-1 – PDK-3-4**

**SECOND SUPPLEMENTAL TESTIMONY
ATTACHMENT PDK-4**

Calculation of Average Maximum Just and Reasonable Rates

PDK-4-1

ATTACHMENT PDK-4
 SECOND SUPPLEMENTAL TESTIMONY
 REVISED SUPPLEMENTAL ATTACHMENT PDK-9
 4/21/11

Calculation of Average Maximum Just and Reasonable Rates

Revised per FCC 4/7/11

Year	2004	2005	2006	2007	2008	2009	
Acc Depr Mthd	Maximum Just and Reasonable Rates Using CPS Counts						Source (As Revised)
Excludes RMR	\$ 4.71	\$ 4.75	\$ 4.80	\$ 4.91	\$ 5.42	\$ 5.35	Att PDK 8, Direct
FCC Proration	\$ 5.19	\$ 5.31	\$ 5.56	\$ 5.81	\$ 6.30	\$ 6.06	Att PDK 7, Suppl.
Corrected Staff TR	\$ 5.81	\$ 5.96	\$ 5.86	\$ 5.79	\$ 6.11	\$ 5.79	Att PDK 6, Suppl.
Average	\$ 5.24	\$ 5.34	\$ 5.41	\$ 5.50	\$ 5.94	\$ 5.73	Calculation

Acc Depr Mthd	Maximum Just and Reasonable Rates Using Staff Counts						Source
Excludes RMR	\$ 4.71	\$ 4.75	\$ 4.80	\$ 4.42	\$ 4.34	\$ 3.80	Att PDK 8, Suppl.
FCC Proration	\$ 5.19	\$ 5.31	\$ 5.56	\$ 5.22	\$ 5.04	\$ 4.31	Att PDK 7, Suppl.
Corrected Staff TR	\$ 5.81	\$ 5.96	\$ 5.86	\$ 5.21	\$ 4.89	\$ 4.12	Att PDK 6, Suppl.
Average	\$ 5.24	\$ 5.34	\$ 5.41	\$ 4.95	\$ 4.76	\$ 4.08	Calculation

**SECOND SUPPLEMENTAL TESTIMONY
ATTACHMENT PDK-5**

**Section 1.1409(e) of the FCC Pole Attachment Rules
as revised April 7, 2011**

PDK-5-1 – PDK-5-2

(5) A copy of the utility's response to the written request including all information given by the utility to support its denial of access. A complaint alleging unlawful denial of access will not be dismissed if the complainant is unable to obtain a utility's written response, or if the utility denies the complainant any other information needed to establish a prima facie case.

* * *

(ix) The annual carrying charges attributable to the cost of owning a pole. The utility shall submit these charges separately for each of the following categories: depreciation, rate of return, taxes, maintenance, and administrative. These charges may be expressed as a percentage of the net pole investment. With its pleading, the utility shall file a copy of the latest decision of the state regulatory body or state court that determines the treatment of accumulated deferred taxes if it is at issue in the proceeding and shall note the section that specifically determines the treatment and amount of accumulated deferred taxes.

* * *

5. Section 1.1409(e) is revised to read as follows:

§ 1.1409 Commission consideration of the complaint.

(e) ***

(2) With respect to attachments to poles by any telecommunications carrier or cable operator providing telecommunications services, the maximum just and reasonable rate shall be the higher of the rate yielded by section 1.1409(e)(2)(i) or 1.1409(e)(2)(ii) of this Part.

(i) The following formula applies to the extent that it yields a rate higher than that yielded by the applicable formula in section 1.1409(e)(2)(ii):

Rate = Space Factor x Cost

Where Cost

in Urbanized Service Areas = 0.66 x (Net Cost of a Bare Pole x Carrying Charge Rate)

in Non-Urbanized Service Areas = 0.44 x (Net Cost of a Bare Pole x Carrying Charge Rate)

$$\text{Where Space Factor} = \frac{\left[\left(\frac{\text{Space}}{\text{Occupied}} \right) + \left(\frac{2}{3} \times \frac{\text{Unusable Space}}{\text{No. of Attaching Entities}} \right) \right]}{\text{Pole Height}}$$

(ii) The following formula applies to the extent that it yields a rate higher than that yielded by the applicable formula in section 1.1409(e)(2)(i):

ATTACHMENT PDK-5
SECOND SUPPLEMENTAL TESTIMONY
4/21/11

PDK-5-1

$$\text{Rate} = \text{Space Factor} \times \text{Net Cost of a Bare Pole} \times \left[\begin{array}{c} \text{Maintenance and Administrative} \\ \text{Carrying Charge Rate} \end{array} \right]$$

$$\text{Where Space Factor} = \left[\frac{\left(\begin{array}{c} \text{Space} \\ \text{Occupied} \end{array} \right) + \left(\frac{2}{3} \times \frac{\text{Unusable Space}}{\text{No. of Attaching Entities}} \right)}{\text{Pole Height}} \right]$$

6. Section 1.1410 is revised to read as follows:

§ 1.1410 Remedies.

(a) If the Commission determines that the rate, term, or condition complained of is not just and reasonable, it may prescribe a just and reasonable rate, term, or condition and may:

- (1) Terminate the unjust and/or unreasonable rate, term, or condition;
- (2) Substitute in the pole attachment agreement the just and reasonable rate, term, or condition established by the Commission;
- (3) Order a refund, or payment, if appropriate. The refund or payment will normally be the difference between the amount paid under the unjust and/or unreasonable rate, term, or condition and the amount that would have been paid under the rate, term, or condition established by the Commission, plus interest, consistent with the applicable statute of limitations; and

(b) If the Commission determines that access to a pole, duct, conduit, or right-of-way has been unlawfully denied or delayed, it may order that access be permitted within a specified time frame and in accordance with specified rates, terms, and conditions.

7. Section 1.1420 is added as follows:

§ 1.1420 Timeline for access to utility poles.

(a) The term "attachment" means any attachment by a cable television system or provider of telecommunications service to a pole owned or controlled by a utility.

(b) All time limits in this subsection are to be calculated according to section 1.4 of this title.

(c) *Survey.* A utility shall respond as described in section 1.1043(b) to a cable operator or telecommunications carrier within 45 days of receipt of a complete application to attach facilities to its utility poles (or within 60 days, in the case of larger orders as described in subsection (g)). This response may be a notification that the utility has completed a survey of poles for which access has been requested. A complete application is an application that provides the utility with the information necessary under its procedures to begin to survey the poles.

(d) *Estimate.* Where a request for access is not denied, a utility shall present to a cable operator or telecommunications carrier an estimate of charges to perform all necessary make-ready work within 14 days of providing the response required by section 1.1420(c), or in the case where a prospective attacher's contractor has performed a survey, within 14 days of receipt by the utility of such survey.

BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of)	
Columbus Southern Power Company and)	Case No. 11-351-EL-AIR
Ohio Power Company, Individually and, if)	Case No. 11-352-EL-AIR
Their Proposed Merger is Approved, as a)	
Merged Company (collectively, AEP Ohio))	
for an Increase in Electric Distribution Rates)	
In the Matter of the Application of)	
Columbus Southern Power Company and)	Case No. 11-353-EL-ATA
Ohio Power Company, Individually and, if)	Case No. 11-354-EL-ATA
Their Proposed Merger is Approved, as a)	
Merged Company (collectively, AEP Ohio))	
for Tariff Approval)	
In the Matter of the Application of)	
Columbus Southern Power Company and)	Case No. 11-356-EL-AAM
Ohio Power Company, Individually and, if)	Case No. 11-258-EL-AAM
Their Proposed Merger is Approved, as a)	
Merged Company (collectively, AEP Ohio))	
for Approval to Change Accounting Methods)	

PREFILED DIRECT TESTIMONY OF

PATRICIA KRAVTIN

ON BEHALF OF

OHIO CABLE TELECOMMUNICATIONS ASSOCIATION

October 24, 2011

Table of Contents

INTRODUCTION 1

 Qualifications 1

 Purpose and Summary of Testimony 5

POLE ATTACHMENT RATES 9

 The PUCO formula, by tracking the well-established FCC formula, is a reasonable, economically appropriate, cost-based approach for determining just and reasonable pole attachment rates. 9

 Based on appropriate corrections to the tax and depreciation data inputs used in Staff’s calculations of the pole rate formula, AEP Ohio should be allowed to charge cable operators an annual pole attachment rental rate of *no more than* \$7.51 for CSP and \$5.62 for OPCo - or a blended rate of \$6.26 - per foot of pole space..... 14

 There are important economic and public policy reasons that support a pole attachment rate, such as Staff’s proposed \$6.40 rate for CSP, set below the maximum permissible rate derived using the rate formula. 24

TERMS AND CONDITIONS 27

 The Utilities’ proposed tariff contains a number of provisions that work to undermine the effectiveness of pole attachment regulation in stemming monopoly abuses, not all of which are fully addressed in Staff’s Report. 27

 Numerous provisions in the Utilities’ proposed tariff, including new unilaterally-imposed rules for inspections and audits, and new potentially onerous penalties for unauthorized or unreported attachments, violate core principles of effective pole attachment regulation. 28

List of Tables

1: Comparison of Utilities’ Existing and Proposed Depreciation Rates for Pole Plant Account, Closely-Related Distribution Plant Accounts, and Total Distribution Plant..... 16

2: Comparison of Maximum Permissible Just and Reasonable Pole Attachment Rates and Rates Proposed by AEP Ohio and Staff..... 21

List of Attachments

- 1: Detailed Resume
- 2: Calculations of Maximum Permissible Just and Reasonable Pole Attachment Rates Using FCC Formula Methodology

1 **INTRODUCTION**

2 *Q. PLEASE STATE YOUR NAME, POSITION, AND BUSINESS ADDRESS.*

3 A. My name is Patricia D. Kravtin. I am an economist in private practice specializing in the
4 analysis of telecommunications and energy regulation and markets. My business address is 57
5 Phillips Avenue, Swampscott, Massachusetts.

6 **Qualifications**

7 *Q. PLEASE DESCRIBE YOUR PROFESSIONAL AND EDUCATIONAL*
8 *BACKGROUND.*

9 A. I received a B.A. with Distinction in Economics from the George Washington University.
10 I studied in the Ph.D. program in Economics under a National Science Foundation Fellowship at
11 the Massachusetts Institute of Technology (M.I.T.). My fields of concentration at M.I.T. were
12 government regulation of industry, industrial organization, and urban and regional economics.
13 My professional background includes a wide range of consulting experiences in regulated
14 industries. Between 1982 and 2000, I was a consultant at the national economic research and
15 consulting firm of Economics and Technology, Inc. (ETI) in that firm's regulatory consulting
16 group, where I held positions of increasing responsibility, including Senior Vice President/Senior
17 Economist. Upon leaving ETI in September 2000, I began my own consulting practice
18 specializing in telecommunications, cable, and energy regulation and markets.

19 I have testified or served as an expert witness on telecommunications matters in proceedings
20 before over thirty state, provincial, and federal regulatory commissions, including the Federal
21 Communications Commission ("FCC"), the Federal Energy Regulatory Commission ("FERC"),
22 and the Canadian Radio-television and Telecommunications Commission ("CRTC"). In

1 addition, I have testified as an expert witness in antitrust litigation before a number of state and
2 federal district courts on matters relating to telecommunications competition, market power, and
3 barriers to entry, and in regard to Section 253 of the Telecommunications Act of 1996 (“the
4 Act”) concerning use of public rights-of-way. I have also testified before a number of state
5 legislative committees and served as advisor to a number of state regulatory agencies.

6 *Q. COULD YOU BRIEFLY DESCRIBE YOUR EXPERIENCE OF PARTICULAR*
7 *RELEVANCE TO THIS PROCEEDING.*

8 A. Yes. Over the course of my career, I have been actively involved in a number of state
9 and federal regulatory commission proceedings involving cost methodologies and the allocation
10 of costs of incumbent local exchange carriers (“ILECs”) and electric utilities. One local network
11 component, essential for the provision of competitive communications services, with which I am
12 also very familiar, is access to poles, ducts, conduits, and rights-of-way. I have testified
13 extensively on matters pertaining to these essential facilities before state and federal regulatory
14 agencies and district courts, including those in Florida, New York, California, Washington, and
15 North Carolina.

16 I have submitted reports in pole proceedings before the FCC, including both rounds of its most
17 recent pole rulemaking proceeding, *In the Matter of Implementation of Section 224 of the Act; A*
18 *National Broadband Plan for our Future, Opinion and Further Notice of Proposed Rulemaking,*
19 *WC Docket No. 07-245, GN Docket No. 09-51, rel. May 20, 2010 (FCC 2010 FNRPM) and In*
20 *the Matter of Implementation of Section 224 of the Act; Amendment of the Commission’s Rules*
21 *and Policies Governing Pole Attachments, WC Docket No. 07-245, RM 11293, RM 11303, re.*
22 *Nov. 20, 2007 (FCC 2007 NPRM Proceeding).* In 2006, I submitted testimony and was subject
23 to live cross-examination before the FCC’s Chief Administrative Law Judge, on issues

1 pertaining to utility compensation for pole attachments in *In the Matter of Florida Cable*
2 *Telecommunications Association, Inc., et. al. v. Gulf Power Company*, Initial Decision, FCC
3 07D-01, 22 FCC Rcd 1997 (2007) *aff'd*, *FTCA v. Gulf Power*, FCC 07D-01, 2011 FCC
4 LEXIS 1384 (Apr. 12, 2011) (“*FCTA*”). I also submitted a declaration in the FCC’s earlier
5 pole attachment proceeding, CS Docket No. 97-98. Additionally, I submitted testimony before
6 the FCC in pole attachment complaint proceedings brought against electric utilities Gulf Power
7 and Dominion Virginia Power.

8 I have served as an expert or advisor on pole attachment matters in proceedings involving
9 investor-owned utilities, non-profit consumer-owned utilities, and municipally-owned utilities,
10 and before various state (and provincial) regulatory commissions including this Commission as
11 well as the Kentucky Public Service Commission, the Arkansas Public Service Commission, the
12 Public Utilities Commission of Texas, the Georgia Public Service Commission, the South
13 Carolina Public Service Commission, the Public Service Commission of the District of
14 Columbia, the New Jersey Board of Public Utilities, the New York Public Service Commission,
15 the Virginia Corporation Commission, and the Ontario Energy Board. I have also testified on
16 matters pertaining to access to poles and conduit of incumbent local exchange carriers (“ILECs”)
17 in proceedings before the Georgia Public Service Commission, the South Carolina Public
18 Service Commission, the Public Service Commission of the District of Columbia, and the New
19 York Public Service Commission.

20 I have also been actively involved in related issues pertaining to broadband deployment. I have
21 authored a number of reports dealing with this subject and participated as a grant reviewer for the
22 Broadband Technology Opportunities Program (“BTOP”) administered by National
23 Telecommunications and Information Administration (“NTIA”).

1 ***Q. PLEASE DESCRIBE YOUR PRIOR TESTIMONY REGARDING POLE***
2 ***ATTACHMENTS BEFORE THE PUBLIC UTILITY COMMISSION OF OHIO.***

3 A. I submitted written pre-filed testimony before the Public Utility Commission of Ohio
4 (“PUCO” or “Commission”) in February, 2009, also on behalf of the Ohio Cable
5 Telecommunications Commission in a matter involving Duke Energy Ohio, Inc. (*In the Matter*
6 *of the Application of Duke Energy Ohio, Inc., for an Increase in Electric Distribution Rates,*
7 *Case No. 08-709-EL-AIR, In the Matter of the Application of Duke Energy Ohio, Inc., for a Tariff*
8 *Approval, Case No. 08-710-EL-ATA, In the Matter of the Application of Duke Energy Ohio, Inc.,*
9 *for Approval to Change Accounting Methods, Case No. 08-11-EL-AAM, In the Matter of the*
10 *Application of Cincinnati Gas & Electric Company for Approval of its Rider BDP, Backup*
11 *Delivery Point, Case No. 06-718-EL-ATA.*) My testimony addressed rate formula calculations
12 and the data inputs to those calculations for both pole and conduit third-party cable attachments,
13 as well as terms and conditions relating to those attachments. Although that matter settled, it is
14 my understanding that the pole attachment rates agreed to in that settlement were at a level
15 consistent with my proposed rate recommendations.

16 ***Q. HAVE YOU PREPARED A SUMMARY CONTAINING DETAILS OF YOUR***
17 ***EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE?***

18 A. Yes, I have. A detailed resume summarizing my training, previous experience, and prior
19 testimony and reports is provided as Attachment 1 to this testimony.

20 ***Q. WHAT HAVE YOU RELIED UPON IN PREPARING THIS TESTIMONY?***

21 A. I have relied on my education, training, research, and experience in economic analysis,
22 and my prior experience in the areas of telecommunications and utility regulation as outlined
23 above and further detailed in Attachment 1. I have considered various data and information in

1 forming my opinions, including data available on the Federal Energy Regulatory Commission
2 (“FERC”) Form 1 for Columbus Southern Power Company (“CSP”) and Ohio Power Company
3 (“OPCo”), and materials produced in the discovery taken in this matter.

4 *Q. UNDER WHAT TERMS ARE YOU BEING COMPENSATED FOR THIS*
5 *TESTIMONY?*

6 A. I am being compensated for the time I spend on this matter at my standard rate of \$385
7 per hour. I will also be reimbursed for any travel and miscellaneous out-of-pocket expenses
8 incurred in connection with this litigation. My compensation is not contingent on the outcome of
9 this litigation or my analysis.

10 **Purpose and Summary of Testimony**

11 *Q. CAN YOU PLEASE DESCRIBE YOUR ASSIGNMENT AND THE PURPOSE OF*
12 *YOUR TESTIMONY?*

13 A. I was asked by counsel for the Ohio Cable Telecommunications Association (“OCTA”)
14 to provide testimony on matters raised in this proceeding by AEP Ohio and the Commission
15 Staff pertaining to cable company rental of space on utility poles (referred to as “pole
16 attachments”) owned by CSP and OPCo (also referred to collectively as the “Utilities”).
17 My testimony will address the appropriate maximum rental rates that CSP and OPCo should be
18 permitted to charge cable operators for pole attachments and also certain of the terms and
19 conditions under which the utilities would provide access to these essential facilities. In
20 particular, my testimony will provide specific rate results for pole attachment rentals derived
21 from a proper application of the rate formula adopted by the Public Utilities Commission of Ohio
22 (“PUCO”) based on the well-established FCC formula, including any adjustments required to
23 ensure the accuracy and integrity of the underlying data inputs upon which the formula relies.

1 My testimony will also address the economic and policy reasons for setting pole attachment
2 rental rates below the maximum fully allocated rate established by the formula and closer to the
3 lower range of permissible just and reasonable rates (i.e. marginal costs).

4 Finally, my testimony addresses the importance of setting terms and conditions for pole
5 attachment rentals that do not lend themselves to discretionary, discriminatory application and
6 that would allow the utility, as the monopoly owner of the poles, to impose excessive costs or
7 engage in other behavior that serves to competitively disadvantage the cable operator vis-à-vis
8 the utility, an affiliate, or any other company in which the utility has an interest.

9 *Q. PLEASE SUMMARIZE YOUR TESTIMONY.*

10 A. This testimony addresses and explains the following main points:

- 11
- 12 • In adopting the FCC formula for setting rates for pole attachments, the PUCO joined the
13 overwhelming majority of states who rely on the FCC approach in setting rates for third-
14 party occupancy of essential utility pole facilities. The FCC formula has withstood the test of
15 time as a straightforward, cost-based approach for determining just and reasonable rates for
16 pole attachments.
 - 17
 - 18 • A major feature of the FCC formula is that it can be applied with a minimum of private,
19 administrative effort using publicly available information reported in the FERC uniform
20 reporting system and involving little if any regulatory intervention. As with any formulaic
21 approach, the accuracy and integrity of the FCC formula depends on the accuracy and
22 integrity of the underlying data inputs. For this reason, it is very important that the data
23 inputs to the formula are subjected to careful scrutiny and held to a high standard as to their
24 reliability, accuracy, consistency, and ability to be verified.
 - 25
 - 26 • In Ohio, because pole rates are tariffed and set within the context of a formal rate proceeding,
27 many of the formula data inputs relied on in Staff's calculations vary from data publicly
28 reported on the utility's FERC Form 1 (and relied on by the Ohio and FCC methodology).

1 Most of these variances reflect adjustments to conform to the rate case test year since data is
2 reported on the FERC Form 1 on a calendar year basis. In addition, data inputs for certain
3 investment and expenses are based on data generated internally by the utility at a level of
4 disaggregation below that provided on the FERC Form 1. Finally, for certain inputs, namely
5 the rate of return and the depreciation accrual rate, Staff relied on its own recommendations.
6

- 7 • Because the areas where Staff’s data and/or calculations diverge from the FCC methodology
8 have, as a general matter, been subject to a rate case quality review by Staff, I have for the
9 most part relied on the same input data used by Staff. The only two exceptions are to the tax
10 and depreciation elements of the carrying charge factor of the formula. Reliance on the
11 uncorrected data would permit the utilities to recover in excess of the maximum permissible
12 just and reasonable rate, which as a fully allocated cost, is by definition already well in
13 excess of the true economic cost (i.e., the marginal or incremental cost of pole attachment).
14 In the case of the tax element, my calculations correct for a simple mathematical error in the
15 application of the FCC formula. In the case of the depreciation accrual rate, my calculations
16 correct for what in my opinion is a gross inconsistency in key parameters underlying the
17 accrual rate for poles vis-a-vis other related distribution plant accounts – in particular, an
18 excessively high cost of removal for poles. As a consequence, the proposed depreciation rate
19 for poles is increasing, whereas rates for other closely-related distribution accounts as well as
20 the average accrual rate for total distribution plant is actually decreasing. These unexplained
21 anomalies for the pole account are especially suspect – and should be held to a very high
22 level of scrutiny – given the Utilities’ proposed cutover to the average remaining life method
23 of calculating depreciation rates. Under the remaining life method, the values of parameters
24 such as the cost of removal have a very significant impact on the accrual rate.
25

- 26 • In addition, while I rely on Staff’s data input for the rate of return element of the carrying
27 charge factor component of the formula, I make the following caveat. The FCC rules require
28 the use of a state authorized rate of return where one is available. In this context, I believe it
29 is acceptable to use the midpoint of the range of the rate of return recommended by Staff as a
30 proxy for the Commission-authorized return, but only as a temporary placeholder for the
31 actual rate of return authorized by the PUCO in this case.

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- Based on a correct application of the FCC methodology, including the use of corrected input data, the pole attachment rate charged cable operators by AEP Ohio should not exceed **\$7.51** for CSP and **\$5.26** for OPCo - or a blended rate of **\$6.26**. The rates derived from the formula are maximum not-to-exceed rates. From an economics and public policy standpoint, Staff’s proposed rate of **\$6.40** for CSP is strongly preferable to the maximum rate derived using the rate formula, in that it is closer to (yet still well in excess of) the true economic or marginal cost of pole attachment (the lower bound of the range of just and reasonable rates pursuant to Section 224 of the Communications Act). Pole attachment rates in the range of \$5 to \$7 such as I have calculated and as proposed by Staff, and especially accounting for make-ready charges cable operators pay in addition to the rental rate, allows the Utilities to recover *much more* than marginal attachment costs.
- From an overall societal standpoint, the closer the rate the Utilities are permitted to charge is to marginal cost, the more efficient the outcome in terms of maximizing the productive use of societal resources, maximizing the value to consumers (most of whom are also electricity subscribers) that accrue from the benefits of competition in the broadband service market, and enhancing productivity and economic development opportunities in the state by creating more favorable economic conditions for broadband deployment.
- In addition to excessive attachment rates, the Utilities’ proposed tariffs also contain terms and conditions that similarly work to undermine the effectiveness of pole attachment regulation in stemming monopoly abuses, not all of which are fully addressed by Staff. These tariff provisions include new, excessive penalties for unauthorized attachments and potentially onerous practices relating to safety inspections and audits. As proposed, the new provisions could be applied on a discriminatory, anti-competitive, and punitive basis to third-party cable attachers. The new provisions are worded to give the Utilities unfettered discretion in areas previously addressed in their agreements with cable operators, and enable them to raise the effective cost of third-party pole attachments and to create impediments to competition and new service deployment in the broadband service market.

- 1 • Effective regulatory oversight of non-price terms and conditions as well as the price aspects
2 of pole attachment regulation is needed to help ensure an outcome that appropriately
3 balances the interests of the utility and the third-party attacher, and at the same time promotes
4 the public policy goals of a competitive telecommunications market and the widespread
5 deployment of broadband services.

6
7 **POLE ATTACHMENT RATES**

8
9 **The PUCO formula, by tracking the well-established FCC formula, is a reasonable,**
10 **economically appropriate, cost-based approach for determining just and reasonable pole**
11 **attachment rates.**

12 *Q. PLEASE DESCRIBE THE GENERAL APPROACH FOLLOWED BY THE PUCO*
13 *WITH RESPECT TO SETTING RATES FOR POLE ATTACHMENTS BY*
14 *CABLE OPERATORS AND OTHER THIRD PARTY ATTACHERS.*

15 A. The formula adopted by the PUCO in 1982 for setting rates for utility pole attachments
16 tracks the formula established by the FCC for this purpose.¹ In adopting the FCC formula, the
17 PUCO joined the overwhelming majority of states who rely on the FCC approach in setting rates
18 for conduit and pole attachments. The FCC formula has withstood the test of time as a
19 straightforward and economically appropriate approach for determining just and reasonable pole

¹ See PUCO Case No. 81-1338-TP-AIR, *In the Matter of the Application of Cincinnati Bell for Authority to Adjust its Rates and Charges and to Change Its Tariffs*, Opinion and Order, dated January 7, 1983, see also PUCO Case Nos. 81-1058-EL-AIR, 82-654-EL-ATA, Opinion and Order dated December 5, 1982.

1 attachment rates and conduit rentals. A key attribute of the FCC methodology is that it is based
2 on publicly reported and verifiable data.²

3 *Q. WHAT DO YOU MEAN WHEN YOU SAY THE FCC FORMULA IS AN*
4 *ECONOMICALLY APPROPRIATE APPROACH TO SETTING RATES?*

5 A. The FCC formula is an economically appropriate approach in that it follows cost
6 allocation principles well-established in the economics literature. Under the FCC methodology,
7 the recovery of the cost of the pole attachment is based upon the concept of cost causation (i.e.,
8 cost-causer pays). Such costs reflect costs that would not be borne by the utility *but for* the
9 attacher, including a normal (reasonable) return to capital. Costs designed in this manner prevent
10 any potential situation of cross-subsidy between the utility pole owner and the third-party
11 attacher.

12 The principle of cost causation is firmly established in Section 224 of the Communications Act
13 ("the Act") upon which the FCC formula for pole attachments is based. Consistent with the
14 principle of cost causation, Section 224(d) links the pole attachment rental to marginal costs, by
15 establishing a range of reasonableness that has marginal costs as a lower bound, and fully
16 allocated cost as an upper bound. The actual FCC rate formula adheres to the *greater* fully
17 allocated cost standard described in Section 224(d), which by definition, allows the utility to
18 recover through the rental rate ongoing costs *much more* than marginal cost.³ It does so by
19 allowing recovery of a cost-causative portion (based on relative use or occupancy of usable space

² In the case of electric utilities, there are a couple of exceptions where the data relied on in the FCC rate formula is provided from the internal records of the utility. The first is the number of poles. The second is the depreciation accrual rate at the plant account level.

³ See *Alabama Power*, 311 F.3d 1357, 1363, 1370 (2002).

1 on the pole) of the utilities' operating expenses and capital costs (including overall return to
2 capital) attributable to the entire pole, based on actual booked costs.

3 *Q. WHAT IS THE FCC FORMULA FOR CALCULATING THE MAXIMUM*
4 *RENTAL RATE FOR POLES AS APPLIED TO ELECTRIC UTILITIES?*

5 A. The FCC formula consists of the following three major components: (1) the net investment
6 per bare pole, (2) a carrying charge factor, and (3) the percent of capacity (i.e., total usable space)
7 occupied by an attachor.⁴ Expressed as an equation, the FCC formula applicable to cable
8 operators is as follows:

9 <i>Maximum Pole Rental Rate =</i> 10 <i>[Net Bare Pole Cost] x [Carrying Charge Factor] x [Usage Percentage]</i>

11
12 The overarching concept underlying the FCC formula is that it can be applied in a
13 straightforward manner, using publicly available information as reported in the FERC uniform
14 Form 1 reporting system, such that it can be updated annually with a minimum of private,
15 administrative effort, and little if any regulatory involvement. As with any formulaic approach,
16 the accuracy and integrity of the FCC formula depends on the accuracy and integrity of the
17 underlying data inputs. For this reason, it is very important that the data inputs to the formula
18 are subjected to careful scrutiny and held to a high standard as to their reliability, accuracy,
19 consistency, and ability to be verified.

⁴ See *FCC Consolidated Partial Order on Reconsideration, CS Docket 97-98, 97-151, FCC 01-170 (FCC 2001 Pole Order)*, at Appendix D-2 (May 25, 2001) (setting forth the specific formulas and FERC accounts to be used when calculating the pole rate for electric utilities).

1 *Q. ARE THERE AREAS WHERE THE PUCO'S APPLICATION OF THE POLE*
2 *RATE FORMULA MAY DIVERGE FROM THE FCC METHODOLOGY?*

3 A. Yes, there are. In Ohio, pole rates are tariffed and set within the context of a formal rate
4 proceeding, where many of the data inputs to the formula are subject to independent review and
5 determination. The corresponding figures for formula inputs provided in the rate case filings
6 may vary for a host of reasons from the numbers publicly reported by the utility in the FERC
7 Form 1 reporting system relied on in the FCC methodology. In applying the FCC pole rate
8 formula in this case, Staff has generally substituted rate case numbers (data for the twelve
9 months ending May 11, 2011) in place of data from the FERC Form 1 which is reported on
10 calendar year basis (the latest being for the twelve months ending December 31, 2010).

11 *Q. ARE THERE OTHER AREAS WHERE STAFF'S APPLICATION OF THE POLE*
12 *RATE FORMULA DIVERGES FROM THE FCC METHODOLOGY?*

13 A. Yes, there are a few other relatively minor divergences. First, in the computation of
14 accumulated deferred income taxes (used in the calculation of net plant investment), Staff
15 includes FERC Account 255 (Accumulated Deferred Investment Tax Credits) in accordance with
16 PUCO rate case practice, in addition to the four accounts (Accounts 281, 282, 283, and 190)
17 included in the FCC methodology.

18 Second, Staff relies on input data generated from the Utilities' internal accounting records at a
19 level of disaggregation below that publicly available in the FERC uniform reporting system. For
20 accumulated deferred taxes, and also for the tax and administrative & general expense
21 components of the carrying charge factor, Staff relies on data provided by the Utilities at the
22 level of distribution plant, whereas the lowest level of aggregation in the FERC Form 1 for these
23 items is at the level of total electric plant in service.

1 Third, for the rate of return component of the carrying charge factor, Staff uses the midpoint of
2 the rate of return range it is recommending the PUCO adopt in this case, which is calculated at
3 7.27% for CSP and 7.33% for OPCo. The FCC formula dictates the use of an actual rate of
4 return authorized by the state commission, where one is available.

5 Finally, Staff uses its recommended depreciation accrual rates for pole plant (4.62% for CSP and
6 5.84% for OPCo) in the calculation of the depreciation carrying charge factor, where the FCC
7 formula relies on a utility-provided accrual rate either at the individual account level or at the
8 level of aggregate distribution plant.

9 *Q. DO YOU ACCEPT THE AREAS OF DIVERGENCE FROM THE FCC*
10 *FORMULA REFLECTED IN STAFF'S POLE RATE CALCULATIONS FOR*
11 *PURPOSES OF THIS RATE CASE?*

12 A. Yes, with a few exceptions as described below. It is generally acceptable to rely on
13 numbers internally generated by the utility (and/or recommended by the Staff) in applying the
14 FCC rate formula in the context of a general rate proceeding such as this case, where those
15 numbers have been subject theoretically to a full and comprehensive rate case quality review by
16 Commission Staff or some other third party, and otherwise appear to be accurate and reasonable.
17 Accordingly, I have relied on the same input data used by Staff in its pole rate formula
18 calculations in my own rate calculations (presented in Attachment 2 to this testimony), with only
19 a couple of exceptions relating to the tax and depreciation elements of the carrying charge factor,
20 for the reasons set forth in the following section of my testimony. With respect to the rate of
21 return input, I believe it is acceptable to use the midpoint of the range of the rate of return
22 recommended by Staff in this case, but as explained further below, only as a temporary
23 placeholder for the actual rate of return authorized by the PUCO in this case.

1 **Based on appropriate corrections to the tax and depreciation data inputs used in Staff’s**
2 **calculations of the pole rate formula, AEP Ohio should be allowed to charge cable**
3 **operators an annual pole attachment rental rate of *no more than* \$7.51 for CSP and \$5.62**
4 **for OPCo - or a blended rate of \$6.26 - per foot of pole space.**

5 *Q. PLEASE EXPLAIN THE CORRECTION YOU MADE TO STAFF’S POLE RATE*
6 *CALCULATIONS REGARDING THE TAX EXPENSE ELEMENT OF THE*
7 *CARRING CHARGE COMPONENT OF THE RATE FORMULA.*

8 A. Under the FCC formula, the carrying charge factor for this element is calculated by
9 taking the relevant federal and state tax expense account figures per FERC Form 1 booked to
10 Accounts 408-411 and dividing them by net utility plant in service (i.e., total gross utility plant
11 less accumulated depreciation less accumulated deferred taxes for total plant). As mentioned
12 above, CSP and OPCo track or allocate these expenses at the level of distribution plant, such that
13 the analog carrying charge factor for the Utilities is calculated by taking the relevant tax expense
14 account figures booked to Accounts 408-411 and dividing them by net distribution plant in
15 service.

16 The problem with Staff’s calculation is that it incorporates the same simple mathematical error
17 found in the Utilities’ calculation relating to Account 411.1. This particular account, unlike the
18 other tax expense accounts, is a “credit” income account relating to deferred income taxes. As a
19 credit account, it is an offset rather than an addition to the current year’s tax expense. Therefore,
20 under accounting rules, and as recognized under the FCC rules governing pole attachments,⁵ the
21 amount in this account must be *subtracted* when summing the various tax “debit” accounts. In

⁵ See *In re: Amendment of Commission’s Rules and Policies Governing Pole Attachments*, 16 F.C.C. Rcd 12103, Appendix D-2.

1 calculating the tax expense, Staff, like the Utilities, incorrectly added this account to the other tax
2 expense accounts, instead of subtracting it. The effect of this error was to overstate the tax
3 expense by an amount equal to twice the balance in this account.⁶ My calculations incorporate
4 the correct mathematical (and accounting) treatment of Account 411.1.

5 *Q. PLEASE EXPLAIN THE CORRECTION YOU MADE TO STAFF'S POLE RATE*
6 *CALCULATIONS REGARDING THE DEPRECIATION EXPENSE ELEMENT*
7 *OF THE CARRYING CHARGE COMPONENT OF THE RATE FORMULA.*

8 A. Under the FCC formula, the depreciation element of the carrying charge factor is
9 calculated by multiplying the utility's depreciation rate for pole plant (or the lowest level of plant
10 grouping identified by the utility) by the ratio of gross to net pole plant.⁷ The Utilities use pole
11 depreciation rates of 4.14% (9.00% after the gross to net ratio is applied) in the case of CSP and
12 5.54% (9.81% gross to net adjusted) in the case of OPCo, based on a 2009 depreciation study.
13 Staff uses depreciation expense factors of 4.62% for CSP and 5.84% for OPCo. These proposed
14 depreciation rates stand out as unreasonably high rates given the underlying characteristics of
15 this property account, including long average service lives and stable technology.
16 The depreciation rates proposed by the Utilities correspond to average service lives for poles
17 between 18 and 24 years, whereas poles more typically enjoy useful service lives of between 30
18 and 45 years. Even accounting for an upward adjustment to the accrual rate to permit recovery of
19 a reasonable amount of negative net salvage (salvage value of plant at retirement less the cost of
20 removal), the Utilities' proposed depreciation rates would still appear to be excessively high,
21 since on a straight-line basis, depreciation rates of 2.5 to 3% would be sufficient to recover the

⁶Correcting this error in Staff's calculations reduces Staff's formula rate from \$7.71 to \$7.13 for CSP and from \$6.10 to \$5.47 for OPCo.

⁷As noted earlier, the depreciation rate is one of a few formula inputs not required on the FERC Form 1.

1 original cost of the pole plant investment. Data with which I am familiar for other utilities
2 indicate depreciation rates for poles more commonly in the range of 2.5% to 3%. The anomalous
3 nature of the Utilities’ proposed depreciation rates for poles is further evidenced in comparison
4 to the rates proposed by the Utilities for other closely-related distribution plant accounts.
5 Table 1 below compares the Utilities’ proposed depreciation rates for pole plant (Account 364)
6 with those of other closely-related distribution plants and with the average rate for total
7 distribution plant. As shown in Table 1, for distribution plant as a whole, the composite
8 depreciation rate is proposed to actually *decrease* from 3.52% to 3.01% for CSP and from 3.97%
9 to 3.77% for OPCo. The same holds true for the closely-related overhead distribution accounts,
10 Account 365 (“Overhead Conductors and Devices”) and Account 369 (“Services.”), which are
11 proposed to decrease between 8% to over 50% percent. By contrast, the proposed depreciation
12 rate for Account 364 (“Poles, Towers, and Fixtures”) is proposed to increase from 4.00% to
13 4.14% for CSP and from 4.84% to 5.54% for OPCo.

Table 1				
Comparison of Utilities’ Existing and Proposed Depreciation Rates for Pole Plant, Closely-Related Distribution Plant Accounts, and Total Distribution Plant				
Columbus Southern Power				
Plant Account	364- Poles	365 – Cond/Dev.	369 - Services	Tot Distrib Plant
Existing Rate	4.00	2.86	6.74	3.52
Proposed Rate	4.14	2.42	3.17	3.01
% Change	+3.5%	-15.4	-53%	-14.5%
Ohio Power Company				
Plant Account	364- Poles	365 – Cond/Dev.	369 - Services	Tot Distrib Plant
Existing Rate	4.84	4.00	4.55	3.97
Proposed Rate	5.54	3.69	3.42	3.77
% Change	+14.5%	-7.8%	-24.8%	-5.04%
Source: Testimony of D.A. Davis, Exh. DAD-1, Schedule II, p. 14; DAD-2, Schedule II, p. 17.				

14

1 Q. ***WOULD ONE EXPECT TO OBSERVE THIS DEGREE OF VARIATION***
2 ***BETWEEN THE DEPRECIATION RATE FOR POLES AND THOSE OF THESE***
3 ***CLOSELY-RELATED DEPRECIATION ACCOUNTS?***

4 A. No, one would not. Investment and retirement experience for these accounts tend to be
5 closely aligned, as they are typically complementary components of a distribution overhead line
6 project. Accordingly, and based on my extensive experience examining utility cost data
7 underlying pole rate formula calculations, these accounts tend to have similar underlying cost
8 parameters relating to depreciation. Indeed, the FCC methodology - which importantly, the
9 Utilities rely on to calculate the formula input for accumulated depreciation - does not rely on
10 accumulated depreciation at the detailed subaccount level at all; rather it prorates aggregate
11 electric (or distribution) plant accumulated depreciation to the various individual plant accounts
12 (i.e., 364, 365, and 369) based on the percentage of gross plant investment in the individual
13 account relative to the aggregate plant. It is instructive, therefore, that application of the FCC's
14 proration methodology results in the same percentage of accumulated depreciation to gross plant
15 for each of these three plant accounts. The FCC methodology thus implies closely aligned
16 depreciation accrual rates and underlying cost parameters for this set of distribution accounts.

17 Q. ***ARE YOU ABLE TO IDENTIFY WHAT IS DRIVING THE OUTLIER NATURE***
18 ***OF THE UTILITIES' PROPOSED DEPRECIATION RATES FOR POLE PLANT?***

19 A. Yes, I can. The detail underlying the Utilities' depreciation accrual calculations reveals a
20 cost of removal amount for the pole plant account that is way out of line with the other related
21 distribution plant accounts. For CSP, the cost of removal for pole plant Account 364 is 95% of
22 plant for poles as compared to 33% and 39% for the closely-related overhead plant Accounts 365

1 and 369, respectively. For OPCo, the cost of removal for pole plant Account 365 is a similarly
2 high 96% for poles vis-à-vis 38% and 31% for Accounts 365 and 369.

3 *Q. WHY DOES THE ANOMALOUSLY HIGH COST OF REMOVAL FOR THE*
4 *POLE ACCOUNT RAISE A RED FLAG?*

5 A. There are several reasons why the high removal cost for the pole account raises a red
6 flag. First, it is not readily apparent why the observed variances would exist. The distribution
7 plant accounts 364, 365, and 369 are closely related and would be expected to experience
8 negative net salvage in a similar range. As mentioned above, under the FCC proration
9 methodology utilized by the Utilities, the accumulated depreciation reserve is allocated on a
10 proportional basis to these three plant accounts so widely varying depreciation parameters is
11 inconsistent with that methodology.

12 Second, the observed discrepancy in cost of removal rates for these plant accounts is particularly
13 suspect given the fact that the Utilities have proposed to cutover to a remaining life method of
14 calculating the depreciation accrual rate. Under the remaining life method, the accrual rate is
15 more sensitive to the amount of projected future net salvage (i.e., future salvage value less the
16 cost of removal), typically a negative value for distribution plant accounts, relative to the whole
17 life approach. Because the amounts of future net salvage are projected numbers, they are
18 subject to estimation errors.

19 Third, even with audited numbers, based on my personal experience examining utility cost data,
20 including my work on the Duke Energy matter before this Commission, costs can be
21 misallocated or erroneously assigned to specific plant accounts as part of the work order process.
22 The anomalous depreciation parameters indicated for the pole account could be an artifact of
23 such misallocations.

1 *Q. PLEASE DESCRIBE THE CORRECTION YOU HAVE MADE TO THE*
2 *DEPRECIATION RATE INPUT, AND ITS JUSTIFICATION.*

3 A. Given the anomalous nature of the pole plant depreciation rate vis-à-vis other closely-
4 related distribution plant accounts, and the heightened impact of the inexplicably high cost of
5 removal for the pole plant account under the proposed remaining life method, my formula rate
6 calculations apply the proposed Utility depreciation rate for total distribution plant to the pole
7 plant category.⁸ This accomplishes two things. First, it removes the cost impact of the
8 inexplicably and unreasonably high level of cost of removal from the pole rate, as without further
9 supporting data at the level of the individual work order to verify the accuracy of these costs, it
10 would not be just and reasonable to burden third-party renters with what at its face value, is
11 excessive cost recovery – even in a fully allocated cost context.
12 Second, it provides for conformity with the proration methodology used by the Utilities to
13 allocate accumulated depreciation to the pole plant account. It is both reasonable and consistent
14 to similarly rely on the average annual depreciation rates for total distribution plant (3.01% for
15 CSP and 3.77% for OPCo) in the calculation of the depreciation expense factor for poles
16 especially where anomalies exist as is the case with poles.

17 *Q. YOU INDICATE YOU HAVE RELIED ON STAFF'S RATE OF RETURN INPUT*
18 *IN YOUR OWN CALCULATIONS, BUT ONLY AS A PLACEHOLDER VALUE*
19 *FOR THE ACTUAL RATE OF RETURN AUTHORIZED BY THE COMMISSION*
20 *IN THIS PROCEEDING. PLEASE ELABORATE.*

⁸The FCC proration method is also applied on a consistent basis to the other overhead distribution accounts used in the formula, i.e., Accounts 365 and 369.

1 A. Under FCC rules, the carrying charge factor for this element is based on the most current
2 state authorized rate of return. Where none is available, the FCC default rate of return may be
3 used. As an integral part of this rate case, the Commission will authorize a current rate of return
4 for the Utilities. Accordingly, it is that value that is ultimately the only appropriate data input for
5 the rate of return element of the carrying charge factor component of the rate formula. Until that
6 number is known however, a placeholder value is needed. Given Staff's role in this proceeding,
7 I believe Staff's rate of return input, which is based on the midpoint of the range of the rate of
8 return recommended and supported by Staff for the two utilities (7.27% for CSG and 7.33% for
9 OPCo), is the most reasonable proxy or placeholder value for the authorized return. Accordingly,
10 my calculations rely on Staff's rate of return numbers. But again, once the PUCO has authorized
11 a new rate of return in this case, it is that number that should be substituted into the formula to
12 derive the correct maximum permissible just and reasonable rate.

13 ***Q. IS THERE ANY VALIDITY TO THE UTILITIES' PROPOSED RATE OF RETURN***
14 ***INPUT VALUE OF 11.25%?***

15 A. None whatsoever. The FCC default rate of return has been set at 11.25% for the past
16 twenty years. Beside from the reality that the 11.25% number is incredibly stale, and is not
17 reflective of current conditions in the capital markets applicable to the Utilities, pursuant to FCC
18 rules, the default is only to be used in those instances where a state authorized return is not
19 available. That is simply not the case here, so there is absolutely no economic or public policy
20 justification for relying on the FCC default. The Utilities' use of the 11.25% rate of return is
21 little more than an attempt to produce a higher pole rate than is justified.

1 *Q. AFTER THE NEEDED CORRECTIONS TO DATA INPUTS ARE MADE, WHAT*
 2 *IS THE RESULTING MAXIMUM POLE ATTACHMENT RENTAL RATES*
 3 *CALCULATED USING THE REGULATED RATE FORMULA?*

4 A. After making the needed corrections to data inputs described above, as shown on Table 2,
 5 I calculate a maximum pole rental rate of \$7.51 for CSG and \$5.62 for OPCo, or a blended rate
 6 of \$6.26, per pole per year for one foot of space. My rate calculations are presented in
 7 Attachment 2 to this testimony.

Table 2			
Comparison of Maximum Permissible Just and Reasonable Pole Attachment Rates Under FCC Formula and Rates Proposed by AEP Ohio and Staff			
	Maximum Permissible Pole Rate per FCC Formula	Staff Proposed Pole Rate	AEP Ohio Proposed Pole Rate
CSP	\$ 7.51	\$ 6.40	n/a
OPCo	\$ 5.62	\$ 6.10	n/a
Blended	\$ 6.26	\$ 6.20 ⁹	\$8.12

8
 9 *Q. HOW DO THE RESULTS OF YOUR FORMULA RATE CALCULATION*
 10 *COMPARE TO STAFF'S PROPOSED RENTAL RATE FOR POLES?*

11 A. Staff calculates a pole attachment rate for CSP of \$ 7.71 using the rate formula.
 12 However, as shown in Table 2, Staff proposes a maximum pole rate of \$6.40, based on its belief
 13 that “an increase from \$2.83 to \$7.71, or a 172% increase is too significant to impose in a single

1 increase.”¹⁰ Staff’s proposed \$6.40 rate “would be equal to the highest tariffed electric company
2 rate in the state,” and according to Staff, would be “reasonable...for purposes of this case.”
3 Although I too calculated a rate (\$7.51) higher than Staff’s proposed rate using the rate formula
4 (but lower than Staff’s calculated formula rate), I concur with Staff’s opinion that a \$6.40 rate
5 would be a just and reasonable rate for CSG to charge. I remain concerned, however, that even
6 if the rate were to move in the \$6.20 to \$6.26 range (which, again, is at the maximum end of the
7 range of fully allocated rates contemplated by the FCC and Ohio methodology), this would still
8 represent a substantial jump (more than 100% in the case of CSCo). For this reason I believe
9 that it would have been advisable for the Staff Report – in addition to its moderation of the
10 *calculated* rate for CSCo – also to have recommended that these steep increases be phased in
11 over a two- to three-year period.

12 As explained previously, the FCC rate formula calculates the *maximum* permissible just and
13 reasonable rate a utility may charge a cable operator based on fully allocated costs. By
14 definition, fully allocated costs reflect costs that would exist for the utility independent of (i.e.
15 even in the absence of) third-party attachers. As discussed below, there are important economic
16 and public policy reasons why a rate less than the maximum, and closer to the true economic or
17 marginal cost of pole attachments (i.e., the costs that “but for” pole attachments would not exist
18 for the utility) should be charged. Staff’s proposed rate of \$6.40 for CSP best achieves these
19 important economic and public policy objectives.

20 For OPCo, Staff calculates a maximum permissible pole rate using the rate formula of \$6.10,
21 which it recommends the Commission adopt. As shown in Table 2 on the preceding page, I have

⁹ Staff does not actually propose a blended rate, but the calculation of the blended rate is a straightforward weighted average of the utility-specific rates based on their respective pole counts.

¹⁰ Staff Report at 45.

1 calculated a lower maximum permissible rate for OPCo of \$5.62 based on appropriate
2 corrections to the tax and depreciation elements of the carrying charge factor as described above.

3 *Q. HOW DO THE RESULTS OF YOUR FORMULA RATE CALCULATIONS*
4 *COMPARE TO THE UTILITIES' PROPOSED RENTAL RATE FOR POLES?*

5 A. The Utilities propose a blended rate of \$8.12 for CSG and OPCo based on the weighted
6 average of the calculated formula rates for the two utilities of \$9.38 and \$7.50, respectively. As
7 shown in Table 2, I have calculated a blended rate for the Utilities, corresponding to the Utilities'
8 proposed rate, but based on my respective rate calculations. My calculated blended rate of \$6.26
9 is significantly below the \$8.12 calculated by the Utilities, as a result of appropriate corrections
10 as described above to the rate of return, tax, and depreciation elements of the carrying charge
11 factor used in the Utilities' calculations.

12 *Q. DO YOU HAVE AN OPINION ON WHETHER THE COMMISSION SHOULD*
13 *AUTHORIZE A BLENDED RATE FOR CSP AND OPCO BASED ON THE*
14 *PROPOSED MERGER OF THE TWO UTILITIES?*

15 A. Yes, I do. While I have calculated a blended rate to compare to the rate calculated by the
16 Utilities, and I have no objection in principle to a unified rate for the merged enterprise, it would
17 seem somewhat premature for the Commission to adopt a blended rate for CSP and OPCo. The
18 merger has not yet taken place, and the cost data upon which the rate formula calculations have
19 been made are based on the separate operations of the two utilities. In particular, the cost data
20 upon which the calculations are based do not reflect any of the assumed integrative efficiencies
21 that would be expected to result from the proposed merger, particularly in the expense areas of
22 Administrative and General and in Maintenance. Indeed, cost savings and efficiencies, so-called

1 merger synergies, are typically the key justification for utility mergers. The authorization of a
2 blended rate on the basis of the proposed merger is logically and reasonably tied to an adjustment
3 or normalization of expenses to reflect the expected synergies of that merger. At a minimum,
4 adjustments should be made to the Administrative and General (“A&G”) and Maintenance
5 elements of the carrying charge factor component of the rate formula as they reflect precisely the
6 types of expenses one would expect the merged company to realize cost savings and efficiencies.
7 In my opinion, an adjustment of 10% over baseline expense levels would be reasonable.¹¹

8 **There are important economic and public policy reasons that support a pole attachment**
9 **rate, such as Staff’s proposed \$6.40 rate for CSP, set below the maximum permissible rate**
10 **derived using the rate formula.**

11 *Q. MS. KRAVTIN, ARE THERE REASONS FOR KEEPING THE POLE*
12 *ATTACHMENT RATES THAT UTILITIES ARE ALLOWED TO CHARGE*
13 *CABLE OPERATORS BELOW THE MAXIMUM PERMISSIBLE RATES AND*
14 *CLOSER TO THE LOWER BOUND OF JUST AND REASONABLE RATES?*

15 A. Yes, there are several important economic and policy reasons that support keeping the
16 pole attachment rates that the Utilities are allowed to charge cable operators below the upper
17 bound of just and reasonable rates (based on fully allocated costs) and closer to the lower bound
18 (based on the true economic cost of pole attachments or marginal costs). With respect to the
19 instant case, these reasons argue for authorizing a pole attachment rate for CSP that is less than
20 the \$7.51 maximum permissible rate I have calculated and no higher than \$6.40 rate proposed by

¹¹ Applying a 10% reduction to the A&G and Maintenance expenses accounts as described results in a maximum permissible blended rate of \$6.02 as compared with the \$6.26 rate based on data unadjusted for anticipated merger cost synergies.

1 Staff, and similarly for authorizing a pole attachment rate for OPCo that is no higher than the
2 \$5.62 maximum permissible rate I have calculated.

3 *Q. PLEASE EXPLAIN.*

4 A. Because the FCC formula rate is a fully allocated cost (including a reasonable return on
5 the utility's investment), by definition it exceeds the marginal cost of attachment.¹² Marginal
6 costs in this context are defined as any additional costs incurred by the utility in order to
7 accommodate or host a third-party attachment that would not exist "but for" the presence of that
8 third-party attachment. These types of costs however are precisely those that the make-ready
9 charges paid by cable operators on an up-front basis for the non-recurring or out-of-pocket costs
10 of hosting an attachment are designed to cover. Annual rental payments based on the regulated
11 rate formula provide payments to the pole owner *over and above* those make-ready charges.
12 Thus, taken together, this means that the Utilities have the opportunity to recover much more
13 than the marginal cost of attachment from a cable operator for use of otherwise available space
14 on utility poles.¹³ Plus, the utility enjoys the benefit of any and all improvements to its pole
15 assets (including greater available pole capacity to use itself or to rent to others) fully funded by
16 the make-ready charges paid by the cable operator.

¹² By design, the carrying charge factor incorporated in both the cable and telecom formulas "reflects those costs incurred by the utility in owning and maintaining pole attachment infrastructure regardless of the presence of attachments," the precise opposite from what marginal costs would be intended to reflect. *Amendment of Commission's Rules and Policies Governing Pole Attachments*, Consolidated Partial Order on Reconsideration, FCC 01-170, 16 FCC Rcd 12103, 12156 ¶ 110 (2001) ("*Reconsideration Order*"), citing *Amendment of Rules and Policies Governing Pole Attachments*, Report and Order, FCC 00-116, 15 FCC Rcd 6453, 6477-78 ¶ 44 (2000) (emphasis added). See also, *Alabama Power Co. v. FCC*, 311 F.3d 1357, 1363, 1368-1369 (11th Cir. 2002).

¹³ "The known fact is that the Cable Rate requires the attaching cable company to pay for any "make-ready" costs and all other marginal costs (such as maintenance costs and the opportunity cost of capital devoted to make-ready and maintenance costs), in addition to some portion of the fully embedded cost . . . [so that] much more than marginal cost is paid under the Cable Rate" *Alabama Power Co. v. FCC*, 311 F.3d at 1368-69.

1 From an economics perspective, as long as the price for pole attachments exceeds the marginal
2 cost of attachment, the utility pole owner and its ratepayers are definitively better off financially
3 after a cable attachment than before, and any potential for cross-subsidy of the cable operator by
4 the utility or its ratepayers is avoided. Thus, even at the lowest proposed rates of \$6.40 for CSP,
5 \$5.62 for OPCo, and especially taking into account make ready charges paid by the attacher in
6 addition to the rental rate, the Utilities stand to recover *much more* than its marginal cost of
7 attachment.¹⁴ Indeed, this is true even at the existing rates of \$2.83 and \$3.72 for CSG and
8 OPCo, respectively. Conservative estimates of the marginal cost of attachment that I have seen
9 (and corroborated by my own analyses of utility data) generally fall in the \$1.00 to \$1.50 range
10 per foot of space. Given the utilities are recovering much more than the marginal cost of
11 attachment for use of otherwise available space on a utility pole, it is a “win-win” for both the
12 utility and the cable operator. It is also a “win” for the society as a whole.

13 From an overall societal standpoint, the closer the prices charged by the utility for cable’s shared
14 use of its pole facilities are to the utility’s marginal costs of attachment, the more efficient the
15 outcome in terms of maximizing the productive use of societal resources. This is the result of
16 several related economic phenomena. Pricing approximating marginal cost creates conditions
17 more likely to simulate and therefore stimulate competition market performance in the final
18 service market (i.e., broadband), with its wide-ranging benefits to consumers in the form of
19 lower prices, greater choices among new and innovative broadband services, and enhanced

¹⁴ “Significantly, when an attacher pays the cost of getting on a pole, Gulf Power stands to earn more.” See Federal Communications Commission, *In the Matter of Florida Cable Telecommunications Association, Inc., Comcast Cablevision of Panama City, Inc.; Mediacom Southeast, L.L.C.; and Cox Communications Gulf, L.L.C.; Complainants v. Gulf Power Company, Respondent (“FCTA”)*, Initial Decision of Administrative Law Judge Richard Sippel, EB Docket 04-381, rel. January 31, 2007, ¶23. See also *Id.* at ¶19: “And Gulf Power is never out of pocket because when a cable operator needs make-ready work to accommodate an attachment, the attacher pays the costs.”

1 productivity and economic development opportunities for the economy in the state of Ohio.
2 Minimizing the possibility of lost value to consumers (most of whom are also electricity
3 subscribers) and to society in general (from allowing utilities to charge too high a price for pole
4 attachments relative to the marginal cost of the attachment) is all the more compelling given the
5 relative ease with which third party attachers have historically been accommodated on utility
6 poles through a utility's normal and customary make-ready arrangements.

7 TERMS AND CONDITIONS

8 **The Utilities' proposed tariff contains a number of provisions that work to undermine the**
9 **effectiveness of pole attachment regulation in stemming monopoly abuses, not all of which**
10 **are fully addressed in Staff's Report.**

11 *Q. IN ADDITION TO EXCESSIVE ATTACHMENT RATES, ARE THERE OTHER*
12 *ISSUES RELATING TO ACCESS TO THE UTILITIES' ESSENTIAL POLE*
13 *FACILITIES THAT ARE ALSO IMPORTANT IN PREVENTING POTENTIAL*
14 *MONOPOLY ABUSES BY THE UTILITY?*

15 A. Yes, there are. The very reason why the rates, terms and conditions of pole attachments
16 came to be regulated in the first instance is due to the bottleneck monopoly status of poles and
17 the fact that these essential facilities historically have been used for anti-competitive ends. The
18 fundamental premise underlying the FCC's development and use of the rate formula upon which
19 the PUCO rate formula is based is that unless the utility is subject to regulatory pricing standards
20 based on well-established economic cost allocation principles, the pole-owning utility will be
21 able to exploit its monopoly power and charge excessively high, economically inefficient rates.

1 The same holds true with respect to the multitude of non-price factors under the utility's control
2 dealing with third-party access to the essential pole facilities, i.e., the numerous terms and
3 conditions established by the utility as part of the pole attachment rental process.

4 **Numerous provisions in the Utilities' proposed tariff, including new unilaterally-imposed**
5 **rules for inspections and audits, and new potentially onerous penalties for unauthorized or**
6 **unreported attachments, violate core principles of effective pole attachment regulation.**

7 *Q. PLEASE IDENTIFY THOSE TERMS AND CONDITIONS IN THE UTILITIES'*
8 *PROPOSED TARIFF THAT ARE INCONSISTENT WITH EFFECTIVE POLE*
9 *REGULATION.*

10 A. There are several terms and conditions in the Utilities' proposed tariff that violate core
11 principles underlying effective pole regulation. Among these are new processes for inspections
12 and audits and a new set of penalties for unauthorized or unreported attachments found during
13 the inspection process.

14 *Q. PLEASE EXPLAIN WHY THESE PROPOSED TARIFF REVISIONS ARE*
15 *PROBLEMATIC IN THE CONTEXT OF EFFECTIVE POLE REGULATION.*

16 A. First, and foremost, these new provisions were unilaterally proposed by the Utilities. It is
17 my understanding that matters involving inspections and audits have historically been addressed
18 in the Utilities' pole attachment agreements with cable operators. Significant modifications to
19 terms and conditions of access as set forth in Utility/Third-party agreements such as these should
20 be mutually agreed upon and not unilaterally imposed by the pole-owning monopolist. As
21 discussed above, the essence of pole regulation is to limit the pole-owning utility's ability to
22 exert its market power over poles and engage in anticompetitive behavior with respect to cable
23 operators and other third parties for whom poles are essential facilities. Unilaterally imposed

1 changes do not work under conditions where one party has monopoly power with respect to the
2 other, and any bargaining between the parties – either implicit or explicit – is asymmetric in
3 favor of the party with market power. In this context, even the addition of seemingly innocuous
4 language can have significant potential anticompetitive implications.

5 For example, it is my understanding that current Utility pole attachment contracts with cable
6 operators provide for periodic safety inspections and audits at the cable operator’s expense, but
7 these are limited to be no more frequent than every five years. The proposed tariff language
8 modifies this agreement to “every five (5) years *or more often if, in the Company’s sole*
9 *discretion, the conditions may warrant.*” By granting itself sole discretion, the Utilities would
10 be able to use the inspection and audit process as a means of effectively increasing the costs of
11 attachment for the Licensee for its own private gain. The Utilities would have both the
12 opportunity and incentive to shift costs appropriately borne by the utility as part of its provision
13 of core electricity services onto a third-party cable attacher, and also to impose unnecessary costs
14 in a discriminatory manner strictly for anti-competitive purposes. Accordingly, consistent with
15 principles of effective regulation, the addition of such language and any other term or condition
16 that would reflect an outcome inconsistent with a free market outcome (i.e., one that would result
17 from negotiations between a cable operator and the utility if the two parties had equal, or close to
18 equal, bargaining power) should not be permitted.

19 The new inspection and audit provisions also conflict with another basic tenet of effective
20 regulation, namely the cost causation principle. Under the economic principle of cost causation,
21 costs are properly attributed to the entity causally responsible, i.e., the entity but for whose
22 existence (or action) a cost would not have been incurred. In keeping with the principle of cost
23 causation, the PUCO should reject any term or condition that would result in a third-party cable

1 attacher being attributed or charged a fee unrelated to, or materially more than, the costs directly
2 attributable to its own actions or existence and/or that would result in a double-recovery of costs
3 or a recovery of costs for which there is no lost economic opportunity for the utility.

4 The new provisions, as I understand them, do not limit the Utilities’ ability to charge the cable
5 operators for only that portion of the inspection and audit expenses that relate specifically to the
6 cable operator’s facilities. Nor do the proposed revisions appear to limit the Utilities’ ability to
7 charge the cable operator for general safety inspections the costs of which are already recovered
8 through the annual pole rental rate.

9 *Q. IN ADDITION TO THE NEW TARIFF LANGUAGE RELATING TO*
10 *INSPECTIONS AND AUDITS, YOU ALSO IDENTIFY TARIFF AMENDMENTS*
11 *RELATING TO UNREPORTED OR UNAUTHORIZED ATTACHMENTS.*
12 *PLEASE EXPLAIN WHY THIS AMENDMENT IS PROBLEMATIC.*

13 A. As the case with inspections and audits, the issue of unreported or authorized attachments
14 is also currently covered in utility pole agreements as I understand it. Accordingly, the same
15 problem relating to the Utilities’ unilateral imposition of changes to previously-agreed upon,
16 established processes applies. The Utilities’ proposal appears punitive by design, and it is
17 unreasonable to impose new, potentially onerous penalties that would apply retroactively, i.e., to
18 attachments installed before the next full audit. The FCC in its recent April 2011 Pole Order
19 affirmed this very point. While that the FCC did relax some of its previously imposed limits on
20 penalties for unauthorized attachments to allow for a “multifaceted system” of penalties adopted
21 by the Oregon PUC, it specifically noted the relaxed guidelines would apply “on a prospective

1 basis only – i.e., to new agreements, or amendments to existing agreements, executed after the
2 effective date of this Order.”¹⁵

3 Moreover, citing to the Oregon system, the FCC highlighted the inclusion of provisions
4 specifically intended to limit the pole owner’s ability to use such penalty provisions to
5 anticompetitive ends and in contravention of effective pole regulation. These include: limiting
6 fees to violations found “in an inspection in which the pole occupant has declined to participate;”
7 requiring the pole owner to properly notice the attacher of violations prior to imposing sanctions;
8 giving the attacher the opportunity to correct the violation to avoid sanctions; and assigning cost
9 responsibility to the cost-causing party (including the pole owner).¹⁶ To the extent the PUCO
10 allows the Utilities to make any additions to their tariffs relating to penalties for authorized or
11 unreported attachments, at a minimum, these kinds of limitations should also be included.

12 It serves no valid economic or public policy purpose, for example, to impose penalties for
13 unauthorized attachments which apply to attachments (such as on drop poles) which at the time
14 of their installation were not required to be separately permitted and therefore would not have
15 been considered “unauthorized.” Neither, as recognized by the FCC, does it serve any valid
16 purpose to impose penalties for unreported attachments that relate to “poor record keeping or
17 changes in pole ownership, rather than because of the attacher’s failure to follow proper
18 protocol.”¹⁷ Indeed, the only purpose such practices would serve is the enrichment of the
19 Utility’s coffers to the detriment of third-party attachers and broadband competition.

20

¹⁵ See *Implementation of Section 224 of the Act, A National Broadband Plan for Our Future*, 26 F.C.C.R. 5240 ¶114 (2011) (“2011 FCC Order”).

¹⁶ *Id.* at 115.

¹⁷ *Id.* at ¶114.

1 A valid purpose of imposing penalties of this nature would be to provide an economic
2 disincentive to third-parties to place unauthorized attachments in order to avoid paying an
3 appropriate rental rate to recover the costs they are causally responsible for. Absent the baseline
4 audit, it is not even known to what extent, if any, truly unauthorized attachments represent a
5 significant problem in the Utilities' system in terms of real economic or safety consequence. I
6 am not aware of any testimony by the Utilities' in this proceeding that establishes the existence
7 of a serious problem in the field or otherwise demonstrates the need for such significant
8 increases in the penalties for unreported or unauthorized attachments. Absent such
9 demonstrations, the PUCO should be very mindful of the incentive and opportunity for
10 anticompetitive behavior on the part of the Utilities that the proposed tariff revisions present.

11 *Q. MS. KRAVTIN, DOES THIS CONCLUDE YOUR TESTIMONY AT THIS TIME?*

12 A. Yes, it does.

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Summary Consulting economist with specialization in telecommunications, cable, and energy markets. Extensive knowledge of complex economic, policy and technical issues facing incumbents, new entrants, regulators, investors, and consumers in rapidly changing telecommunications, cable, and energy markets.

Experience

CONSULTING ECONOMIST

2000–Present Independent Consulting Swampscott, MA
Providing expert witness services and full range of economic, policy, and technical advisory services in the telecommunications, cable, and energy fields.

SENIOR VICE PRESIDENT/SENIOR ECONOMIST

1982–2000 Economics and Technology, Inc. Boston, MA
Active participant in regulatory proceedings in over thirty state jurisdictions, before the Federal Communications Commission, Federal Energy Regulatory Commission, and other international regulatory authorities on telecommunications, cable, and energy matters.

Provided expert witness and technical advisory services in connection with litigation and arbitration proceedings before state and federal regulatory agencies, and before U.S. district court, on behalf of diverse set of public and private sector clients (see Record of Prior Testimony).

Extensive cable television regulation expertise in connection with implementation of the Cable Act of 1992 and the Telecommunications Act of 1996 by the Federal Communications Commission and local franchising authorities.

Led analysis of wide range of issues related to: rates and rate policies; cost methodologies and allocations; productivity; cost benchmarking; business case studies for entry into cable, telephony, and broadband markets; development of competition; electric industry restructuring; incentive or performance based regulation; universal service; access charges; deployment of advanced services and broadband technologies; and access to pole attachments and other rights-of-way.

Served as advisor to state regulatory agencies, assisting in negotiations with utilities, non-partial review of record evidence, deliberations and drafting of final decisions.

Author of numerous industry reports and papers on topics including market structure and competition, alternative forms of regulation, patterns of investment, telecommunications modernization, and broadband deployment (see listing of Reports and Studies).

Invited speaker before various national organizations, state legislative committees and participant in industry symposiums.

Grant Reviewer for Broadband Technology Opportunities Program (BTOP) administered by National Telecommunications and Information Administration (NTIA), Fall 2009.

RESEARCH/POLICY ANALYST

1978–1980 Various Federal Agencies Washington, DC
Prepared economic impact analyses related to allocation of frequency spectrum (Federal Communications Commission).

Performed financial and statistical analysis of the effect of securities regulations on the acquisition of high-technology firms (Securities and Exchange Commission).

Prepared analyses and recommendations on national economic policy issues including capital recovery. (U.S. Dept. of Commerce).

Education 1980–1982 Massachusetts Institute of Technology Boston, MA
Graduate Study in the Ph.D. program in Economics (Abd).
General Examinations passed in fields of Government Regulation of Industry, Industrial Organization, and Urban and Regional Economics.

National Science Foundation Fellow.

1976–1980 George Washington University Washington, DC
B.A. with Distinction in Economics.

Phi Beta Kappa, Omicron Delta Epsilon in recognition of high scholastic achievement in field of Economics. Recipient of four-year honor scholarship.

Prof. Affiliation American Economic Association

Reports and Studies (authored and co-authored)

Report on the Financial Viability of the Proposed Greenfield Overbuild in the City of Lincoln, California, prepared for Starstream Communications, August 12, 2003.

“Assessing SBC/Pacific’s Progress in Eliminating Barriers to Entry, The Local Market in California is Not Yet ‘Fully and Irreversibly Open,” prepared for the California Association of Competitive Telecommunications Companies (CALTEL), August 2000.

“Final Report on the Qualifications of Wide Open West-Texas, LLC For a Cable Television Franchise in the City of Dallas,” prepared for the City of Dallas, July 31, 2000.

“Final Report on the Qualifications of Western Integrated Networks of Texas Operating L.P. For a Cable Television Franchise in the City of Dallas,” prepared for the City of Dallas, July 31, 2000.

“Price Cap Plan for USWC: Establishing Appropriate Price and Service Quality Incentives in Utah” prepared for The Division of Public Utilities, March, 2000.

“Building a Broadband America: The Competitive Keys to the Future of the Internet,” prepared for The Competitive Broadband Coalition, May 1999.

“Broken Promises: A Review of Bell Atlantic-Pennsylvania's Performance Under Chapter 30,” prepared for AT&T and MCI Telecommunications, June 1998.

“Analysis of Opportunities for Cross Subsidies Between GTA and GTA Cellular,” prepared for Guam Cellular and Paging, submitted to the Guam Public Utilities Commission, July 11, 1997.

“Reply to Incumbent LEC Claims to Special Revenue Recovery Mechanisms,” submitted in the Matter of Access Charge Reform in CC Docket 96-262, February 14, 1997.

“Assessing Incumbent LEC Claims to Special Revenue Recovery Mechanisms: Revenue opportunities, market assessments, and further empirical analysis of the ‘Gap’ between embedded and forward-looking costs,” FCC CC Docket 96-262, January 29, 1997.

“Analysis of Incumbent LEC Embedded Investment: An Empirical Perspective on the ‘Gap’ between Historical Costs and Forward-looking TSLRIC,” Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, FCC CC 96-98, May 30, 1996.

“Reply to X-Factor Proposals for the FCC Long-Term LEC Price Cap Plan,” prepared for the Ad Hoc Telecommunications User Committee, submitted in FCC CC Docket 94-1, March 1, 1996.

“Establishing the X-Factor for the FCC Long-Term LEC Price Cap Plan,” prepared for the Ad Hoc Telecommunications User Committee, submitted in FCC CC Docket 94-1, December 1995.

“The Economic Viability of Stentor's ‘Beacon Initiative,’ exploring the extent of its financial dependency upon revenues from services in the Utility Segment,” prepared for Unitel, evidence before the Canadian Radio-television and Telecommunications Commission, March 1995.

“Fostering a Competitive Local Exchange Market in New Jersey: Blueprint for Development of a Fair Playing Field,” prepared for the New Jersey Cable Television Association, January 1995.

“The Enduring Local Bottleneck: Monopoly Power and the Local Exchange Carriers,” Feb. 1994.

“A Note on Facilitating Local Exchange Competition,” prepared for E.P.G., Nov. 1991.

“Testing for Effective Competition in the Local Exchange,” prepared for the E.P.G., October 1991.

“A Public Good/Private Good Framework for Identifying POTS Objectives for the Public Switched Network” prepared for the National Regulatory Research Institute, October 1991.

“Report on the Status of Telecommunications Regulation, Legislation, and modernization in the states of Arkansas, Kansas, Missouri, Nebraska, Oklahoma and Texas,” prepared for the Mid-America Cable-TV Association, December 13, 1990.

“The U S Telecommunications Infrastructure and Economic Development,” presented at the 18th Annual Telecommunications Policy Research Conference, Airlie, Virginia, October 1990.

“An Analysis of Outside Plant Provisioning and Utilization Practices of US West Communications in the State of Washington,” prepared for the Washington Utilities and Transportation Commission, Mar.1990.

“Sustainability of Competition in Light of New Technologies,” presented at the Twentieth Annual Williamsburg Conference of the Institute of Public Utilities, Williamsburg, VA, December 1988.

“Telecommunications Modernization: Who Pays?,” prepared for the National Regulatory Research Institute, September 1988.

“Industry Structure and Competition in Telecommunications Markets: An Empirical Analysis,” presented at the Seventh International Conference of the International Telecommunications Society, MIT, July 1988.

“Market Structure and Competition in the Michigan Telecommunications Industry,” prepared for the Michigan Divestiture Research Fund Board, April 1988.

“Impact of Interstate Switched Access Charges on Information Service Providers - Analysis of Initial Comments,” submitted in FCC CC Docket No. 87-215, October 26, 1987.

“An Economic Analysis of the Impact of Interstate Switched Access Charge Treatment on Information Service Providers,” submitted in FCC CC Docket No. 87-215, September 24, 1987.

“Regulation and Technological Change: Assessment of the Nature and Extent of Competition from A Natural Industry Structure Perspective and Implications for Regulatory Policy Options,” prepared for the State of New York in collaboration with the City of New York, February 1987.

“BOC Market Power and MFJ Restrictions: A Critical Analysis of the ‘Competitive Market’ Assumption,” submitted to the Department of Justice, July 1986.

“Long-Run Regulation of AT&T: A Key Element of a Competitive Telecommunications Policy,” *Telematics*, August 1984.

“Economic and Policy Considerations Supporting Continued Regulation of AT&T,” submitted in FCC CC Docket No. 83-1147, June 1984. “Multi-product Transportation Cost Functions,” MIT Working Paper, September 1982.

Record of Prior Testimony

2011

Before the **Virginia State Corporation Commission**, *In the Matter of Determining Appropriate Regulation of Pole Attachments and Cost Sharing in Virginia*, Case No. PUE-2011-00033, Affidavit submitted June 22, 2011, Oral Testimony given July 13, 2011.

Before the **Public Utility Commission of Texas**, State Office of Administrative Hearings, *Petition of CPS Energy for Enforcement Against AT&T Texas and Time Warner Cable Regarding Pole Attachments*, SOAH Docket No. 473-09-5470, PUC Docket No. 36633, Supplemental Testimony submitted March 17, 2011; Further Supplemental Testimony submitted April 22, 2011, Cross-examination September 13, 2011.

2010

Before the General **Court of Justice Superior Court Division, State of North Carolina, County of Rowan**, *Time Warner Entertainment– Advance/Newhouse Partnership, Plaintiff, V. Town Of Landis, North Carolina, Defendant*, 10 CVS 1172, submitted October 20, 2010, Deposition December 1, 2010, Cross-examination July 20, 2011.

Before the **Federal Communications Commission**, *In the Matter of Implementation of Section 224 of the Act; Amendment of the Commission's Rules and Policies Governing Pole Attachments*, WC Docket No. 07-245, GN Docket No. 09-51. Report submitted August 16, 2010, Attachment A to Comments filed by the National Cable and Telecommunications Association.

Before the **Public Utility Commission of Texas**, State Office of Administrative Hearings, *Petition of CPS Energy for Enforcement Against AT&T Texas and Time Warner Cable Regarding Pole Attachments*, SOAH Docket No. 473-09-5470, PUC Docket No. 36633, Direct Testimony submitted July 23, 2010.

Before the **Kentucky Public Service Commission**, *In the Matter of: Application of Kentucky Utilities Company for An Adjustment of its Base Rates*, Case No. 2009-00548, submitted April 22, 2010.

Before the **Kentucky Public Service Commission** *In the Matter of: Application of Louisville Gas and Electric Company for An Adjustment of its Electric and Gas Base Rates*, Case No. 2009-00549, submitted April 22, 2010.

Before the **Arkansas Public Service Commission**, *Coxcom, Inc., D/B/A Cox Communications, Complainant V. Arkansas Valley Electric Cooperative Corporation, Respondent*. Docket No. 09-133-C, submitted March 17, 2010.

2009

BeBfore the **Circuit Court of the Thirteenth Judicial Circuit in and for Hillsborough County, State of Florida**, *Tampa Electric Company, Plaintiff, vs. Bright House Networks, LLC, Defendant*, Case No. 06-00819, Division L. Expert Report submitted December 30, 2009, Deposition February 2, 2010, Cross-examination, March 24, 2010.

Before the **Superior Court of the State Of Washington for the County of Pacific**, *Pacific Utility District No. 2 Of Pacific County, Plaintiff, V. Comcast of Washington Iv, Inc., Centurytel of Washington, Inc., and Falcon Community Ventures I, L.P. D/B/A Charter Communications, Defendants*, Case No. 07-2-00484-1, Expert Report submitted September 18, 2009, Reply Report submitted October 16, 2009, Deposition December 21, 2009, Deposition December 21, 2009, Cross-examination October 12-13, 2010.

Before the **Public Utilities Commission of Ohio**, *In the Matter of the Application of Duke Energy Ohio, Inc., for an Increase in Electric Distribution Rates, Case No. 08-709-EL-AIR, In the Matter of the Application of Duke Energy Ohio, Inc., for a Tariff Approval, Case No. 08-710-EL-ATA, In the Matter of the Application of Duke Energy Ohio, Inc., for Approval to Change Accounting Methods, Case No. 08-11-EL-AAM, In the Matter of the Application of Cincinnati Gas & Electric Company for Approval of its Rider BDP, Backup Delivery Point, Case No. 06-718-EL-ATA*, filed February 26, 2009.

2008

Before the **Arkansas Public Service Commission**, *In the Matter of a Rulemaking Proceeding to Establish Pole Attachment Rules In Accordance With Act 740 of 2007*, Docket No. 08-073-R, filed May 13, 2008, reply filed June 3, 2008, Cross-examination, June 10, 2008.

Before the **Federal Communications Commission**, *In the Matter of Implementation of Section 224 of the Act; Amendment of the Commission's Rules and Policies Governing Pole Attachments*, WC Docket No. 07-245, RM 11293, RM 11303, filed March 7, 2008, reply filed April 22, 2008.

2006

Before the **State of New Jersey Board of Public Utilities**, Office of Administrative Law, *in the Matter of the Verified Petition of TCG Delaware Valley, Inc. and Teleport Communications New York for an Order Requiring PSE&G Co. to Comply with the Board's Conduit Rental Regulations*, OAL Docket PUC 1191-06, BPU Docket No.EO0511005, filed September 29, 2006; rebuttal filed November 17, 2006.

Before the **Federal Communications Commission**, *In the Matter of Florida Cable Telecommunications Association, Inc., Comcast Cablevision of Panama City, Inc.; Mediacom Southeast, L.L.C.; and Cox Communications Gulf, L.L.C.; Complainants v. Gulf Power Company, Respondent*. EB Docket No. 04-381. Testimony on behalf of Complainants filed March 31, 2006, Deposition March 15, 2006, Cross-Examination April 26-27, 2006.

2005

Before the **United States District Court for the Eastern District of New York**, *Coastal Communication Service, Inc. and Telebeam Telecommunications Corporation, Plaintiffs - against -The City of New York and New York City Department of Information Technology and Telecommunications*, 02 Civ. 2300 (RJD) (SMG), Expert Report filed February 4, 2005; Rebuttal Expert Report, filed August 29, 2005, Deposition December 1, 2005.

2004

Before the **Ontario Energy Board**, *In the Matter of the Ontario Energy Board Act 1998*, S.O.1998, c.15, (Schedule B); and *In the Matter of an Application pursuant to section 74 of the Ontario Energy Board Act, 1998* by the Canadian Cable Television Association for an Order or Orders to amend the licenses of electricity distributors, RP-2003-024, Reply Evidence, filed September 27, 2004 (jointly with Paul Glist), Cross-examination October 26-27, 2004.

2003

Before the **United States District Court for the Southern District of California**, *Level 3 Communications, LLC v. City of Santee*, Civil Action No. 02-CV-1193, Rebuttal Expert Report, filed July 18, 2003.

2002

Before the **New York State Public Service Commission**, *In the Matter of the Cable Television & Telecommunications Association of New York, Inc., Petitioner, v. Verizon New York, Inc., Respondent*, Affidavit filed December 19, 2002.

Before the **West Virginia Public Service Commission**, *Community Antenna Service, Inc. v. Charter Communications*, Case No. 01-0646-CTV-C, Live Direct Testimony and Cross-examination, June 12, 2002.

Before the **Public Service Commission of the District of Columbia**, *Comcast Cablevision of the District, L.L.C., Complainant, v. Verizon Communications Inc. - Washington, D.C., Respondent*, Formal Case No. 1006, Direct Testimony filed June 11, 2002; Rebuttal Testimony filed June 24, 2002.

Before the **Federal Communications Commission**, in *Cavalier Telephone, LLC, Complainant, v. Virginia Electric & Power Co., D/b/a Dominion Virginia Power, Respondent*, Case No. EB-02-MD-005, Declaration filed May 21, 2002.

Before the **Puerto Rico Telecommunications Regulatory Board**, in *Re: Petition of Centennial Puerto Rico License Corp. for arbitration pursuant to Sections 252(b) of the Telecommunications Act of 1996 to Establish an Interconnection Agreement with Puerto Rico Telephone Company*, on behalf of Centennial Puerto Rico License Corp., Direct Testimony filed April 16, 2002; Deposition May 7, 2002, May 14, 2002; Reply Testimony filed May 20, 2002, Cross-examination May 22, 2002.

Before the **Federal Energy Regulatory Commission**, in *Re: In the Matter of Transcontinental Gas Pipe Line Corporation*, Docket No. RP01-245, on behalf of the University of Maryland-College Park, Johns Hopkins University and Johns Hopkins University Health System, and the North Carolina Utilities Commission, Cross-answering Testimony filed January 23, 2002; Rebuttal Testimony filed May 31, 2002, Cross-examination July 31, 2002.

2001

Before the **United States District Court for the Northern District of New York**, *TC Systems, Inc. and Teleport Communications-New York vs. Town of Colonie, New York*, Civil Action No. 00-CV-1972, Expert Report filed November 16, 2001; Deposition December 7, 2001, Rebuttal Expert Report filed December 20, 2001, Deposition January 9, 2002.

Before the **Federal Energy Regulatory Commission**, in *Re: In the Matter of Transcontinental Gas Pipe Line Corporation*, Docket No. RP01-245, on behalf of the University of Maryland-College Park, Johns Hopkins University and Johns Hopkins University Health System, and the North Carolina Utilities Commission, filed November 15, 2001.

Before the **Public Service Commission of the District of Columbia**, *Comcast Cable Communications, Inc. d/b/a/Comcast Cable of Washington, D.C., Complainant, v. Verizon Communications Inc. – Washington, D.C., Respondent*, filed September 21, 2001.

Before the **Public Utility Commission of Texas**, State Office of Administrative Hearings, SOAH Docket No. 473-00-1014, PUC Docket No. 22349, *Application of Texas-New Mexico Power Company for Approval of Unbundled Cost of Service Rate Pursuant to PURA § 39.201 and Public Utility Commission Substantive Rule §25.344*, on behalf of Cities Served by Texas-New Mexico Power, filed January 25, 2001.

2000

Before the **Puerto Rico Telecommunications Regulatory Board**, in *AT&T of Puerto Rico, Inc. et al v. Puerto Rico Telephone Company, Inc., Re: Dialing Parity*, Docket Nos. 97-Q-0008, 98-Q-0002, on behalf of Lambda Communications Inc., Cross-examination October 19-20, 2000.

Before the **Department of Telecommunications and Energy of the Commonwealth of Massachusetts**, Docket No. DTE 98-57 – Phase III, *Re: Bell Atlantic- Massachusetts Tariff No. 17 Digital Subscriber Line Compliance Filing and Line Sharing Filing*, (Panel Testimony with Joseph Riolo, Robert Williams, and Michael Clancy) on behalf of Rhythms Links Inc. and Covad Communications Company, filed July 10, 2000.

Before the **New York State Public Service Commission** in *Re: Proceeding on Motion of the Commission to Examine New York Telephone Company's Rates for Unbundled Network Elements* on behalf of the Cable Television & Telecommunications Association of New York, Inc., Direct Testimony filed June 26, 2000, Supplemental Testimony filed November 29, 2000.

Before the **Maryland Public Service Commission**, on behalf of Rhythms Links Inc. and Covad Communications Company, filed jointly with Terry L. Murray and Richard Cabe, May 5, 2000.

Before the **Public Utility Commission of Texas**, in *Re: Proceeding to Examine Reciprocal Compensation Pursuant to Section 252 of the Federal Telecommunications Act of 1996*, CC Docket No. 21982, on behalf of AT&T Communications of Texas, L.P., TCG Dallas, and Teleport Communications Houston, Inc., filed March 31, 2000.

Before the **Federal Communications Commission**, in *Re: In the Matter of Price Caps Performance Review for Local Exchange Carriers, Access Charge Reform*, CC Dockets 94-1, 96-262, on behalf of Ad Hoc Telecommunications Users Committee, filed January 24, 2000.

Before the **Federal Energy Regulatory Commission**, in *Re: In the Matter of Northern Border Pipeline Company*, on behalf of the Canadian Association of Petroleum Producers and the Alberta Department of Resource Development, filed January 20, 2000.

1999

Before the **Connecticut Department of Public Utilities**, in *Re: Evaluation and Application to Modify Franchise Agreement by SBC Communications Inc., Southern New England telecommunications Corporation and SNET Personal Vision, Inc.*, Docket No. 99-04-02, on behalf of the Office of Consumer Counsel, filed June 22, 1999; cross-examination July 8, 1999

Before the **Illinois Commerce Commission**, in *Re: Illinois Commerce Commission on its own Motion v. Illinois Bell Telephone Company; et al: Investigation into Non-Cost Based Access Charge Rate Elements in the Intrastate Access Charges of the Incumbent Local Exchange Carriers in Illinois, Illinois Commerce Commission on its own Motion Investigation into Implicit Universal Service Subsidies in Intrastate Access Charges and to Investigate how these Subsidies should be Treated in the Future, Illinois Commerce Commission on its own motion Investigation into the Reasonableness of the LS2 Rate of Illinois Bell Telephone Company*, Docket No. 97-00601, 97-0602, 97-0516, Consolidated, on behalf of City of Chicago, filed January 4, 1999; rebuttal February 17, 1999.

Before the **Puerto Rico Telecommunications Regulatory Board**, in *Re: In the Matter of Arbitration of Interconnection Rates, Terms and Conditions between Centennial Wireless PCS Operations Corp., Lambda Communications Inc., and the Puerto Rico Telephone Company*, behalf of Centennial Wireless PCS Operations Corp. and Lambda Communications Inc., cross-examination February 16, 1999.

1998

Before the **California Public Utilities Commission**, in *Re: In the Matter of the Application of Pacific Bell (U 1001 C), a Corporation, for Authority for Pricing Flexibility and to Increase Prices of Certain Operator Services, to Reduce the Number of Monthly Assistance Call Allowances, and Adjust Prices for Four Centrex Optional Features*, Application No. 98-05-038, on behalf of County of Los Angeles, filed November 17, 1998, cross-examination, December 9, 1998.

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Before the **Connecticut Department of Public Utility Control**, in *Re: Application of the Southern New England Telephone Company*, Docket no. 98-04-03, on behalf of the Connecticut Office of Consumer Counsel, filed August 17, 1998, cross-examination February 18, 1999.

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1997

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Before the **State Corporation Commission of Kansas**, in *Re: In the Matter of and Investigation to Determine whether the Exemption from Interconnection Granted by 47 U.S.C. 251(f) should be Terminated in the Dighton, Ellis, Wakeeney, and Hill City Exchanges*, Docket No. 98-GIMT-162-MIS, on behalf of classic Telephone, Inc., filed October 23, 1997.

Before the **Georgia Public Services Commission**, in *Re: Review of Cost Studies, Methodologies, and Cost-Based Rates for Interconnection and Unbundling of BellSouth Telecommunications Services*, Docket No. 7061-U, on behalf of the Cable Television Association of Georgia, filed August 29, 1997, cross-examination September 19, 1997.

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Before the **Public Utilities Commission of the State of California**, in *Re: Rulemaking on the Commission's Own Motion to Govern Open Access to Bottleneck Services and Establish a Framework for Network Architecture Development of Dominant Carrier Networks*, R.93-04-003, I.93-04-002AT&T, filed March 19, 1997, reply April 7, 1997.

Before the **Puerto Rico Telecommunications Regulatory Board**, in *Re: In the Matter of Centennial Petition for Arbitration with PRTC*, on behalf of Centennial Cellular Corporation, filed February 14, 1997, supplemental March 10, 1997.

Before the **Federal Communications Commission**, in *Re: In the Matter of Access Charge Reform*, CC Docket 96-262, on behalf of AT&T, filed January 29, 1997, reply February 14, 1997.

1996

Before the **New Jersey Board of Public Utilities**, in *Re: In the Matter of the Investigation Regarding Local Exchange Competition for Telecommunications Services*, TX95120631, on behalf of New Jersey Cable Television Association, filed on August 30, 1996, reply September 9, 1997, October 20, 1997, cross-examination September 12, 1996, December 20, 1996.

Before the **State Corporation Commission of the State of Kansas**, in *Re: In the Matter of a General Investigation Into Competition Within the Telecommunications Industry in the State of Kansas*, 190, 492-U 94-GIMT-478-GIT, on behalf of Kansas Cable Telecommunications Association, Inc., filed July 15, 1996, cross-examination August 14, 1996.

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Before the **Federal Communications Commission**, in *Re: Puerto Rico Telephone Company (Tariff FCC No. 1)*, Transmittal No. 1, on behalf of Centennial Cellular Corp., filed April 29, 1996.

Before the **United States District Court for the Eastern District of Tennessee at Greeneville**, in *Re: Richard R. Land, Individually and d/b/a The Outer Shell, and on behalf of all others similarly situated, Plaintiffs, vs. United Telephone-Southeast, Inc., Defendant*, CIV 2-93-55, filed December 7, 1996.

1995

Before the **Federal Communications Commission**, in *Re: Bentleyville Telephone Company Petition and Waiver of Sections 63.54 and 63.55 of the Commission's Rules and Application for Authority to Construct and Operate, Cable Television Facilities in its Telephone Service Area*, W-P-C-6817, on behalf of the Helicon Group, L.P. d/b/a Helicon Cablevision, filed November 2, 1995.

Before the **US District Court for the Eastern District of Tennessee**, in *Re: Richard R. Land, Individually and d/b/a The Outer Shell, and on behalf of all others similarly situated, Plaintiffs, vs. United Telephone-Southeast, Inc., Defendant*, 2-93-55, Class Action, filed June 12, 1995.

Before the **Connecticut Department of Public Utility Control**, in *Re: Application of SNET Company for approval to trial video dial tone transport and switching*, 95-03-10, on behalf of New England Cable TV Association, filed May 8, 1995, cross-examination May 12, 1995.

Before **Canadian Radio-Television and Telecommunications Commission**, in *Re: CRTC Order in Council 1994-1689*, Public Notice CRTC 1994-130 (Information Highway), filed March 10, 1995.

Before the **Federal Communications Commission**, in *Re: GTE Hawaii's Section 214 Application to provide Video Dialtone in Honolulu, Hawaii*, W-P-C- 6958, on behalf of Hawaii Cable TV Association, filed January 17, 1995 (Reply to Amended Applications).

Before the **Federal Communications Commission**, in *Re: GTE Hawaii's Section 214 Application to provide Video Dialtone in Ventura County*, W-P-C 6957, on behalf of the California Cable TV Association, filed January 17, 1995 (Reply to Amended Applications).

Before the **Federal Communications Commission**, in *Re: GTE Florida's Section 214 Application to Provide Video Dialtone in the Pinellas County and Pasco County, Florida areas*, W-P-C 6956, on behalf of Florida Cable TV Association, filed January 17, 1995 (Reply to Amended Applications).

Before the **Federal Communications Commission**, in *Re: GTE Virginia's Section 214 Application to provide Video Dialtone in the Manassas, Virginia area*, W-P-C 6956, on behalf of Virginia Cable TV Association, filed January 17, 1995 (Reply to Amended Applications).

1994

Before the **Federal Communications Commission**, in *Re: NET's Section 214 Application to provide Video Dialtone in Rhode Island and Massachusetts*, W-P-C 6982, W-P-C 6983, on behalf of New England Cable TV Association, filed December 22, 1994 (Reply to Supp. Responses).

Before the **State Corporation Commission of the State of Kansas**, in *Re: General Investigation into Competition*, 190, 492-U 94-GIMT-478-GIT, on behalf of Kansas CATV Association, filed November 14, 1994, cross-examination December 1, 1994.

Before the **Federal Communication Commission**, in *Re: Carolina Telephone's Section 214 Application to provide Video Dialtone in areas of North Carolina*, W-P-C 6999, on behalf of North Carolina Cable TV Association, filed October 20, 1994, reply November 8, 1994.

Before the **Federal Communication Commission**, in *Re: NET's Section 214 Application to provide Video Dialtone in Rhode Island and Massachusetts*, W-P-C 6982, W-P-C 6983, on behalf of New England Cable TV Association, filed September 8, 1994, reply October 3, 1994.

Before the **California Public Utilities Commission**, in *Re: Petition of GTE-California to Eliminate the Preapproval Requirement for Fiber Beyond the Feeder*, I.87-11-033, on behalf of California Bankers Clearing House, County of LA, filed August 24, 1994.

Before the **Federal Communications Commission**, in *Re: BellSouth Telecommunications Inc., Section 214 Application to provide Video Dialtone in Chamblee, GA and Dekalb County, GA*, W-P-C 6977, on behalf of Georgia Cable TV Association, filed August 5, 1994.

Before the **Federal Communications Commission**, in *Re: Bell Atlantic Telephone Companies Section 214 Application to provide Video Dialtone within their Telephone Services Areas*, W-P-C 6966, on behalf of Mid Atlantic Cable Coalition, filed July 28, 1994, reply August 22, 1994.

Before the **Federal Communication Commission**, in *Re: GTE Hawaii's 214 Application to provide Video Dialtone in Honolulu, Hawaii*, W-P-C 6958, on behalf of Hawaii Cable TV Association, filed July 1, 1994, and July 29, 1994.

Before the **Federal Communication Commission**, in *Re: GTE California's Section 214 Application to provide Video Dialtone in Ventura County*, W-P-C 6957, on behalf of California Cable TV Association, filed July 1, 1994, and July 29, 1994.

Before the **Federal Communication Commission**, in *Re: GTE Florida's 214 Application to provide Video Dialtone in the Pinellas and Pasco County, Florida areas*, W-P-C 6956, on behalf of Florida Cable TV Association, filed July 1, 1994, and July 29, 1994.

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Before the **Federal Communication Commission**, in *Re: US WEST's Section 214 Application to provide Video Dialtone in Portland, OR; Minneapolis, St. Paul, MN; and Denver, CO*, W-P-C 6919-22, on behalf of Minnesota & Oregon Cable TV Association, filed March 28, 1994.

Before the **Federal Communications Commission**, in *Re: Ameritech's Section 214 Application to provide Video Dialtone within areas in Illinois, Indiana, Michigan, Ohio, and Wisconsin*, W-P-C-6926-30, on behalf of Great Lakes Cable Coalition, filed March 10, 1994, reply April 4, 1994.

Before the **Federal Communications Commission**, in *Re: Pacific Bell's Section 214 Application to provide Video Dialtone in Los Angeles, Orange County, San Diego, and Southern San Francisco Bay areas*, W-P-C-6913-16, on behalf of Comcast/Cablevision Inc., filed February 11, 1994, reply March 11, 1994.

Before the **Federal Communications Commission**, in *Re: SNET's Section 214 Application to provide Video Dialtone in Connecticut*, W-P-C 6858, on behalf of New England Cable TV Association, filed January 20, 1994, reply February 23, 1994.

1993

Before the **Arkansas Public Service Commission**, in *Re: Earnings Review of Southwestern Bell Telephone Company*, 92-260-U, on behalf of Arkansas Press Association, filed September 2, 1993.

Before the **United States District Court for the Eastern District of Tennessee at Greenville**, in *Re: Cleo Stinnett, et al. Vs. BellSouth Telecommunications, Inc. d/b/a/ South Central Bell Telephone Company, Defendant*, Civil Action No 2-92-207, Class Action, cross-examination May 10, 1993, and February 10, 1994.

Before the **Federal Communications Commission**, in *Re: NJ Bell's Section 214 Application to provide Video Dialtone service within Dover Township, and Ocean County, New Jersey, W-P-C-6840*, on behalf of New Jersey Cable TV Association, filed January 21, 1993.

1992

Before the **New Jersey Board of Regulatory Commissioners**, in *Re: NJ Bell Alternative Regulation, T092030358*, on behalf of NJ Cable TV Association, filed September 21, 1992.

Before the **New Hampshire Public Utilities Commission**, in *Re: Generic competition docket, DR 90-002*, on behalf of Office of the Consumer Advocate, filed May 1, 1992, reply July 10, 1992, Surrebuttal August 21, 1992.

Before the **New Jersey General assembly Transportation, Telecommunications, and Technology Committee**, *Concerning A-5063*, on behalf of NJ Cable TV Association, filed January 6, 1992.

1991

Before the **New Jersey Senate Transportation and Public Utilities Committee**, in *Re: Concerning Senate Bill S-3617*, on behalf of New Jersey Cable Television Association, filed December 10, 1991.

Before the **119th Ohio General Assembly Senate Select Committee on Telecommunications Infrastructure and Technology**, in *Re: Issues Surrounding Telecommunications Network Modernization*, on behalf of the Ohio Cable TV Association, filed March 7, 1991.

Before the **Tennessee Public Service Commission**, in *Re: Master Plan Development and TN Regulatory Reform Plan*, on behalf of TN Cable TV Association, filed February 20, 1991.

1990

Before the **Tennessee Public Service Commission**, in *Re: Earnings Investigation of South Central Bell, 90-05953*, on behalf of the TN Cable Television Association, filed September 28, 1990.

Before the **New York Public Service Commission**, in *Re: NYT Rates, 90-C-0191, on behalf of User Parties NY Clearing House Association*, filed July 13, 1990, Surrebuttal July 30, 1990.

Before the **Louisiana Public Service Commission**, in *Re: South Central Bell Bidirectional Usage Rate Service, U-18656*, on behalf of Answerphone of New Orleans, Inc., Executive Services, Inc., King Telephone Answering Service, et al, filed January 11, 1990.

1989

Before the **Georgia Public Service Commission**, in *Re: Southern Bell Tariff Revision and Bidirectional Usage Rate Service, 3896-U*, on behalf of Atlanta Journal Const./Voice Information Services Company, Inc., GA Association of Telemessaging Services, Prodigy Services, Company, Telnet Communications, Corp., filed November 28, 1989.

Before the **New York State Public Service Commission**, in *Re: NYT Co. - Rate Moratorium Extension - Fifth Stage Filing, 28961 Fifth Stage*, on behalf of User Parties NY Clearing House Association Committee of Corporate Telecommunication Users, filed October 16, 1989.

Before the **Delaware Public Service Commission**, in *Re: Diamond State Telephone Co. Rate Case, 86-20*, on behalf of DE PSC, filed June 16, 1989.

Before the **Arizona Corporation Committee**, in *Re: General Rate Case, 86-20*, on behalf of Arizona Corporation Committee, filed March 6, 1989.

1988

Before **New York State Public Service Commission**, in *Re: NYT Rate Moratorium Extension*, 28961, on behalf of Capital Cities/ ABC, Inc., AMEX Co., CBS, Inc., NBC, Inc., filed December 23, 1988.

1989

Before **Rhode Island Public Utilities Commission**, in *Re: New England Telephone*, 1475, on behalf of RI Bankers Association, filed August 11, 1987, cross-examination August 21, 1987.

Before the **New York State Public Service Commission**, in *Re: General Rate Case Subject to Competition*, 29469, on behalf of AMEX Co., Capital Cities/ ABNC, Inc., NBC, Inc., filed April 17, 1987, cross-examination May 20, 1987.

Before the **Minnesota Public Utilities Commission**, in *Re: Northwestern Bell*, P-421/ M-86-508, on behalf of MN Bus. Utilities Users Counsel, filed February 10, 1987, cross-examination March 5, 1987.

1986

Before the **Kansas Public Utilities Commission**, in *Re: Southwestern Bell*, 127, 140-U, on behalf of Boeing Military, et al., filed August 15, 1986.

1985

Before the **Washington Utilities and Transportation Commission**, in *Re: Cost of Service Issues bearing on the Regulation of Telecommunications Company*, on behalf of US Department of Energy, filed November 18, 1985 (Reply Comments).

1984

Before the **Maine Public Utilities Commission**, in *Re: New England Telephone*, 83-213, on behalf of Staff, ME PUC, filed February 7, 1984, cross-examination March 16, 1984.

Before the **Minnesota Public Service Commission**, in *Re: South Central Bell*, U-4415, on behalf of MS PSC, filed January 24, 1984, cross-examination February 1984.

1983

Before the **Kentucky Public Service Commission**, in *Re: South Central Bell*, 8847, on behalf of KY PSC, filed November 28, 1983, cross-examination December 1983.

Before the **Florida Public Service Commission**, in *Re: Southern Bell Rate Case*, 820294-TP, on behalf of Florida Department of General Services, FL Ad Hoc Telecommunications Users, filed March 21, 1983, cross-examination May 5, 1983.

1982

Before the **Maine Public Utilities Commission**, in *Re: New England Telephone*, 82-142, on behalf of Staff, ME PUC, filed November 15, 1982, cross-examination December 9, 1982.

Before the **Kentucky Public Service Commission**, in *Re: South Central Bell*, 8467, on behalf of the Commonwealth of Kentucky, cross-examination August 26, 1982.



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FILED ELECTRONICALLY AND VIA COURIER

December 16, 2011

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Helen T Newland
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Dear Ms. Walli:

**RE: Application by Canadian Distributed
 Antenna Systems Coalition ("CANDAS");
 Reply Evidence of Ms. Patricia D. Kravtin;
 Board File No.: EB-2011-0120**

We write on behalf of CANDAS and in accordance with in Procedural Order No. 6, to file a report prepared by Ms. Patricia D. Kravtin replying to the evidence of Toronto Hydro-Electric System Limited filed in this proceeding. Ms. Kravtin's report replaces the report of Dr. Roger Ware that CANDAS filed under cover of letter dated October 11, 2011. Dr. Ware's report, as well as his responses of interrogatories on his report, are hereby withdrawn.

CANDAS will file two paper copies of Ms. Kravtin's report as soon as possible.

Yours very truly,

(signed) H.T. Newland

HTN/ko

Encls.

cc: All Intervenors

REPLY REPORT
PATRICIA D. KRAVTIN

BEFORE THE
ONTARIO ENERGY BOARD

SUBMITTED ON BEHALF OF THE CANADIAN DISTRIBUTED
ANTENNA SYSTEM COALITION

December 16, 2011

**REPLY REPORT OF
PATRICIA D. KRAVTIN**

Table of Contents

I. INTRODUCTION AND QUALIFICATIONS 1

II. EXECUTIVE SUMMARY 2

III. CHARACTERISTICS OF POLE NETWORKS SUPPORT SHARED USE OF
UTILITY POLES..... 3

IV. COMPETITIVE ANALYSES PRESENTED BY DR. YATCHEW AND MR.
STARKEY ARE FLAWED 7

V. GRANTING ALL CARRIERS THE SAME NON-DISCRIMINATORY RIGHT
TO ACCESS UTILITY POLES SERVES THE PUBLIC INTEREST 11

ATTACHMENT 1: DETAILED RESUMÉ OF PATRICIA D. KRAVTIN

I. INTRODUCTION AND QUALIFICATIONS

1. My name is Patricia D. Kravtin. My business address is 57 Phillips Avenue, Swampscott, Massachusetts. I am an economist in private practice specializing in the analysis of telecommunications and energy regulation and markets. I was asked by counsel for the Canadian Distributed Antenna System Coalition (“CANDAS”) to review certain materials filed in the Ontario Energy Board’s File No. EB-2011-0120 and to prepare a reply report setting forth my opinions on the economic and public policy issues raised in the evidence of Mr. Michael Starkey and Dr. Adonis Yatchew on behalf of Toronto Hydro-Electric Systems Limited (“THESL”), and in particular, the economic and public policy grounds for mandating access to utility poles by telecommunications carriers.

2. Over the course of my career, I have been actively involved in state and federal regulatory commission proceedings involving the economic regulation of incumbent telephone and electric utilities and access, by competitive telecommunications companies, to the facilities of such utilities, including poles, ducts, conduits, and rights-of-way. I have testified extensively on such matters before state and federal regulatory agencies including: the Federal Communications Commission (“FCC”) (including in its most recent pole proceeding setting new rules for wireline and wireless attachments and the recently decided Gulf Power case addressing the evidentiary burden of showing that a pole is at full capacity); the Federal Energy Regulatory Commission (“FERC”); the Ontario Energy Board (“OEB”)¹; the Canadian Radio-television and Telecommunications Commission (“CRTC”); the Guam Public Utilities Commission; and numerous state regulatory commissions including those in Arkansas, Georgia, Kentucky, New Jersey, New York, Ohio, South Carolina, Texas, Virginia, and the District of Columbia. I have been qualified as an expert on matters pertaining to access to poles, ducts, conduits and rights-of-way before numerous state and federal district courts including those in Florida, New York, California, Washington, and North Carolina. A detailed resume of my

¹ *In re Canadian Cable Television Association*, OEB File No. RP-2003-0249 (the “CCTA proceeding”) and Decision and Order dated March 7, 2005, (the “CCTA Order”).

educational background and previous experience, including a full listing of proceedings I have testified in and reports I have authored, is provided in Attachment 1 to this report.

II. EXECUTIVE SUMMARY

3. My conclusions are summarized as follows:

- The intrinsic characteristics of utility poles that make it necessary, efficient, and practical for their shared occupancy by cable and wireline telecommunications hold just as true in the case of wireless telecommunications.
- Space on utility poles is not a scarce resource in any true economic sense; pole space is nonrivalrous in consumption and characterized by readily available capacity under normal utility operating practices.
- The utility pole owner, by virtue of its natural monopoly, is in a position to artificially limit and control access to its network of poles despite the relative ease with which the utility can accommodate additional attachments through the make-ready process – the cost of which is fully reimbursable to the utility by the incremental attacher.
- Arguments by Dr. Yatchew and Mr. Starkey in support of THESL’s position to deny wireless the right of access to utility poles are based on flawed competitive analyses, including flawed definitions of the relevant markets, for both the underlying input and the downstream final product for which the input is a key element of production (and, thus, from which the demand for the input is derived).
- The competitive analyses of Dr. Yatchew and Mr. Starkey are at odds with the economic reality of a highly dynamic, convergent telecommunications market – a key market condition recognized and acknowledged as such by both Dr. Yatchew and the OEB in the 2005 CCTA proceeding and by Dr. Yatchew in evidence he presents in this proceeding.

- The shared occupancy of utility poles produces an economic “win-win” for the utility, its ratepayers, and third-party attachers alike, with significant spillover benefits to consumers and society at large.
- The public interest standard applicable to the regulation of a public utility appropriately takes into consideration the significant benefits to society associated with granting all carriers, regardless of their choice of wireline, wireless or hybrid facilities or technologies, the same right of access to utility poles.
- The public interest is not served by giving a monopoly pole-owning utility unfettered discretion to unfairly discriminate against a given carrier based on that carrier’s choice of facilities or technologies or any other aspect of the carrier’s business model.
- Valid safety or operational concerns regarding wireless attachments – as with attachments of any kind – can be (and generally are) addressed in existing objective standards and procedures and non-discriminatory terms and conditions of attachment. Such concerns are not proper grounds for denying the same fundamental right of access to utility poles by telecommunications carriers. Nor are they proper grounds for imposing arbitrary, unreasonable, or discriminatory conditions or requirements on any given telecommunications attacher or any particular type of attachment.

III. CHARACTERISTICS OF POLE NETWORKS SUPPORT SHARED USE OF UTILITY POLES

Pole Networks Are a Natural Monopoly

4. Unlike incumbent telephone and electric utilities but similar to cable companies and competitive telecommunications carriers, wireless telecommunications carriers (including facilities-based providers who use a combination of wireline and wireless technologies such as outdoor DAS) face many regulatory and economic barriers to the construction of dedicated pole networks. Wireless carriers, who are increasingly seeking to compete in

the market for high-quality, ubiquitous telecommunications services, have little, if any, realistic choice but to rent space on existing utility poles.

5. Utility pole networks are a classic case of what economists refer to as “natural monopolies.” In any given area, typically, there is one dominant regulated utility provider of poles with surplus space. In other words, typically, there is no other regulated or unregulated pole owner that leases pole space in sufficient quantity and/or ubiquity so as to provide cable and telecommunications carriers with a viable alternative to pole space leased from the dominant utility. Moreover, local governmental authorities generally resist authorizing unnecessary duplication of outside plant and/or disruptive street cuts. Even if local permits were to be granted, the prohibitively expensive cost of constructing multiple stand-alone, duplicative pole networks throughout the entire service area and the social, aesthetic, and other costs of constructing duplicative outside plant, have long served to effectively require cable and telecommunications carriers to follow the existing paths of dominant utilities’ networks. The same holds true for wireless carriers seeking to effectively compete with these firms.

Capacity on Utility Poles Is Not a Scarce Resource – Only the Monopoly Power of the Utility Over Its Pole Network Enables the Utility to Limit Access

6. Both Dr. Yatchew and Mr. Starkey assert limited available capacity on utility poles as grounds for denying wireless carriers access to utility poles for wireless equipment attachments – the former focuses on the space requirements for wireless equipment attachments relative to “traditional” attachments,² and the latter directly asserts that pole space is a limited resource based on assumptions regarding multiple future uses.³ Neither argument is grounded in economic reality.

7. The economic reality is that poles, unlike other readily depletable resources, have a unique characteristic that makes them “for practical purposes, *nonrivalrous*.”⁴ Where a resource is “nonrivalrous,” one entity’s use of a resource does not diminish or preclude the use or benefits derived by another. Nonrivalrous use is the polar opposite of the

² See Starkey Affidavit at 12 -20.

³ See Yatchew Affidavit at 16-17.

⁴ See *Alabama Power v. FCC*, 311 F.3d 1357(11th Cir. 2002) (“*Alabama Power*” or “*APCo*”) at 1369-70.

economic concept of zero sum, a term that describes a situation where if one party gains, the other party to the transaction must necessarily lose by the amount of the former's gain.

8. It is inefficient to prevent nonrivalrous use since the marginal (or incremental) cost of such use is at (or near) zero. This nonrivalrous condition is a defining feature of a public good and a basis for governmental intervention to ensure a more efficient outcome *i.e.*, one that promotes more sharing of the resource than would be produced by private market forces.

9. A nonrivalrous condition generally exists on poles due to an intrinsic economic characteristic of poles, where under normal operating conditions of production, capacity is *not* fixed in the short-run. Rather the capacity of a given pole and, necessarily, of any group of poles, is dynamic in nature. Based on utility data with which I am familiar, in the overwhelming majority of cases, additional attachments can be (and are) accommodated on utility poles with otherwise vacant space. Moreover, even on poles that appear “crowded,” additional attachments can be (and are) accommodated in the normal course of utility operations, through pole modifications (*e.g.* reinforcement or change-outs) and rearrangements of existing attachments. Thus, in a true economic sense, pole capacity is neither static nor finite, such that the sharing of poles does not result in either physical or economic exhaustion of the shared resource.⁵

10. In other words, if adding another attachment does not preclude the pole owner's ability to accommodate another attachment or alternative use or require the utility to displace another user or use then, by economic definition, there is no lost opportunity to the utility. Under these conditions, a given pole or group of poles is not at full capacity – there is available or effective capacity, even if the poles appear “crowded.”

⁵ See *Florida Cable Telecommunications Association et al v. Gulf Power Company*, EB Docket No. 04-381, FCC 07D-01 (Rel. Jan. 31, 2007) (“*FCTA*”), at ¶ 25 (“When capacity is available through rearrangement or expansion of a pole's height, its capacity cannot be full since there is no exclusion of another and no missed, foreclosed, or lost opportunity.”)

11. Generally speaking, it is the fixed nature of most inputs that limit capacity or scale of operations. While all inputs are ultimately variable in the long run, what makes poles unique is their inherent ability to provide for greater effective capacity in the “shortest” of short-runs through the process of make-ready work (which is undertaken by the utility only at the full and sole expense of the incremental attacher, *i.e.*, as a fully reimbursable expense to the utility).⁶ The only situations where a state of full capacity can be demonstrated in a true economic sense are those very limited situations in which all poles are actually fully occupied after all practical modifications or rearrangements have been made and pole change-outs for higher capacity poles cannot practically occur due to terrain, obstructions, zoning, or other such externally-imposed restrictions.

12. The only structural economic condition that affects access to pole space is the condition of monopoly power. By virtue of its monopoly control over the pole network, the utility is in a position to restrict access to its existing network of poles. Such restriction is an artificial barrier to an available resource and does not reflect any structural economic condition of resource exhaustion or state of full capacity.

Concerns About Utility’s Ability to Accommodate Wireless Are Unfounded

13. With the introduction of facilities-based competition into telecommunications markets over twenty years ago, the U.S. 1996 Telecommunications Act mandated a right to access utility poles to include telecommunications carriers in addition to cable operators. Utilities in the U.S. expressed similar concerns to those being expressed by THESL about insufficient capacity on poles to accommodate new third-party attachers in connection with the Act’s expanded mandate. These concerns about a deluge of new third-party attachments have not been borne out. As a general proposition, over the past couple of decades, utilities have been able, through normal and customary make-ready practices, to accommodate all entities and all manner of attachments to their poles. Moreover, naturally occurring competitive market and technological forces that serve to

⁶ Productive capacity on the utility’s network of poles can be harnessed generally as fast as paperwork can be processed, and technicians called to rearrange attachments or install a taller pole from inventory. See FCC EB Docket 04-381, FCC 07D-01, at 1 (“make-ready is the means of providing space for attachments on poles already having the capacity to expand,...the case for practically all of Gulf Power’s poles.”)

limit the number of viable competitors in any given market and that promote more efficient means of production, and the normal rate of demand growth for the final product, tend to work in concert to place natural limits on both the number and space requirements of attaching entities.

IV. COMPETITIVE ANALYSES PRESENTED BY DR. YATCHEW AND MR. STARKEY ARE FLAWED

14. A competitive market analysis generally must begin with the proper definition of the relevant market. Conclusions reached as to the existence of market power (or lack thereof) are highly sensitive to the manner in which the relevant market is defined. From an economics perspective, the concept of substitutability lies at the heart of a competitive market analysis. Two products (or services) are considered to be in the same relevant market if they are close substitutes. On the demand side, this is measured by the extent to which buyers shift their consumption in response to a change in relative price, quality, or other competitive variable;⁷ similarly, on the supply side, this is measured by the extent to which suppliers shift their production in response to relative changes in price, quality, or other competitive variables.⁸ In the context of this widely-accepted analytical framework, Dr. Yatchew and Mr. Starkey incorrectly define the relevant market for both the underlying input and the downstream final product market for which the input is a key element of production and, thus, from which the demand for the input is derived. Their analyses do so by ignoring key structural conditions of supply and demand pertinent to the markets at issue in this proceeding and by failing to apply established economic principles and competition guidelines.

Input Market Definition Fails to Apply Established Competition Guidelines

15. Under well-established economic principles and competition guidelines such as those incorporated into U.S. and Canadian merger guidelines,⁹ it is not sufficient to point to the

⁷ See M. Scherer and David Ross, *Industrial Market Structure and Economic Performance*, Third Edition, Boston: Houghton Mifflin Company, 1990 (Scherer and Ross), at 75.

⁸ *Id.*

⁹ See U.S. Department of Justice and the Federal Trade Commission, Horizontal Merger Guidelines (Washington, April 2, 1992), http://www.usdoj.gov/atr/public/guidelines/horiz_book/hmg1.html; see also Canadian Competition Bureau Merger Enforcement Guidelines, <http://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/03384.html>. Pursuant to these guidelines, a

mere existence of or numerousness of alternative siting options as Dr. Yatchew and Mr. Starkey suggest. To be economically meaningful, it must be demonstrated that these siting options are close substitutes in a real economic sense, *i.e.*, sufficiently close to limit the exercise of market power by the owner of the input as measured by the ability of the monopolist to profitably sustain a price increase. Dr. Yatchew does not appear to have applied these well established guidelines in his determination of the relevant input market. For the reasons discussed below, the various wireless siting alternatives identified by Dr. Yatchew and Mr. Starkey as constituting the relevant input market (*e.g.*, rooftops, towers, building walls, street furniture, assorted decorative fixtures, billboards, signage, and the like)¹⁰ would not pass a valid price elevation test, *i.e.*, would not place any material constraint on the monopolist's (THESL's) ability to raise pole attachment prices for wireless *carriers* seeking to effectively compete in the provision of telecommunications services.

16. On the demand side, as discussed in the CANDAS Application and in the evidence of Johanne Lemay and of Tormod Larsen,¹¹ the alternative wireless siting options identified by Dr. Yatchew and Mr. Starkey, do not offer anywhere near comparable coverage, regularity, height requirements, predictability, connectivity, bandwidth capacity, signal strength, network reliability, efficiency, and quality of service, among others, that access to THESL's pole network provides.¹² It is well established that such unique physical and

properly framed analysis determines whether inclusion of potential substitutes would place any material constraint on the ability of a "hypothetical monopolist" to raise prices by a small but significant non-transitory amount and sustain profits. Only if the potential substitute would place such a constraint is the market definition properly expanded to include that alternative. Consideration is given to factors including the nature of the downstream competition faced by buyers in relevant output markets, and the timing and costs of switching to substitute inputs of production (*e.g.*, costs of delays, transaction costs, and inferior quality attributes).

¹⁰ See Starkey Affidavit at 23, Yatchew Affidavit at 12,16.

¹¹ See Reports of Johanne Lemay and Tormod Larsen submitted on behalf of CANDAS, July 26, 2011 and Reply Evidence of Johanne Lemay submitted October 11, 2011. See, *e.g.*, Lemay Reply Evidence at 15-16 ("Outdoor DAS nodes have limited power and reach, typically less than 600 metres thus cannot be installed at the top of large towers to provide coverage for kilometers as macro cell sites do." Thus, macro cell sites are not interchangeable with utility poles.... and an outdoor DAS network cannot be deployed on, for example only rooftops or towers.")

¹² In adopting new rules applicable to both wireless and wireline carriers, the FCC acknowledged the importance of characteristics including "regularity," predictability," and "efficiency of deployment" especially as it pertains to wireless pole attachments" See FCC 11-50 at ¶¶41-42, see also n. 120 citing CTIA ("wireless providers operate in a fast-moving, intensely competitive industry, so speedy access to poles is just as important to wireless attachers as it is to wireline if not more so").

technical attributes (“actual or perceived”) provide a valid basis upon which to “define distinct relevant markets.”¹³ Mr. Starkey and Dr. Yatchew place considerable emphasis on the existence of companies such as American Tower Corporation and Crown Castle International Corporation, “whose primary business is the siting of wireless and other communications facilities.”¹⁴ In addition to the fact that the cited companies do not appear to even have a presence in Canada, companies of this nature do not own networks that are comparable to the electricity utility pole network in any respect. Even in the jurisdictions in which these companies are operating, they are, for the most part, merely packaging together and reselling sites (largely owned by others) of the same types and having the same inferior qualities vis-à-vis utility poles, as the siting options individually identified by Mr. Starkey and Dr. Yatchew. Accordingly, they would fail a valid price elevation test.

17. Moreover, from a supply perspective, it is well established that utility pole networks are a natural monopoly. Accordingly, there are no practical and/or economically viable opportunities for other suppliers to enter the market and provide substitutes sufficiently close to utility poles so as to constrain a utility’s ability, as monopoly owner (in the absence of regulation), to significantly raise prices for access to its pole network.

18. By framing their analyses of the input market in terms of the “siting market for *wireless* attachments,” Mr. Starkey and Dr. Yatchew rely improperly on a definition based solely on the nature of a technology (*i.e.*, wireless¹⁵) used in the production of the output, without meaningful consideration of more relevant structural conditions affecting actual or perceived substitutability of demand or supply for the actual input in question, *i.e.*, pole attachments.¹⁶ The result is the wrongful inclusion, in the relevant input market

¹³ See Canadian Competition Bureau Merger Enforcement Guidelines at ¶4.14, <http://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/03384.html>

¹⁴ See THESL Notice of Motion at 10-13, Starkey Affidavit at 31-32, Yatchew Affidavit at 18-21.

¹⁵ DAS providers actually use a combination of wireless and wireline components that “are equally essential to the operation of the network.” See CANDAS Application at 12.

¹⁶ Ironically, this is precisely what Mr. Starkey describes at page 24 of his Affidavit as inappropriate, but in the context of his discussion of essential facilities (“the extent to which a facility is ‘essential’ should not be considered based upon the business plan and/or experience of a single market participant using a particular type of technology.”)

for pole attachments, of alternative siting options that may be used in the provision of an artificially limited subset of downstream *wireless* services, but that are decidedly inferior substitutes for access to the utility's existing pole network in the context of the relevant downstream market of convergent telecommunications services.

Final Product Market Definition Ignores Convergent Nature of Telecommunications

19. The relevant output or downstream final product market in which facilities-based service providers (including outdoor DAS to support the deployment of wireless services) are increasingly seeking to compete is not the amorphous *wireless* services market as Dr. Yatchew and Mr. Starkey suggest (which, according to Mr. Starkey, include such services as very short-range, fixed-location WiFi and limited user, private building femtocell applications¹⁷). Rather, it is the market for today's highly dynamic and convergent telecommunications services, including high quality, ubiquitous services, in which providers (including affiliates of pole-owning utilities) using wireline, wireless and hybrid technologies (such as outdoor DAS) increasingly compete in the provision of advanced broadband services. The convergent nature of the telecommunications market renders distinctions among and between industries and technological platforms, and in particular, distinctions between wireline and wireless technology, artificial and fleeting, and strongly supports adoption of policies of competitive and technological neutrality.¹⁸

20. These concepts were recognized by Dr. Yatchew in the report he submitted in the CCTA proceeding¹⁹ and by the OEB in its decision in that case.²⁰ Dr. Yatchew identifies convergence as a "key trend" in his Affidavit in this case as well,²¹ but then proceeds, largely, to ignore its logical consideration in the competitive market analysis he performs. Dr. Yatchew's CCTA report, as cited above, along with the OEB's recognition of industry convergence and the likely increasing number of attaching entities in the future,

¹⁷ See Starkey Affidavit at 33-40.

¹⁸ See FCC 11-50 at ¶42, n. 120 citing MetroPCS at 11 ("[applying the timeline to both wired and wireless attachments] is appropriate to ensure a level playing field between wired and wireless providers.")

¹⁹ See Bridger Mitchell and Adonis Yatchew, *Joint Use Agreements for Power Poles: An Efficient and Equitable Standard, Report Prepared for the Electricity Distributors Association and the Canadian Electricity Association* (August 13, 2004) at 3.

²⁰ See CCTA Order at 4, 7.

²¹ See Yatchew Affidavit at 8.

not only refute the market definitions relied on by Dr. Yatchew and Mr. Starkey in this case, they also refute the claim “that neither the Board, nor the intervenors, contemplated that the ‘attachments’ at issue would include the type of wireless attachments proposed by CANDAS.”²²

V. GRANTING ALL CARRIERS THE SAME NON-DISCRIMINATORY RIGHT TO ACCESS UTILITY POLES SERVES THE PUBLIC INTEREST

Shared Occupancy of Utility Poles Produces an Economic “Win-Win”

21. Policymakers in both Canada and the U.S. (in the earlier legislative history in connection with the 1978 Pole Attachments Act and reiterated in connection with the 1996 Telecommunications Act), have found sharing arrangements for pole users to be efficient, practical, and necessary for the public good.²³ Third-party attachments are occupying otherwise available but unused capacity on existing poles²⁴ and, as explained above, to the extent a utility pole becomes crowded, the capacity to accommodate an additional attachment can be readily accessed using normal, customary make-ready practices (at the third-party attacher’s expense). For use of this otherwise available space and load-bearing capacity on utility poles, third party attachers are paying well in excess of the incremental costs associated with their occupancy, including a fair return on the utility’s investment. Moreover, *in addition to* charging the regulated attachment rate, the utility is able to pass on, to attachers, make-ready charges that recover one-time incremental costs of accommodating pole attachments, including the full costs (as actually incurred and paid by the utility) associated with rearrangements and pole modifications or replacements. In addition to these charges, the utility may also charge an attacher other direct reimbursement fees, including fees for such administrative items as application processing, inspections and audits, unauthorized attachments, and additional trips to jobs. Finally, the utility may pass through the costs of removing attachments that are unauthorized or abandoned by the attachers and restoring the pole.

²² See Starkey at 20.

²³ See CCTA Order at 3; see also 47 U.S.C. § 224(f) (Supp. II 1996) and S. REP. NO. 95-580, at 16 (1977) (“Sharing arrangements minimize unnecessary and costly duplication of plant for all pole users, utilities as well as cable companies.”).

²⁴ “CATV offers an income-producing use of an otherwise unproductive and often surplus portion of plant.” Id. at 13.

22. Because of this additional compensation (which can be quite substantial) over and above the regulated rate and because pole upgrades that are paid for by the attacher through the make-ready process become the property of the utility, the pole owner (and its ratepayers) stand to be made *much better off* financially after the accommodation of an additional attachment. This can occur in any of the following ways:

- The utility receives revenue from the combination of make-ready and other direct fees plus the rental rate, which is in excess of the associated incremental costs it incurs, thus providing it (and ratepayers) with a contribution to the cost of providing core electric distribution service that it otherwise would not have, but for use of available pole capacity;
- When poles are modified or replaced (at the attaching entity's expense), the utility typically ends up with greater available pole capacity as compared with pre-attachment, because the modified or replacement poles are stronger or in better condition;
- The utility has the benefit of a stronger and often a newer pole for its own operations at the expense of the attacher and can realize savings (or deferred capital expenditures) to its own build-out program;
- With more potential space available on the pole to accommodate additional uses and/or users, the utility can realize additional sources of revenue; and
- Existing pole networks, including poles that may not ultimately be used for attachments, are subjected to additional inspections and engineering analyses at the expense of the attachers; this may serve to alert the pole-owner to safety or operational issues, including non-compliance with applicable standards.

23. Utility ratepayers also stand to benefit directly from the shared use of utility poles. The contribution received by the utility for use of otherwise available capacity, or to its

capital program through the process of make-ready at the attacher's expense, should translate into a reduced revenue requirement that has to be recovered through regulated rates. The sharing of the utility's pole network – an asset that has historically been paid for and maintained primarily using ratepayer dollars – allows for more effective utilization of the asset, and hence a means of effectively enhancing the return on ratepayer dollars.

24. Beyond the financial benefits to the parties directly involved with shared pole arrangement (*i.e.*, the private good aspect of the transaction), are the significant benefits that accrue to society at large. From a “social welfare” perspective, there is economic value to society associated with the efficient use of resources, *i.e.*, the use of resources resulting in the lowest overall cost to society and the best possible utilization of those resources vis-à-vis alternative uses. As mentioned earlier, utility distribution networks (including the pole component) are “natural monopolies,” meaning “economies of scale are so persistent that a single firm can serve the market at a lower unit cost than two or more firms.”²⁵ As a consequence, the shared use of a utility's existing distribution network results in a lower overall cost to the economy as a whole in terms of the consumption of societal resources. Resources that would otherwise be used (unnecessarily and more expensively) to duplicate existing pole networks are, instead, freed up and can be put to more productive uses – in particular, ones that can provide concrete benefits to consumers – *including the utility's own electric ratepayers* – such as the provision of new and improved services, at lower prices, to consumers in the downstream product markets in which access to utility poles are a key input of production. In the case of utility pole attachments, these benefits are particularly significant given the growing importance of the widespread availability of advanced broadband services (including mobile services) to the economic, health, education, safety and wellbeing of the public. Again, the public welfare includes the utility's own electricity ratepayers as well as the business, educational, medical, cultural, and governmental entities upon which they depend.

²⁵ F.M.Scherer, *Industrial Market Structure and Economic Performance*, Rand McNally, Chicago, 1980, at 482.

25. The more the monopoly owner of poles is allowed to exercise monopoly power over the pole network asset – either by outright denial of access to its network of poles or by charging a price for attachment that is too high, relative to economic costs – the greater the “deadweight” efficiency loss to society. The possibility of deadweight losses to consumers and society is all the more troubling given the relative ease with which cable and other third-party attachers have historically been accommodated through a utility’s normal and customary make-ready arrangements. The physical configuration of a typical shared utility pole is one in which power, incumbent telephone and cable companies, competitive telecommunications carriers, and governmental attachers have installed facilities of all manner of shape, size and weight. Attachments present on utility poles, in addition to power, telephone and cable wires, include the following: power supplies; signal amplifiers; equipment enclosures; streetlights; private floodlights; traffic signals; fire and police call boxes and alarm signal wires; municipal communications systems; and antennas.

Public Interest Standard Considers Both Public and Private Benefits of Right to Access

26. Where government regulation of industry occurs, as in the case of public utilities, the overarching decision-making criteria to be applied by the regulator is a public interest standard. Applied to the instant proceeding, the public interest standard dictates that the appropriate economic and public policy calculus consider the costs and benefits associated with granting the same right to access to utility poles for wireless attachments as is provided for cable and wireline attachments, not only in terms of the interests of the pole owning utility or the third-party seeking access, but also from the perspective of the greater public good, including the interests of the ratepayers. Economists refer to this in the context of maximizing social welfare, and such analysis would include, but not be limited to, consideration of the respective private benefits to the parties directly involved.

27. The benefits of granting the same right of access to utility poles for wireless attachments at regulated rates, terms and conditions as is enjoyed by competing cable and wireline telecommunications attachments (and similarly the competitive disadvantages of

a denial of such access) are clear. However, as described above, there are also significant benefits to the utility, its ratepayers and society overall of having third-party entities share space on utility poles. This economic reality strongly supports a regulatory policy that mandates the same, non-discriminatory right to access utility poles to telecommunications attachments and/or attachers, without regard to the technology or mix of technologies employed or any other particular aspect of the carrier's business model. Given the characteristics of poles, there are essentially no costs to society of such a policy and any costs incurred by the utility are more than fully recoverable from the third-party attacher.

Utility's Unfettered Discretion Opens Door for Monopoly Abuse and Anti-Competitive Behavior

28. The need for effective pole regulation arose in the first instance because pole-owning utilities – who by sole virtue of their historical incumbency, including historical preferential access to the public rights of ways in which the poles are installed, own and control the ubiquitous network of poles to which cable and telecommunications carriers have no practical alternative but to attach – have historically used their leverage over the existing pole network as the basis for monopoly abuse. In the new, highly dynamic and convergent telecommunications industry, traditional cable and incumbent telephone companies are vertically integrated providers of an expanding range of telecommunications services including voice telephony, broadband, Internet access and mobile wireless services. New entrant telecommunications carriers are directly competing against incumbent telephone companies and cable operators but, increasingly, also with electric distribution utilities, their affiliates and/or companies in which the utility has an interest, whether by ownership or through contractual arrangements.

29. As is the case with wireline attachments, the mere existence of alternatives to attaching to utility poles (*e.g.*, the possibility of going underground) does not alter the fundamental structural conditions of supply and demand. As discussed above, the various siting options for wireless cited by Mr. Starkey and Dr. Yatchew are inherently limited in terms of availability, coverage, connectivity, capacity, and/or other needed

functionality and, as such, are demonstratively inferior substitutes for access to the utility's existing ubiquitous network of poles. Moreover, to the extent it is even possible to use those identified options at a scale and scope remotely close to that afforded by access to the utility's pole network, it would likely be prohibitively expensive and impractical, creating a substantial barrier to entry for a firm.²⁶

30. In its historical context, and in light of the very significant benefits accruing to the public from third-party telecommunications attachment to utility poles, it does not serve the public interest to have THESL or any other electricity distributor, as monopoly owners of existing distribution pole networks, directly or indirectly impose restrictions, in their sole discretion, on the supply of telecommunications services that is available to the public. Nor does it serve the public interest to have utilities exert influence on the technology or mix of technologies and on the identities and business models of carriers seeking to enter and to compete effectively and sustainably in the telecommunications market. Yet, this will be precisely the outcome if electricity distributors are allowed to exercise unfettered discretion in deciding which telecommunications attachments or carriers get access to their poles and which do not.

31. Any decision by THESL or others to deny access to the wireless attachments of outdoor DAS providers would be particularly inefficient and arbitrary given the expressed acknowledgement, by THESL in this proceeding, that the CCTA Order mandates access for the attachment of the *wired* components of DAS. Given the

²⁶ Neither economic nor regulatory policy defines barriers to entry as an absolute condition, *i.e.*, one in which the constructed barrier prevents the firm (or firms) in question from providing any service in the given market. The economic literature defines barriers to entry in terms of the "condition of entry" or "state of potential competition" from possible new sellers, and as emanating from sources including absolute cost advantages, product differentiation advantages, and advantages of scale enjoyed by the established firm vis-à-vis the new seller. See Joe S. Bain, *Barriers to New Competition*, Cambridge, Ma.: Harvard University Press, 1965 (Bain), p.3. The regulatory literature, most recently in response to the 1996 U.S. Telecom Act's mandate for competitive (and technological) neutrality, defines an entry barrier as any regulation or policy that "materially inhibits or limits the ability of any competitor or potential competitor to compete in a fair and balanced legal and regulatory environment. See FCC First Report and Order, *In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket 96-98, FCC 96-325 ("FCC Local Competition Order,"), released August 8, 1996, at ¶¶308-310, also FCC Memorandum Opinion and Order, FCC 97-25, re: California Payphone Association Petition for Preemption of Ordinance No. 576 NS of the City of Huntington Park, California Pursuant to Section 253(d) of the Communications Act of 1934, CCB Pol 96-26, released July 17, 1997, at ¶¶31, 42.

underlying natural monopoly cost characteristics of utility poles, the ease with which space can be made available, and the public interest benefits (including to ratepayers) associated with shared access, giving carriers no alternative but to use markedly inferior and more costly alternatives to utility poles for wireless equipment attachments makes no sense from an economic or public policy perspective and serves only the very narrowly defined, anti-competitive, or pecuniary interest of THESL and the other distributors to the detriment of the greater public good.

Valid Safety or Operational Concerns Addressed in Existing Standards For Access

32. Ms. Byrne, in her evidence in this proceeding, cites alleged safety, operational and engineering concerns as grounds for THESL's denial of pole access for wireless attachments.²⁷ Such concerns are not unique to wireless equipment or to third party attachments generally. For example, data on alleged "safety violations" associated with pole attachments with which I am familiar, have shown violations associated with attachments of the utility's own distribution equipment at the same rate, if not higher, than those associated with third-party attachments. Unlike the utility, third party attachers typically face the threat of removal from utility poles if they do not correct an identified violation within the timeframe specified in the applicable terms and conditions of access. To the extent they exist, valid concerns related to safety, operational or engineering issues associated with wireless equipment are appropriately addressed in the same manner as they have been addressed in the case of wireline and other attachments, *i.e.*, through adherence to existing electrical safety codes and other objective standards of access established over the many years of experience with attachments to utility poles in general, and with shared occupancy, in particular. Indeed, such adherence is typically required under standard pole attachment terms and conditions. Accordingly, such concerns are not proper grounds for denying the same non-discriminatory right of access to utility poles for all telecommunications carriers, without regard to whether the attachments involve wireline or wireless facilities.

²⁷ See Byrne Affidavit at ¶¶40 – 46.

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Summary

Consulting economist with specialization in telecommunications, cable, and energy markets. Extensive knowledge of complex economic, policy and technical issues facing incumbents, new entrants, regulators, investors, and consumers in rapidly changing telecommunications, cable, and energy markets.

Experience

CONSULTING ECONOMIST

2000–Present Independent Consulting Swampscott, MA
Providing expert witness services and full range of economic, policy, and technical advisory services in the telecommunications, cable, and energy fields.

SENIOR VICE PRESIDENT/SENIOR ECONOMIST

1982–2000 Economics and Technology, Inc. Boston, MA
Active participant in regulatory proceedings in over thirty state jurisdictions, before the Federal Communications Commission, Federal Energy Regulatory Commission, and other international regulatory authorities on telecommunications, cable, and energy matters.

Provided expert witness and technical advisory services in connection with litigation and arbitration proceedings before state and federal regulatory agencies, and before U.S. district court, on behalf of diverse set of public and private sector clients (see Record of Prior Testimony).

Extensive cable television regulation expertise in connection with implementation of the Cable Act of 1992 and the Telecommunications Act of 1996 by the Federal Communications Commission and local franchising authorities.

Led analysis of wide range of issues related to: rates and rate policies; cost methodologies and allocations; productivity; cost benchmarking; business case studies for entry into cable, telephony, and broadband markets; development of competition; electric industry restructuring; incentive or performance based regulation; universal service; access charges; deployment of advanced services and broadband technologies; and access to pole attachments and other rights-of-way.

Served as advisor to state regulatory agencies, assisting in negotiations with utilities, non-partial review of record evidence, deliberations and drafting of final decisions.

Author of industry reports and papers on topics including market structure and competition, alternative forms of regulation, patterns of investment, telecommunications modernization, and broadband deployment.

Invited speaker before various national organizations, state legislative committees and participant in industry symposiums.

Grant Reviewer for Broadband Technology Opportunities Program (BTOP) administered by National Telecommunications and Information Administration (NTIA), Fall 2009.

RESEARCH/POLICY ANALYST

1978–1980 Various Federal Agencies Washington, DC
Prepared economic impact analyses related to allocation of frequency spectrum (Federal Communications Commission).

Performed financial and statistical analysis of the effect of securities regulations on the acquisition of high-technology firms (Securities and Exchange Commission).

Prepared analyses and recommendations on national economic policy issues including capital recovery. (U.S. Dept. of Commerce).

Education

1980–1982 Massachusetts Institute of Technology Boston, MA
Graduate Study in the Ph.D. program in Economics (Abd). General Examinations passed in fields of Government Regulation of Industry, Industrial Organization, and Urban and Regional Economics.

National Science Foundation Fellow.

1976–1980 George Washington University Washington, DC
B.A. with Distinction in Economics.

Phi Beta Kappa, Omicron Delta Epsilon in recognition of high scholastic achievement in field of Economics. Recipient of four-year honor scholarship.

Prof. Affiliation

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Reports and Studies (authored and co-authored)

Report on the Financial Viability of the Proposed Greenfield Overbuild in the City of Lincoln, California, prepared for Starstream Communications, August 12, 2003.

“Assessing SBC/Pacific’s Progress in Eliminating Barriers to Entry, The Local Market in California is Not Yet ‘Fully and Irreversibly Open,” prepared for the California Association of Competitive Telecommunications Companies (CALTEL), August 2000.

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“Telecommunications Modernization: Who Pays?,” prepared for the National Regulatory Research Institute, September 1988.

“Industry Structure and Competition in Telecommunications Markets: An Empirical Analysis,” presented at the Seventh International Conference of the International Telecommunications Society at MIT, July 1988.

“Market Structure and Competition in the Michigan Telecommunications Industry,” prepared for the Michigan Divestiture Research Fund Board, April 1988.

“Impact of Interstate Switched Access Charges on Information Service Providers - Analysis of Initial Comments,” submitted in FCC CC Docket No. 87-215, October 26, 1987.

“An Economic Analysis of the Impact of Interstate Switched Access Charge Treatment on Information Service Providers,” submitted in FCC CC Docket No. 87-215, September 24, 1987.

“Regulation and Technological Change: Assessment of the Nature and Extent of Competition from a Natural Industry Structure Perspective and Implications for Regulatory Policy Options,” prepared for the State of New York in collaboration with the City of New York, February 1987.

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Record of Prior Testimony

2011

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2010

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2009

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Before the **Public Utilities Commission of Ohio**, *In the Matter of the Application of Duke Energy Ohio, Inc., for an Increase in Electric Distribution Rates, Case No. 08-709-EL-AIR, In the Matter of the Application of Duke Energy Ohio, Inc., for a Tariff Approval, Case No. 08-710-EL-ATA, In the Matter of the Application of Duke Energy Ohio, Inc., for Approval to Change Accounting Methods, Case No. 08-11-EL-AAM, In the Matter of the Application of Cincinnati Gas & Electric Company for Approval of its Rider BDP, Backup Delivery Point, Case No. 06-718-EL-ATA*, filed February 26, 2009.

2008

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Before the **Federal Communications Commission**, *In the Matter of Implementation of Section 224 of the Act; Amendment of the Commission's Rules and Policies Governing Pole Attachments*, WC Docket No. 07-245, RM 11293, RM 11303, filed March 7, 2008, reply filed April 22, 2008.

2006

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2005

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2004

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2003

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2002

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2001

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2000

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1999

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1998

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1997

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1996

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1995

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1994

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Before the **Federal Communications Commission**, in *Re: Ameritech's Section 214 Application to provide Video Dialtone within areas in Illinois, Indiana, Michigan, Ohio, and Wisconsin*, W-P-C-6926-30, on behalf of Great Lakes Cable Coalition, filed March 10, 1994, reply April 4, 1994.

Before the **Federal Communications Commission**, in *Re: Pacific Bell's Section 214 Application to provide Video Dialtone in Los Angeles, Orange County, San Diego, and Southern San Francisco Bay areas*, W-P-C-6913-16, on behalf of Comcast/Cablevision Inc., filed Feb. 11, 1994, reply March 11, 1994.

Before the **Federal Communications Commission**, in *Re: SNET's Section 214 Application to provide Video Dialtone in Connecticut*, W-P-C 6858, on behalf of New England Cable TV Association, filed January 20, 1994, reply February 23, 1994.

1993

Before the **Arkansas Public Service Commission**, in *Re: Earnings Review of Southwestern Bell Telephone Company*, 92-260-U, on behalf of Arkansas Press Association, filed September 2, 1993.

Before the **United States District Court for the Eastern District of Tennessee at Greenville**, in *Re: Cleo Stinnett, et al. Vs. BellSouth Telecommunications, Inc. d/b/a/ South Central Bell Telephone Company*, Defendant, Civil Action No 2-92-207, Class Action, cross-examination May 10, 1993, and Feb. 10, 1994.

Before the **Federal Communications Commission**, in *Re: NJ Bell's Section 214 Application to provide Video Dialtone service within Dover Township, and Ocean County, New Jersey*, W-P-C-6840, on behalf of New Jersey Cable TV Association, filed January 21, 1993.

1992

Before the **New Jersey Board of Regulatory Commissioners**, in *Re: NJ Bell Alternative Regulation*, T092030358, on behalf of NJ Cable TV Association, filed September 21, 1992.

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1991

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1990

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Before the **New York Public Service Commission**, in *Re: NYT Rates, 90-C-0191, on behalf of User Parties NY Clearing House Association*, filed July 13, 1990, Surrebuttal July 30, 1990.

Before the **Louisiana Public Service Commission**, in *Re: South Central Bell Bidirectional Usage Rate Service*, U-18656, on behalf of Answerphone of New Orleans, Inc., Executive Services, Inc., King Telephone Answering Service, et al, filed January 11, 1990.

1989

Before the **Georgia Public Service Commission**, in *Re: Southern Bell Tariff Revision and Bidirectional Usage Rate Service*, 3896-U, on behalf of Atlanta Journal Const./Voice Information Services Company, Inc., GA Association of Telemessaging Services, Prodigy Services, Company, Telnet Communications, Corp., filed November 28, 1989.

Before the **New York State Public Service Commission**, in *Re: NYT Co. - Rate Moratorium Extension - Fifth Stage Filing*, 28961 Fifth Stage, on behalf of User Parties NY Clearing House Association Committee of Corporate Telecommunication Users, filed October 16, 1989.

Before the **Delaware Public Service Commission**, in *Re: Diamond State Telephone Co. Rate Case*, 86-20, on behalf of DE PSC, filed June 16, 1989.

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1988

Before **New York State Public Service Commission**, in *Re: NYT Rate Moratorium Extension*, 28961, on behalf of Capital Cities/ ABC, Inc., AMEX Co., CBS, Inc., NBC, Inc., filed December 23, 1988.

1989

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Before the **Minnesota Public Utilities Commission**, in *Re: Northwestern Bell*, P-421/ M-86-508, on behalf of MN Bus. Utilities Users Counsel, filed February 10, 1987, cross-examination March 5, 1987.

1986

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1985

Before the **Washington Utilities and Transportation Commission**, in *Re: Cost of Service Issues bearing on the Regulation of Telecommunications Company*, on behalf of US Department of Energy, filed November 18, 1985 (Reply Comments).

1984

Before the **Maine Public Utilities Commission**, in *Re: New England Telephone*, 83-213, on behalf of Staff, ME PUC, filed February 7, 1984, cross-examination March 16, 1984.

Before the **Kentucky Public Service Commission**, in *Re: South Central Bell*, U-4415, on behalf of MS PSC, filed January 24, 1984, cross-examination February 1984.

1983

Before the **Kentucky Public Service Commission**, in *Re: South Central Bell*, 8847, on behalf of KY PSC, filed November 28, 1983, cross-examination December 1983.

Before the **Florida Public Service Commission**, in *Re: Southern Bell Rate Case*, 820294-TP, on behalf of Florida Department of General Services, FL Ad Hoc Telecommunications Users, filed March 21, 1983, cross-examination May 5, 1983.

1982

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Before the **Kentucky Public Service Commission**, in *Re: South Central Bell*, 8467, on behalf of the Commonwealth of Kentucky, cross-examination August 26, 1982.

COMMONWEALTH OF VIRGINIA

BEFORE THE

STATE CORPORATION COMMISSION

COMMONWEALTH OF VIRGINIA,

At the relation of the

STATE CORPORATION COMMISSION

Ex Parte: In the matter of determining
appropriate regulation of pole attachments and
cost sharing in Virginia.

Case No. PUE-2011-00033

AFFIDAVIT OF

PATRICIA D. KRAVTIN

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PATRICIA D. KRAVTIN

Introduction and Qualifications 3

Assignment and Summary of Affidavit 5

The economic and public policy rationale for effective pole rate regulation, and that gave rise to the FCC Cable Rate Formula, applies as forcefully to electric cooperatives as to their investor-owned counterparts..... 6

The Cable Rate Formula methodology is the most economically appropriate methodology for determining just and reasonable utility pole attachment rates for cable and other broadband providers. 11

Because the Cable Rate Formula provides the utility recovery of much more than marginal costs - especially taking into account make-ready and other direct reimbursement charges imposed by utilities, pole rates set using that methodology are fully compensatory to the utility and are not subsidized. 21

Claims that cable attachers are not paying a “fair” share of utility pole costs are based on the flawed arguments that such attachers should be paying an equal (or near equal) share of the common costs of the utility pole network and/or that there are “hidden” costs not being recovered by the utility. 24

An analysis distributed by NOVEC to the General Assembly alleging fees from telecom and cable attachers pay only a very small portion of the costs of its pole network is based on a number of incorrect assumptions and comparisons, and ignores important sources of cost recovery under the FCC methodology..... 29

The Cable Rate Formula is readily applied to electric cooperatives, using data publically available in the RUS and Annual Tax Reports filed with the SCC. 32

Application of the Cable Rate Formula to a representative electric cooperative indicates rate levels, as would generally be expected, in the vicinity of those derived for their investor-owned counterparts..... 36

Tables and Figures:

Figure 1:Allocation of the Full Costs of the Entire Pole Under Cable Rate Formula..14

Table 1: Maximum Just and Reasonable Rates Under Cable Rate Formula for Representative Electric Cooperative.....36

Attachments:

- 1: Detailed Resume
- 2: Description of the Three Major Components of the FCC Pole Rate Formula Methodology
- 3: Calculation of Maximum Pole Attachment Rates Under FCC Formula for Representative Electric Cooperative
- 4: Appendix I of Agreement between Prince Georges Electric Cooperative and Tele-Media Company, dated January 1, 2004.

AFFIDAVIT OF PATRICIA D. KRAVTIN

COMMONWEALTH OF MASSACHUSETTS)
)
COUNTY OF ESSEX)

I, **PATRICIA D. KRAVTIN**, being first duly sworn, under penalty of perjury, to hereby declare the following:

Introduction and Qualifications

1. My name is Patricia D. Kravtin. My business address is 57 Phillips Avenue, Swampscott, Massachusetts. I am an economist in private practice specializing in the analysis of telecommunications regulation and markets.
2. I have testified or served as an expert in proceedings before over thirty state regulatory commissions. I have also provided expert testimony and reports in proceedings before the Federal Communications Commission (“FCC”), the Federal Energy Regulatory Commission (“FERC”), and before international agencies including the Canadian Radio-television and Telecommunications Commission, the Ontario Energy Board, and the Guam Public Utilities Commission. In addition, I have testified as an expert witness in antitrust litigation in federal district courts, and also before a number of state legislative committees. A detailed resume summarizing my educational background and previous experience, including a listing of the proceedings I have testified in and the reports I have authored, is provided in Attachment 1 to this Affidavit.
3. Over the course of my career, I have been actively involved in a number of state and federal regulatory commission proceedings involving cost methodologies and the allocation of costs of incumbent local exchange carriers (“ILECs”) and electric utilities.

One local network component, essential for the provision of competitive communications services, with which I am also very familiar, is access to poles, ducts, conduits, and rights-of-way. I have testified extensively on matters pertaining to these essential facilities before state and federal regulatory agencies and district courts, including those in Florida, New York, California, Washington, and North Carolina. I have submitted reports in pole proceedings before the FCC, including both rounds of its most recent pole rulemaking proceeding, *In the Matter of Implementation of Section 224 of the Act; A National Broadband Plan for our Future, Opinion and Further Notice of Proposed Rulemaking*, WC Docket No. 07-245, GN Docket No. 09-51, rel. May 20, 2010 (FCC 2010 FNRPM) and *In the Matter of Implementation of Section 224 of the Act; Amendment of the Commission's Rules and Policies Governing Pole Attachments*, WC Docket No. 07-245, RM 11293, RM 11303, re. Nov. 20, 2007 (FCC 2007 NPRM Proceeding). In 2006, I submitted testimony and was subject to live cross-examination before the FCC's Chief Administrative Law Judge, on issues pertaining to utility compensation for pole attachments in *In the Matter of Florida Cable Telecommunications Association, Inc., et. al. v. Gulf Power Company*, Initial Decision, FCC 07D-01, 22 FCC Rcd 1997 (2007) *aff'd*, *FTCA v. Gulf Power*, FCC 07D-01, 2011 FCC LEXIS 1384 (Apr. 12, 2011) ("*FCTA*").

4. I have served as an expert or advisor on pole attachment matters in proceedings involving investor-owned utilities, non-profit consumer-owned utilities, and municipally-owned utilities, and before the following state regulatory commissions: the Kentucky Public Service Commission, the Arkansas Public Service Commission, the Public Utilities Commission of Ohio, the Public Utilities Commission of Texas, the Georgia Public Service Commission, the South Carolina Public Service Commission, the Public Service Commission of the District of Columbia, the New Jersey Board of Public Utilities, and the New York Public Service Commission. I have also been actively involved in related issues pertaining to broadband deployment. I have authored a number of reports dealing with this subject and participated as a grant reviewer for the Broadband Technology Opportunities Program ("*BTOP*") administered by National Telecommunications and Information Administration ("*NTIA*").

Assignment and Summary of Affidavit

5. I was asked by the Virginia Cable Telecommunications Association (“VCTA”) to address matters raised in this proceeding relating to the most appropriate pole attachment rental rates that electric cooperatives should be able to charge cable companies and other broadband service providers from an economic and public policy perspective. The matters addressed in my affidavit respond, in particular, to questions one, two, eight, and nine in the State Corporation Commission’s (“SCC”) April 15, 2011 *Order Establishing Proceeding and Scheduling Hearing*. These questions seek comments concerning the most appropriate methodology and formula for determining appropriate pole rental charges for electric cooperatives, including the FCC methodology; what constitutes just and reasonable compensation for pole attachments; and the appropriateness of proportionate sharing of the full costs associated with utility poles.

6. As an economist with experience in determining just and reasonable rates for pole attachment rentals, it is my opinion that the most appropriate methodology for determining the economically appropriate just and reasonable rental rate that an electric cooperative (or an investor-owned or municipally-owned utility for that matter) may charge cable operators and other broadband providers to attach to its poles is the FCC Cable Rate Formula. Accordingly, my affidavit includes a discussion of the economic and public policy justification for the FCC methodology, a description of the basic components of that formula, and the proper application of that formula to electric cooperatives. As part of my affidavit, I will provide a representative calculation of a just and reasonable pole attachment rate applicable to electric cooperatives using the FCC methodology and publically available data from the Rural Utilities Service (“RUS”) Financial and Operating Report and the SCC Annual Tax Report of Electric Companies.

7. As described in this affidavit, my calculations indicate just and reasonable pole rental rates applicable to electric cooperatives in the range of \$5 -\$7. These rates are in the vicinity of rates charged by investor owned utilities (“IOUs”) in the state of Virginia that are subject to federal Section 224 pole regulation. This is not a surprising result,

given the homogeneity of pole plant, i.e., generally speaking, “a pole is a pole.” In my opinion, rates set any higher than those calculated under a proper application of the Cable Rate Formula, such as presented in my affidavit, would be economically inefficient and thwart competition, hinder broadband deployment and service innovation, and serve to deprive citizens of the Commonwealth of Virginia of the important economic development benefits that broadband is now commonly acknowledged to provide.

8. That the just and reasonable rates produced by an economically appropriate application of the Cable Rate Formula may be lower than rate levels previously “negotiated” between electric cooperatives and cable companies, and/or “market benchmark” rates set by other monopoly pole owners, is not a valid economic or public policy concern. Consistent with economic cost causation principles (i.e., entity causally responsible for the incurrence of the cost pays a rate that recovers the cost), and as found by the FCC and the courts on various occasions, rates calculated using the Cable Rate Formula are much more than fully compensatory to the pole owner and do not subsidize the services provided by attaching entities. To allow an electric cooperative to charge an even higher rate, at best, serves only the very limited private financial interest of the cooperative, but not the greater public good. The latter is best served by adoption of the Cable Rate Formula. For the reasons set forth in this affidavit, the Cable Rate Formula - as opposed to the pre-April 7, 2011 Telecom Rate Formula or any of the other alternative methodologies frequently advanced by electric utilities in support of a higher pole rate - provides the most economically efficient and effective methodology for achieving the important public policy goals of broadband deployment and competition.

The economic and public policy rationale for effective pole rate regulation, and that gave rise to the FCC Cable Rate Formula, applies as forcefully to electric cooperatives as to their investor-owned counterparts.

9. The need for effective pole regulation has arisen because pole-owning utilities - electric cooperatives, investor-owned utilities (“IOUs”), and municipally-owned (“MOUs”) alike - by virtue of their historical incumbency, own and control existing pole plant to which cable operators and other third-parties have no practical alternative but to attach. Poles and conduits are recognized in the economic and regulatory literature, as

well as by the courts, as “essential facilities” that serve as bottlenecks to facilities-based competition in telecommunications and cable television markets.¹ Where a utility has absolute control over essential bottleneck facilities, as in the absence of effective pole regulation, pole-owning utilities are in a position to limit access to these essential bottleneck facilities and/or to extract excessive monopoly rents.² In addition, this control of the essential bottleneck pole facility effectively affords the utility a key gatekeeper role with respect to the roll-out and availability of new or advanced internet and broadband services in its service area.

10. Where competitive market conditions do not exist (as is the case with pole attachments and in the absence of effective regulatory involvement), there are no external pressures or self-imposed discipline on the utility to constrain the prices it charges for these bottleneck facilities to levels remotely approximating marginal costs - the true economic costs to the utility of third party attachment on otherwise vacant space on its poles. Under these conditions, it makes no sense to talk in terms of a “free market” rate. Instead, rates are being set in a grossly unbalanced negotiating environment where the pole owner, regardless of its size, has an inordinate amount of leverage over third-party attachers and can impose excessive monopoly level rates. The utility always has the upper hand by its ability to threaten, and in the absence of effective regulation, to carry out on its threat, to effectively limit access to its poles or to ultimately remove the third-party attachments from its poles.

11. The incentive and opportunity for electric cooperatives to leverage their monopoly ownership of poles and to extract excessive monopoly level rents from third-party attachers is inherently the same as that for IOUs subject to federal pole rate regulation.

¹ See *Common Carrier Bureau Cautions Owners of Utility Poles*, 1995 FCC LEXIS 193, *1 (Jan. 11, 1995) (“Utility poles, ducts, and conduits are regarded as essential facilities, access to which is vital for promoting the deployment of cable television systems.”). See also *National Cable & Telecomm. Ass’n v. Gulf Power Co.*, 122 S. Ct. 782, 784 (2002) (opining that cable companies have “found it convenient, and often essential, to lease space for their cables on telephone and electric utility poles. . . . Utilities, in turn, have found it convenient to charge monopoly rents.”) (hereinafter “*Gulf Power*”).

² See *NCTA v. Gulf Power*, 534 U.S. 327, 330 (2002) (“Since the inception of cable television, cable companies have sought the means to run a wire into the home of each subscriber. They have found it convenient, and often essential, to lease space for their cables on telephone and electric utility poles. Utilities, in turn, have found it convenient to charge monopoly rents.”).

Any notion that the market dynamics would be different in the case of an electric cooperative is belied by the monopoly level rates being charged and/or proposed to be charged by electric cooperatives in Virginia³ that have given rise to this initiative to address the pole rental rates of electric cooperatives. That electric cooperatives have historically been excluded from the definition of utility in the Federal Pole Attachment Act and subject to FCC pole regulation, is an issue of jurisdiction and does not in any meaningful way refute the applicability of the fundamental economic conditions of demand and supply facing cable and other third-party attachers needing access to poles owned by electric cooperatives. The structural economic conditions (i.e., utility control of essential facilities needed by cable and telecommunications companies to provide service and compete) that gave rise to the need for effective regulation of pole attachments - and that underlie the FCC methodology - are not dependent on the organizational charter of the pole-owning utility. They apply equally to electric cooperatives as they do to IOUs that have been subject to the FCC's pole attachment rules for the past several decades.⁴

12. Preventing a pole-owning utility from charging excessive rates to the detriment of competition and the consuming public, is precisely what pole rate regulation nationally pursuant to Section 224 was designed to address. In this context, the FCC formula methodology (and any other effective system of pole rate regulation at the state or local level) is designed to limit the rents that utilities are permitted to charge third-party

³ As reported in the Affidavit of Ray LaMura (see Attachment 1), electric cooperatives in Virginia charge rates of up to \$54.19, approximately 8.5 times the most commonly charged cable pole rate by Virginia's electric investor-owned utilities of \$6.39, who unlike electric cooperatives, are subject to federal pole rate regulation. The average electric cooperative pole rate in Virginia is \$29.79, some 320% higher than the average IOU rate in Virginia of \$7.08. Only one electric cooperative (representing only 3% of electric cooperative poles to which cable is attached), charges a rate (\$9) remotely close to the average IOU rate, and even that outlier rate is almost 30% higher than the average IOU rate. The next lowest pole rate charged by an electric cooperative in Virginia is \$14.52, over 100% higher than the average IOU rate.

⁴ The applicability of the FCC pole rate methodology to electric cooperatives in Virginia was recognized by the SCC Staff in its testimony in NTELOS Telephone Company, Inc. et al V. BARC Electric Cooperative, et al, Case No. PUC 2003-0087. See Pre-filed Testimony of Rosemary M. Henderson, dated Nov. 7, 2003. Although Staff's application of the FCC methodology in that case was in the specific context of a joint-use pole agreement between an electric cooperative and a telephone utility (as opposed to attachments by third-party licensees who do not enjoy similar rights and privileges of ownership and are subject to substantial make-ready and direct reimbursement charges and other more restrictive terms and condition of access) and was based on the original telecom formula (which, as explained below, has been recently revised by the FCC to align closely with Cable Rate), Staff's testimony nonetheless demonstrated the straightforward adaptability and availability of data needed to apply the FCC methodology to electric cooperatives.

attachers to levels more in line with the incremental or marginal costs that a competitive market (if one existed, which it does not) would produce, while at the same time ensuring the rates utilities are permitted to charge attachers are fully compensatory and subsidy-free. In fact, as described further below, because the FCC formula methodology is a fully allocated cost methodology (and *not* an incremental cost methodology),⁵ the Cable Formula Rate - particularly taking into account make-ready charges and other direct reimbursement fees charged by the utility - is *much more* than fully compensatory to the utility.

13. Pole attachments are a vital input needed for the delivery of new, advanced broadband services and applications. Accordingly, charging a more economically efficient rate (such as the Cable Formula Rate) that more closely tracks (but as discussed below, is still well in excess of) a competitive rate level can provide important benefits to consumers -- including utility and cable subscribers alike. Setting rates for pole attachments at more economically efficient levels creates a market environment that is most conducive to the provision of a greater array of innovative and advanced broadband services and at lower rates than would occur if rate were set at higher monopoly rate levels. This is particularly the case in rural areas served by many electric cooperatives, where there are even less favorable underlying economic conditions for broadband deployment (e.g., lower population densities resulting in higher construction costs per capita) – and even more to gain from the economic and social benefits of affordable access to broadband services in today’s information age economy.⁶

⁵ There is often confusion as to this distinction. For example, the wording of Issue No. 2 in the January 31, 2011 Letter from Delegate Terry G. Kilgore and Senator Richard L. Saslaw to the SCC could be read as citing 47 USC §224 as an example of an “incremental cost methodology.” While, as explained in the next section of this Affidavit, while §224(d) defines a just and reasonable rate for pole attachments as falling within the range of incremental costs (at the low end) and fully allocated costs (at the high end), in developing the Cable Rate Formula, the FCC expressly chose a fully allocated methodology that produced a rate falling at the higher end of the permissible range.

⁶ These are all points emphasized in the FCC’s National Broadband Report, which recommends rates for pole attachments be set as low and as close to uniform (in the vicinity of the current cable rate) as possible to support the goal of broadband deployment, particularly in rural areas where the “impact of these rates can be particularly acute.” See FCC National Broadband Report, at 110. (Pursuant to the American Recovery and Reinvestment Act of 2009, the FCC was directed to submit a National Broadband Plan to Congress that addressed “broadband deployment, adoption, affordability, and the use of broadband to advance solutions to national priorities, including health care, education, energy, public safety, job creation, investment, and others.” See Press Release, Federal Communications Commission, *FCC Sends National*

14. Having to absorb higher pole rents will reduce the cable industry's ability to meet financial and investment obligations including those related to the build out of infrastructure needed to support the widespread deployment of advanced broadband services and technologies, including VoIP services. To the extent cable companies are able to raise rates to recover higher utility pole rental costs in selected markets, it will raise the cost of broadband and VoIP services in those markets, thereby reducing the ability of consumers (who include electric utility customers) to afford and enjoy the widely –acknowledged economic and social benefits of affordable access to broadband services in today's information age economy.

15. Given the increased opportunities for utilities to compete with third-party attachers and the increased economic and social benefits of accelerated and enhanced broadband deployment, the need for effective pole regulation today is more important than ever. So too are the benefits of the adoption of a uniform, administratively simple, predictable, and economically efficient cost-based formula methodology for setting pole attachment rates – such as the Cable Rate Formula. Allowing electric cooperatives to charge pole rates in excess of the FCC's economically efficient, cost-based and fully compensatory Cable Rate would, at best, serve only the very limited financial interest of the cooperative, at the expense of broadband deployment⁷ and the greater public good. The latter is best served by adoption of a rate methodology, namely the Cable Rate Formula, that has a proven track record (at the national level and across the overwhelming majority of states that have certified to regulate pole attachments) and that can most effectively achieve the important public policy goals expressed by policymakers in Virginia and nationwide, namely to promote widespread broadband deployment and competition.

16. As described in more detail in the section below, the Cable Rate Formula, which relies on the relative occupancy of a pole attachment to allocate the cost of the entire pole

Broadband Plan to Congress: Plan Details Actions for Connecting Consumers, Economy with 21st Century Networks (March 16, 2010), <http://www.fcc.gov>.)

⁷ According to the FCC's National Broadband Report, expenses associated with pole attachments can represent up to 20% of the cost of fiber optic deployment and rights-of-way; and lowering the rate charged could significantly reduce the typical monthly price of broadband particularly in rural areas where there are often more poles per mile than households, which could have a potentially significant positive impact on broadband deployment and service adoption. See FCC National Broadband Report at 109-111.

to an attacher and that uses publicly verifiable information, is a very straightforward formula to implement. The Cable Rate Formula provides for a consistent, predictable, and just and reasonable rate for third party attachments. Such features are very important to firms in making business case decisions as to which areas to invest in new infrastructure and to roll-out new services. In my opinion, this is one of the key reasons behind the widespread adoption of the Cable Rate Formula (or close variations of that formula) among states that have certified to regulate pole attachments.

The Cable Rate Formula methodology is the most economically appropriate methodology for determining just and reasonable utility pole attachment rates for cable and other broadband providers.

17. In the 1978 Pole Attachment Act, Congress directed the FCC to implement a cost-based methodology for determining a just and reasonable pole attachment rate that “assures a utility the recovery of *not less than* the additional costs of providing pole attachments, *nor more than* an amount determined by multiplying the percentage of the total usable space...occupied by the pole attachment by the sum of the operating expenses and actual capital costs of the utility attributable to the entire pole.”⁸ Pursuant to this directive, the FCC developed a methodology, that has come to be known as the Cable Rate Formula and that has been widely adopted in this country for setting rates for third-party pole attachments, including in those states that have elected to regulate pole rates. As described in more detail below, the Cable Rate Formula is a straightforward cost-based approach designed to allow recovery of a portion of the utilities’ operating expenses and actual capital costs (including overall return to capital) attributable to the *entire* pole, based on the attacher’s relative use of the pole.

18. By design, and as is widely recognized, the Cable Rate Formula adheres to the *greater* fully allocated cost standard set forth in Section 224(d)(1) as cited above.⁹ The fully allocated cost standard, in theory and in practice by the FCC, allows for recovery of

⁸47 U.S.C. §224 (d)(1) (emphasis added).

⁹ See, e.g., APCo at 1363 (“Based on these guidelines [47 U.S.C. 224(d)(1)], the FCC promulgated regulations that focused on the upper end of this range”), and at 1369 ([T]he fact [is] that much more than marginal cost is paid under the Cable Rate.”)

the *full* costs (i.e., the sum of all the operating expenses and capital costs of the utility attributable to the *entire* pole) from the attacher, including many costs that would exist independent of the existence of the third-party attachment. By definition, adherence to a fully allocated cost standard allows the utility to recover through the rental rate ongoing costs *much more* than the additional or marginal cost of attachment and results in a pole attachment rate that lies at the high end of the permissible range of just and reasonable rates established in Section 224.

19. Moreover, *in addition to* the fully allocated cost-based formula rate, the FCC approach also permits utilities to recover any incremental or up front expenses incurred in connection with hosting a third-party attachment through the imposition of make ready expenses. Make-ready payments are designed to recover all out-of-pocket costs incurred by the utility in connection with the required accommodation of a third-party attachment through rearrangement of existing attachments on the pole or pole replacement, and including such items as pre-construction surveys of poles, engineering work, and any other work deemed needed by the pole owner. Through the imposition of make-ready charges, utilities are effectively permitted to receive the minimum directed by Section 224 (i.e., “the additional costs of providing pole attachments” or the low end of the permissible range) *even before the rental rate formula* is applied.

20. As discussed further below, pursuant to economic principles of cost-causation, all that is required in order to avoid any cross-subsidy between the pole owner and the third-party attacher (the same holds true under the legal standard for just compensation), is that attachers be held responsible for the additional (or incremental) costs they cause the pole-owning utility to incur, such that the utility is, at a minimum, no worse off for having hosted the third-party attachment. Through the combination of the rental rate and make ready charges -- the former adhering to a fully allocated cost standard, and the latter designed to recover the incremental costs of attachment -- utilities in fact stand to be made much better off under the Cable Rate Formula after a third-party attachment takes place.

21. The Cable Rate Formula has withstood the test of time as a straightforward and economically appropriate approach for determining just and reasonable pole attachment rates. FCC Cable Rate Formula is an economically appropriate approach in that it assigns the costs of the *entire* pole - including both direct (usable) and common (unusable) space alike - to an attachor based on an attachor's relative occupancy of usable space on the pole. This concept is illustrated graphically in Figure 1 below, as applied to a 37.5' joint-use utility pole, which is the standard pole height presumption under the FCC methodology.¹⁰

22. As shown in Figure 1 on the following page, under the FCC methodology, the "usable" space on a 37.5 foot joint use pole is defined as the 13.5 feet of pole space above the necessary ground clearance and ground support "which can be used for the attachment of wires, cables, and associated equipment."¹¹ "Unusable" space is defined by the FCC as the 24 feet of space on the pole other than the usable space, consisting of the 6 feet of the pole that is below ground and the 18 feet of the pole above grade required to clear possible interference and obstacles and on which strand attachments cannot be made.

23. As also shown in Figure 1, under the FCC methodology, the 13.5 feet of usable space includes the so-called "safety space," as is economically appropriate, since attachments including all manner of other devices present on the pole (including streetlights, private floodlights, traffic signals, fire and police call boxes and alarm signal wires, and municipal communications systems) can and are in fact routinely made in this space by the utility.

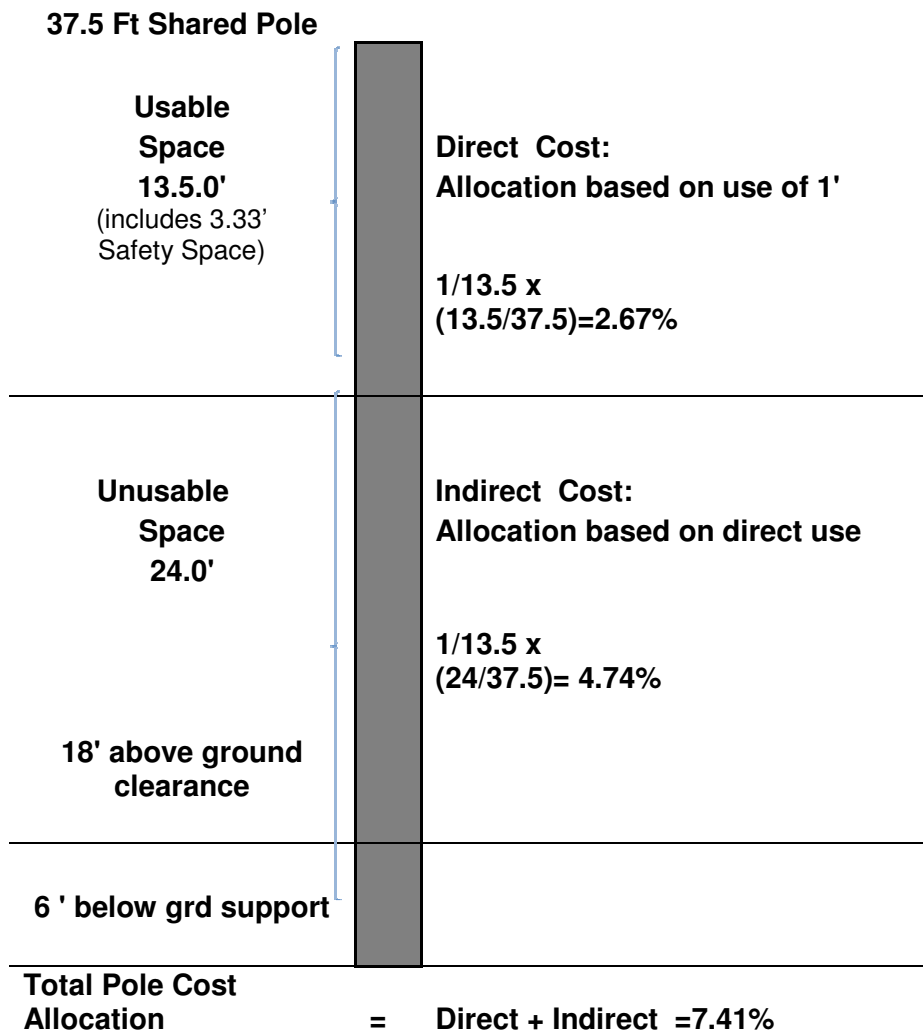
24. Defining the safety space as usable space is fully consistent with the fundamental economic principle of cost causation, under which the entity causally responsible (i.e., the entity but for whose existence or action the cost would not have existed.) pays. First, "but for" the danger of high voltage electric lines, there would be no need for the safety space. Second, pole utilities are able to realize additional revenues from the rental of that

¹⁰ Under the FCC methodology, there are a number of standard presumptions that are rebuttable with verifiable utility-specific data – either actual data or data obtained from a statistically valid survey.

¹¹ 47 U.S.C. 224(d)(2).

space (e.g., from the placement street lights) or to use the space for other purposes including placement of their own fiber optic cables. Third, third-party attachers routinely pay their full economic (direct) share of costs associated with this safety space through make-ready charges they pay to the utility for the replacement of poles and/or the rearrangement of space on the pole to ensure compliance with National Electric Safety Code (“NESC”) rules governing the safety space following an attachment.

**Figure 1:
Allocation of the Full Costs of the Entire Pole under Cable Rate Formula**



25. To shift an even higher percentage of cost recovery for the safety space onto attachers only compounds the likelihood of double recovery associated with their payment of make-ready charges. Cable and other third-party attachers are already effectively paying for required separation space for their wires in their annual rental rates given those rates are based on occupancy of a full foot of space,¹² even though their attached wires occupy a much smaller amount of space.¹³

26. Accordingly, the proportion of costs assigned to the attacher using the FCC's relative use allocation methodology is 1 foot of occupied space to 13.5 feet of total usable space or 7.41%. One must be careful however not to confuse the particular *choice of allocator* (i.e. proportion of usable space occupied by the attacher) used in the FCC cable formula to attribute space on the pole with the *actual costs that are being attributed* (i.e., *total space* on the pole including both usable and unusable space). This is a common misconception advanced by advocates for the electric utilities. As illustrated in Figure 1, the Cable Rate Formula allocates this same proportionate share (1/13.5 or 7.41%) of the costs associated with the *entire* pole including *both* usable and unusable space.

27. By assigning pole costs to attachers in accordance with their proportionate use or direct occupancy of the pole, the Cable Rate Formula follows cost allocation principles well established in the economics and regulatory literature,¹⁴ and in a manner directly

¹²See *Report and Order, In the Matter of Implementation of Section 703(e) of the Telecommunications Act of 1996, Amendment of the Commission's Rules and Policies Governing Pole Attachments*, CS Docket No. 97-151 (rel. February 6, 1998) FCC 98-20, ¶81. ("The 1977 Senate Report evidenced Congress' intent that cable television providers be responsible for 12 inches of usable space on a pole, including actual space on a pole plus clearance space. In 1979, the Commission established the rebuttable presumption that a cable television attachment occupies one foot. The Commission subsequently refined its methodology for determining the amount of usable space and made the one foot presumption permanent.")

¹³ "We understand CATV cables are uniformly assigned an effective occupancy space of 1 foot, without regard to their actual ¾ or ½ inch diameter." 72 F.C.C. 2d 59, n. 26.

¹⁴ See *In the Matter of Implementation of Section 224 of the Act; A National Broadband Plan for our Future Report and Order and Order on Reconsideration (FCC R&O & Order on Recon)*, WC Docket No. 07-245, GN Docket No. 09-51, FCC 11-50, rel. April 7, 2011 at ¶143, n. 425 ("prices based on cost-causation principles enable an allocation or a mix of goods to be produced that buyers desire and are willing to pay for and so are socially efficient, and enable an efficient firm to recover its costs. See, e.g., Greg Houston and Hayden Green, NERA Economic Consulting, Treatment of Operating Costs: A Report for Meridian 65-75 (Aug. 6, 2010). The allocation of goods is optimal in a perfectly competitive market. That is, no buyer can be made better off by reallocating resources to produce a different mix of goods

analogous to other well-accepted, familiar facility rental contexts, such as an apartment building. With the apartment building analogy serving as a model, Congress specifically designed the cable formula to allocate an appropriate proportionate share of the cost of the entire pole to cable attachers:

Cable would pay its share of not just the costs of...usable space but of the total costs of the entire pole, including the unusable portion (below grade and between minimum clearance levels.) This allocation formula reflects the concept of relative use of the entire facility. To the extent that a pole is used for a particular service in greater proportion than it is used for another service, the relative costs of that pole are reflected proportionately in the costs of furnishing the service which has the greater amount of use.¹⁵

28. As cited in the legislative history of the 1978 Pole Attachment Act, a proportionate-use allocation methodology makes sense in the assignment of both the direct and common costs of a facility (i.e., usable and unusable space in the context of a pole):

The renter of one of the ten units pays the cost of that unit plus one-tenth of the cost of all common areas. He does not pay one-half the cost of the common areas just because only one other person occupies the other nine units, but rather he pays his one-tenth share of all the costs attributable to the building.¹⁶

29. This concept of a cost-causative linkage between the costs of occupancy of common spaces in a facility on the basis of relative use or the direct occupancy of space is a common and widely-accepted practice in the leasing of property and other facilities throughout the private and public sectors of the economy. The same concept that applies to tenants leasing residential apartments as described above also applies, for example, to condominiums (where residents who occupy a 2000 square foot unit are typically assessed a proportionately higher monthly fee to cover costs of common space and expenses than those occupying a 500 square foot unit), malls (where anchor department stores pay proportionately more toward common costs of the mall than a tenant of a small

without making other buyers worse-off. *See, e.g.*, WALTER NICHOLSON, MICROECONOMIC THEORY, BASIC PRINCIPLES AND EXTENSIONS 512-13 (2d ed. 1978).

¹⁵ S. Rep. No. 95-580, 95th Cong., 1st Sess. 20 (1977).

¹⁶ 123 Cong. Rec. 5080 (1977) (Statement of Rep. Wirth).

store-front), and airport terminals (where airlines pay fees to the airport authority typically based on the number of gates they occupy, not their mere presence in a terminal).

30. The FCC's allocation of one foot of space is commensurate with cable's small use requirements (which as mentioned above is typically much less than one foot of usable space) and the fundamental economic principle of cost causation, which holds that costs are properly incurred by the entity causally responsible for the costs, i.e., the cost-causer pays. Compared with electric utility facilities, cable attachments occupy considerably less space on the pole, and cable attachments are far lighter as well. For the reasons described above, the maximum pole rental rate derived from the Cable Rate Formula is an economically appropriate, just and reasonable rate that allocates a cost-causative proportionate share of the full costs of the entire pole to third-party attachers.

31. In contrast to the Cable Rate Formula, the Telecom Rate Formula (developed by the FCC pursuant to Section 224(e) of the Communications Act), as well as other pole rate methodologies often advanced by pole-owning utilities, employ a per-capita cost allocator to allocate the costs associated with the unusable space on the pole. (Again, the Cable Rate Formula *also* allocates the costs associated with the unusable space on the pole, it just does so using the 7.41% proportionate share allocator that it (and the Telecom Rate Formula for that matter) uses to allocate the usable space on the pole). Under the per-capita approach, the costs associated with the unusable space on the pole are divided by the number of attaching entities.¹⁷ For the reasons discussed above, however, a per-

¹⁷ Pursuant to the Section 224(e) telecom formula, a two-thirds factor is applied to costs associated with unusable space prior to the equal division of costs. Application of the 2/3 factor appropriately recognizes the additional ownership privileges and use of the pole that accrue solely to the pole owner vis-à-vis third party attachers (although in a manner less consistent with fundamental cost causation principles compared to the Cable Rate formula's proportionate use allocator). Methodologies advanced by the electric utilities quite typically do not apply such a factor. The methodology proposed by Staff in the NTELOS case did not apply the 2/3 factor either, but again, Staff's application of the FCC telecom formula was in the specific context of a joint-use agreement with a telephone utility that likely enjoyed ownership privileges and terms and conditions of access that would not apply to third-party attachers. Other than the use of the per-capita allocator to allocate the costs of unusable space in the telecom formula, the FCC telecom and cable methodologies are the same.

capita type allocation methodology is not as closely aligned with the fundamental economic principle of cost causation.

32. The economic reality of poles is that they can readily accommodate multiple attachers through the process of make-ready (i.e., rearrangements of the facilities on the pole and/or pole replacements). The addition of another entity onto the pole does not result in the displacement or exclusion of another user or use by the utility. Thus, from an economic perspective, there is no underlying cost-causative rationale for allocating a common space on the pole on the basis of the number of attachers. By doing so, the total costs of pole attachment that any given attaching entity pays the utility is an arbitrary function of the number of attachers in a given service area, a condition over which the attacher's own occupancy has no connection. Rather, the number of entities seeking attachment to any given set of utility poles has, and will continue to vary from pole to pole, based on ever-changing market, regulatory, and technological factors that are largely beyond anyone's control and exceedingly difficult to predict as the experience in the post-1996 Telecom Act period has taught.

33. Because the number of attaching entities varies pole to pole, and service area to service area, the need to track the number of attaching entities adds a level of complexity and arbitrariness to the Telecom Rate Formula. The Cable Rate Formula, which relies strictly on the square foot occupancy of an attachment to allocate the cost of the entire pole to an attacher, is more straightforward to implement and provides for a more consistent and predictable application of the pole attachment formula across service areas. These features are important to firms in making business case decisions to roll-out new services.

34. Another related benefit of the Cable Rate Formula not being based on the number of attaching entities is that it does not effectively penalize consumers, or conversely, reward utility owners of essential pole facilities, for the failure of more widespread facilities' based competition to emerge in the post-Act period. Similarly, it does not effectively penalize firms adopting innovative new technologies, such as VoIP, which provide voice

services by sending packets of information over existing wires, and therefore require no additional space on the pole and do not engender any new cost burden to the utility. In this important aspect, the Cable Rate Formula is independent of, and hence more competitively neutral, with respect to the impact of technology and emerging competition than the Telecom Rate Formula on existing and prospective attachers. The Cable Rate Formula also better promotes deployment of new services in rural areas, since under the Telecom Rate Formula, the number of attaching entities is presumed lower, resulting in a presumptively higher pole attachment rate that ironically serves to discourage investment in new infrastructure and make new services even less affordable in rural areas.

35. Rate formulas that utilize a per-capita allocator, by relying on the number of attaching entities, introduce an artificial construct into the pricing formula – one that has no direct connection to the consumption of space on the pole or to any actual increase in cost burden placed on the utility or its ratepayers. For example, an incumbent local exchange telephone company (“ILEC”) occupying three feet of space under a joint-use agreement with the utility could make three attachments on the pole, but under the Telecom Rate Formula the ILEC would be counted as a single entity, and assigned the same portion of common costs as an entity occupying just one foot of space providing room for only one attachment. In the context of the leasing examples presented earlier, this would be analogous to charging the tenant occupying one floor in the office building the same amount of common costs as the tenant occupying three floors, as opposed to a more reasonable (smaller) proportionate share as would be assigned under the cable formula.

36. Finally, and perhaps most importantly, from the standpoint of achieving the public policy goals of promoting broadband deployment and competition, economic theory is definitive in its preference for pricing as close to marginal cost as feasible. In this context, the cable rate, because it is closer to (but still well in excess of) marginal cost than methodologies that employ a per-capita cost allocator to assign costs of the pole, is the relatively more efficient rate – one that more closely mimics the outcome of a competitive market with its resultant benefits to consumers of lower rates and the provision of a greater array of innovative and advanced services.

37. In a truly competitive market, there would be multiple pole owners with their own infrastructure, each vying for buyers to rent space on their poles. Under these circumstances, prices would tend to be bid down to levels approximating marginal cost, which is essentially the cost of make-ready, i.e., the costs of rearranging and adding space on an owner's poles. In the absence of competitive market conditions, the FCC method of charging cable companies for pole attachments, consisting of make-ready fees designed to cover the marginal costs of the pole attachment and a rental fee (based on a cost-causative relative-use allocation of the utility's ongoing costs, plus a return) most closely approximates a competitive market rate.

38. The inherent advantages of the Cable Rate Formula's relative use methodology in best promoting the public policy goals of broadband deployment and competition, as compared with the per-capita approach embodied in the telecom formula, was directly acknowledged by the FCC in its March 2010 National Broadband Report and in a May 2010 Further Notice of Proposed Rulemaking (FNPRM) opened on the heels of that report.¹⁸ The FNPRM proposed specific revisions to the section 224(e) telecom formula in order to produce a telecom rate "set as low and as close to uniform (in the vicinity of the current cable rate) as possible." At its April 7, 2011, Open Meeting, and in an order released on that same day, the FCC formally adopted revisions to its rules for pole attachments, consistent with previously stated goals.¹⁹ To implement its goal of setting the telecom rate "as close to uniform (in the vicinity of the current cable rate) as possible," the FCC adopted a definition of cost for urban areas as "66% of the fully allocated costs used for purposes of the pre-existing [pre-April 7, 2011] telecom rate," and a definition of cost for rural areas as "44% of the fully allocated costs."²⁰ Under this

¹⁸ See FCC, *Connecting America: The National Broadband Plan*, rel. March 16, 2010, at 110. <http://www.broadband.gov/plan/#read-the-plan>; and *In the Matter of Implementation of Section 224 of the Act, A National Broadband Plan for our Future*, WC Dkt. No. 07-245, GN Dkt. No. 09-51; and *Opinion and Further Notice of Proposed Rulemaking (FNPRM)*, rel. May 20, 2010, at ¶¶ 6-7, 110-118.

¹⁹ See *FCC R&O & Order on Recon*, rel. April 7, 2011.

²⁰ See *Id.* at ¶ 149. Fully allocated cost is defined as net bare pole cost times carrying charge factor (i.e., the first two components of the rate formula for both the cable and telecom formulas).

definition of cost and using FCC presumptions for the number of attaching entities,²¹ the percentage of fully allocated costs allocated under the new (post April 7, 2011) telecom rate approximately now equals that allocated under cable, i.e., 7.41%,²² so that the two FCC formulas effectively converge to the same just and reasonable rate - in both urban and rural areas alike.

Because the Cable Rate Formula provides the utility recovery of much more than marginal costs - especially taking into account make-ready and other direct reimbursement charges imposed by utilities, pole rates set using that methodology are fully compensatory to the utility and are not subsidized.

39. While economists may disagree on many things, there is perhaps one central tenet upon which there is solid agreement, and that is the notion that rates that recover the marginal costs of production are economically efficient and subsidy-free.²³ For a subsidy to occur, the utility must have unrecovered costs that but for the attacher would otherwise not exist. This is decidedly not the case where rental rates cover the incremental cost of attachment. From an economics standpoint, where rates cover the incremental or marginal cost of attachment, neither the utility nor any of the other parties sharing the pole will bear a higher cost as a result of the attachment (than they would absent the attachment).²⁴

40. Under these conditions, there can be no valid claim of subsidy or specific cost burden borne by the utility company, its ratepayers, or any other attacher as a result of the

²¹ The FCC presumptive averages, which remain unchanged under the new rules, are five attaching entities in urban areas, and three in rural. Another number may be used if that number is based on actual data or a statistically valid survey. See *FCC Recon Order* at ¶¶70-72 (footnote omitted). (“We are now persuaded that utilities and attaching entities would benefit from our providing presumptive averages for their use. Our establishment of presumptive averages will expedite the process and allow utilities to avert the expense of developing location specific averages. As with all our presumptions, either party may rebut this presumption with a statistically valid survey or actual data.”)

²² For urban areas: $.66 \times 11.2\%$ (based on the presumption of 5 attaching entities) = 7.39%; for rural areas: $.44 \times 16.89\%$ (based on the presumption of 3 attaching entities) = 7.43%.

²³ See, e.g., Paul A. Samuelson, *Economics*, Tenth Edition, McGraw-Hill Book Company, 1976 at 462-3.

²⁴ See, e.g., Bridger M. Mitchell, “COSTS AND CROSS-SUBSIDIES IN TELECOMMUNICATIONS,” *The Changing Nature of Telecommunications/Information Infrastructure*, National Academy Press, Washington, DC, 1995. “A group of customers is being subsidized if their price is so low that the service supplier and its other customers would be better off if the service were discontinued. This circumstance occurs only when the increase in revenues to the [telephone] company from offering the service is less than the increased costs of providing it.”

attachment, provided the rental rate exceeds the marginal cost of attachment as is indisputably the case with the existing cable formula rate – a fact highlighted in the landmark Eleventh Circuit APCO case.²⁵ The economist’s notion of cross-subsidy avoidance is fully consistent with the legal principle in takings law for just compensation as summarized in that case, which similarly holds the appropriate standard to apply in the pricing of third-party attachments is *not* whether the pole owner is made better off as a result of the third-party attachment, but rather to ensure the pole owner (and its customers) are made *no worse off*.²⁶

41. Moreover, as mentioned above, *in addition to* the Cable Formula Rate, the utility is also allowed to charge cable operators make-ready charges to recover any one-time additional costs incurred in the provision of pole attachments, including the full costs (as determined by the utility) associated with rearrangement and pole replacements.²⁷ On top of these charges, the utility also typically charges the cable operator a number of other direct reimbursement fees, covering such items as application processing fees,

²⁵ This widely “known fact” played a central role in the Court’s analysis in *APCo* (“The known fact is that the Cable Rate requires the attaching cable company to pay for any “make-ready” costs and all other marginal costs (such as maintenance costs and the opportunity cost of capital devoted to make-ready and maintenance costs), in addition to some portion of the fully-embedded cost.

...This legal principle [just compensation is determined by the loss to the person whose property is taken], *together with the fact that much more than marginal cost is paid under the Cable Rate*, leads us to ask the following question: does marginal cost provide just compensation in this case?...In short, before a power company can seek compensation above marginal cost, it must show with regard to each pole that (1) the pole is at full capacity and (2) either (a) another buyer of the space is waiting in the wings or (b) the power company is able to put the space to a higher-valued use with its own operations.” *Without such proof, any implementation of the Cable Rate, (which provides for much more than marginal cost) necessarily provides just compensation.*”) *Alabama Power*, 311 F.3d at 1369, 1370, *emphasis added*.

²⁶ “This takings principle is a specific application of the general principle of the law of remedies: an aggrieved party should be put in as good a position as he was in before the wrong, but not better.” *Alabama Power*, 311 F.3d at 1369.

²⁷ If anything, because utilities set make-ready charges generally in the absence of regulatory scrutiny, make-ready charges may in fact recover more than an economically appropriate attribution of cost. For example, a cable company may be charged make-ready fees for a change-out that the electric utility would have made in the absence of the cable attachment, or the cable company may be charged costs in excess of those actually incurred. Since the power company is in total control of the make-ready charge process, it is rational to assume that if the power company believed it was not recovering the full cost of make-ready, it would perform such a true-up and seek additional make-ready payments since it is not constrained in any manner from doing so. For example, it is my understanding that make-ready charges recently estimated by Shenandoah Electric Valley Cooperative to Shentel (\$1,950,500 to replace 336 poles and rearrange facilities on 279 poles) actually exceeded the \$1,648,941 funding award granted by the federal Broadband Technology Opportunities Program to Page County Broadband Authority with whom Shentel was partnering to construct 39 miles of fiber optic broadband plant connecting public anchor institutions within the county.

inspections and audits, unauthorized attachments, additional trips to jobs caused by licensee, abandonment of poles, and installation of grounds.²⁸ Because of this additional compensation over and above the cable formula rate (which can be quite substantial), plus the fact that any upgrades to the pole made (and paid for) through the make-ready process become property of the utility, the pole owner stands to be made *much better off* after the accommodation of an additional cable attachment. This can occur in any of the following ways:

- The utility receives in excess of the marginal costs it incurs through the combination of make-ready and other direct fees plus the cable rental rate, providing a source of contribution to the utility's core electric distribution service that it otherwise would not have for use of otherwise vacant space on its poles;
- When poles are replaced (at the attaching entity's expense), the utility ends up with greater available pole capacity as compared with pre-attachment, because cable attachments place minimal space demands on the pole and poles come in standard heights;
- More space is available on the pole to accommodate additional uses and/or users for which the utility can realize additional sources of revenue; and
- The utility has the benefit of a newer, stronger pole for its own operations at the cable company's expense, and can realize savings (or deferred capital expenditures) to its own build-out program.²⁹

42. For the specific reasons described above, there is simply no reasonable basis under well-established economic principles (or the corresponding principles of just

²⁸ See e.g., Appendix I of Agreement between Prince Georges Electric Cooperative and Tele-Media Company, dated January 1, 2004, reproduced as Attachment 4 to my Affidavit.

²⁹“In instances where attachers pay the costs of a replacement pole, the attacher actually increases the utility's asset value and defers some of the costs of the physical plant the utility would otherwise be required to construct as part of its core service.” *ACTA*, 16 FCC Rcd. 12209 at ¶ 58.

compensation) upon which to conclude the cable rate is a “subsidized rate” received at the expense of electric customers or that cable operators are not paying an appropriate share of the utility’s costs.

Claims that cable attachers are not paying a “fair” share of utility pole costs are based on the flawed arguments that such attachers should be paying an equal (or near equal) share of the common costs of the utility pole network and/or that there are “hidden” costs not being recovered by the utility.

43. Notwithstanding these well-established principles demonstrating pole rates set using the Cable Rate Formula are more than compensatory and do not subsidize the services of the attaching entity, utilities continue to argue the cable rate provides them insufficient compensation and that cable and other third-party attachers are not paying a “fair” share of the utility’s pole costs. Underlying these arguments is the flawed notion that third-party attachers should be paying an equal (or close to equal) share of the common costs of the poles, given what the utilities allege are the attachers’ equal benefit from such space. The utilities’ argument in support of this concept of an equal sharing of costs is based on a number of erroneous and/or unproven premises.

44. First, in the case of pole attachments, an equal (or near equal) assignment of common costs is *neither* economically efficient nor “fair,” any more so than the assignment of an equal share of an office building’s common costs would be to all tenants, regardless of how much office space each actually occupies within the building as previously discussed. This assumption incorrectly presumes that third-party attachers somehow bear equal causal responsibility for the incumbent utility’s *entire* existing pole network, so as to justify an equal sharing of the utility’s revenue requirement associated with pole investment from a cost accounting point of view. This is simply not the case.

45. The utilities’ pole networks were built largely decades ago and maintained under franchises granted by local authorities for the express purpose of providing consumers with core electric services. Those consumers, as subscribers to the utility’s electric distribution services, have already paid for the investment in the utility’s pole network, as

is appropriate, given those networks were built and maintained on their behalf.

Consistent with this historical reality, the costs of the utilities' pole network are properly and fully recoverable from those electric subscribers and have been so recovered in the past. Currently, and in the future, any additional third-party service provided over the utility's pole network are truly incremental to the provision of the core electric services by any objective standard and also helps recover costs the utility incurred and would incur regardless of the presence or absence of third-party attachments.

46. Plus, and a point typically ignored by utilities making the "equal" cost share argument, any additional or new investment in pole plant required to accommodate a third-party attachment (such as the need to put in a taller or stronger pole) is expressly paid for by the attacher in the form of make-ready charges. Considering the attacher is paying any and all actual capital costs incurred by the utility in connection with the attachment through make ready charges, in addition to a host of other direct reimbursable fees and indemnification clauses imposed by the utility, it is more than "fair" to have the third-party attacher *also* pay some percentage contribution toward covering the fixed expenses of the pole network (expenses that would exist whether or not there are any third-party attachers on the utilities' poles), as occurs in the fully allocated cable rate.

47. This is especially true in light of the fact that as mere licensees, third-party attachers enjoy none of the benefits of ownership that accrue exclusively to the owner of the pole network. Third-party licensees receive no benefit from any improvements to the utility pole they have financed through make-ready fees other than the ability to attach; any added value to the utility's pole assets created through the make-ready process accrues to the sole benefit of the utility owner. Moreover, under the terms and conditions of utility pole attachment agreements, none of the value of the integrated pole line network is conveyed to the attacher, it is retained by the utility as owner of the pole network.³⁰ Nor

³⁰*See, Alabama Cable Television Ass'n v. Alabama Power Co.*, 16 FCC Rcd 12209 (2001) at ¶57: (...the ownership interest in the space occupied by a pole attachment is a limited property interest, restricted in duration, primacy, exclusivity, and physical manner of use, all of which affect the determination of value of the interest conveyed. A pole attachment does not displace the utility from its own use of the pole or from the right to license additional users on the pole...pole owners in general, are not entitled to an enhanced value or network value for pole attachments...the utility is not conveying to the

do third-party licensees have any input or control over the timing or deployment of pole plant - decisions that could have a material impact on their business plans. These decisions have historically and continue to be driven by the utilities' provision of its core electric distribution network.

48. Finally, third-party attachers are attached to only a subset of the utility's poles, and as illustrated earlier in this affidavit, their attached wire occupies a very small amount of space on any given pole. Again, it is neither efficient nor equitable (from either an economic or common sense perspective) to expect a third-party attacher to pay anything remotely close to an "equal" proportion of the costs of the utility's pole network given its relatively small use or occupancy on utility poles, the relatively small cost burden it generates for the utility, and the negligible influence it has on the deployment of that pole network.

49. Utility arguments that advocate a more equal sharing of pole costs also ignore the fact that the FCC formula methodology is a fully allocated methodology that includes in its definition of costs to be allocated to third-party attachers an expansive set of operating and capital costs relating to the utility's overhead distribution network that go beyond those causally related to pole attachments. So, while under the FCC formula, any given attacher is being allocated 7.41% per foot of pole space occupied (rather than the 20% to 30% typically sought by the utilities), the "bucket" of pole costs that are being allocated to them far exceed those actually causally related to their occupancy of pole space. As a result, attachers end up paying much more than the actual marginal cost of their attachment. This is especially the case given that utilities impose full marginal cost recovery of any out-of-pocket or nonrecurring expenses they incur in connection with accommodating a third party attachment *in addition* to the fully allocated rental rate. Overlaying marginal costs in the form of make-ready or other direct reimbursable fees (e.g., for certain engineering, maintenance and administration work – a common feature of third-party pole agreements) on top of the FCC's fully allocated rate that already

attacher the right to be in the public right-of-way, which is granted by the local franchising authority for a fee, nor does the utility provide the attacher with a complete corridor of access to a network of customers.")

includes recovery of these types of costs, affords the utility the opportunity to actually double recover from the attacher. To allow the utility to charge an even higher fully allocated rate than permitted under the FCC cable rate methodology inappropriately increases the opportunity for double recovery of costs from the attacher.

50. For similar reasons, claims by utilities of the existence of “hidden” costs - costs they allege are attributable to, but not recovered from third-party attachers are similarly not credible. The types of costs typically identified by the utilities generally fall into one of three categories. These costs are either (1) directly recoverable from third parties in the form of make-ready charges, other direct reimbursable fees, or through indemnification provisions of the third-party pole agreement; (2) directly recoverable from third parties in the formula rental rate, as part of the pole-related expenses that form a significant portion of the fully allocated costs allocated to attachers in proportion to their occupancy on utility poles; or (3) direct costs associated with the utilities’ core electric business and therefore properly recoverable from utility ratepayers and not third-party attachers in the first instance.

51. One such category of costs often identified by the utilities as “hidden” costs involve additional costs associated with tree trimming. The FCC has specifically recognized the role of make-ready in making utilities whole for any cost outlay related to tree trimming associated with a third-party attachment.³¹ The same would be true of costs associated with pole work to take care of any obstruction or interferences associated with third-party attachments that utilities often claim create additional costs for them. Similarly, costs associated with pole rearrangements are routinely included in make-ready charges, as are inspections related to attachments.

52. Another category of costs often identified by utilities as “hidden” costs of pole attachments relate to legal liabilities or concerns about the use of easements and rights-of-way. Because third-party attachers are generally required to indemnify pole owners

³¹ See *Reconsideration Order*, 16 FCC Rcd at 12161-62, ¶ 122 (“If tree trimming is required as part of make-ready activity to pay for installation of an attaching entity’s pole attachment, the attacher pays or reimburses that amount as part of make-ready charges.”)

from additional liabilities associated with their attachment, and provide insurance or a bond with respect to potential liabilities, claims of unrecovered costs associated with the use of easements or rights-of-way are similarly unfounded. In addition to indemnification, bond and insurance requirements typically mandated in the third party pole agreements, the Cable Rate Formula also provides for recovery of certain costs relating to the pole owners' insurance to protect against injuries and damages, and franchise payments to local authorities related to the utilities' use of public rights-of-way.³²

53. Other of the alleged "hidden" or additional unrecovered costs of pole attachments relate to the use of taller poles and include costs associated with additional weight loads, safety concerns, or specialized equipment. These costs however are properly attributed to the utility's core business. Electric lines and ancillary equipment are by far the heaviest of all attachments, generating stresses and height requirements that far exceed those of third-party attachments.³³ Accordingly, following cost causation principles, and absence any cost evidence to the contrary, any such additional costs engendered by the taller poles are not "hidden costs" of third-party attachments, but costs properly attributable to the utility's core electric business.³⁴ Moreover, as mentioned numerous times, but it bears

³² See 18 CFR, Vol. 1, Parts 1 to 399, Account Definitions for FERC Accounts 920-930.

³³ See Direct Testimony of Victor N. Gates on behalf of the Michigan Cable Telecommunications Association, at 14; Cross Ex. of Victor N. Gates, tr. 772-73 in *In the matter of the application of Consumers Power Company for authority to modify tariffs governing attachments to poles; In the matter of the application of the Detroit Edison Company for authority to modify tariffs governing attachments to poles; In the matter of the proceeding, on the Commission's own motion, to examine setting just and reasonable rates for attachments to utility poles, ducts, and conduits, pursuant to MCL 460.6g; MSA 22.13(6g)*, Michigan Pub. Svc. Commission, Case No. U-10741; Case No. U-10816; Case No. U-10831. According to the unchallenged testimony of Mr. Gates: "Electric lines, which are mostly metal, are the heaviest of all the conductors on the pole. For example, "0" primary weighs 384 pounds per 1000 feet; "0" triplex weighs 412 pounds per foot; and "0000" service wire weighs 585 pounds per 1000 feet." *Id.* at 15. "Telephone conductors are the next heaviest. For example, 3/4" telephone cable weighs 330 pounds per foot." *Id.* "Cable television facilities (as opposed to power and telephone facilities) are by far the smallest and lightest conductors on the pole. For example, coaxial cable, made of aluminum wrapped around polyurethane foam with a small center conductor, weighs approximately one-fourth the weight of primary electric conductor." *Gates Direct* at 14. "One-half inch coaxial feeder (distribution) cable weighs 78 pounds per 1000 feet, while trunk cable weighs 171 pounds (for 3/4" trunk). Fiber optic conductors most commonly used for cable television construction today, at .59" in diameter, weigh 50 pounds per 1000 feet."

³⁴ See *FCC R&O & Order on Recon*, at ¶191, n. 583 ("without a cost study, we are unable to find that these [pole replacements] represent "significant incremental capital expenditures" or that "[c]ommunications attachers demonstrably add significantly to electric utility capital expenditures," as utilities claim.")

repeating, to the extent a taller pole is deployed in connection with the accommodation of a third party attachment, the third party bears *full* cost responsibility in the form of make-ready charges.³⁵ Utilities also cite to increased property tax assessments attributable to third party attachers, but tax expenses are included in the pole rental formula rate and are therefore already being recovered from attachers (even though as recognized by the FCC, the cost causal link to pole attachments is likely insignificant).³⁶

An analysis distributed by NOVEC to the General Assembly alleging fees from telecom and cable attachers pay only a very small portion of the costs of its pole network is based on a number of incorrect assumptions and comparisons, and ignores important sources of cost recovery under the FCC methodology.

54. A document prepared by Northern Virginia Electric Cooperative (“NOVEC”) and distributed to the Virginia General Assembly on December 20, 2010, entitled “Template Electric Cooperative Incremental Costs Incurred Solely to Accommodate Communications Pole Attachments” (a copy of which is provided as Appendix H to the VCTA Comments submitted in conjunction with this Affidavit) reads like a playbook of these flawed utility arguments. NOVEC alleges pole attachment fees from telecom and cable attachers “pay for only a very small portion of the total cost of owning, operating, and maintaining overhead pole lines.” To support its argument, NOVEC compares a figure of \$14.5 million that it purports to represent its “2009 pole line ownership cost” with \$826,450 of pole attachment fees for that year. The implication is that fees collected from attachers, and that based on NOVEC’s calculations amount to 1/17th of pole costs (or about 5.7%), pay for too small a portion of NOVEC’s costs. NOVEC’s argument is totally unfounded.

³⁵ See *Id.* at ¶185 (“Pole owners have the opportunity to recover through make-ready fees all of the capital costs caused by third-party attachers. Importantly, the utility itself sets these fees as appropriate – they are not subject to any mandatory rate formula set by the Commission.”); see also *Id.* at ¶187 (“Moreover, as one party points out, in cases where an attacher pays make-ready fees to upgrade or to add capacity to an existing pole, or for a new, taller pole to accommodate that attacher’s demand, the utility, not the attacher, owns the poles.”)

³⁶ See, *Id.* at ¶198 (“We are persuaded by the record, however, that such a theoretical property tax increase, if any, would be insignificant.”)

55. First, even if NOVEC's analysis was correct (which it is not), for the reasons described above, a rental rate based on a small proportionate share of fully allocated pole costs is economically appropriate and produces a rate that is subsidy free and much more than compensatory, especially when make-ready charges and other direct reimbursable fees are taken into account. Not surprisingly, NOVEC's analysis would appear to ignore these other very important sources of cost recovery under the FCC methodology, which can be quite substantial in any given year.

56. Second, the \$14.5-million in annual pole ownership costs identified in NOVEC's analysis would appear to be based on the total cost of its *entire* pole line network, including the costs associated with the poles on which third-party attachers are *not* present. This is an improper comparison. Referring back to the apartment building analogy used by Congress to explain the economic foundation underlying the allocation methodology embodied in Section 224, this is as if a tenant is being charged rent based on the common costs of not only his building, but a building owned by the same developer, but to which he does not have any right to access the property.

57. At a minimum, to make a proper apples-to-apples comparison, and accepting NOVEC's \$14.5-million as an accurate measure of total pole line costs for the utility (an assumption that is likely generous to NOVEC in that this figure cannot be verified and a number of components of that figure appear to exceed amounts shown on NOVEC's publically available RUS Report), the \$14.5-million figure would need to be reduced to reflect the actual percentage of joint use poles (i.e., the actual percentage of poles to which telecom and cable attachers are attached). While I do not have access to data regarding all telecom and cable attachments, the best data available to VCTA indicates member cable companies are attached to approximately 12,678 NOVEC poles, representing only about 5.35% of the total number of NOVEC poles identified on the SCC Tax Report. Accordingly, the pool of costs for which one could begin to assign causal responsibility to cable attachers is only about 5.35% of the \$14.5-million or approximately \$775,658. Based on this figure, the pole attachment fees from cable

attachers which total \$495,980, recover 64% of the cost of NOVEC's pole network to which they are attached.

58. The disproportionate share of cost recovery that represents is apparent when one considers that cable attachments that occupy only a very small portion of the pole – one foot out of a total of at least 37.5 feet are allocated 64% of the cost of poles to which they are attached, while the electric company which occupies typically 8 to 12 feet of space, is left with only 36% of those costs. Referring back to the apartment building analogy again, this is as if a tenant occupying one unit in a ten-unit building is charged a rent that recovers almost 100% more than the amount of common costs charged to the owner who is in possession of the remaining nine units.

59. Another way of looking at the highly compensatory nature of pole attachment fees NOVEC receives from cable operators is to further adjust the identified costs to reflect the relatively small space occupancy of cable attachments. For the numerous reasons discussed in this affidavit, a direct use allocator of 7.41% is the most economically appropriate allocator for attributing pole costs to cable attachers. That said, even applying NOVEC's apparent contention that attachers should bear something approximating "an equal share of 2/3rds of the pole," which appears to translate into an allocator in the range of 33% (and is significantly less than the 64% they contribute under current rates), produces an allocation of only \$255,967 of pole costs to cable attachers. According to NOVEC's figures, cable attachers are contributing a total of \$495,980, an amount almost twice that. Of course, even the \$255,967 figure is itself likely an inflated amount of pole costs relative to the true economic costs, i.e, the actual additional or marginal costs of pole attachments.

60. Following straight from the electric cooperative playbook, the NOVEC handout also purports to identify a series of "annual incremental costs – costs due solely to communications pole access and attachments requirements," that it appears to be suggesting independent support for an annual pole rent of \$40.05. For the reasons discussed above, none of these proposed additional charges are justified, in that they are

either *already* being recovered under the FCC methodology - through the pole rental rate or through make-ready or other direct reimbursable charges imposed by the utility – or they are properly recoverable from the utility’s core electric distribution customers and not third-party attachers who did not cause the costs. Utilities should not be allowed to have it both ways. If they want to charge third party attachers based on incremental costs, then the amount of the rental rate would have to be commensurately reduced to reflect the true ongoing incremental costs of pole attachments, which have been shown to be extremely small.³⁷

The Cable Rate Formula is readily applied to electric cooperatives, using data publically available in the RUS and Annual Tax Reports filed with the SCC.

61. As described above, consistent with Section 224(d) of the Communications Act and the principles of cost causation, the Cable Rate Formula calculates a maximum annual pole attachment rent for cable operators by taking the sum of the actual capital costs and operating expenses of the utility attributable to the entire pole, expressed on an annual basis, and apportioning those costs to the attacher based on the attacher’s relative or proportionate use of the pole. Operationally, the Cable Rate Formula methodology is very straightforward to apply. Once the various pieces of input data are properly identified, the calculation of the maximum just and reasonable rate under the FCC formula methodology is a simple multiplication of the three major components: (1) the net investment per bare pole, (2) a carrying charge factor, and (3) a space allocation factor, i.e., the percent of pole capacity occupied by an attacher. Expressed as an equation, the Cable Rate Formula is as follows:

FCC Cable Rate Formula Maximum Pole Rental Rate =

[Net Bare Pole Cost] x [Carrying Charge Factor] x [Space Allocation Factor]

Where Space Allocation Factor = Space occupied by attacher / Usable Space on Pole

³⁷ My own estimates, as well as those of the FCC, show marginal costs of pole attachments to be in the range of \$0.50 to \$1.00.

The various components of the FCC formula methodology, and the manner in which they are determined, are described in more detail in Attachment 2 to this Affidavit.

62. The Cable Rate Formula relies on the investment and expense data utilities maintain in, or derive from, their accounting books and records. For investor-owned electric utilities, the FCC relies on uniform accounting data as publically reported in the FERC Form 1 reporting system.³⁸ Although electric cooperatives are not required to file Form 1 reports with FERC, the various pieces of data necessary to run the Cable Rate Formula for electric cooperatives are readily available, albeit in summary fashion, from two primary public sources, the Rural Utilities Services (“RUS”) Financial and Statistical Report and the SCC Annual Tax Report of Electric Companies. Because much of the data needed to calculate the formula rate was identified only in summary fashion, it has not been possible to independently verify the figures as to their accuracy or to tie them to directly to the utilities’ books of accounts. But it is my understanding that SCC staff routinely reviews the data provided in the RUS and Tax Reports, and that many if not all cooperatives keep accounting records in a manner consistent with the FERC uniform system of accounts relied on by the FCC methodology, notwithstanding the fact they are not required to do so. It is also my understanding that the utilities have been directed by the SCC to provide rate calculations in their filings, and there is the opportunity that the utilities will provide more detailed accounting information at that time. That said, and contrary to claims by the utilities, the information needed to run the FCC methodology was readily available in public reports routinely filed with the SCC as my calculations demonstrate.³⁹

63. Certain pieces of input data used in the calculation of the Cable Fate Formula, i.e., those involving taxes and the rate of return, require minor adaptation to apply to an electric cooperative. First, because electric cooperatives are not subject to income taxes as would be an investor-owned utility (IOU), they have no reportable accumulated

³⁸ For telephone utilities, the FCC relies on uniform system of accounting information as reported in the FCC’s ARMIS database.

³⁹ As mentioned above, Staff also used the RUS data in the pole rate calculations it performed in connection with the NTELOS case.

deferred taxes. Therefore, in applying the FCC methodology to electric cooperatives, the calculation of net investment for pole plant (as is the case for aggregate plant accounts) is calculated by deducting accumulated depreciation alone from gross plant investment. Second, only a subset of the tax accounts included under the FCC methodology in the tax component of the carrying charge factor will be applicable to electric cooperatives. As mentioned above, I have relied on the figure for tax expenses identified in the RUS Financial and Operating Report.

64. With respect to rate of return, this element of the carrying charge factor (CCF) component allows the utility to recover a normal or fair (economic) return on capital from third-party attachers over and above actual cost recovery. For an IOU, the capital cost element of the CCF component of the rate formula is the most current authorized rate of return set by a state regulatory commission or in the absence of one, an FCC default rate of return based on the weighed cost of debt and equity determined in the last FCC return proceeding may be used. A non-profit cooperatively-owned utility has no allowed rate of return and faces a different set of capital costs than investor-owned utilities. Accordingly, it is appropriate to substitute an effective or imputed “rate of return” in lieu of an allowed rate of return set by a regulatory commission in applying the FCC cable formula to calculate a maximum pole rate applicable. Consistent with the actual equity risk facing an electric cooperative, I have calculated a “rate of return” based on recorded interest expenses and using the cooperative’s actual cost of long term debt as a proxy for the cost of equity.⁴⁰ I have also calculated the rate of return using the FCC default value,

⁴⁰ The methodology I have employed is supported by the findings of the Indiana Utility Regulatory Commission (IURC) in a pole complaint proceeding involving a cooperative (Kankakee Valley Rural Membership Corporation) in which it specifically addressed the appropriate rate of return applicable to a cooperative:

We find, however, that there is some risk for owners of a co-op losing a portion of their equity deposited in the co-op and, therefore, a cost of equity should be determined. Among the measures that could be used include the cost of debt, the rate of inflation, risk-free rate or a yield on long term securities such as government or corporate bonds. KVREMC, by using the cost of debt to determine the cost of capital, assumes the cost of debt is equal to the cost of capital. Based on the evidence of record, and as proposed by KVREMC, we find the cost of debt (4.93%) to be the closest approximation to the cost of equity.

While I disagree with certain other assumptions incorporated in the IURC pole rate calculations, those other assumptions appear to have been based on the proposal submitted by the telecommunications carrier (the complainant) as opposed to based on the IURC’s own reasoning. The IURC’s finding with regard to the rate of return was one area where the IURC specifically disagreed with the complainant. Moreover,

which is a much higher number,⁴¹ in anticipation of the utilities claim of entitlement to the FCC default rate of return input.

65. In addition, one other minor adaptation was required to a data input to correspond to the level of accounting detail reported in the RUS form. The FCC methodology calculates the maintenance expense element of the carrying cost component based on expenses booked to FERC Account 593 (“Maintenance of Overhead Lines”), associated with the following three distribution plant in service accounts: Account 364 (“Poles, Towers, and Fixtures”), 365 (“Overhead conductors and devices”) and 369 (“Services”).⁴² The CCF for this element is calculated by taking the amount of maintenance expense recorded in Account 593 and dividing that by the net plant in service associated with each of these three individual accounts. The RUS form on the other hand identifies maintenance and operating costs at the more aggregate level of total distribution plant. Accordingly, I have calculated this element of the carrying charge factor based on total distribution maintenance and operating expenses and divided that by the total net distribution plant in service.⁴³ The essential requirement in applying the FCC methodology is that one use the lowest level of granularity for which the expense data is publically reported, and that there is consistency between the level of granularity used to track expenses and the level of aggregation of the plant accounts used to translate those expense dollars into an annual carrying charge applicable to investment.

the ultimate pole rate adopted by the IURC was \$11.50 as compared with the \$24 rate sought by the utility. *See* Indiana Utility Regulatory Commission, Cause No. 42755, at 18.

My use of the cost of debt as the appropriate proxy for the rate of return applicable to electric coops is also consistent with the approach taken by Staff in the NTELOS case. *See* Testimony of Rosemary M. Henderson at 6, recognizing the use of the cost of debt will “permit coverage for all the costs, without subsidy from the cooperative members.”

⁴¹ Notwithstanding the fact that electric cooperatives do not incur the types of equity risk and costs facing an IOU, the FCC default rate is also much higher for no other reason that it was based on capital market conditions some twenty years ago.

⁴² Unlike the comparable FCC ARMIS reporting system for telephone utilities, the FERC Account 593 does not separately track pole and line-related maintenance expenses. As a result, Account 593 includes a number of non-pole related expenses that from a cost-based or economic efficiency perspective would be removed if data readily existed to do so.

⁴³ Staff similarly calculated the maintenance component of the carry charge cost component based on total distribution plant, finding that to be “a reasonable surrogate for the use of the individual distribution account data.” *See* Testimony of Rosemary Henderson in the NTELOS case at 6.

Application of the Cable Rate Formula to a representative electric cooperative indicates rate levels, as would generally be expected, in the vicinity of those derived for their investor-owned counterparts.

66. Table 1 below presents the results of my rate calculations for a representative electric cooperative using data for the year ending 2010. These calculations adhere to the Cable Rate Formula in the manner described above. Supporting calculations are presented in Attachment 3 to this Affidavit. As shown in Table 1, my calculations indicate just and reasonable pole rental rates applicable to electric cooperatives in the range of \$5.50 -\$7. These rates are right in line with the rates charged by investor owned utilities (“IOUs”) in the state of Virginia that are subject to federal Section 224 pole regulation.⁴⁴ This is not an unexpected result, given the homogeneity of pole plant, i.e., generally speaking, “a pole is a pole” across electric utilities, regardless of corporate structure.

Table 1 Maximum Just and Reasonable Pole Rental Rates Under Cable Rate Formula for Representative Electric Cooperative		
Rappahannock Electric Cooperative (Yr ending 2010)	Cable Rate (Based on Imputed Rate of Return)	Cable Rate (Based on FCC Default Return)
Net Inv. Per Bare Pole	\$368.12	\$368.12
x Carrying Charges	19.99%	26.02%
x Space Factor	7.41%	7.41%
=Maximum Rate	\$5.45	\$7.10

67. As further demonstration of this point, within the past year, Rappahannock Electric Cooperative (“REC”) acquired a portion of Allegheny's distribution plant. As IOU poles subject to federal pole rate regulation, it is my understanding that Allegheny charged

⁴⁴ As noted earlier, the average IOU rate in Virginia is \$7.08, which closely tracks the national average as reported by the FCC. The most commonly charged cable pole rate by IOUs in Virginia is \$6.39, as identified in Attachment 1 to the Affidavit of Ray LaMura.

cable operators a pole attachment rental rate of \$4.12 per pole, and that those acquired poles are now billed out by REC at \$6.76 per pole as an interim rate based on those poles being former Allegheny poles.⁴⁵ By contrast, it is my understanding that for all of its other poles, REC charges cable operators an unregulated pole attachment rate of \$24.63 on average, which includes rates as high as \$36.08, almost nine times higher than the regulated IOU rate.⁴⁶ Other than a change in the corporate ownership of these poles, these poles are the same poles, and subject to the same fundamental conditions of supply. There is no valid economic basis for the magnitude of disparity between the IOU and cooperative pole attachment rate other than the absence of effective pole regulation in the case of the latter.

68. In my opinion, rates set any higher than those calculated under a proper application of the Cable Rate Formula, such as presented in my affidavit, and that are in the vicinity of rates charged by other electric utilities in the Commonwealth, would be economically inefficient and thwart competition, hinder broadband deployment and service innovation, and serve to deprive citizens of the Commonwealth of Virginia with the important economic development benefits that broadband is now commonly acknowledged to provide.

69. For purposes of comparison, I have also calculated rates using the FCC Telecom Rate Formula for the representative electric cooperative, using the FCC presumptive average of three attaching entities on the assumption the areas served by electric cooperatives more typically meet the definition of rural areas (see Attachment 3). As noted earlier, pursuant to the revisions adopted by the FCC on April 7, 2011, when the FCC presumptive average for the number of attaching entities is used in the telecom formula's allocation factor for unusable space, the two formulas produce nearly identical just and reasonable rates.⁴⁷

⁴⁵ See Affidavit of Ray LaMura, Attachment 1.

⁴⁶ See *id.*

⁴⁷ The Telecom Rate for REC, assuming three attaching entities, is calculated at \$5.47 versus \$5.45 for the Cable Rate (using the cost of debt as the imputed rate of return) and \$7.12 versus the \$7.10 for the Cable

70. That the just and reasonable rates produced by an economically appropriate application of the Cable Rate Formula may be lower than rate levels previously “negotiated” between electric cooperatives and cable companies, and/or “market benchmark” rates set by other monopoly pole owners, is not a valid economic or public policy concern. Consistent with economic cost causation principles, and as found by the FCC and the courts on various occasions, rates calculated using the Cable Rate Formula are much more than fully compensatory to the pole owner and do not subsidize the services provided by attaching entities. To allow an electric cooperative to charge an even higher rate, at best, serves only the very limited private financial interest of the cooperative, but not the greater public good. The latter is best served by adoption of the Cable Rate Formula.

Rate (using the FCC default rate of return). If one assumes only two attaching entities, the Telecom Rate increases to \$7.77 (using cost of debt) and \$10.12 (using FCC default return), respectively.

I HEREBY DECLARE UNDER PENALTY OF PERJURY that the foregoing is true and correct to the best of my knowledge.

Patricia D. Kravtin

COMMONWEALTH OF MASSACHUSETTS
COUNTY OF ESSEX

Subscribed and sworn to before me this ____ day of _____, 2011 by the said Patricia D. Kravtin.

Notary Public

My commission expires:_____.

STATE OF NEW HAMPSHIRE

Before the

PUBLIC UTILITIES COMMISSION

Time Warner Entertainment Company L.P.
d/b/a Time Warner Cable

Petition for Resolution of Dispute with
Public Service Company of New Hampshire

DT 12-084

PREFILED DIRECT TESTIMONY OF

PATRICIA D. KRAVTIN

ON BEHALF OF

TIME WARNER ENTERTAINMENT COMPANY L.P. d/b/a TIME WARNER CABLE

COMCAST CABLE COMMUNICATIONS MANAGEMENT, LLC

COMCAST OF NEW HAMPSHIRE, INC.

COMCAST OF MASSACHUSETTS/NEW HAMPSHIRE, LLC

AND COMCAST OF MAINE/NEW HAMPSHIRE, INC.

July 20, 2012

Table of Contents

INTRODUCTION 1

 Qualifications 1

 Assignment and Purpose of Testimony 5

 Executive Summary 5

APPROPRIATE METHODOLOGY FOR DETERMINING JUST AND REASONABLE
POLE ATTACHMENT RATES PURSUANT TO NH RSA 374:34-a AND PUC 1304.06 11

APPLICATION OF THE PUC’S SIX FACTOR RATE REVIEW STANDARD 15

 Factor 1: Relevant federal, state or local laws, rules and decisions 16

 Factor 2: The impact on competitive alternatives 21

 Factor 3: The potential impact on the pole owner and its customers 23

 Factor 4: The potential impact on the deployment of broadband services 27

 Factor 5: The formulae adopted by the FCC in 47 C.F.R. § 1.1409(c) through (f) in
 effect on July 16, 2007 31

 Factor 6: Any other interests of the subscribers and users of the services offered via
 such attachments or consumers of any pole owner providing such attachments, as may
 be raised 34

FCC RATE FORMULA METHODOLOGY 37

 Major Components of the FCC Pole Rate Formula 38

 Cable Rate Formula 41

 Differences with Old Telecom Rate Formula 46

 Revised Telecom Rate Formula 48

DETERMINATION OF JUST AND REASONABLE UNIFIED BROADBAND POLE
ATTACHMENT RATES FOR PSNH AND UNITIL 52

 Application of the FCC Cable Rate Formula to PSNH and Unitil 52

 Application of the FCC Revised Telecom Formula to PSNH and Unitil 63

CONCLUSION 70

List of Tables

1: Maximum Just and Reasonable Pole Attachment Rates for PSNH10

2: Maximum Just and Reasonable Pole Attachment Rates for Unutil.....10

3: Maximum Just and Reasonable Unified Broadband Pole Attachment Rates for PSNH and Unutil under the FCC Cable Rate Formula.....55

4: Comparison of Maximum Just and Reasonable Unified Broadband Pole Attachment Rates with Rates Calculated by PSNH65

5: Comparison of Maximum Just and Reasonable Unified Broadband Pole Attachment Rates with Rates Calculated by Unutil69

List of Attachments

1: Detailed Resume

2: Calculations of Maximum Just and Reasonable Pole Attachment Rates for PSNH

3: Calculations of Maximum Just and Reasonable Pole Attachment Rates for Unutil

1 **INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME, POSITION, AND BUSINESS ADDRESS.**

3 A. My name is Patricia D. Kravtin. I am an economist in private practice specializing in the
4 analysis of telecommunications and energy regulation and markets. My business address is
5 57 Phillips Avenue, Swampscott, Massachusetts.

6 **Qualifications**

7 **Q. PLEASE DESCRIBE YOUR PROFESSIONAL AND EDUCATIONAL**
8 **BACKGROUND.**

9 A. I received a B.A. with Distinction in Economics from the George Washington University.
10 I studied in the Ph.D. program in Economics under a National Science Foundation Fellowship at
11 the Massachusetts Institute of Technology (M.I.T.). My fields of concentration at M.I.T. were
12 government regulation of industry, industrial organization, and urban and regional economics.
13 My professional background includes a wide range of consulting experiences in regulated
14 industries. Between 1982 and 2000, I was a consultant at the national economic research and
15 consulting firm of Economics and Technology, Inc. (ETI) in that firm's regulatory consulting
16 group, where I held positions of increasing responsibility, including Senior Vice President/Senior
17 Economist. Upon leaving ETI in September 2000, I began my own consulting practice
18 specializing in telecommunications, cable, and energy regulation and markets.

19 I have testified or served as an expert witness on telecommunications matters in
20 proceedings before over 30 state, provincial, and federal regulatory commissions, including the
21 Federal Communications Commission ("FCC"), the Federal Energy Regulatory Commission
22 ("FERC"), the Canadian Radio-television and Telecommunications Commission ("CRTC") and

1 the Ontario Energy Board. In addition, I have testified as an expert witness in litigation before a
2 number of state and federal district courts on matters relating to telecommunications
3 competition, market power, and barriers to entry, and concerning access and use of poles,
4 conduits, and public rights-of-way. I have also testified before a number of state legislative
5 committees and served as advisor to a number of state regulatory agencies.

6 **Q. PLEASE DESCRIBE YOUR EXPERIENCE OF PARTICULAR**
7 **RELEVANCE TO THIS PROCEEDING.**

8 A. Over the course of my career, I have been actively involved in a number of state and
9 federal regulatory commission proceedings involving cost methodologies and the allocation of
10 costs of incumbent local exchange carriers (“ILECs”) and electric utilities. One local network
11 component, essential for the provision of competitive communications services, with which I am
12 also very familiar, is access to poles, ducts, conduits, and rights-of-way. I have testified
13 extensively on matters pertaining to these essential facilities before state and federal regulatory
14 agencies and district courts, including those in Florida, New York, California, Washington, and
15 North Carolina.

16 I have submitted reports in pole proceedings before the FCC, including both rounds of its
17 most recent pole rulemaking proceeding, *Implementation of Section 224 of the Act; A National*
18 *Broadband Plan for our Future*, Opinion and Further Notice of Proposed Rulemaking, 25 FCC
19 Rcd 11864 (2010) (“FCC 2010 FNRPM”) and *Implementation of Section 224 of the Act;*
20 *Amendment of the Commission’s Rules and Policies Governing Pole Attachments*, 22 FCC Rcd
21 20195 (2007). In 2006, I submitted testimony and was subject to live cross-examination before
22 the FCC’s Chief Administrative Law Judge, on issues pertaining to utility compensation for pole

1 attachments in *Florida Cable Telecommunications Association, Inc., et al. v. Gulf Power*
2 *Company*, Initial Decision, 22 FCC Rcd 1997 (2007), *aff'd*, *FCTA v. Gulf Power*, 26 FCC
3 Rcd 6452 (2011) (“*FCTA*”). I also submitted a declaration in the FCC’s earlier pole attachment
4 proceeding, CS Docket No. 97-98. Additionally, I submitted testimony before the FCC in pole
5 attachment complaint proceedings brought against electric utilities Gulf Power and Dominion
6 Virginia Power.

7 I have served as an expert or advisor on pole attachment matters in proceedings involving
8 investor-owned utilities, non-profit consumer-owned utilities, and municipally-owned utilities,
9 and before various state (and provincial) regulatory commissions including the Kentucky Public
10 Service Commission, the Arkansas Public Service Commission, the Public Utilities Commission
11 of Texas, the Georgia Public Service Commission, the South Carolina Public Service
12 Commission, the Public Service Commission of the District of Columbia, the New Jersey Board
13 of Public Utilities, the New York Public Service Commission, the Virginia Corporation
14 Commission, the Ohio Public Utilities Commission, and the Ontario Energy Board. I have also
15 testified on matters pertaining to access to poles and conduit of ILECs in proceedings before the
16 Georgia Public Service Commission, the South Carolina Public Service Commission, the Public
17 Service Commission of the District of Columbia, and the New York Public Service Commission.

18 I have also been actively involved in related issues pertaining to broadband deployment.
19 I have authored a number of reports dealing with this subject and participated as a grant reviewer
20 for the Broadband Technology Opportunities Program (“BTOP”) administered by National
21 Telecommunications and Information Administration (“NTIA”).

1 **Q. HAVE YOU TESTIFIED PREVIOUSLY BEFORE THE NEW**
2 **HAMPSHIRE PUBLIC UTILITY COMMISSION ?**

3 A. Yes. I submitted written pre-filed testimony before the New Hampshire Public Utility
4 Commission (“PUC” or “Commission”) in the Commission’s *Generic Competition Proceeding*,
5 Docket No. DR 90-002, on behalf of the Office of the Consumer Advocate, filed May 1, 1992
6 (direct), July 10, 1992 (reply), and August 21, 1992 (surrebuttal). My testimony in that
7 proceeding addressed the economics of monopoly bottleneck toll and switched access services,
8 and the design and implementation of intrastate access charges.

9 **Q. HAVE YOU PREPARED A SUMMARY CONTAINING DETAILS OF**
10 **YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE?**

11 A. Yes, I have. A detailed resume summarizing my training, previous experience, and prior
12 testimony and reports is provided as Attachment 1 to this testimony.

13 **Q. WHAT HAVE YOU RELIED UPON IN PREPARING THIS TESTIMONY?**

14 A. I have relied on my education, training, research, and experience in economic analysis,
15 and my prior experience in the areas of telecommunications and utility regulation as outlined
16 above and further detailed in Attachment 1. I have considered various data and information in
17 forming my opinions, including data available on the Federal Energy Regulatory Commission
18 (“FERC”) Form 1 for Public Service Company of New Hampshire (“PSNH”) and Unitil Energy
19 Systems, Inc. (“Unitil”), and the June 8, 2012 PSNH filing and the June 13, 2012 Unitil filing
20 submitted in this matter.

1 **Assignment and Purpose of Testimony**

2 **Q. PLEASE DESCRIBE YOUR ASSIGNMENT AND THE PURPOSE OF**
3 **YOUR TESTIMONY.**

4 A. I was asked by counsel for Time Warner Cable (“TWC”) and for Comcast Cable
5 Communications Management, LLC, Comcast of New Hampshire, Inc., Comcast of
6 Massachusetts/New Hampshire, LLC and Comcast of Maine/New Hampshire, Inc. (collectively
7 “Comcast”) to provide testimony on matters raised in this proceeding concerning the appropriate
8 methodology for determining just and reasonable rates for the attachments of cable television
9 service providers to poles owned by incumbent electric utilities pursuant to New Hampshire
10 Revised Statutes Annotated RSA 374:34-a (“RSA 374:34-a”) and the six factor rate review
11 standard set forth in N.H. Code Admin. R. Puc 1304.06 (“PUC 1304.06”), from an economic and
12 public policy perspective. As part of my assignment, I was asked to analyze the pole formula
13 calculations submitted by PSNH and other intervening utilities including Unutil, and to offer my
14 opinions regarding the utilities’ rate calculations as well as their specific application of the rate
15 formula methodology in the context of the applicable rate review standards.

16 **Executive Summary**

17 **Q. PLEASE SUMMARIZE YOUR TESTIMONY.**

18 A. My testimony describes the numerous economic and public policy rationales in support
19 of setting pole attachment rates that utilities may charge cable companies – for both traditional
20 cable and advanced broadband services, including interconnected Voice over Internet protocol
21 (“VoIP”) services – as well as competitive local exchange carriers (“CLECs”), based on a
22 unified broadband pole rate formula equal to the existing FCC cable rate formula. My testimony

1 explains why the existing FCC cable rate formula is by far the most appropriate and by far the
2 best methodology for determining maximum just and reasonable rates for pole attachments
3 pursuant to the governing pole attachment regulation in New Hampshire, RSA 374:34-a and
4 PUC 1304.06.

5 The advantages of the cable rate formula are many. First and foremost, the cable formula
6 is designed in a manner that is fully consistent and transparent with respect to the underlying
7 economic theory, including the principles of cost causation and economically efficient marginal
8 cost pricing. It also offers the practical advantages of being applied in a very simple,
9 expeditious, and unified manner that is less administratively burdensome than the telecom rate
10 formula.

11 Not only does the cable rate formula produce a result that is more economically efficient
12 than the old telecom rate formula, and more straightforward than either the old or revised
13 telecom formula, it also produces one that is fair to pole owning utilities and their ratepayers. In
14 particular, the rates derived using the cable formula (and especially including make-ready
15 charges that apply in addition to the formula rate) are much more than fully compensatory to the
16 pole owner in that they make a contribution over and above economically efficient prices, and
17 have been proven over time not to affect the utilities' investment in pole plant. Indeed, for the
18 reasons discussed in this testimony, pole owners and their customers stand to be made much
19 better off after attachments are made at rates set under the cable formula than if no such
20 attachments are made.

21 Given pole attachments are a vital input for the delivery of broadband services, the
22 combination of these key attributes makes the cable rate formula best suited to promote the

1 widespread deployment of advanced broadband services and competition in the increasingly
2 convergent communications industry where cable, telecommunications, and potentially electric
3 utility companies (or their affiliates) compete for the same customers in the voice, video,
4 broadband data and wireless marketplaces. This finding is one that has been explicitly
5 recognized by the FCC and the majority of certified states who have adopted a unified approach
6 for setting pole attachment rates based on the cable rate formula or a close variation of it. The
7 fact that the PUC's final rules specifically identify the potential impact on the deployment of
8 broadband services as one of the rate review criteria, would, in my opinion, make it difficult to
9 justify from an economic and public policy viewpoint a rate formula other than the cable rate
10 formula or a formula that produced a rate very close to the cable rate, and applied to pole
11 attachments of all kinds and across the spectrum of broadband services providers to the extent
12 allowed by applicable law.

13 As part of the 1996 amendments to the Communications Act, the FCC was directed to
14 implement two separate formulas when Congress extended access to utility poles at just and
15 reasonable rates beyond cable operators to include telecommunications service providers. The
16 PUC, however, is not similarly constrained. The adoption of a bifurcated pole rate formula
17 approach introduces a number of unnecessary complications and areas of potential dispute
18 among the parties into the rate setting process (e.g., number of attaching entities, amount of
19 unusable space on poles, classification of "cable" versus "telecom attachments,") with no
20 measurable offsetting economic or public interest benefit. To the contrary, from an economic
21 and public policy perspective, a bifurcated rate formula approach runs directly counter to widely-

1 accepted critical public policy goals of encouraging deployment of advanced broadband services
2 and promoting robust competition.

3 Indeed, these findings were the basis of the FCC’s decision in April 7, 2011 to adopt a
4 new, revised telecom formula, designed to produce rates as close to the cable rate as possible.
5 *Implementation of Section 224 of the Act, Report and Order and Order on Reconsideration, 26*
6 *FCC Rcd 5240 (2011)* (“April 7, 2011 Order”). While definitely superior to the old telecom
7 formula, since the new formula is intended to produce rates roughly equivalent to the cable rate,
8 there is no real purpose served by adopting it at the state level, where there is no legal
9 requirement to do so, as is the case here in New Hampshire. Indeed, the vast number of other
10 states who have exercised jurisdiction over poles have not adopted a bifurcated rate setting
11 approach, and in almost all instances where a specific rate formula was adopted for cable and
12 telecommunications attaching entities, that rate formula was the FCC cable rate or slightly
13 modified version.

14 My testimony provides specific rate results for pole attachment rentals derived from a
15 proper application of the FCC cable rate formula for PSNH and Unitil using data for the years
16 2010 and 2011, respectively, provided by the utilities, in addition to data publically reported by
17 the utilities on FERC Form 1. Those results are presented in Table 1 (for PSNH) and Table 2
18 (for Unitil) on the following page.

19 My testimony also provides specific rate results calculated for PSNH and Unitil (see
20 Tables 1 and 2 below) using the revised FCC telecom formula should the PUC decide to adopt a
21 bifurcated pole rate formula approach. For the reasons described in my testimony and outlined
22 above, adoption of a bifurcated pole rate formula approach which applies the FCC cable rate

1 formula to attachments classified as “cable” and the revised FCC telecom formula to attachments
2 classified as “telecom” would be a second best option for the PUC in determining just and
3 reasonable rates that utilities may charge eligible broadband services providers for pole
4 attachments as compared with the best option of adopting a unified, rate setting approach using
5 the cable rate formula.

6 Both PSNH and Unitil have proposed bifurcated rate formula approaches. In addition to
7 their reliance on an inferior bifurcated approach to rate setting, both utilities’ calculations contain
8 serious flaws, either in the data inputs used to run the formulas, or in the manner in which the
9 rate formulas themselves are applied. PSNH in particular applies the FCC’s old, now discarded
10 telecom formula, which, for the reasons summarized above, produces rates far in excess of
11 economically efficient levels and are thus counter productive to attainment of widely-accepted
12 public policy goals. Unitil correctly applies the FCC’s new, revised telecom formula, but
13 includes a number of cost accounts not included in the FCC formula approach. More
14 significantly, Unitil disaggregates costs as between solely owned and jointly owned poles in a
15 manner that creates an artificial, highly distorted distinction between the two categories of poles
16 and that produces an unjustifiably high and economically unreasonable pole attachment rate for
17 solely owned poles.

18

Table 1 PSNH Maximum Just and Reasonable Unified Broadband Pole Attachment Rental Rate Under FCC Cable and Revised Telecom Formula			
PSNH Based on Year End 2010 Data	Cable	New Telecom 3 AE	Revised Telecom 5 AE
Net Investment Per Bare Pole	\$387.02	\$387.02	\$387.02
x Carrying Charges	35.12%	35.12%	35.12%
x Space Factor*	7.41%	16.89%	11.20%
x Cost Factor**	n/a	.44	.66
Maximum J&R Solely-Owned Pole	\$10.07	\$10.05	\$10.10
Maximum J&R Jointly-Owned Pole	\$5.03	\$5.03	\$5.04
*Calculated using FCC presumptive values for space factor (13.5ft usable space on 37.5 ft. pole), and FCC cost factors linked to FCC presumptions for space and number of attaching entities (“AE”)- 3 non-urbanized, 5 urbanized.			

1

Table 2 Unitil Maximum Just and Reasonable Unified Broadband Pole Attachment Rental Rate Under FCC Cable and Revised Telecom Formula			
Unitil Based on Year End 2011 Data	Cable	New Telecom 3 AE	Revised Telecom 4 AE
Net Investment Per Bare Pole	\$487.70	\$487.70	\$487.70
x Carrying Charges	31.51%	31.51%	31.51%
x Space Factor*	7.24%	16.71%	13.20%
x Cost Factor*	n/a	.433	.548
Maximum J&R Solely-Owned Pole	\$11.12	\$11.12	\$11.12
Maximum J&R Jointly-Owned Pole	\$5.56	\$5.56	\$5.56
*Calculated using Unitil’s space factor (13.82 usable space on 37.57 ft. pole), and appropriate FCC cost factors for Unitil’s space factors and assumed number attaching entities (“AE”).			

2

1 **APPROPRIATE METHODOLOGY FOR DETERMINING JUST AND REASONABLE**
2 **POLE ATACHMENT RATES PURSUANT TO NH RSA 374:34-a AND PUC 1304.06**

3 **Q. HAVE YOU MADE A DETERMINATION OF THE MOST APPROPRIATE**
4 **METHODOLOGY FOR DETERMINING MAXIMUM JUST AND REASONABLE POLE**
5 **ATTACHMENT RATES THAT UTILITIES MAY CHARGE CABLE COMPANIES AND**
6 **OTHER ELIGIBLE ATTACHERS IN NEW HAMPSHIRE PURSUANT TO RSA 374:34-a**
7 **AND THE RATE REVIEW STANDARD SET FORTH IN PUC 1304.06?**

8 A. Yes, I have. The language in RSA 374:34-a governing the rules that the PUC shall adopt
9 in setting rates for pole attachments in New Hampshire affords the PUC discretion in adopting an
10 “appropriate formula or formulae for apportioning costs” and thereby affording the PUC the
11 ability to adopt a single unified broadband rate formula.¹ Unlike the FCC in setting its rules
12 governing pole attachment rates for investor owned utilities at the federal level, the PUC is not
13 constrained by the existing statutory framework of Section 224(e) of the Communications Act
14 (“Act”) to implement a bifurcated rate structure that establishes separate cable and
15 telecommunications rate formulas.

16 As discussed in more detail below, the adoption of two separate formulas, as the FCC
17 was directed to implement as part of the 1996 amendments to the Act when access to utility
18 poles at just and reasonable rates was extended beyond cable operators to include
19 telecommunications service providers, introduces a number of unnecessary complications into

¹ See RSA 374:34-a.III (effective July 16, 2007) (“The commission shall adopt rules under RSA 541-A to carry out the provisions of this section, including appropriate formula or formulae for apportioning costs.”).

1 the rate setting process. Even more importantly from an economic and public policy perspective,
2 is that, in light of the technological and market changes in the communications industry that have
3 ensued in the 16 years since the passage of the Telecommunications Act in 1996, a bifurcated
4 pole rate formula approach is at cross purposes to the critical public policy goals of encouraging
5 deployment and adoption of advanced broadband services and promoting robust competition in
6 the increasingly convergent communications industry.

7 In ways not fully anticipated at the time the Telecommunications Act was passed, the
8 telecommunications marketplace has become increasingly convergent over the past couple of
9 decades with telecommunications, cable television (and potentially electric utilities or their
10 affiliates as well) competing for the same customers in the voice, video, broadband data and
11 wireless marketplaces. In an increasingly convergent marketplace, markets that were
12 traditionally thought of as separate markets will no longer function as separate or independent
13 markets.

14 In light of these important structural changes in the industry, a regulatory policy that is
15 readily adaptable and competitively neutral (i.e., does not give one competitor in a given market
16 an undue competitive advantage) with respect to changes in service usage, mix, and technology
17 over time is highly desirable from the standpoint of both economic efficiency and equity.

18 In this context, the adoption of a single unified broadband formula that applies to pole
19 attachments of all kinds and applies across the spectrum of broadband providers is best suited to
20 achieve the widely accepted public policy goals of encouraging the widespread deployment of
21 broadband services and promoting robust competition in the increasingly convergent
22 communications marketplace.

1 This concept was explicitly recognized in the FCC’s National Broadband Plan the
2 agency’s Further Notice of Proposed Rulemaking issued in the wake of the National Broadband
3 Plan, and the FCC’s final decision in that rulemaking proceeding the April 7, 2011 Order.² The
4 State of New Hampshire has embraced similar goals in the form of a “Broadband Action Plan”
5 designed to encourage and to increase broadband deployment throughout all areas of the state.³
6 Moreover, as discussed more fully below, the rules promulgated by the PUC in PUC 1304.06 to
7 implement RSA 374:34-a set forth specific criteria designed to adopt and implement a formula
8 methodology that takes into express consideration the achievement of those goals.

9 Consistent with the recent findings of the FCC,⁴ and the findings of the overwhelming
10 majority of states that have exercised jurisdiction over pole attachment regulation, in the context
11 of these overarching goals to encourage and increase broadband deployment, among other
12 benefits, the existing cable rate formula would be the best overall methodology for a unified rate
13 for broadband services providers and for determining just and reasonable rates. As will be
14 explained in more detail in this testimony, the cable rate formula, which allocates costs
15 exclusively in proportion to relative use offers many advantages vis-à-vis the existing telecom

² FCC, *Connecting America: The National Broadband Plan* (2010), at 110, <http://www.broadband.gov/plan/#read-the-plan>; *Implementation of Section 224 of the Act; A National Broadband Plan for Our Future*, Order and Further Notice of Proposed Rulemaking, 25 FCC Rcd 11864 (2010) (“FCC 2010 FNPRM”); April 7, 2011 Order ¶ 181.

³ See New Hampshire Department of Resources and Economic Development (DRED) and the Telecommunications Advisory Board (TAB), *State of New Hampshire Broadband Action Plan*, dated June 30, 2008 (“NH Broadband Action Plan”), available at <http://www.nheconomy.com/uploads/Final-Report-082808.pdf>.

⁴ See April 7, 2011 Order ¶¶ 172-181. FCC 2010 FNPRM ¶ 118 (“We believe that pursuing uniformity by increasing cable operators’ pole rental rates—potentially up to the level yielded by the current telecom formula—would come at the cost of increased broadband prices and reduced incentives for deployment. Instead, by seeking to limit the distortions present in the current pole rental rates by reinterpreting the telecom rate to a lower level

1 rate formula which allocates costs using a hybrid proportional and per capita approach. These
2 advantages include, among others, the cable formula being designed in a manner that is fully
3 consistent and transparent with respect to the principles of cost causation and economically
4 efficient marginal cost pricing, the requirement to be fully compensatory to the pole owner, as
5 well as the practical advantages of being applied in a simple, expeditious, and unified manner
6 that is less administratively burdensome than the telecom rate formula.⁵

7 Not only does the cable rate formula produce a result that is more economically efficient
8 than the old telecom rate formula, and more straightforward than either the old or revised
9 telecom rate formula, it also produces one that is fair to pole owning utilities and their ratepayers.
10 In particular, rates derived using the cable rate formula (and especially including make-ready
11 charges that apply in addition to the formula rate) provide contribution over and above
12 economically efficient prices, and has been proven over time not to affect the utilities'
13 investment in pole plant.

14 As discussed fully in the following section of this testimony, rates at levels produced by
15 the cable rate formula, as recently found by the FCC, and as found by the overwhelming majority
16 of states certified to regulate pole attachments, is much more appropriate from economic and
17 public policy perspectives (given the PUC's rate review standard criteria) over the old telecom

consistent with the Act, we expect to increase the availability of, and competition for, advanced services to anchor institutions and as middle-mile inputs to wireless services and other broadband services.”).

⁵ April 7, 2011 Order ¶ 183.

1 rate formula and even the revised telecom rate formula adopted by the FCC in its April 7, 2011
2 Order.⁶

3 While the revised telecom rate formula goes a long way to address the infirmities of the
4 old telecom rate formula by effectively reducing rates derived by that formula to levels in the
5 close vicinity of cable rate, given the PUC has the latitude to adopt a unified rate formula in the
6 first instance, there is no real benefit to implementing a second rate formula that was expressly
7 designed by the FCC to produce a rate as close as possible to the first. In this context, adoption
8 of the revised telecom rate formula to be applied to telecommunications attachments offers no
9 real advantage, but does have the disadvantage of introducing unnecessary complexity and areas
10 of contention as discussed further below.

11 **APPLICATION OF THE PUC'S SIX FACTOR RATE REVIEW STANDARD**

12 **Q. PLEASE DESCRIBE THE SIX FACTOR RATE REVIEW STANDARD**
13 **SET FORTH IN PUC 1304.06 THAT THE PUC IS TO FOLLOW IN SETTING POLE**
14 **ATTACHMENT RATES FOR CABLE OPERATORS AND COMPETITIVE LOCAL**
15 **EXCHANGE CARRIERS.**

16 A. PUC 1304.06 sets forth the following criteria as the rate review standard the PUC is to
17 apply in “[i]n determining just and reasonable rates for the attachments of competitive local
18 exchange carriers and cable television service providers to poles owned by incumbent local
19 exchange carriers or electric utilities.” These six criteria are as follows:

20 (1) Relevant federal, state or local laws, rules and decisions;

⁶ As discussed *infra* in this testimony, the FCC’s revised telecom formula, implemented appropriately, would be an acceptable formula should the PUC choose to implement a bifurcated formula approach.

- 1 (2) The impact on competitive alternatives;
- 2 (3) The potential impact on the pole owner and its customers;
- 3 (4) The potential impact on the deployment of broadband services;
- 4 (5) The formulae adopted by the FCC in 47 C.F.R. § 1.1409(c) through (f) in effect on July 16,
- 5 2007; and
- 6 (6) Any other interests of the subscribers and users of the services offered via such attachments
- 7 or consumers of any pole owner providing such attachments, as may be raised.

8 **Q. PLEASE EXPLAIN THE BASIS OF YOUR OPINION THAT THE PUC'S**
9 **SIX FACTOR REVIEW STANDARD IS BEST SATISFIED BY THE ADOPTION OF A**
10 **UNIFIED BROADBAND RATE FORMULA BASED ON THE FCC CABLE RATE.**

11 A. The basis of my opinion is described below for each of the six factors that comprise the
12 PUC's rate review standard. While my analysis is structured to address each factor individually,
13 the factors interrelate in very substantive ways. Accordingly, my ultimate determination that a
14 unified broadband rate formula based on the cable rate best satisfies the PUC's rate review
15 standard is based on the cable rate being best suited to achieve the six identified criteria on *both*
16 an individual and collective basis.

17 **Factor 1: Relevant federal, state or local laws, rules and decisions.**

18 The FCC cable formula is a long-standing methodology that is well accepted and easy to
19 understand and apply. Testament to this point is the fact that the vast majority of states that
20 regulate pole attachments use the cable rate formula or some close variation of it for all regulated
21 attachments. Included in the many states that use the cable rate formula for all third party
22 attachments is the neighboring state of Massachusetts with which New Hampshire directly

1 competes for economic development opportunities and the ability to attract a highly educated
2 and skilled labor force.

3 Notwithstanding numerous legal challenges by monopoly pole owners over the years, the
4 FCC and the courts, including the U.S. Supreme Court, have repeatedly found the cable rate to
5 be more than compensatory to the utility pole owner and void of cross subsidy, especially when
6 make-ready charges designed to recover any non-recurring out-of-pocket costs the utility may
7 incur in order to accommodate any particular third party attachment to its poles and that apply
8 over and above the recurring formula rental rate are taken into account.⁷

9 It is the case at the federal level that, pursuant to Section 224(e) of the Communications
10 Act as amended in 1996, a separate telecom rate formula has been applied to attachments
11 classified as “telecommunications.” However, since the passage of the 1996 amendments, the
12 issue of applying a bifurcated formula approach that requires the separate classification and rate
13 treatment of “cable” versus “telecommunications” attachments has become much more complex
14 and impactful. There are several related reasons why, as a matter of economic and public policy,
15 the PUC should not give that aspect of the federal law (i.e., the establishment of a bifurcated rate
16 formula approach) much consideration in the context of this particular rate review standard.

17 First, since the passage of Section 224(e), there is increasing recognition at both the
18 federal and state levels of the substantial public interest benefit to policies that promote increased

⁷ See, e.g., *Alabama Power Co. v. FCC*, 311 F.3d 1357, 1370-71 (11th Cir. 2002) (“[A]ny implementation of the [Commission’s cable pole attachment rate] (which provides for much more than marginal cost) necessarily provides just compensation.”); *FCC v. Florida Power Corp.*, 480 U.S. 245, 253-54 (1987) finding that it could not “seriously be argued, that a rate providing for the recovery of fully allocated cost, including the actual cost of capital, is confiscatory”). See also FCC National Broadband Plan at 110 (“[The cable rate] has been in place for 31 years and is ‘just and reasonable’ and fully compensatory to utilities.”).

1 broadband deployment and widespread availability of advanced broadband services. Back in
2 1996, broadband applications were still in their relative infancy. Now, they are perceived by
3 many as a basic necessity. Back in 1996, there was the widely expressed expectation of a
4 relatively larger number of facilities based carriers than has actually occurred. Since the telecom
5 formula divides the costs of unusable space on the pole on a per capita basis, the formulaic
6 impact of the relatively fewer anticipated number of entities needing to attach to utility poles has
7 been a much greater divergence between the long-standing cable rate and the telecom formula
8 that Congress directed the FCC to implement.

9 Second, and in direct recognition of and in response to the preceding factors, the FCC, in
10 its seminal April 7, 2011 Order, formally abandoned the old telecom formula. In its decision, the
11 FCC explicitly acknowledges that the old telecom formula has been shown over time to diverge
12 too substantively from accepted principles of cost causation, thereby resulting in rates well in
13 excess of efficient levels and that serve to place a damper on broadband deployment, competition
14 and the widespread availability and adoption of advanced broadband services.⁸ The reasons why
15 this is the case are discussed more fully under the discussion of factor #5 below. While it is my
16 understanding that the FCC, subject to the language of Section 224(e), was constrained to keep a
17 bifurcated rate formula approach, the revised telecom rate formula adopted by the FCC in its
18 April 7, 2011 decision, for all intents and purposes, when properly applied, produces a rate that is
19 an exact or very close equivalent to the cable rate.

⁸ April 7, 2011 Order ¶¶ 147-48, 172, 174-76.

1 Third, the federal law that permits states to certify to regulate pole attachments in their
2 state, does not require certifying states to apply the bifurcated formula approach. Section 224(e)
3 is a requirement imposed only on the FCC to apply in its federal level regulation of investor
4 owned utilities operating in states where the FCC has maintained jurisdiction. Again, as noted
5 above, the vast majority of states that have exercised jurisdiction over poles, and that are not
6 constrained as is the FCC by language in Section 224(e), have not opted to implement a separate
7 telecom rate formula.

8 Fourth, since the passage of Section 224(e), the communications industry has become
9 increasingly convergent in nature, such that markets previously perceived as separate markets are
10 converging into one more broadly defined communications market consisting of voice, video,
11 data, and wireless service applications. In this regard, however, it is significant that the FCC,
12 consistent with its prior rulings upheld by the Supreme Court, as well as pole regulating states,
13 have consistently applied the cable formula to commingled cable and broadband services
14 including Internet and interconnected VoIP. Similarly, there is no language in the PUC's pole
15 attachment rules requiring cable operators to pay a higher pole attachment rate for commingled
16 cable television and Internet services, including interconnected VoIP, than they would for
17 traditional cable.

18 While the PUC's 2011 ruling classified VoIP as a "telecommunications" service, it is my
19 understanding that the PUC's ruling was for the limited purposes of ensuring that certain
20 consumer protection requirements imposed on other providers of voice services were also
21 adhered to by cable operators offering cable voice services (which the PUC order recognized was
22 already the case). It is my further understanding that the PUC order did not address the issue of

1 pole attachment rates applicable to VoIP services.⁹ Indeed, in the PUC’s own words, its ruling
2 was not intended to have anything more than a “minimal if any, competitive impact on Comcast
3 and Time Warner services in New Hampshire,” which indeed would have been the case had the
4 result of the order been to subject cable operators to the higher telecom formula rate.¹⁰

5 In any event, it is my further understanding that recent legislation has specifically
6 confirmed that VoIP is not subject to regulation as telecommunications service in New
7 Hampshire.¹¹

8 Finally, as explained in the discussion of factor #4 below, the PUC’s rules, by
9 specifically identifying the potential impact on the deployment of broadband services as one of
10 the rate review criteria, would, in my opinion, make it difficult to justify a rate formula to be
11 applied to broadband service providers other than the cable formula or a formula that produced a
12 rate very close to the cable rate. That said, in my opinion as an economist with experience in
13 setting just and reasonable rates for essential facilities, the just and reasonable standard in and of
14 itself, as set forth in New Hampshire’s pole attachment statute and as widely adopted by other
15 certified states, independent of the PUC’s final rules promulgated to implement that statute,
16 provides a solid basis upon which to adopt the cable rate formula.

⁹ See *New Hampshire Tel. Ass’n*, NH PUC Dkt. No. DT 09-044, Order No. 25,262 (Aug. 11, 2011).

¹⁰ According to the PUC’s ruling, cable operators Comcast and Time Warner were already substantially complying with the customer service requirements and regulations at issue in the ruling. On this basis, the PUC concluded that its “finding that cable voice services are subject to regulation should have minimal, if any, competitive impact on Comcast and Time Warner services in New Hampshire.” See *id.* at 59. I understand that adoption of PSNH’s proposed use of the FCC’s old FCC formula to VoIP attachments would likely double pole attachment rent for Comcast and Time Warner Cable in New Hampshire. See Direct Testimony of Glenn Fiore and Christopher Hodgdon on behalf of Comcast at 14; Direct Testimony of Julie Laine on behalf of Time Warner Cable at 18.

¹¹ See SB48, N.H. Laws of 2012, Ch. 177.

1 **Factor 2: The impact on competitive alternatives.**

2 From an economic and public policy perspective, there is widespread acceptance that
3 sound regulatory policy should be implemented in a manner that does not provide a competitive
4 advantage to one competitor or competitive alternative vis-à-vis another. This concept is widely
5 known as the concept of competitive neutrality or level playing field. All other things being
6 equal, competitive parity among providers of broadband services, including new VoIP services,
7 is best achieved by a regulatory policy that applies a uniform price per foot of equivalent utility
8 pole attachment, set at an economically efficient level so as not to artificially depress demand in
9 the final market for broadband services. Conversely, a bifurcated rate formula approach can
10 serve to penalize arbitrarily a competitor for its choice as to technology, business plan, or mix of
11 service offerings, especially, when that approach imposes an undue cost burden far in excess of
12 cost causative costs on one class of competitors vis-à-vis another, as is the case with the old
13 telecom formula. This, in turn, can lead to the stifling of innovation and competition for
14 broadband services, an outcome that is contrary to public policy goals and the public interest.

15 The FCC cable rate formula methodology is not inherently biased in favor of any one
16 industry or competitor over another, and can be readily applied in uniform fashion across
17 broadband providers. The continued adherence to the FCC cable methodology, as clearly
18 articulated in the FCC's April 7, 2011 Order, and the FCC's National Broadband Plan, the
19 impetus for the pole rulemaking, is first and foremost driven by the public policy objectives of
20 promoting competition and broadband deployment. This is true in all regions of the country, and
21 particularly the case in rural areas, where there are even less favorable underlying economic
22 conditions for broadband deployment, and even more to gain from the economic and social

1 benefits of affordable access to advanced broadband services in today's information age
2 economy. The economic reality is that, in order to achieve these widely embraced public policy
3 objectives, pole attachments, a vital input to broadband deployment, need to be priced at an
4 efficient, cost-based level (i.e., closer to marginal cost) relative to the excessive monopoly rate
5 levels sought by the pole owners, and in a manner that does not discriminate against competitive
6 alternatives depending on the provider's particular choice as to technology, business plan, or mix
7 of service offerings.

8 Fundamental economic principles hold that the closer the prices that third party attachers
9 are charged for their shared use of the natural monopoly pole facilities are to the owner's
10 marginal costs of attachment, the closer the outcome will be to achieving the performance
11 attributes ascribed to a competitive marketplace, i.e., the more efficient the outcome in terms of
12 maximizing the productive use of societal resources and the resultant benefits to consumers,
13 including lower prices and greater service offerings and innovation. Any rate level materially
14 higher than the existing cable rate, which, as noted above, is already compensatory and in excess
15 of the marginal cost, will raise the regulated rate for this critical input needed to provide
16 broadband services to many users even further above the economic cost, thereby introducing
17 even greater market distortions vis-à-vis the competitive benchmark of marginal cost pricing
18 This will have a decidedly negative or harmful impact on competitive alternatives and more
19 generally, on promoting competition and deployment of advanced broadband services including
20 interconnected VoIP.

1 **Factor 3: The potential impact on the pole owner and its customers.**

2 Pursuant to widely recognized economic principles of cost causation (and under the legal
3 standard of just compensation), avoidance of any cross-subsidy between the pole owner and the
4 third party attacher requires that attachers be held responsible for the additional (or incremental)
5 costs they cause the pole owning utility to incur, such that the utility is, at a minimum, no worse
6 off for having hosted the third party attachment. The cable rate formula is a fully allocated rate
7 formula which, by definition, provides for recovery of costs that would occur even in the absence
8 of the third party attacher. Accordingly, and for use of otherwise vacant space on the pole, the
9 cable rate provides for recovery of much more than the incremental costs required to avoid cross-
10 subsidy.

11 This is especially the case since, *in addition to* the cable formula rate, the utility is also
12 able to pass on to the attachers make-ready charges to recover any one-time incremental costs
13 incurred to accommodate third party pole attachments, including the full costs (as actually
14 incurred and paid by the utility) associated with rearrangements and pole modifications or
15 replacements as necessary to accommodate the attachments. On top of these charges, the utility
16 may also typically charge an attacher other direct reimbursement fees, including fees for such
17 administrative items as application processing, field surveys, inspections and audits.

18 Because of this additional compensation (which can be quite substantial) over and above
19 the regulated rate, plus the fact that any upgrades to the pole made and paid for by the attacher
20 through the make-ready process become property of the utility, the pole owner (and its
21 ratepayers) stands to be made *much better off* financially after the accommodation of an
22 additional attachment. This can occur in any of the following ways:

- 1 • The utility receives in excess of the incremental costs it incurs through the combination of
2 make-ready and other direct fees plus the rental rate, providing a source of contribution to the
3 cost of providing core electric distribution service that it otherwise would not have, but for
4 use of otherwise available pole capacity;
- 5 • When poles are modified or replaced (at the attaching entity's expense), the utility typically
6 ends up with greater available pole capacity as compared with pre-attachment, because the
7 modified or replacement poles are stronger, taller and/or in better condition;
- 8 • The utility has the benefit of a stronger and often a newer pole for its own operations at the
9 attacher's expense, and can realize savings (or deferred capital expenditures) to its own
10 build-out program; and
- 11 • With more potential space available on the pole to accommodate additional uses and/or users,
12 the utility can realize additional sources of revenue.

13 Utility ratepayers also stand to benefit directly from the shared use of utility poles. The
14 contribution received by the utility for use of otherwise available capacity, or to its capital
15 program, through the process of make-ready (including pole replacement) at the attacher's
16 expense, should translate into reduced utility revenue requirement needed to be recovered
17 through regulated rates. In addition, as discussed further below, as consumers of
18 communications services, utility ratepayers are also the beneficiaries of lower rates and
19 expanded and/or advanced service offerings in the convergent communications marketplace and
20 the growing number of markets dependent on advanced broadband services. The sharing of the
21 utility's pole network – an asset that has historically been paid for and maintained primarily
22 using ratepayer dollars – allows for more effective utilization of the asset, and hence a means of
23 effectively enhancing the return on ratepayer dollars.

1 The negative economic impact of high pole attachment rates in the broadband services
2 market (described in more detail in the discussion of the next rate review factor) is magnified by
3 the fact there would be little to any offsetting societal value gained in the electric distribution
4 market, where very different economic conditions exist. These conditions include:

- 5 • The true marginal costs of pole attachments (i.e., the costs that truly, but for the existence of
6 third party attachers, would not otherwise exist for the utility in providing its core electric
7 distribution service) are extremely small when one looks at costs that are not already
8 recovered in the set of make-ready or direct reimbursable fees the utilities charge attachers.¹²
9 This means, even if there were no third party attachers, the electric distribution company's
10 actual pole attachment related costs would not go down much.¹³
- 11 • The impact of pole attachment revenues on a per electric subscriber or per kilowatt hour
12 basis is very small (in contrast to the relatively large impact per broadband subscriber).
- 13 • The demand for electric distribution service is not price sensitive, it is what economists refer
14 to as inelastic demand, meaning even if the impact of pole attachment revenues per electric
15 subscriber was significant (which it is not) and even if it could be shown that electric rates
16 charged by the utilities would actually go down in response to changes in pole attachment
17 rates (which is unlikely), it would not cause that subscriber to increase his or her demand for
18 electricity.

¹² Along with the FCC and others, I have previously measured these recurring marginal costs to be in the range of \$1.00 to \$1.50 annually per attachment for electric utilities.

¹³ Actually, for the reasons delineated above, the electric company and its customers would be much worse off without third party attachers. Under the FCC methodology, as demonstrated by economics, and as found by the courts, third party attachers pay much more than the marginal costs, thereby providing a significant contribution to the electric company's overhead costs, especially taking make-ready charges into account. Moreover, through make-ready charges, third party attachers pay the total out-of-pocket costs to install taller and stronger poles when required to accommodate their attachments. These poles remain fully owned by the utility, which benefits additionally by the revenues it can earn by renting out space to other attachers or by savings to its own capital upgrade programs.

- 1 • There is no evidence from utilities of which I am aware that demonstrates the process by
2 which electric customers would receive an actual benefit if pole rentals from cable
3 companies increase.
- 4 • There is no evidence to suggest any dampening of investment in distribution plant by electric
5 utilities have occurred in the more than three decades in which the cable rate has been the
6 prevailing rate for third-party pole attachment rates. To the contrary, increases in Account
7 364 gross investment in pole plant has steadily increased over time.
- 8 • The electric utility subscribers are also potential subscribers of broadband and associated
9 advanced services, so they stand to benefit as much or more from a lower pole attachment
10 rate such as the cable rate that encourages a lower price for such broadband services than
11 from a higher pole attachment rate that will stifle broadband competition, deployment and
12 adoption.

13 For all the aforementioned reasons, the pole owners and their customers have much to gain,
14 and little if any to lose, from a pole attachment rate set equal to the cable rate. This finding is
15 corroborated by the fact that the National Association of State Utility Consumer Advocates
16 (“NASUCA”), a public interest group representing the interest of all consumers, including cable,
17 telephone and utility ratepayers, has consistently supported the cable rate, including its most
18 recent recommendation to the FCC to adopt a unified cable rate as the best way to balance
19 interests of the various consumer constituencies.¹⁴ Similarly, the vast majority of utility
20 commissions in states certified to regulate pole attachment rates, expressly charged, pursuant to

¹⁴ Reply Comments of The National Association of State Utility Consumer Advocates in FCC Docket 07-245, filed Apr. 22, 2008, at 1-2, 5 (“This rate was upheld against challenges that it was confiscatory. Thus this is the rate that should be used for all pole attachments, regardless of the exact service provided over the attachment, and regardless of the identity of the attacher.... Equally importantly, the Commission must not increase the rate paid by broadband service providers because this would be contrary to ‘the nation’s commitment to achieving universal broadband deployment and adoption.’”).

1 Section 224(c)(2)¹⁵ to take into the account the impact on utility customers, have applied a
2 uniform pole attachment rate based on the cable rate, or close variation of it.

3 **Factor 4: The potential impact on the deployment of broadband services.**

4 As widely acknowledged, pole attachments are a vital input needed for the delivery of
5 new, advanced broadband services and applications. It is fundamental economic theory that a
6 more efficient rate (such as the FCC cable rate) that more closely tracks a competitive rate level
7 can provide important benefits to consumers – including both utility ratepayers and cable
8 subscribers alike. Setting rates for pole attachments at economically efficient levels creates a
9 market environment that is most conducive to the provision of a greater array of innovative and
10 advanced broadband services including associated advanced services like VoIP, and at lower
11 rates, than would occur if the pole attachment rate was set at higher monopoly rate levels.
12 Charging rates higher than the cable rate for this vital pole input serves no valid economic or
13 public policy purpose.

14 To the contrary, such excessive rates work at cross purposes to important public policy
15 goals, as expressed by policymakers nationally, and in New Hampshire, to promote effective
16 competition and widespread availability of broadband services. Increasingly, the widespread
17 availability of broadband services, at affordable prices, is being recognized as essential to the
18 economic and overall well-being of a community. The need for, and resultant benefits of,
19 broadband connectivity and its applications at affordable prices, has made its way into almost

¹⁵ 47 U.S.C. § 224(c)(2) (“Each State which regulates the rates, terms, and conditions for pole attachments shall certify to the Commission that ... it does consider the interests of the subscribers of the services offered via such attachments, as well as the interests of the consumers of the utility services.”).

1 every aspect of modern life including health, education, public safety, recreation and culture,
2 commerce, and government.

3 This is particularly the case in less populated areas such as exist in New Hampshire
4 where there are even less favorable underlying economic conditions for broadband services
5 deployment (e.g., lower population densities resulting in higher construction costs per capita) –
6 areas with even more to gain from the economic and social benefits of affordable access to
7 broadband services in today’s information age economy. These are all points emphasized in the
8 FCC’s National Broadband Report, which recommends rates for pole attachments be set as low
9 and as close to uniform (in the vicinity of the current cable rate) as possible to support the goal of
10 broadband services deployment.¹⁶ Another added benefit of VoIP service in particular is that
11 provides for the ability to more effectively compete with the incumbent local exchange carrier,
12 which in itself produces benefits to consumers in the form of lower prices for both telephony and
13 broadband service offerings and hence increased deployment and adoption of the latter,

14 These are also points emphasized in the State of New Hampshire’s Broadband Action
15 Plan, which independently acknowledges and validates the findings of the FCC’s National
16 Broadband Plan as directly applicable in the State of New Hampshire as the following excerpts
17 make clear:

¹⁶ See FCC National Broadband Report at 110, which recommends rates for pole attachments be set as low and as close to uniform (in the vicinity of the current cable rate) as possible to support the goal of broadband deployment, particularly in rural areas where the “impact of these rates can be particularly acute.”

- 1 • “Improv[ing] utility pole access” is identified as a *critical priority* of the state planning
2 process requiring regulatory involvement.¹⁷
- 3 • “Based upon research, vendor feedback, and the regional forums, it appears that utility pole
4 access may be an important issue for broadband deployment in the State of New
5 Hampshire.”¹⁸
- 6 • “Attachment fees for pole access should be *consistent and competitive* so that they do not
7 hinder the further deployment of broadband services.”¹⁹ (Emphasis added.)
- 8 • One of the “responsibilities of the proposed broadband entity” is to “work with private
9 vendors to ensure that public sector initiatives do not impede private investment that would
10 expand broadband services in unserved and underserved regions of New Hampshire.”²⁰

11 As to this last bullet point, allowing the monopoly pole owners to charge cable operators
12 and other broadband services providers pole rents in excess of an economically efficient level,
13 perhaps more directly than any other regulatory policy, will serve to “impede private investment
14 that would expand broadband services in unserved and underserved regions of New Hampshire,”
15 *expressly contrary to the expressed goals of the NH Broadband Action Plan.*

16 Having to absorb higher pole rents directly (and negatively) impacts the cable industry’s
17 ability to meet financial and investment obligations including those related to the build out of
18 infrastructure needed to support the widespread deployment of advanced broadband services and
19 technologies, including interconnected VoIP services. Cable companies are not generally in a

¹⁷ See NH Broadband Action Plan at iv, 39.

¹⁸ See *id.* at 39.

¹⁹ See *id.*

²⁰ See *id.* at 34-35.

1 position to flow through to customers higher pole costs given the increasing price-constraining
2 competition and market conditions they face – conditions which are quite different from those
3 facing the utility in regard to its provision of electric distribution services.

4 However, to the extent cable companies are able to do so in selected markets, they will
5 raise the cost of broadband and interconnected VoIP services in those markets, thereby reducing
6 the ability of consumers (who include electric utility ratepayers) to afford and enjoy the widely-
7 acknowledged economic and social benefits of affordable access to broadband services in
8 today’s information age economy. As a general proposition, and particularly in less populated
9 areas, many poles can be required to serve an individual subscriber, such that the price charged
10 per pole attachment can have a very significant impact on the cost to serve any one broadband
11 subscriber. Moreover, consumer demand for broadband is relatively price sensitive, in economic
12 parlance, “price elastic” demand, such that increases in price are going to have a significant
13 dampening effect on service adoption rates in the state.

14 New Hampshire’s Broadband Action Plan makes clear the desirability to the state of
15 creating a climate for broadband services deployment that ranks high if not the highest among
16 neighboring states.²¹ This makes good economic sense since New Hampshire directly competes
17 with other states for economic development opportunities for attracting and retaining a highly
18 educated and skilled labor force. New Hampshire’s neighbor to the south, Massachusetts, in
19 particular, has adopted a number of pro-broadband policies, including a unified pole attachment

²¹ See NH Broadband Action Plan at 47 (“New Hampshire’s goal should be to ensure that at a minimum it maintains its current ranking [#12 on the New Economy Index] for digital economy and broadband, if not improve its ranking. These ... rankings should not be taken lightly since businesses and individuals often refer to them when considering relocation. These rankings, therefore, play an important role in marketing the State.”).

1 rate based on the FCC cable rate.²² If New Hampshire were to adopt a pole rate formula for
2 broadband services such as interconnected VoIP, that was higher than the formula applicable to
3 cable attachments, the State could be placed at a distinct competitive disadvantage, expressly
4 counter to the goals expressed in the State's Broadband Action Plan.

5 **Factor 5: The formulae adopted by the FCC in 47 C.F.R. § 1.1409(c) through (f) in effect**
6 **on July 16, 2007.**

7 This factor directs the PUC to take into consideration the FCC formulas in effect on
8 July 16, 2007. This factor is best understood in the context that the FCC rules were in a state of
9 flux during the period that New Hampshire's pole attachment regulation policies were being
10 deliberated. Indeed, I am familiar with other state legislative initiatives during that same time
11 period that also made reference to the old FCC rules, notwithstanding, but perhaps precisely
12 because of, the uncertainty that existed with respect to the new rules that might be the outcome
13 of the FCC's pole rulemaking proceedings during that time frame. The inclusion of a factor that
14 allowed the state regulator to consider the old FCC rules gave the regulator the option to keep
15 with the old rules in the event the new rules might run counter to state goals or policies.

16 However, at this point in time, the outcome of the FCC's pole rulemaking proceeding is
17 known. The FCC telecom rate formula in effect on July 16, 2007 was formally rejected by the
18 FCC in its April 7, 2011 decision in favor of a revised telecom rate formula that is effectively
19 equivalent to the cable rate formula, which the FCC left intact. Given that the vast majority of

²² *Cablevision of Boston v. Boston Edison Co.*, Docket D.P.U./D.T.E. 97-82 (1998) (cable rate assures payment by cable operators of "the fully allocated costs for the pole space occupied by them").

1 certified states never relied on the old telecom formula, for all intents and purposes, the old
2 telecom rate formula is largely obsolete.

3 Perhaps even more significantly, the old telecom rate formula, and more generally, the
4 use of a bifurcated pole formula methodology that effectively penalized attachments of
5 broadband providers classified as telecommunications, was explicitly found by the FCC, as well
6 as by a number of other state regulators, to hinder the deployment of broadband services and the
7 development of a robust, competitive broadband marketplace.²³ There are many reasons why the
8 old telecom formula was found to produce excessive rates and, as a result, hinder broadband
9 services deployment. These include:

- 10 • *Use of a per capita allocator inconsistent with cost causation principles.* In contrast to the
11 cable rate formula, the old telecom formula employs a per-capita cost allocator to allocate the
12 costs associated with the unusable space on the pole.²⁴ A per capita type allocation
13 methodology does not make sense from an economic cost causation perspective, given the

²³ See, e.g., April 7, 2011 Order ¶¶ 176-177; *Proceeding on Motion of the Commission as to New York State Electric & Gas Corporation's Proposed Tariff Filing to Revise the Annual Rental Charges for Cable Television Pole Attachments and to Establish a Pole Attachment Rental Rate for Competitive Local Exchange Companies*, Order Directing Utilities to Cancel Tariffs, Case 01-E-0206, 2002 N.Y. PUC LEXIS 14, at * 3 (Jan. 15, 2002) (“New York Pole Rent Proceeding”), noting, in particular, the fact that “competition and the number of attachers has not developed as previously contemplated” as the basis for its decision not to increase pole attachment rates above the level of the existing cable rate.; *California Competition Decision*, 1998 Cal. PUC LEXIS 879 (“Moreover, such an approach promotes the incentive for facilities-based local exchange competition through the expansion of existing cable services. . . . We conclude that the adoption of attachment rates based on the [cable rate] formula provides reasonable compensation to the utility owner, and there is no basis to find that the utility would be lawfully deprived of any property rights.”) (internal citations omitted).

²⁴ Under the per capita approach, costs associated with the unusable space on the pole are divided by the number of attaching entities. The cable rate formula *also* allocates the costs associated with the unusable space on the pole, it just does so using the 7.41% proportionate share allocator that it, and the telecom rate formula, uses to allocate the usable space.

- 1 important structural attribute of poles of being able to readily accommodate multiple
2 attachers through the process of make-ready.²⁵
- 3 • *Adds complexity and arbitrariness and unnecessary issues of contention that serve no cost-*
4 *causative purpose.* Because the number of attaching entities varies pole to pole, and service
5 area to service area, the need to track the number of attaching entities adds a level of
6 complexity and arbitrariness to the telecom rate formula. Rate formulas that utilize a per-
7 capita allocator, by relying on the number of attaching entities, introduce an artificial
8 construct into the pricing formula – one that has no direct connection to the consumption of
9 space on the pole or to any actual increase in cost burden placed on the utility or its
10 ratepayers.
- 11 • *Produces rates well in excess of economically efficient marginal costs.* When Congress
12 adopted the language prescribing the old telecom rate formula in the mid-1990s, the
13 technology for facilities-based competition for telecom involved a new wire attached to the
14 pole by a new CLEC entity, and there was the expectation that there would be a greater
15 number of attaching entities in any given service area than in fact materialized.²⁶ Because
16 the telecom formula divides costs on a per capita basis, the smaller the number of attaching
17 entities, the larger the rate produced by the formula.²⁷
- 18 • *Discourages broadband services deployment, especially in underserved areas.* For the
19 reasons discussed under the preceding bullet points, the rates produced by the old telecom
20 formula were typically well in excess of the more economically efficient cable rate, and

²⁵ Because of this attribute, the addition of another entity onto the pole does not result in the displacement or exclusion of another user or use by the utility. So, from an economic perspective, there is no cost-causative rationale for allocating a common space on the pole on the basis of the number of attachers.

²⁶ See, *supra*, note 24 (New York Pole Rent Proceeding).

²⁷ Had the widely-anticipated facilities-based new entry occurred, the differential between the cable and telecom formula rates could very well have converged. In fact, the FCC rules anticipated the possibility of the telecom attachment rate being lower than the cable rate as the number of new facilities-based competitors increased. 47 C.F.R. §1.1409(f) (“Rate reductions are to be implemented immediately.”)

1 introduced unnecessary complexity and uncertainty into the equation. These factors all serve
2 to hinder broadband services deployment as discussed more fully under the discussion of
3 factor #4 above. Furthermore, dividing the costs of the unusable space among attachers has
4 the perverse effect of producing a higher pole attachment rate in less populated areas where
5 the number of attaching entities tends to be lower, and precisely where public policy would
6 want to encourage, not discourage, broadband services deployment and subscriber
7 penetration rates.

8 While pursuant to this factor the PUC is to consider the FCC's old rules, for the various
9 reasons set forth above, there is no valid economic and public policy reason to adopt or in any
10 way rely on the now abandoned telecom formula for any time period following the PUC's
11 certification to regulate pole attachments. The shortcomings identified above are now widely-
12 acknowledged vis-à-vis the long standing, and repeatedly upheld cable formula.

13 **Factor 6: Any other interests of the subscribers and users of the services offered via such**
14 **attachments or consumers of any pole owner providing such attachments, as may be raised.**

15 Where government regulation of industry occurs, as in the case of public utilities, the
16 overarching decision-making criteria to be applied by the regulator is a public interest standard.
17 Applied to the instant proceeding, the public interest standard dictates that the appropriate
18 methodology for determining just and reasonable rates take into consideration not only the
19 interests of the pole owning utility or the third party seeking access, and the interests of the
20 consumers of both the utility and the third party attacher in terms of the respective stakeholders'
21 private interests, but also the greater public good. Economists refer to this concept as
22 maximizing social welfare, and such analysis would include, but not be limited to, consideration
23 of the public benefits of the policy in addition to the respective private costs and benefits of the
24 parties directly involved.

1 Going beyond the win-win situation (as discussed under factors #3 and #4 above) to the
2 utility and its ratepayers, and the third party attacher and its customers – which, in fact, include
3 utility ratepayers, there are significant benefits that accrue to society at large to be considered.
4 From a “social welfare” perspective, there is economic value to society associated with the
5 efficient use of resources, i.e., the use of resources resulting in the lowest overall cost to society
6 and the best possible utilization of those resources vis-à-vis alternative uses.

7 Because utility distribution networks (including the pole component) are “natural
8 monopolies,”²⁸ the shared use of a utility’s existing distribution network results in a lower overall
9 cost to the economy as a whole in terms of the consumption of societal resources. Resources that
10 would otherwise be used (unnecessarily and more expensively) to duplicate existing pole
11 networks are instead freed up and can be put to more productive uses – in particular, ones that
12 can provide concrete benefits to consumers, including the utility’s own electric ratepayers – such
13 as the provision of new and improved services, at lower prices, to consumers in the downstream
14 product markets in which access to poles are a key input.

15 In the case of utility pole attachments, these benefits are particularly significant given the
16 growing importance of the widespread availability of advanced broadband services to the
17 economic, health, education, safety and well-being of the public. Again, the public welfare
18 includes the utility’s own electricity ratepayers, the customers of the attaching entity, as well as
19 the business, educational, medical, cultural, and governmental entities upon which they depend.

²⁸ Natural monopolies mean that “economies of scale are so persistent that a single firm can serve the market at a lower unit cost than two or more firms.” F.M. Scherer, *Industrial Market Structure and Economic Performance* 482 (Rand McNally 1980).

1 The economically appropriate standard of reasonableness, where there exists no
2 effectively competitive or well-functioning marketplace, is based on costs incurred by the pole
3 owner in relation to the cable companies' and CLECs' use of the pole – and *not* the benefits to
4 the attacher, such as the cost savings realized by not having to place their own duplicate facilities
5 (not that they could realistically or practically do so given existing legal, environmental, zoning,
6 and/or aesthetic constraints). Such a cost standard is consistent with the economic concept of a
7 subsidy-free rate, which holds that, as long as rates cover the incremental costs of an additional
8 user, they are economically efficient and avoid cross-subsidy. As discussed above, the cable rate
9 formula has been consistently found to provide cost recovery in excess of incremental or
10 marginal costs, especially when make-ready charges are taken into account.

11 Second, even if one goes beyond the economically appropriate standard of fairness, to
12 apply a broader, and inherently more subjective view as to what constitutes a reasonable rate,
13 i.e., to add the question of what is “fair” into the mix, the application of well established social
14 welfare economic criteria would support the notion that a pole rental rate for third party attachers
15 that is based more closely on directly attributable or incremental costs is “fair.” This applies not
16 only for the private entities involved (i.e., the pole owner and its electric subscribers and the
17 attacher and its customers), but also to the greater public constituency, including the residents,
18 businesses, institutions, and visitors of New Hampshire who benefit from broadband services.

19 In the context of a social welfare economic framework, and as explicitly recognized in
20 factor #4 of the rate review standard, the well acknowledged benefits to society of the broadband
21 services provided by the communications companies, including interconnected VoIP, are
22 essential components of any calculus as to what constitutes a just and reasonable rate. Analysis

1 by the FCC and others provides strong support for the notion that the profound, long-term
2 beneficial impacts of broadband services deployment promoted by keeping rates for access to
3 poles, conduit and rights-of-way as low as possible far outweigh any short term gain to the pole
4 owning utility from the imposition of pole rental rates at levels far in excess of the incremental or
5 actual costs incurred in direct relation to third party attachment to its poles, such as rates
6 produced by the old telecom formula.²⁹

7 **FCC RATE FORMULA METHODOLOGY**

8 **Q. PLEASE DESCRIBE THE FCC FORMULA METHODOLOGY**

9 **APPROACH TO SETTING POLE RATES IN GENERAL AS IT APPLIES TO BOTH**
10 **CABLE AND TELECOMMUNICATIONS ATTACHMENTS.**

11 A. The FCC pole rate methodology, applicable to *both* cable and telecom rate attachments,
12 calculates a maximum annual pole attachment rent by taking the sum of the actual capital costs
13 and operating expenses of the utility attributable to the *entire* pole, expressed on an annual basis,
14 and apportioning those costs to the attacher based on an allocation of space on the pole.

15 The FCC formula is an economically appropriate approach in that, pursuant to Section
16 224 of the Communications Act upon which it is based, it follows cost allocation principles well-
17 established in the economics literature. Under the FCC methodology, the recovery of the cost of
18 the pole attachment is based upon the fundamental economic principle of cost causation (i.e.,
19 cost-causer pays). Such costs reflect costs that would not be borne by the utility *but for* the
20 attacher, including a normal (reasonable) return to capital. Costs designed in this manner prevent

²⁹ See, e.g., FCC National Broadcast Plan at 110; April 7, 2011 Order ¶¶ 172-181.

1 any potential situation of cross-subsidy between the utility pole owner and the third-party
2 attacher. The FCC formula methodology has been well vetted over the past several decades at
3 both the federal and state levels and repeatedly found by regulatory agencies and by the courts,
4 including the U.S. Supreme Court, to produce rates that are just and reasonable and fully
5 compensatory to the utility.³⁰

6 **Major Components of the FCC Pole Rate Formula**

7 **Q. PLEASE DESCRIBE THE MAJOR COMPONENTS OF THE FCC RATE**
8 **FORMULA METHODOLOGY.**

9 A. Operationally, the FCC pole rate formula methodology consists of the following three
10 major components: (1) the net investment per bare pole, (2) a carrying charge factor (used to
11 convert the net cost per bare pole figure into an annual rental amount) and (3) a space allocation
12 factor (i.e., the percent of pole capacity attributable to the attacher). Expressed as an equation,
13 the FCC formula methodology is as follows:

<p>14 <u>FCC Pole Rate Formula (for both cable and telecom) =</u> 15 Net Bare Pole Cost x Carrying Charge Factor x Space Allocation Factor</p>
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16

³⁰ See, e.g., 2001 Reconsideration Order, 16 FCC Rcd 12103 ¶¶15-25; *FCC v. Florida Power Corp.*, 480 U.S. at 253-54 (1987) (finding that it could not be “seriously argued, that a rate providing for the recovery of fully allocated cost, including the cost of capital, is confiscatory.”). *Alabama Power Co. v. FCC*, 311 F.3d at 1363, 1370; *Detroit Edison Co. v. Michigan Public Serv. Comm’n*, Nos. 203421, 203480, slip op., at 3-4 (Mich. Ct. App. Nov. 24, 1998) affirming *Consumers Power Co., Detroit Edison Co., Setting Just and Reasonable Rates for Attachments to Utility Poles, Ducts and Conduits*, Case Nos. U-010741, U-010816, U-010831, Opinion and Order (Mich. Pub. Serv. Comm’n Feb. 11, 1997), appeal denied, 461 Mich. 853, 602 N.W.2d 386, 1999 Mich. LEXIS 3252, 1999 WL 711854 (Mich.); *In the Matter of Trenton Cable TV, Inc. v. Missouri Public Serv. Co.*, PA-81-0037, ¶ 4 (rel. Jan. 25, 1985) (“Since any rate within the range assures that the utility will receive at least the additional costs which would not be incurred but for the provision of cable attachments, that rate will not subsidize cable subscribers at the expense of the public.”).

1 Under the FCC rules, the cable and telecom formulas are calculated in exactly the same
2 manner as to the first two components of the rate formula, i.e., the net bare pole cost and the
3 carrying charge factor. Both of these components are calculated in a straightforward, but
4 multistep, process.

5 The net bare pole cost is calculated in the following four steps: First, the electric utility's
6 gross investment in pole cost is determined based on amounts reported in the utility's books of
7 account in Account 364 ("Poles, Towers and Fixtures").³¹ Second, this gross investment amount
8 is converted to a net investment figure by subtracting accumulated depreciation for pole plant
9 and accumulated deferred taxes applicable to poles. Third, the net investment in bare pole plant
10 is determined by making a further reduction to remove amounts booked to Account 364 for
11 "appurtenances," such as cross-arms, from which communications attachers do not benefit. The
12 fourth and final step is to divide the net investment in bare pole plant figure by the total number
13 of poles the utility has in service to derive a per-unit pole cost figure. It is this unitized net
14 investment figure that the formula multiplies by the other two components of the formula (i.e.,
15 the carrying charge factor and the space allocation factor) to derive the maximum pole rental
16 rate.

17 The carrying charge factor (CCF) is used to convert the net cost per bare pole investment
18 figure into an annualized cost. The carrying charge factor is comprised of the sum of five

³¹ Account 364 for poles is one of the detailed plant accounts that comprise the electric utility's primary general ledger Account 101 (Electric Plant in Service). See 18 C.F.R. Ch. 1, Pt. 101, p. 348, which defines Account 101 as to "include the original cost of electric plant, included in accounts 301 to 399, prescribed herein, owned and used by the utility in its electric utility operations, and having an expectation of life in service of more than one year from date of installation, including such property owned by the utility but held by nominees."

1 different expense factors including maintenance, depreciation, administrative, taxes, and overall
2 rate of return, each expressed as a percentage of expense to net plant in service.³² The
3 appropriate net plant in service figure used to calculate the various elements of the CCF will
4 depend on the level of aggregation with which the relevant expense data used in the numerator of
5 the calculation is tracked in the FERC reporting system or utility books of account. The
6 important principle to follow is one of consistency between the level of aggregation of the
7 expense data and the level of aggregation of the net plant investment figure. Once calculated,
8 these five expense elements are then summed together prior to being multiplied against the net
9 cost per bare pole component.

10 The overarching concept underlying the two FCC formulas is that they can be applied in
11 a straightforward manner, using publicly available information as reported in the FERC uniform
12 reporting system (i.e., FERC Form 1) where available, such that it can be updated annually with
13 a minimum of private, administrative effort, and little if any regulatory involvement. As with
14 any formulaic approach, the accuracy and integrity of the FCC formula depends on the accuracy
15 and integrity of the underlying data inputs. For this reason, it is very important that the data
16 inputs to the formula are subjected to careful scrutiny and held to a high standard as to their
17 reliability, accuracy, consistency, and ability to be verified. Also important is that there be

³² See *Amendment of Commission's Rules and Policies Governing Pole Attachments*, FCC Consolidated Partial Order on Reconsideration, 16 FCC Rcd 12103, at Appendix D-2 (2001) ("2001 Recon. Order") (setting forth the specific formulas and FERC accounts to be used when calculating the pole rate for electric utilities).

1 consistency between values of the numerator and the denominator in any of the ratios of expense
2 and investment relied on in the computation of the formula.

3 There are two exceptions to data being publicly available in the FERC reporting system,
4 where data inputs generally must be obtained from the books of the electric utility: the
5 depreciation rate for poles and the number of poles. In addition, in some instances, the FCC pole
6 attachment formulas may rely on other pieces of investment and expense data utilities maintain
7 in, or derive from, their internal accounting books and records at a level of disaggregation below
8 that publicly available in the FERC uniform reporting system.

9 In this case, for example, Unitil has provided data at the detailed plant account level for
10 accumulated depreciation and deferred income tax amounts used in the calculation of net
11 investment for poles (Account 364) as well as other plant accounts used in the development of
12 the carrying charge factor. To the extent this additional data has been provided by the utility,
13 and is not subject to dispute, it is reasonable to utilize the more detailed accounting data in the
14 formula rate calculation.

15 **Cable Rate Formula**

16 **Q. PLEASE DESCRIBE THE CABLE RATE FORMULA IN PARTICULAR**
17 **THAT YOU HAVE DETERMINED IS THE MOST APPROPRIATE METHOD FOR**
18 **SETTING POLE RATES IN NEW HAMPSHIRE PURSUANT TO PUC 1304.06?**

19 A. Consistent with the principle of cost causation, Section 224(d), upon which the FCC
20 cable rate formula is based, links the pole attachment rental to marginal costs, by establishing a
21 range of reasonableness that has marginal costs as a lower bound, and fully allocated cost as an
22 upper bound. The FCC cable rate formula adheres to the *greater* fully allocated cost standard

1 described in Section 224(d), which, by definition, allows the utility to recover through the rental
2 rate ongoing costs *much more* than marginal cost.³³ It does so by allowing recovery of a cost-
3 causative portion (based on relative use or occupancy of usable space on the pole) of the utilities'
4 operating expenses and capital costs (including overall return to capital) attributable to the entire
5 pole, based on actual booked costs.

6 **Q. WHAT IS THE FCC CABLE FORMULA FOR CALCULATING THE**
7 **MAXIMUM RENTAL RATE FOR POLES AS APPLIED TO ELECTRIC UTILITIES?**

8 A. The FCC cable formula consists of the three major components as described above: (1)
9 the net investment per bare pole, (2) a carrying charge factor, and (3) the percent of capacity,
10 defined as the percentage of total usable space occupied by an attacher. Expressed as an
11 equation, the FCC cable formula is as follows:

$$\text{FCC Cable Rate Formula} = \text{Net Bare Pole Cost} \times \text{Carrying Charge Factor} \times$$
$$[\text{Space occupied by attacher} / \text{Usable Space on Pole}]$$

14 Using the FCC's rebuttable presumptions of an average 37.5 foot joint-use pole, 1 foot of
15 space per communications attachment, and the availability of 13.5 feet of usable space on the
16 pole, the appropriate space allocator factor for the cable rate formula is 1/13.5 or 7.41%.³⁴ PSNH
17 has directly relied upon, these presumptive values in its rate calculation. While Unitil has relied

³³ See *Alabama Power Co.*, 311 F.3d at 1363, 1370.

³⁴ See *Amendment of Rules and Policies Governing Pole Attachments*, Report and Order, 15 FCC Rcd 6453 ¶ 16 (2000) (based on National Electrical Safety Code guidelines and data received during rulemaking proceedings, and "[t]o avoid a pole by pole rate calculation, the Commission adopted rebuttable presumptions of (1) an average 37.5 foot pole height; (2) 13.5 feet of usable space; and (3) one foot as the amount of space a cable television attachment occupies.").

1 on its own pole inventory data for these input values, the space figures it uses are very close to
2 the FCC's presumptive values. The corresponding figures for Unifil are 1/13.82 or 7.24%.

3 **Q. WHAT ADVANTAGES DOES THE CABLE RATE FORMULA HAVE VIS-**
4 **À-VIS THE TELECOM RATE?**

5 A. There are many such advantages, a number of which have been discussed above in the
6 context of the six factor test. To recap, the cable formula offers the following favorable
7 attributes vis-à-vis the telecom rate formula:

- 8 • *Uses a proportionate versus per capita allocator more consistent with principles of cost*
9 *causation.* As recognized by Congress in adopting a cable rate formula based strictly on the
10 space occupancy of an attachment as the basis to allocate the cost of the entire pole (i.e., the
11 totality of usable and usable space), the costs associated with a third party attachment vary in
12 accordance with the relative use or occupancy of space by attaching entities and not
13 according to the number of attaching entities, in a manner directly analogous to other, well
14 accepted and familiar leasing arrangements such as an apartment building.³⁵
- 15 • *Uses a proportionate versus per capita allocator that more closely aligns with the production*
16 *of pole space:* An economic reality of poles is that they can readily accommodate multiple
17 attaching entities through the normal make-ready process of rearrangements and change-outs
18 (for which the attacher pays). This key feature of poles means that the addition of another

³⁵ See 123 Cong. Rec. 5080 (1977) (statement of Rep. Wirth) (“The renter of one of the ten units pays the cost of that unit plus one-tenth of the cost of the all common areas. He does not pay one-half of the cost of the common areas just because only one other person occupies the other nine units, but rather he pays his one-tenth share of all the costs attributable to the building.”).

1 entity on the pole does not result in the displacement of exclusion of another user or use by
2 the utility, and thus, from an economic perspective, there is no underlying cost causative
3 reason to allocate unusable or common space on the pole on the basis of the number of
4 attaching entities.³⁶

5 • *Better promotes deployment of advanced broadband services in competitive and technology*
6 *neutral fashion:* By not being based on the number of attaching entities, the cable rate
7 formula does not effectively penalize consumers, or conversely, reward utility owners of
8 essential pole facilities, for the failure of more widespread facilities based competition to
9 have materialized as expected in the post-1996 Act period. Similarly, it does not effectively
10 penalize firms adopting innovative new technologies, such as interconnected VoIP, which
11 provides voice services by sending packets of information over existing wires, and therefore
12 require no additional space on the pole and do not engender any new cost burden to the
13 utility. In this key regard, the cable rate formula is independent of, and hence more
14 competitively neutral than, the old telecom rate formula with respect to the impact of
15 technology and emerging competition.

16 • *Better promotes deployment of advanced broadband services in less populated, unserved or*
17 *underserved areas:* Due to generally less favorable economic conditions associated with
18 lower population densities, such areas typically have fewer attaching entities, which under
19 the old telecom rate formula, results in a presumptively higher pole attachment rate.
20 Ironically, the higher rate then serves to discourage investment in new infrastructure, the

³⁶ *Alabama Power Co.*, 311 F.3d at 1357, 1370-71 n.23.

1 deployment of new broadband services, and make new service offerings even less affordable
2 in the very areas of most concern to policymakers. The cable rate formula's relative use cost
3 allocation methodology does not so penalize less served areas, a fact directly acknowledged
4 by the FCC in its March 2010 National Broadband Plan, the FCC 2010 FNPRM that opened
5 on its heels and in the April 7, 2011 Order.³⁷

- 6 • *Best approximates competitive market result:* In a truly competitive market, there would be
7 multiple pole owners with their own infrastructure, each vying for buyers to rent space on
8 their poles. Under these circumstances, prices would tend to be bid down to levels
9 approximating marginal cost, which is essentially the cost of make-ready, i.e., the costs of
10 rearranging and adding space on an owner's poles. In the absence of competitive market
11 conditions, the FCC cable rate formula methodology, which more closely applies a cost
12 causative allocation methodology, better mimics the outcome of a competitive market with
13 its resultant benefits to consumers of lower rates and a greater array of innovative and
14 advanced service offerings.
- 15 • *Provides for a more straightforward, consistent and predictable application:* By strictly
16 relying on a proportionate cost allocation, the cable formula is more straightforward to
17 implement and provides for a more consistent and predictable application of the pole
18 attachment formula across service areas. These features are very important to firms in
19 making business case decisions to invest in new technology and to roll-out new services.

³⁷ See FCC National Broadband Plan at 110; FCC 2010 FNPRM ¶¶ 110-118. See also April 7, 2011 Order ¶¶ 172-181.

- 1 • *Less costly, fewer areas of contention to implement and administer:* Related to the preceding
2 point, because the cable formula is strictly based on a proportionate cost allocator, it does not
3 need a number of inputs required to run the telecom formula, i.e., the number of attaching
4 entities and the feet of unusable space, and in the case of the revised telecom rate formula, a
5 just and reasonable cost factor. This is particularly important as these inputs are often areas
6 of dispute among the parties, and the utility and pole specific audit data that would be needed
7 to verify these numbers are often not available.

8 **Differences with Old Telecom Rate Formula**

9 **Q. PLEASE EXPLAIN THE DIFFERENCES BETWEEN THE FCC CABLE**
10 **RATE FORMULA AND THE OLD TELECOM RATE FORMULA.**

11 A. The one place where the FCC cable and telecom rate formulas differ is in the calculation
12 of the space allocation factor and, in particular, the manner in which the telecom formula
13 allocates the costs associated with the *unusable* space on the pole. Whereas the FCC cable rate
14 formula assigns costs relating to the entire pole – including both usable and unusable space – on
15 the basis of a proportionate-use allocator, the FCC telecom rate formula methodology assigns the
16 cost of usable space on the pole based on the proportionate share of usable space occupied by the
17 attacher (exactly the same as the cable rate formula) but assigns costs relating to the unusable
18 space on the pole using a per-capita allocator. Specifically, as originally prescribed in the 1996
19 Telecom Act, the FCC telecom rate formula methodology takes 2/3 of the unusable space on the
20 pole and divides that equally by the number of attaching entities. Expressed as an equation, the
21 FCC's old telecom rate formula is as follows:

22

1 Original (Old) FCC Telecom Rate Formula =
2 Net Bare Pole Cost x Carrying Charge Factor x
3 [Usable Space Percentage + Unusable Space Percentage] where:
4 Usable Space Percentage =
5 (Space occupied by attacher / Usable Space) x (Usable Space/Pole Height); and
6 Unusable Space Percentage = $2/3 \times (\text{Unusable Space} / \text{Pole Height}) \times (1/\text{No. Attachers})$
7

8 Using the FCC's same rebuttable assumptions presented above for the cable formula (i.e.,
9 a 37.5 foot joint-use pole, 1 foot of space per communications attachment, and 13.5 feet of
10 usable space on the pole), the usable space percentage of the telecom space allocator factor
11 equals $(1/13.5) \times (13.5/37.5)$ or 2.67%. Given these same assumptions, there are 24 feet of
12 unusable space to apportion, since unusable space under FCC rules is defined as the space on the
13 pole other than the usable space $(37.5-13.5 = 24)$, consisting of the 6 feet of the pole that is
14 below ground and the 18 feet of the pole above grade required to clear possible interference and
15 obstacles and on which attachments cannot be made.

16 The FCC rules establish two presumptive numbers of attaching entities to use in
17 calculating the telecom formula" 5 for urbanized areas, and 3 for non-urbanized.³⁸ Using the
18 FCC presumptive number of 5 attaching entities in urbanized areas, the unusable space
19 percentage equals $(2/3) \times (24/37.5) \times (1/5)$ or 8.53%. Adding the usable and unusable space

³⁸ See 2001 Recon. Order ¶ 67 (“[W]e provide utilities the option of using our presumptive averages [3 for rural and 5 for urban] or developing averages for two areas: (1) urbanized (50,000 or higher population), and (2) non-urbanized (less than 50,000 population”); 47 C.F.R. §1.1417(c).

1 percentages together (2.67% + 8.53%) together produces a total space allocator factor for the
2 telecom formula of 11.20%. Similarly, using the FCC presumptive number of 3 attaching
3 entities in non-urbanized areas, the unusable space percentage equals $(2/3) \times (24/37.5) \times (1/3)$ or
4 14.22%. Adding the usable and unusable space percentages together (2.67% + 14.22%) together
5 produces a total space allocator factor for the telecom formula of 16.89%.

6 The problem that arises in connection with the telecom rate formula's use of an allocator
7 at odds with established cost causation principles identified in the discussion of factor #5 above
8 is compounded by the fact that the underlying costs of the pole that are currently being allocated
9 under the old telecom rate formula are fully allocated costs (the same as under the cable rate
10 formula). Indeed, for a number of expense categories, the direct cost linkage to pole attachments
11 is weak to non-existent. These problems with the old rate formula were the basis of the FCC's
12 decision to adopt a new revised telecom rate formula as described below.

13 **Revised Telecom Rate Formula**

14 **Q. PLEASE DESCRIBE THE FCC'S REVISED TELECOM RATE**
15 **FORMULA AND HOW IT DIFFERS FROM THE OLD FORMULA.**

16 A. In its April 7, 2011 Order, the FCC formally adopted revisions to the old telecom rate
17 formula. As explained in the FCC's 2010 FNPRM and the FCC's National Broadband Plan,
18 which gave rise to the FNPRM, revisions to the telecom rate formula were necessary in order to
19 achieve the vital national public policy goals of promoting broadband services deployment and
20 competition in telecommunications throughout all areas of the country. The pre-April 7, 2011

1 telecom rate formula generally produced rates much higher than the current cable rate.³⁹ Because
2 pole attachments are a vital input to broadband providers, the FCC found the significant price
3 differential between the cable and telecom rates discouraged investment in broadband
4 infrastructure and raised the costs to end users of broadband services. In addition, as found by
5 the FCC, a higher telecom rate deters cable companies from offering new and advanced services
6 such as interconnected VoIP that could potentially be classified as “telecom,” since those
7 companies would risk paying higher pole rental fees across their entire network.

8 The April 7, 2011 Order included formal adoption of the proposed range of just and
9 reasonable rates, with the higher bound rate set equal to the preexisting telecom rate and the
10 lower bound rate set equal to a new fully allocated rate limited to recovery of operating costs of
11 pole attachments (i.e., maintenance and administrative). The FCC affirmed its prior finding that
12 capital costs attributed to pole attachments under the preexisting cable and telecom rate formulas
13 (i.e., depreciation, taxes, and rate of return) are properly excluded from the lower bound rate for
14 telecom, in that attachers are “not the ‘cost causer’ of these costs,” as they “cause none or no
15 more than a *de minimis* amount of these costs, other than those that are recovered up front
16 through the make ready fees.”⁴⁰ The lower bound telecom rate formula methodology presented
17 in this report is a direct proxy for the economically efficient marginal cost of pole attachment –
18 the cost standard most conducive to achieving the goals set forth in the FCC’s National

³⁹ As described above, under FCC presumptions, the cable formula allocates to an attacher 7.41% of the fully allocated costs of pole attachments, whereas the pre-April 7, 2011 telecom formula allocated 11.2% of these same costs in urban areas and 16.89% of these costs in rural, resulting in telecom rates generally in the range of 50% to 130% higher than cable rates.

⁴⁰ April 7, 2011 Order ¶ 144.

1 Broadband Plan. Because the FCC rules set the maximum just and reasonable rate at the *higher*
2 of the upper and lower bound rate formula, and the latter excludes capital costs, it is most likely
3 the case that the upper bound formula is the applicable rate formula. Accordingly, unless
4 specifically noted, references in this testimony to the revised telecom rate formula will be to the
5 upper bound formula,

6 More specifically, to implement its goal of setting the telecom rate “as close to uniform
7 [in the vicinity of the current cable rate] as possible,” the FCC established a new just and
8 reasonable telecom rate, by “adopt[ing] a particular definition of cost” “[f]rom within the range
9 of possible interpretations of the term ‘cost’ for purposes of section 224(e).”⁴¹ Specifically, the
10 FCC adopted a definition of cost for urbanized areas as “66 percent of the fully allocated costs
11 used for purposes of the pre-existing telecom rate,” and a definition of cost for rural or non-
12 urbanized areas as “44 percent of the fully allocated costs,” where fully allocated cost is defined
13 as net bare pole cost times carrying charge factor (i.e., the first two components of the rate
14 formula for both cable and telecom formulas).⁴² Under this definition of cost and using FCC
15 presumptions (which remain unchanged under the new rules), the percentage of fully allocated
16 costs allocated under the revised telecom rate approximately equals that allocated under cable,
17 i.e., 7.41%.⁴³ Under the revised FCC rules, this definition of cost would be used to calculate the

⁴¹ *Id.* ¶¶ 134, 146.

⁴² *Id.* ¶ 149.

⁴³ For urban areas: $.66 \times 11.2\%$ (based on the presumption of 5 attaching entities) = 7.39%; for rural areas: $.44 \times 16.89\%$ (based on the presumption of 3 attaching entities) = 7.43%.

1 telecom rate, unless it produced a rate that fell below the FCC's lower bound rate, in which case,
2 the lower bound formula as described above would apply.⁴⁴ The revised formula is as follows:

3 Revised FCC Telecom Rate Formula (applies unless lower bound calculation is higher):

4 Net Bare Pole Cost x Carrying Charge Factor x

5 [Usable Space Percentage + Unusable Space Percentage] x Cost Factor where:

6 Usable Space Percentage =

7 (Space occupied by attacher / Usable Space) x (Usable Space/Pole Height); and

8 Unusable Space Percentage = 2/3 x (Unusable / Pole Height) x (1/No. Attachers); and

9 Cost Factor for Urbanized Area = .66; and for Non-urbanized area = .44

10 Despite the many reasons for adopting a single unified rate formula based on the cable
11 rate formula described above, and the PUC's ability pursuant to RSA 374:34-a to adopt a single
12 formula, should the PUC choose to adopt the bifurcated approach of having a separate telecom
13 rate formula, one refinement to the FCC methodology by the PUC is needed in order for to
14 achieve the FCC's clearly articulated rationale for revised formula. The two identified FCC cost
15 factors (.66 for urbanized areas, .44 for non-urbanized) are developed specifically to achieve the
16 desired result (a rate as close as possible to cable rate) at the FCC presumptive values (e.g.,
17 number of attaching entities, usable and unusable space and pole height presumptions). To the
18 extent utility specific inputs other than these FCC presumptive values are used – as is the case

⁴⁴ Based on calculations performed by FCC staff in the FNRPM, which I have also corroborated in my own rate calculations, the lower bound rate (calculated by including only operating cost elements of the carrying charge factor) is unlikely to be higher than the new just and reasonable telecom rate defined by the FCC.

1 with Unitil's rate calculations) – the specific cost factors identified by the FCC do not achieve
2 their stated purpose, and could lead to a rate more divergent from the cable rate than intended.

3 The most straightforward approach to remedy this unintended outcome is to apply a
4 variable cost factor based on the ratio of the space factor from the cable formula to the space
5 factor of the old telecom formula calculated using the utility specific data – rather than the fixed
6 percentages identified by the FCC calculated based on its presumptive number of attaching
7 entities. The proposed remedy is fully consistent with the FCC's revised methodology, for
8 which there was no independent cost basis other than the ratio that algebraically produces a
9 telecom rate roughly equivalent to cable. Again, the need for this particular refinement and the
10 additional inputs needed to run the telecom rate formula (i.e., number of attaching entities and
11 unusable space figure) would be avoided entirely if a unified rate approach based on the cable
12 rate formula is adopted by the PUC.

13 **DETERMINATION OF JUST AND REASONABLE UNIFIED BROADBAND POLE**
14 **ATTACHMENT RATES FOR PSNH AND UNITIL**

15 **Application of the FCC Cable Rate Formula to PSNH and Unitil**

16 **Q. YOU HAVE DESCRIBED ABOVE THE MANY ECONOMIC AND**
17 **PUBLIC POLICY REASONS WHY A UNIFIED BROADBAND POLE FORMULA**
18 **BASED ON THE FCC CABLE RATE FORMULA IS THE APPROPRIATE**
19 **METHODOLOGY. IS YOUR DETERMINATION DEPENDENT ON THE MIX OF**
20 **SERVICES THE CABLE COMPANY MAY BE PROVIDING, I.E., TRADITIONAL**
21 **CABLE, OR ADVANCED BROADBAND SERVICES INCLUDING INTERNET AND**
22 **INTERCONNECTED VOIP?**

1 A. No, it is not. From an economic cost perspective, the particular mix of services offered
2 by the cable provider (or CLEC) on its attached wire does not impact the amount of space
3 occupied by the attachment, or the costs incurred by the pole owner in connection with the cable
4 attachment. Accordingly, there is no basis under a cost causative approach for charging a rate
5 higher than that produced by the cable rate where no cost causative reason exists.

6 For example, in the case of interconnected VoIP services, voice communication is sent in
7 IP packets and carried through existing wires such that there is no new cost burden on the pole or
8 pole owner, either in the form of an additional attachment or by any other measure of cost
9 causative impact. To effectively penalize a cable operator for adding new or advanced
10 broadband services such as interconnected VoIP to its service mix is directly counter to the
11 widely accepted public policy goals to encourage such deployment and to promote broadband
12 voice service competition. It is also inconsistent with the regulatory policy goal to be
13 technology neutral, i.e., not influence the choice of technology deployed in the marketplace.
14 This is especially the case when deployment of the new technology is in the public interest, as is
15 so widely recognized with broadband.

16 **Q. IS YOUR OPINION REGARDING THE APPLICABILITY OF THE**
17 **CABLE RATE FORMULA TO COMMINGLED CABLE SERVICE OFFERINGS**
18 **INCLUDING INTERCONNECTED VOIP AFFECTED BY THE PUC’S 2011 DECISION**
19 **CLASSIFYING VOIP AS A “TELECOMMUNICATIONS SERVICE?”**

20 A. No, it is not. That the PUC previously issued a ruling that treated interconnected VoIP as
21 a “telecommunications” service does not affect the fundamental economic reasoning in support
22 of charging a unified broadband rate based on the cable rate formula. In addition, as explained

1 under the discussion of the rate review factor #1, the PUC's ruling does not address the issue of
2 pole attachment rates, but rather, was limited to certain consumer protection requirements. As
3 further explained, the PUC's ruling specifically noted it was not the PUC's intention to have any
4 competitive impact on the cable operators as would be certain to occur if it resulted in cable
5 operators paying substantially higher pole attachment rates as a result of the PUC's
6 classification. Finally, it is my understanding that recent legislation deregulated VoIP and
7 defined VoIP differently than telecommunications.⁴⁵

8 **Q. PLEASE EXPLAIN HOW YOU CALCULATED A JUST AND**
9 **REASONABLE UNIFIED BROADBAND POLE RATE BASED ON THE CABLE RATE**
10 **FORMULA FOR PSNH AND UNITIL.**

11 A. In calculating maximum just and reasonable pole attachment rates using the FCC cable
12 rate formula, I have adhered strictly to the methodology and presumptive averages pertaining to
13 space on poles set forth in the FCC rules and guidelines and described in the preceding section of
14 this testimony, with a couple of exceptions in the calculations performed for Unitil relating to
15 choice of data inputs used to run the formula.

16 In particular, my calculations use certain pieces of data pertaining to appurtenances and
17 accumulated depreciation that are not provided in the FERC Form accounts specified in the FCC
18 rules, but that are instead supported by utility internal accounting modules referred to as "Pole
19 Accountability Reporting." It is my understanding that Unitil's internal reporting records are
20 kept consistent with FCC rules, and hence I found it reasonable to rely on the utility's more

⁴⁵ House Calendar, Vol. 34, No. 37 (May 11, 2012), Pages 2046-2047.

1 granular reporting system. The second area where my calculations use data inputs other than
 2 those expressly identified in FCC rules pertains to inputs for usable space per pole and pole
 3 height. In lieu of the FCC’s presumptive values, I relied on Unitil specific data provided in Ex.
 4 A-1 of the utility’s submission in this proceeding. That said, the Unitil specific data are very
 5 close to FCC presumptive values.

6 **Q. PLEASE IDENTIFY THE RATES YOU CALCULATED FOR PSNH AND**
 7 **UNITIL USING THE FCC CABLE RATE FORMULA.**

8 A. A summary of my rate results using the cable rate formula, in comparison with the rates
 9 calculated by PSNH and Unitil in their June 2012 filings, are provided in Table 3 below. The
 10 underlying calculations are provided in Attachments 2 and 3 to my testimony.

Table 3 Maximum Just and Reasonable Unified Broadband Pole Attachment Rates for PSNH and Unitil under FCC Cable Rate Formula		
Based on Year Ending ¹	PSNH	Unitil
Net Inv. Per Bare Pole	\$387.02	\$487.70
x Carrying Charges	35.12%	31.51%
x Space Factor	7.41%	7.24%
J&R Solely-Owned Pole	\$10.07	\$ 11.12
J&R Jointly-Owned Pole	\$5.03	\$5.56
¹ Calculations based on Y/E 2010 for PSNH, Y/E 2011 for Unitil.		

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1 **Q. HOW DO YOUR CALCULATIONS OF THE CABLE RATE FORMULA**
2 **DIFFER FROM THOSE PROVIDED BY THE UTILITIES?**

3 A. It is a testament to the straightforward nature of the FCC cable rate formula methodology
4 that there is effectively little dispute as to the basic mechanics of the formula. As shown in
5 Table 3, in the case of PSNH, my rate calculations using the FCC cable rate formula are
6 essentially identical. In the case of Unitil, however, my input data which is based on strict
7 application of the FCC methodology differ from those used by Unitil in a number of areas. I also
8 disagree with Unitil in the manner in which it has applied the formula to solely and jointly
9 owned poles.

10 **Q. WHAT IS THE PROBLEM WITH THE MANNER IN WHICH UNITIL**
11 **HAS APPLIED THE FORMULA TO SOLELY AND JOINTLY OWNED POLES?**

12 A. As shown in Table 3 on the preceding page, Unitil has calculated separate rates for solely
13 and jointly owned poles. Unitil's approach is problematic at two levels. First, Unitil's approach
14 is inconsistent with the FCC methodology which applies to pole investment account #364 as
15 recorded on the FERC Form 1 Report without regard to shared ownership agreements between
16 electric and telephone utilities. Under the FCC methodology, as followed by PSNH in its rate
17 calculations, one pole attachment rate is calculated based on the FERC Form 1 data. In cases
18 where pole ownership is shared, the pole rate for the electric utility is reduced by 1 minus the
19 utility's ownership percentage (typically in the vicinity of 50% for a jointly owned pole).

20 For example, in its rate calculations, PSNH derives a formula rate for poles of \$10.07
21 based on aggregate FERC account 364 pole investment and aggregate pole counts, which it
22 reduces by 50% to arrive at a rate of \$5.04 to be applied to jointly owned poles. By contrast,

1 Unitil disaggregates its pole account investment according to jointly and solely owned poles and
2 divides those disaggregated investment dollars by the number of poles in each such category to
3 arrive at separate net bare pole cost figures to be applied in the formula. The result of this
4 disaggregation process is remarkably disparate pole rates of \$15.84 and \$5.01, for solely owned
5 and jointly owned poles, respectively. (The components of the utility's rate calculations are
6 provided in Tables 4 and 5 below.)

7 Secondly, and more substantively, there is no meaningful economic or statistical basis for
8 treating these two subsets of utility poles (i.e., jointly owned and solely owned) separately for
9 purposes of calculating a just and reasonable rate – other than to artificially produce a higher
10 pole rate for solely owned poles. This is because poles are homogenous in nature – in more
11 layman's terms, this is often described as “a pole is a pole is a pole.” The fundamental cost
12 characteristics of a pole are not materially impacted by ownership status, which is subject to
13 change over time as electric and telephone utilities may and have transferred ownership in the
14 routine course of business. There is no change in the underlying pole just because the
15 investment associated with that pole transfers from one utility's books of account to another.
16 The distinction between solely and jointly owned poles is largely an artificial distinction, not an
17 economic one.

18 Interestingly, the data submitted by Unitil in this proceeding identifying average pole
19 characteristics (i.e., pole height and usable space) does not break down this data according to
20 sole or joint ownership. The data presented by PSNH on the other hand does (although, as noted
21 above, PSNH does not calculate separate solely and jointly owned rates). The PSNH data shows
22 that the vast majority of poles for both full and jointly owned poles all in same range of 30 to 45

1 feet (consistent with FCC presumptive value of 37.5 ft.). Until has presented no evidence in this
2 proceeding to conclude that fully or solely owned poles represent a different subpopulation of
3 poles from a real or economic perspective such as to justify a divergence from the FCC's well
4 accepted methodology.

5 To the contrary, separating the solely and jointly owned poles as if they were two distinct
6 subpopulations of poles produces a less accurate and less efficient rate, i.e., a rate that less
7 closely tracks cost, thereby sending distorted price signals to an attacher relative to their
8 respective use of these different types of pole resources. Attachers do not have any control over
9 whether they attach to a solely owned or jointly owned pole, it is largely a matter of happenstance.
10 Establishing pole attachment prices differently based on ownership percentages serves no
11 economic purpose since attachers cannot meaningful shift to the lower priced jointly owned pole.
12 To do so would typically make little sense from a business perspective and would be detrimental
13 from a public policy perspective in that it would discourage the deployment of advanced
14 broadband services across the state, and especially in less densely populated areas. In effect,
15 Unutil's proposed disaggregated pricing structure effectively serves as a means of imposing an
16 uneconomic surcharge on cable attachers not to build out in areas where the utility has sole
17 ownership of poles, areas that are likely to be subject to less competition to begin with.

18 It is my understanding that the majority of third party attachments are on jointly owned
19 poles, as would be expected given the much larger number of jointly owned poles relative to
20 solely owned poles on Unutil's books at the moment (49,725 as compared with 9,036).
21 Accordingly, Unutil's disaggregation of jointly and solely owned poles has a relatively small
22 impact on the rates paid by third party attachers in the aggregate. That said, Unutil's

1 disaggregation could have a very substantial competitive impact on an attacher who just
2 happened to be located on a disparately high number of solely owned poles.

3 **Q. PLEASE IDENTIFY THE DATA INPUTS UNITIL HAS USED IN ITS**
4 **RATE FORMULA CALCULATIONS THAT YOU DISAGREE WITH.**

5 A. There are two areas where the input data I use to run the FCC cable rate formula differ
6 from Unitil's. The first involves Unitil's use of a rate of return input higher than the identified
7 authorized rate of return by the PUC in its most recent determination. The second involves
8 Unitil's adjustments to the formula relating to the treatment of regulatory assets in the calculation
9 of Accumulated Deferred Taxes and Administrative and General Expenses.

10 **Q. WHAT IS THE PROBLEM WITH UNITIL'S RATE OF RETURN INPUT?**

11 A. The rate of return element of the carrying charge factor allows the utility to recover a
12 normal or fair (economic) return on capital from third party attachers over and above actual cost
13 recovery. Indeed, because it provides for additional cost recovery over and above actual or cost
14 causative costs, this factor is in fact eliminated entirely from the lower bound telecom rate
15 formula adopted by the FCC in 2011. However, in the case of the cable rate formula (and the
16 upper bound version of the revised telecom rate formula), pursuant to existing FCC rules, the
17 capital cost element of the carrying charge factor is to be set at the most current authorized rate
18 of return set by a state regulatory commission. In the absence of one, an FCC default rate of
19 return based on the last FCC return proceeding may be used. Because a state authorized rate of
20 return is available for Unitil, that number is the appropriate input value. The most recent PUC

1 decision concerning Unitil rates identifies that rate of return figure as 8.39%.⁴⁶ Unitil uses an
2 input value of 9.01% without any explanation as to why its value differs from the rate of return
3 adopted by the PUC.

4 **Q. WHAT IS THE PROBLEM WITH UNITIL'S ADJUSTMENTS FOR**
5 **REGULATORY ASSETS?**

6 A. As a general matter, the FCC formula methodology is very specific with respect to the
7 FERC accounts to be included within the formulas, based on a careful consideration of which
8 investment and expense accounts have demonstrative cost causative linkages to pole attachments
9 as opposed to the core electric utility service. Over the decades of FCC pole rate regulation,
10 utilities have repeatedly argued for the inclusion of additional accounts, and the FCC, after
11 careful consideration of utility arguments, has ruled against the inclusion of additional
12 investment or expense accounts on the grounds there is weak or non-existent cost causative
13 linkage to pole attachments,⁴⁷ or because the cost of any added precision in cost allocation is not
14 worth the added cost or complexity to the rate formula process associated with identifying and
15 tracking the portion of the investment or expense account that may be arguably allocated to poles
16 or pole attachments.⁴⁸ As noted earlier in the discussion of the FCC formula methodology (and

⁴⁶ See NH PUC Docket No. DE 10-055, Unitil Energy Systems, Inc. Notice of Intent to File Rate Schedules, Order Approving Settlement Agreement, PUC Order No. 25,214 at 7, 27 (Apr. 26, 2011).

⁴⁷ See, e.g., 2001 Recon. Order ¶ 119 (“because the costs or expenses reported to these accounts do not reflect a sufficient nexus to the operating expenses and actual capital costs of the utility attributable to the pole or conduit attachment”).

⁴⁸ See, e.g., *Amendment of Rules and Policies Governing Pole Attachments*, Report and Order, 15 FCC Rcd 6453 ¶¶ 38-39, 60-61 (2000) (“2000 Pole Order” (internal citations omitted), *aff'd*, *Rules and Policies Governing Pole Attachments; Implementation of Section 703(e) of the Telecommunications Act of 1996*, Consolidated Partial Order

1 any formula methodology for that matter), the ability to verify and replicate year after year with
2 a minimum of administrative cost and dispute, are a hallmark of a good formula methodology.

3 Regulatory assets are a particular class of assets created for accounting purposes
4 pertaining to the cost recovery of extraordinary expenses, typically storm-related expenses.
5 Because of the recognition of these expenses as extraordinary in nature, such expenses are often
6 amortized over a number of years in order to minimize the severity of the impact in any given
7 year on the utility's financial records. The idea is to insulate ratepayers from having to absorb
8 the effect of these extraordinary expenses in any given rate year, but to ensure the utility receives
9 recovery over a specified number of years. At the end of the agreed-upon amortization period, in
10 principle, the regulatory asset is fully recovered and written off. As a general proposition, it
11 would be unjust and unreasonable for third party attachers to be charged a formula rate that
12 includes recovery of these extraordinary expenses for several reasons.

13 First, the types of extraordinary costs in question are from a cost causative perspective
14 more properly attributed to and recovered by rates for core electric service. Moreover, as with
15 expenses for related maintenance items such as tree trimming, third party attachers typically have
16 to bear their own costs relating to these types of expenses pursuant to pole agreements with the
17 utility. In addition, even assuming the inclusion of regulatory assets in the rate formula was

on Reconsideration, 16 FCC Rcd 12103 ¶¶ 120-124 (2001) (“Based on the record, we believe that any increased accuracy that would be derived from including some minute percentage of pole-related expenses that may be recorded in miscellaneous accounts, is outweighed by the complexity of arriving at an appropriate and equitable percentage of the expenses. The descriptions of what expense are to be reported to Accounts 365, 368, 580 and 583, contained in FERC Part 101, appear to relate more directly to the electric utilities’ core business operations than “actual capital costs attributable to the entire pole, duct, conduit, or rights-of-way, as required for inclusion in the rate formula.”).

1 deemed appropriate from a cost causative viewpoint (which again I do not believe is the case),
2 adjustments to the FCC formula methodology for regulatory assets as Unital has done introduces
3 unnecessary complexities and complications into the formula relating to the timing and amount
4 of authorized cost recovery that may not line up with the application of the rate formula, which is
5 intended to apply year after year with minimal regulatory oversight, unlike a rate proceeding.
6 Depending on the length of the amortization period, and adjustments to the amount of the
7 regulatory asset that tend to be made over time as more accurate information is available to the
8 regulator as to the actual allowable expenses incurred by the utility, there is the distinct
9 possibility that inclusion of such expenses based on snapshot adjustments to the rate formula
10 such as made by Unital in its rate calculations, will result in an excess recovery of utility
11 expenses from third party attachers.

12 With regard to the actual impact of Unital's adjustments for regulatory assets, they enter
13 into the rate calculation in several ways, further adding to the complexity. They enter into the
14 calculation of the carrying charge factor for Administrative and General expense, both on the
15 expense side in the data input for administrative and general expense (i.e., in the numerator of
16 the carrying charge factor), and on the investment side in the data input for accumulated deferred
17 taxes (i.e., in the denominator of the carrying charge factor). The combined effect of these
18 adjustments, both individually and collectively, is to increase the carrying charge factor for
19 Administrative and General expense.⁴⁹ Unital's adjustments for regulatory assets also enter into
20 the calculation of the net bare pole cost component. For that element, Unital's adjustment

⁴⁹ The CCF increases from 5.79% under the FCC's methodology to 6.68%, as shown in Attachment 3 to this testimony.

1 increases the amount of accumulated deferred taxes attributable to pole investment, which has
2 the effect of decreasing the amount of net investment per bare pole since accumulated deferred
3 taxes is an offset to gross pole investment. The overall impact of Unitil's adjustments for
4 regulatory assets is to increase the pole attachment rate, although that increase is mitigated by the
5 fact that the two ways in which the adjustments impact the formula, i.e., to increase the CCF for
6 Administrative and General Expense but to decrease the Net Investment per Bare Pole
7 component, work in offsetting ways.

8 For all of the various reasons set forth above, I believe Unitil's adjustments for regulatory
9 assets are inappropriate in determination of a just and reasonable rate. It is worth noting that
10 PSNH did not make any such adjustments, but rather, as noted above, strictly adhered to the FCC
11 methodology in its calculation of the cable rate (albeit, it has applied the wrong formula rate
12 calculation to interconnected VoIP).

13 **Application of the FCC Revised Telecom Formula to PSNH and Unitil**

14 **Q. YOU HAVE IDENTIFIED THE REVISED TELCOM RATE FORMULA AS**
15 **A SECOND BEST ALTERNATIVE TO THE CABLE FORMULA. SHOULD THE PUC**
16 **DECIDE TO IMPLEMENT A BIFURCATED AS OPPOSED TO A UNIFIED**
17 **APPROACH TO SETTING JUST AND REASONABLE RATES FOR POLE**
18 **ATTACHMENTS? HAVE YOU CALCULATED RATES BASED ON THE REVISED**
19 **TELECOM RATE FORMULA FOR PSNH AND UNITIL?**

20 A. Yes, I have. In calculating just and reasonable pole attachment rates using the FCC
21 revised telecom rate formula, I have adhered to the methodology and presumptive averages
22 pertaining to space on poles set forth in the FCC rules and guidelines and as described in the

1 preceding section of this testimony, that is consistent with the FCC's revised rules but necessary
2 to address Unitil's use of a number of attachers (i.e., 4 in the case of jointly owned poles) other
3 than the FCC's presumptive values of 3 and 5.

4 **Q. PLEASE DESCRIBE YOUR CALCULATIONS UNDER THE REVISED**
5 **FCC TELECOM FORMULA FOR PSNH AND HOW THEY DIFFER FROM THE**
6 **TELECOM RATE CALCULATIONS PROVIDED BY PSNH.**

7 A. As a general matter, as with PSNH's calculation of the FCC cable formula rate, my
8 calculations apply the same data inputs as PSNH, since PSNH appears to have strictly followed
9 the FCC rules with respect to the specific FERC expense and investment amounts to be included
10 and FCC presumptive values such as number of attaching entities and usable and unusable space
11 on the poles. However, I have a threshold disagreement as to PSNH's decision to calculate the
12 telecom rate formula based on the old, now abandoned telecom rate formula, and to have applied
13 a telecom formula at all.⁵⁰ As discussed above in some detail, the old formula has been
14 abandoned by the FCC and replaced with a revised formula expressly designed to produce a rate
15 as close as possible to the cable rate formula. The revised formula for all intents and purposes
16 has eliminated the differential or surcharge imposed by the old telecom rate formula. It is
17 instructive that Unitil's rate calculations, while containing a number of errors with respect to data
18 inputs and disaggregation of solely and jointly owned poles, apply the correct (revised) version
19 of the FCC's telecom formula. Using the same data and presumptions used by PSNH in its rate
20 calculations for year end 2010, I have calculated just and reasonable pole rates using the FCC's

⁵⁰ For reasons discussed in my testimony, PSNH erred in applying its telecom formula to interconnected VoIP services.

1 revised telecom formula. These calculations are provided below in Table 4 below, in a side-by-
2 side comparison with PSNH’s rate calculations, which again are based on the old telecom rate
3 formula.

Table 4 Comparison of Maximum Just and Reasonable Unified Broadband Pole Attachment Rates for PSNH and PSNH Pole Rate Calculations						
PSNH	Cable Rate Formula Unified Broadband		Telecom Rate - 3 AE ¹		Telecom Rate - 5 AE ¹	
			Revised Formula	Old Formula	Revised Formula	Old Formula
Based on Y/E 2011	Just&Reas	PSNH	Just&Reas	PSNH	Just&Reas	PSNH
Net Inv. Per Bare Pole	\$387.02	\$387.02	\$387.02	\$387.02	\$387.02	\$387.02
x Carrying Charges	35.12%	35.12%	35.12%	35.12%	35.12%	35.12%
x Space Factor ²	7.41%	7.41%	16.89%	16.89%	11.20%	11.20%
x Cost Factor ³			.44	n/a	.66	n/a
J&R Solely-Owned Pole	\$10.07	\$10.07	\$10.05	\$22.96	\$10.10	\$15.22
J&R Jointly-Owned Pole	\$5.03	\$5.04	\$5.03	\$11.48	\$5.04	\$7.61

¹Just and Reasonable rate calculated under revised telecom rate formula; PSNH rate calculated under old telecom formula.
²Both Just and Reasonable and PSNH rates calculated using FCC presumptive values for space factor (13.5ft usable space on 37.5 ft. pole), and FCC cost factors linked to FCC presumptions for space and number of attaching entities (3 non-urbanized, 5 urbanized).
³Just and Reasonable rate calculated using FCC cost factors applicable to FCC presumptive number of attaching entities. 47 C.F.R. § 1.1409(e)(2)(i).

4

5 **Q. PLEASE DESCRIBE YOUR CALCULATIONS UNDER THE REVISED**
6 **FCC TELECOM FORMULA FOR UNITIL AND HOW THEY DIFFER FROM THE**
7 **TELECOM RATE CALCULATIONS PROVIDED BY UNITIL.**

8 A. Like PSNH, Unitil improperly applies the telecom formula to interconnected VOIP in the
9 first instance, however, unlike Unlike PSNH, Unitil correctly uses the FCC revised telecom rate

1 formula, so the two sets of calculations are based on the same underlying formula. However, as
2 described above with respect to the cable rate formula calculations, unlike PSNH, Unitil makes a
3 number of errors relating to data inputs. In particular, Unitil's rate calculations contain the
4 following incorrect or flawed data inputs which are corrected for in my calculations of just and
5 reasonable rates:

- 6 • *Inappropriately disaggregates calculation of jointly and solely owned pole rates.* For the
7 reasons described above in connection with the cable rate formula calculations, there is no
8 valid economic or public policy rationale for making such a rate distinction. As does PSNH
9 in its rate calculations (and as the FCC provides), my just and reasonable rate calculations are
10 based on an aggregate calculation, and simply apply a 50% reduction factor to reflect proper
11 cost recovery for a jointly owned pole vis-à-vis a solely owned pole.
- 12 • *Inappropriately adjusts for regulatory assets in the data inputs for Accumulated Deferred*
13 *Taxes and in connection with the CCF for Administrative and General expenses.* For the
14 reasons described above in connection with the cable rate formula calculations, adjustments
15 of this kind dealing with regulatory assets add unnecessary complexity to the rate formula,
16 and can lead to uneconomic recovery or over-recovery of these types of expenses. As does
17 PSNH in its rate calculations, my just and reasonable rate calculations do not include any
18 adjustments for regulated assets, but simply rely on the FERC Form 1 data as publically
19 reported for the accounts specified pursuant to FCC rules.
- 20 • *Inappropriately uses a cost of capital input higher than the authorized rate of return by state*
21 *regulatory authority.* For the reasons described above in connection with the cable rate

1 formula calculations, Unitil has not justified its use of a rate of return input different from
2 that identified in the PUC's most recent order. My just and reasonable rate calculations rely
3 on the rate of return identified as authorized pursuant to the PUC's most recent decision.

- 4 • *Uses an unsupported number of attaching entities that differs from FCC presumptive values*
5 *of 3 and 5.* The FCC rules do allow for the use of a utility-specific number of attaching
6 entities, where that number can be supported by actual audit data or a statistically significant
7 sampling of poles derived on an attacher specific basis. Unitil does not provide any evidence
8 as to the source of its assumption of 4 attaching entities for a jointly owned pole. Absent
9 corroborating evidence with the credibility required pursuant to FCC rules, there is no basis
10 to rely on data inputs other than those reflected in the FCC's presumptive values, as relied on
11 by PSNH in its rate calculations. While a correct application of the FCC revised formula
12 adjusts the cost factor to account for the impact on the final rate result, the use of number of
13 attaching entities other than the FCC's presumptive values adds an unnecessary degree of
14 complication and possible dispute into the formula calculations. As does PSNH in its rate
15 calculations, my just and reasonable rate calculations effectively rely on the FCC
16 presumptive values of 3 and 5. My calculations do this by adjusting the cost factor as
17 described earlier in the testimony and summarized in the following bullet.

- 18 • Applies a higher "urbanized" cost factor of .66 to scenarios of 3 and 4 attaching entities
19 versus the appropriate cost factor of .44 specified in the FCC rules. Pursuant to the revised
20 FCC rules, a cost factor of .66 is applicable to urbanized areas where the number of attaching
21 entities is presumed to be 5, and a cost factor of .44 is applicable to non-urbanized area

1 where the number of attaching entities is presumed to be 4. These cost factors were derived
2 mathematically to result in a just and reasonable rate that essentially equals the cable rate
3 formula. For example, the non-urbanized cost factor (.44) provides for a lower percentage of
4 cost recovery vis-à-vis the cable rate formula to precisely offset the higher percentage of cost
5 recovery that the formula produces based on the smaller number of attaching entities.

6 Unitil, for reasons unexplained, but that are, in any event, inconsistent with the intended
7 purpose of the FCC rules, applies the urbanized cost factor of .66, but inputs for the number of
8 attaching entities that are less than the urbanized presumptive value of 5, and in the case of solely
9 owned poles, exactly equals the presumptive value for non-urbanized areas of 3. Pursuant to
10 FCC rules, Unitil should have applied the non-urbanized cost factor of .44 to be consistent with
11 the non-urbanized number of attaching entities. The effect of Unitil's mixing and matching of
12 cost factors and the number of attaching entities input is to produce an overstated rate well in
13 excess of the cable rate which is the intended result of the FCC presumptions.

14 My just and reasonable calculations correct for Unitil's error by applying the non-
15 urbanized cost factor of .44 to match an assumption of 3 attaching entities (which is the
16 presumptive value for non-urbanized areas), and a cost factor of .548 to match the assumption of
17 4 attaching entities. The latter is the mathematical formula equivalent to applying the FCC
18 presumptive values applicable to an urbanized area, i.e., use of a .66 cost factor and 5 attaching
19 entities. As noted above, the latter is the approach followed by PSNH, and it is a much less
20 complicated application of the revised telecom rate formula.

1 **Q. PLEASE PROVIDE THE RATE CALCULATIONS AS DESCRIBED**
2 **ABOVE.**

3 A. My calculations of just and reasonable pole rates for Unitil using the FCC’s revised
4 telecom formula as described above are provided below in Table 5 on the following page. Table
5 5 also provides a side-by-side comparison with Unitil’s rate calculations for data for the year
6 ending 2011.

Table 5 Comparison of Maximum Just and Reasonable Unified Broadband Pole Attachment Rates and Utility Pole Rate Calculations - Unitil							
Unitil	Cable Rate Formula / Unified Broadband Rate			Revised Telecom Formula ¹ – 3AE		Revised Telecom Formula ¹ - 4 AE	
Based on Y/E 2011	Just&R	Unitil Sole	Unitil Joint	Just&R	Unitil Sole	Just&R	Unitil Joint
Net Inv. Per Bare Pole	\$487.70	\$633.08	\$200.10	\$487.70	\$633.08	\$487.70	\$200.10
x Carrying Charges	31.51%	34.56%	34.56%	31.51%	34.56%	31.51%	34.56%
x Space Factor ²	7.24%	7.24%	7.24	16.71%	16.71%	13.20%	13.20%
x Cost Factor ²	n/a	n/a	n/a	.433	.66	.548	.66
J&R Solely-Owned Pole	\$11.12	15.84		\$11.12	\$24.13	\$11.12	
J&R Jointly-Owned Pole	\$5.56		\$5.01	\$5.56		\$5.56	\$6.03

¹ Both Just and Reasonable rates and Unitil rates calculated using revised telecom pole rate formula.
² Just and reasonable rates calculated for aggregate pole population, jointly and solely-owned combined.
³ Calculated using Unitil’s space factor (13.82 usable space on 37.57 ft. pole), and economically appropriate FCC cost factors for Unitil’s space factors and assumed number attaching entities.

1 **CONCLUSION**

2 **Q. PLEASE SUMMARIZE YOUR OVERALL CONCLUSIONS.**

3 A. As set forth in this testimony, there is no valid economic or public policy rationale for
4 allowing utilities to charge a pole attachment rate in excess of the compensatory cable rate.
5 Indeed, it is much more efficient economically and productive for society, that the prices for pole
6 attachment rates be kept as close to marginal cost as possible – especially when broadband
7 services deployment and adoption is so highly valued as a public policy goal. Again, any rate in
8 excess of marginal costs satisfies the economic standard for subsidy-free rates and the parallel
9 legal standard of just compensation for the pole owner. Given the widely acknowledged
10 economic and social benefits of accelerated and enhanced broadband deployment, the benefits of
11 adopting a uniform, administratively simple, predictable, and economically efficient cost-based
12 rate formula methodology for setting pole attachment rates – and, in particular, the long-
13 standing, well understood, and accepted FCC cable formula – is more important than ever.

14 Charging broadband services providers rates for pole access in excess of the FCC’s
15 economically efficient, cost-based and fully compensatory cable rate, e.g., those set at the much
16 higher old (and now abandoned) FCC telecom rate, would enable the pole-owning utility to
17 leverage its monopoly ownership of the pole network, contrary to effective pole attachment
18 regulation and at the expense of broadband services deployment in New Hampshire. Such an
19 outcome would be in direct contravention of the state’s Broadband Action Plan, which
20 specifically aims to keep high/and or increase the state’s ranking relative to other states with
21 which it directly competes for economic development opportunities and skilled labor force based
22 on cited broadband rankings. Adopting a bifurcated pole rate which penalizes attachments used

1 to provide advanced broadband services including interconnected VoIP could have an especially
2 detrimental impact on New Hampshire’s standing with respect to broadband services deployment
3 and adoption rates.

4 As discussed in this testimony, as a certified state, the PUC is not constrained, as is the
5 FCC, to adopt and maintain a bifurcated pricing structure. The FCC’s revised telecom rate
6 formula is designed to produce a rate as close to the cable rate formula as possible in order to
7 promote broadband services deployment and adoption.⁵¹ Accordingly, it is a much more
8 efficient and straightforward way to achieve these important goals – goals strongly embraced by
9 the state in its Broadband Action Plan⁵² – to adopt a unified rate formula set equal to the cable
10 rate in the first instance. In doing so, New Hampshire would be joining the overwhelming
11 majority of states that have certified to regulate pole attachments.

12 **Q. DOES THIS CONCLUDE YOUR TESTIMONY AT THIS TIME?**

13 A. Yes, it does.

14

⁵¹ See FCC National Broadband Plan at 110 (“To support the goal of broadband deployment, rates for pole attachments should be as low and as close to uniform as possible. The rate formula for cable providers articulated in Section 224(d) has been in place for 31 years and is ‘just and reasonable’ and fully compensatory for utilities. Through a rulemaking, the FCC should revisit its application of the telecommunications carrier rate formula to yield rates as close as possible to the cable rate.”); *id.* (“The impact of these rates can be particularly acute in rural areas, where there often are more poles per mile than households.... If the lower rates were applied, and if the cost differential in excess of \$8 per month were passed on to consumers, the typical monthly price of broadband for some rural consumers could fall materially. That could have the added effect of generating an increase – possibly a significant increase – in rural broadband adoption.”).

⁵² See NH Broadband Action Plan at 39.

PDK Attachment 1

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- Summary** Consulting economist with specialization in telecommunications, cable, and energy markets. Extensive knowledge of complex economic, policy and technical issues facing incumbents, new entrants, regulators, investors, and consumers in rapidly changing telecommunications, cable, and energy markets.
- Experience**
- CONSULTING ECONOMIST**
2000–Present Independent Consulting Swampscott, MA
Providing expert witness services and full range of economic, policy, and technical advisory services in the telecommunications, cable, and energy fields.
- SENIOR VICE PRESIDENT/SENIOR ECONOMIST**
1982–2000 Economics and Technology, Inc. Boston, MA
Active participant in regulatory proceedings in over thirty state jurisdictions, before the Federal Communications Commission, Federal Energy Regulatory Commission, and other international regulatory authorities on telecommunications, cable, and energy matters.
- Provided expert witness and technical advisory services in connection with litigation and arbitration proceedings before state and federal regulatory agencies, and before U.S. district court, on behalf of diverse set of public and private sector clients (see Record of Prior Testimony).
- Extensive cable television regulation expertise in connection with implementation of the Cable Act of 1992 and the Telecommunications Act of 1996 by the Federal Communications Commission and local franchising authorities.
- Led analysis of wide range of issues related to: rates and rate policies; cost methodologies and allocations; productivity; cost benchmarking; business case studies for entry into cable, telephony, and broadband markets; development of competition;

electric industry restructuring; incentive or performance based regulation; universal service; access charges; deployment of advanced services and broadband technologies; and access to pole attachments and other rights-of-way.

Served as advisor to state regulatory agencies, assisting in negotiations with utilities, non-partial review of record evidence, deliberations and drafting of final decisions.

Author of numerous industry reports and papers on topics including market structure and competition, alternative forms of regulation, patterns of investment, telecommunications modernization, and broadband deployment (see listing of Reports and Studies).

Invited speaker before various national organizations, state legislative committees and participant in industry symposiums.

Grant Reviewer for Broadband Technology Opportunities Program (BTOP) administered by National Telecommunications and Information Administration (NTIA), Fall 2009.

RESEARCH/POLICY ANALYST

1978–1980 Various Federal Agencies Washington, DC
Prepared economic impact analyses related to allocation of frequency spectrum (Federal Communications Commission).

Performed financial and statistical analysis of the effect of securities regulations on the acquisition of high-technology firms (Securities and Exchange Commission).

Prepared analyses and recommendations on national economic policy issues including capital recovery. (U.S. Dept. of Commerce).

Education

1980–1982 Massachusetts Institute of Technology Boston, MA
Graduate Study in the Ph.D. program in Economics (Abd).
General Examinations passed in fields of Government Regulation of Industry, Industrial Organization, and Urban and Regional Economics.

National Science Foundation Fellow.

1976–1980 George Washington University Washington, DC

B.A. with Distinction in Economics.

Phi Beta Kappa, Omicron Delta Epsilon in recognition of high scholastic achievement in field of Economics. Recipient of four-year honor scholarship.

Prof. Affiliation American Economic Association

Reports and Studies (authored and co-authored)

Report on the Financial Viability of the Proposed Greenfield Overbuild in the City of Lincoln, California, prepared for Starstream Communications, August 12, 2003.

“Assessing SBC/Pacific’s Progress in Eliminating Barriers to Entry, The Local Market in California is Not Yet ‘Fully and Irreversibly Open,’” prepared for the California Association of Competitive Telecommunications Companies (CALTEL), August 2000.

“Final Report on the Qualifications of Wide Open West-Texas, LLC For a Cable Television Franchise in the City of Dallas,” prepared for the City of Dallas, July 31, 2000.

“Final Report on the Qualifications of Western Integrated Networks of Texas Operating L.P. For a Cable Television Franchise in the City of Dallas,” prepared for the City of Dallas, July 31, 2000.

“Price Cap Plan for USWC: Establishing Appropriate Price and Service Quality Incentives in Utah” prepared for The Division of Public Utilities, March, 2000.

“Building a Broadband America: The Competitive Keys to the Future of the Internet,” prepared for The Competitive Broadband Coalition, May 1999.

“Broken Promises: A Review of Bell Atlantic-Pennsylvania's Performance Under Chapter 30,” prepared for AT&T and MCI Telecommunications, June 1998.

“Analysis of Opportunities for Cross Subsidies Between GTA and GTA Cellular,” prepared for Guam Cellular and Paging, submitted to the Guam Public Utilities Commission, July 11, 1997.

“Reply to Incumbent LEC Claims to Special Revenue Recovery Mechanisms,” submitted in the Matter of Access Charge Reform in CC Docket 96-262, February 14, 1997.

“Assessing Incumbent LEC Claims to Special Revenue Recovery Mechanisms: Revenue opportunities, market assessments, and further empirical analysis of the ‘Gap’ between embedded and forward-looking costs,” FCC CC Docket 96-262, January 29, 1997.

“Analysis of Incumbent LEC Embedded Investment: An Empirical Perspective on the ‘Gap’ between Historical Costs and Forward-looking TSLRIC,” Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, FCC CC 96-98, May 30, 1996.

“Reply to X-Factor Proposals for the FCC Long-Term LEC Price Cap Plan,” prepared for the Ad Hoc Telecommunications User Committee, submitted in FCC CC Docket 94-1, March 1, 1996.

“Establishing the X-Factor for the FCC Long-Term LEC Price Cap Plan,” prepared for the Ad Hoc Telecommunications User Committee, submitted in FCC CC Docket 94-1, December 1995.

“The Economic Viability of Stentor's ‘Beacon Initiative,’ exploring the extent of its financial dependency upon revenues from services in the Utility Segment,” prepared for Unitel, evidence before the Canadian Radio-television and Telecommunications Commission, March 1995.

“Fostering a Competitive Local Exchange Market in New Jersey: Blueprint for Development of a Fair Playing Field,” prepared for the New Jersey Cable Television Association, January 1995.

“The Enduring Local Bottleneck: Monopoly Power and the Local Exchange Carriers,” Feb. 1994.

“A Note on Facilitating Local Exchange Competition,” prepared for E.P.G., Nov. 1991.

“Testing for Effective Competition in the Local Exchange,” prepared for the E.P.G., October 1991.

“A Public Good/Private Good Framework for Identifying POTS Objectives for the Public Switched Network” prepared for the National Regulatory Research Institute, October 1991.

“Report on the Status of Telecommunications Regulation, Legislation, and modernization in the states of Arkansas, Kansas, Missouri, Nebraska, Oklahoma and Texas,” prepared for the Mid-America Cable-TV Association, December 13, 1990.

“The U S Telecommunications Infrastructure and Economic Development,” presented at the 18th Annual Telecommunications Policy Research Conference, Airlie, Virginia, October 1990.

“An Analysis of Outside Plant Provisioning and Utilization Practices of US West Communications in the State of Washington,” prepared for the Washington Utilities and Transportation Commission, Mar. 1990.

“Sustainability of Competition in Light of New Technologies,” presented at the Twentieth Annual Williamsburg Conference of the Institute of Public Utilities, Williamsburg, VA, December 1988.

“Telecommunications Modernization: Who Pays?,” prepared for the National Regulatory Research Institute, September 1988.

“Industry Structure and Competition in Telecommunications Markets: An Empirical Analysis,” presented at the Seventh International Conference of the International Telecommunications Society, MIT, July 1988.

“Market Structure and Competition in the Michigan Telecommunications Industry,” prepared for the Michigan Divestiture Research Fund Board, April 1988.

“Impact of Interstate Switched Access Charges on Information Service Providers - Analysis of Initial Comments,” submitted in FCC CC Docket No. 87-215, October 26, 1987.

“An Economic Analysis of the Impact of Interstate Switched Access Charge Treatment on Information Service Providers,” submitted in FCC CC Docket No. 87-215, September 24, 1987.

“Regulation and Technological Change: Assessment of the Nature and Extent of Competition from A Natural Industry Structure Perspective and Implications for Regulatory Policy Options,” prepared for the State of New York in collaboration with the City of New York, February 1987.

“BOC Market Power and MFJ Restrictions: A Critical Analysis of the ‘Competitive Market’ Assumption,” submitted to the Department of Justice, July 1986.

“Long-Run Regulation of AT&T: A Key Element of a Competitive Telecommunications Policy,” *Telematics*, August 1984.

“Economic and Policy Considerations Supporting Continued Regulation of AT&T,” submitted in FCC CC Docket No. 83-1147, June 1984. “Multi-product Transportation Cost Functions,” MIT Working Paper, September 1982.

Record of Prior Testimony

2012

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2011

Before the **Ontario Energy Board**, *in the Matter of the Application by Canadian Distributed Antenna Systems Coalition (“CANDAS”), File No. EB-2011-1020, Reply Evidence, filed December 16, 2011.*

Before the **Public Utilities Commission of Ohio**, *In the Matter of the Application of Columbus Southern Power Company and Ohio Power Company, Individually and, if Their Proposed Merger is Approved, as a Merged Company (collectively, AEP Ohio) for an Increase in Electric Distribution Rates, Case No. 11-351-EL-AIR, Case No. 11-352-EL-AIR; In the Matter of the Application of Columbus Southern Power Company and Ohio Power Company, Individually and, if Their Proposed Merger is Approved, as a Merged Company (collectively, AEP Ohio) for Tariff Approval, Case No. 11-353-EL-ATA Case No. 11-354-EL-ATA; In the Matter of the Application of Columbus Southern Power Company and Ohio Power Company, Individually and, if Their Proposed Merger is Approved, as a Merged Company (collectively, AEP Ohio) for Approval to Change Accounting Methods, Case No. 11-356-EL-AAM, Case No. 11-258-EL-AAM.* filed October 24, 2011.

Before the **Virginia State Corporation Commission**, *In the Matter of Determining Appropriate Regulation of Pole Attachments and Cost Sharing in Virginia*, Case No. PUE-2011-00033, Affidavit submitted June 22, 2011, Oral Testimony given July 13, 2011.

Before the **Public Utility Commission of Texas**, State Office of Administrative Hearings, *Petition of CPS Energy for Enforcement Against AT&T Texas and Time Warner Cable Regarding Pole Attachments*, SOAH Docket No.

473-09-5470, PUC Docket No. 36633, Supplemental Testimony submitted March 17, 2011; Further Supplemental Testimony submitted April 22, 2011, Cross-examination September 13, 2011.

2010

Before the **General Court of Justice Superior Court Division, State of North Carolina, County of Rowan**, *Time Warner Entertainment– Advance/Newhouse Partnership, Plaintiff, V. Town Of Landis, North Carolina, Defendant*, 10 CVS 1172, submitted October 20, 2010, Deposition December 1, 2010, Cross-examination July 20, 2011.

Before the **Federal Communications Commission**, *In the Matter of Implementation of Section 224 of the Act; Amendment of the Commission's Rules and Policies Governing Pole Attachments*, WC Docket No. 07-245, GN Docket No. 09-51. Report submitted August 16, 2010, Attachment A to Comments filed by the National Cable and Telecommunications Association.

Before the **Public Utility Commission of Texas**, State Office of Administrative Hearings, *Petition of CPS Energy for Enforcement Against AT&T Texas and Time Warner Cable Regarding Pole Attachments*, SOAH Docket No. 473-09-5470, PUC Docket No. 36633, Direct Testimony submitted July 23, 2010.

Before the **Kentucky Public Service Commission**, *In the Matter of: Application of Kentucky Utilities Company for An Adjustment of its Base Rates*, Case No. 2009-00548, submitted April 22, 2010.

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Before the **Arkansas Public Service Commission**, *Coxcom, Inc., D/B/A Cox Communications, Complainant V. Arkansas Valley Electric Cooperative Corporation, Respondent*. Docket No. 09-133-C, submitted March 17, 2010.

2009

Before the **Circuit Court of the Thirteenth Judicial Circuit in and for Hillsborough County, State of Florida**, *Tampa Electric Company, Plaintiff, vs. Bright House Networks, LLC, Defendant*, Case No. 06-00819, Division L. Expert Report submitted December 30, 2009, Deposition February 2, 2010, Cross-examination, March 24, 2010.

Before the **Superior Court of the State Of Washington for the County of Pacific**, *Pacific Utility District No. 2 Of Pacific County, Plaintiff, V. Comcast of Washington Iv, Inc., Centurytel of Washington, Inc., and Falcon Community Ventures I, L.P. D/B/A Charter Communications, Defendants*, Case No. 07-2-00484-1, Expert Report submitted September 18, 2009, Reply Report submitted October 16, 2009, Deposition December 21, 2009, Deposition December 21, 2009, Cross-examination October 12-13, 2010.

Before the **Public Utilities Commission of Ohio**, *In the Matter of the Application of Duke Energy Ohio, Inc., for an Increase in Electric Distribution Rates, Case No. 08-709-EL-AIR, In the Matter of the Application of Duke Energy Ohio, Inc., for a Tariff Approval, Case No. 08-710-EL-ATA, In the Matter of the Application of Duke Energy Ohio, Inc., for Approval to Change Accounting Methods, Case No. 08-11-EL-AAM, In the Matter of the Application of Cincinnati Gas & Electric Company for Approval of its Rider BDP, Backup Delivery Point, Case No. 06-718-EL-ATA*, filed February 26, 2009.

2008

Before the **Arkansas Public Service Commission**, *In the Matter of a Rulemaking Proceeding to Establish Pole Attachment Rules In Accordance With Act 740 of 2007*, Docket No. 08-073-R, filed May 13, 2008, reply filed June 3, 2008, Cross-examination, June 10, 2008.

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Amendment of the Commission's Rules and Policies Governing Pole Attachments, WC Docket No. 07-245, RM 11293, RM 11303, filed March 7, 2008, reply filed April 22, 2008.

2006

Before the **State of New Jersey Board of Public Utilities**, Office of Administrative Law, *in the Matter of the Verified Petition of TCG Delaware Valley, Inc. and Teleport Communications New York for an Order Requiring PSE&G Co. to Comply with the Board's Conduit Rental Regulations*, OAL Docket PUC 1191-06, BPU Docket No.EO0511005, filed September 29, 2006; rebuttal filed November 17, 2006.

Before the **Federal Communications Commission**, *In the Matter of Florida Cable Telecommunications Association, Inc., Comcast Cablevision of Panama City, Inc.; Mediacom Southeast, L.L.C.; and Cox Communications Gulf, L.L.C.; Complainants v. Gulf Power Company, Respondent*. EB Docket No. 04-381. Testimony on behalf of Complainants filed March 31, 2006, Deposition March 15, 2006, Cross-Examination April 26-27, 2006.

2005

Before the **United States District Court for the Eastern District of New York**, *Coastal Communication Service, Inc. and Telebeam Telecommunications Corporation, Plaintiffs - against -The City of New York and New York City Department of Information Technology and Telecommunications*, 02 Civ. 2300 (RJD) (SMG), Expert Report filed February 4, 2005; Rebuttal Expert Report, filed August 29, 2005, Deposition December 1, 2005.

2004

Before the **Ontario Energy Board**, *In the Matter of the Ontario Energy Board Act 1998*, S.O.1998, c.15, (Schedule B); and *In the Matter of an Application pursuant to section 74 of the Ontario Energy Board Act, 1998* by the Canadian Cable Television Association for an Order or Orders to amend the licenses of electricity distributors, RP-2003-024, Reply Evidence, filed September 27, 2004 (jointly with Paul Glist), Cross-examination October 26-27, 2004.

2003

Before the **United States District Court for the Southern District of California**, *Level 3 Communications, LLC v. City of Santee*, Civil Action No. 02-CV-1193, Rebuttal Expert Report, filed July 18, 2003.

2002

Before the **New York State Public Service Commission**, *In the Matter of the Cable Television & Telecommunications Association of New York, Inc., Petitioner, v. Verizon New York, Inc., Respondent*, Affidavit filed December 19, 2002.

Before the **West Virginia Public Service Commission**, *Community Antenna Service, Inc. v. Charter Communications*, Case No. 01-0646-CTV-C, Live Direct Testimony and Cross-examination, June 12, 2002.

Before the **Public Service Commission of the District of Columbia**, *Comcast Cablevision of the District, L.L.C., Complainant, v. Verizon Communications Inc. - Washington, D.C., Respondent*, Formal Case No. 1006, Direct Testimony filed June 11, 2002; Rebuttal Testimony filed June 24, 2002.

Before the **Federal Communications Commission**, *in Cavalier Telephone, LLC, Complainant, v. Virginia Electric & Power Co., D/b/a Dominion Virginia Power, Respondent*, Case No. EB-02-MD-005, Declaration filed May 21, 2002.

Before the **Puerto Rico Telecommunications Regulatory Board**, in *Re: Petition of Centennial Puerto Rico License Corp. for arbitration pursuant to Sections 252(b) of the Telecommunications Act of 1996 to Establish an Interconnection Agreement with Puerto Rico Telephone Company*, on behalf of Centennial Puerto Rico License Corp., Direct Testimony filed April 16, 2002; Deposition May 7, 2002, May 14, 2002; Reply Testimony filed May 20, 2002, Cross-examination May 22, 2002.

Before the **Federal Energy Regulatory Commission**, in *Re: In the Matter of Transcontinental Gas Pipe Line Corporation*, Docket No. RP01-245, on behalf of the University of Maryland-College Park, Johns Hopkins University and Johns Hopkins University Health System, and the North Carolina Utilities Commission, Cross-answering Testimony filed January 23, 2002; Rebuttal Testimony filed May 31, 2002, Cross-examination July 31, 2002.

2001

Before the **United States District Court for the Northern District of New York**, *TC Systems, Inc. and Teleport Communications-New York vs. Town of Colonie, New York*, Civil Action No. 00-CV-1972, Expert Report filed November 16, 2001; Deposition December 7, 2001, Rebuttal Expert Report filed December 20, 2001, Deposition January 9, 2002.

Before the **Federal Energy Regulatory Commission**, in *Re: In the Matter of Transcontinental Gas Pipe Line Corporation*, Docket No. RP01-245, on behalf of the University of Maryland-College Park, Johns Hopkins University and Johns Hopkins University Health System, and the North Carolina Utilities Commission, filed November 15, 2001.

Before the **Public Service Commission of the District of Columbia**, Comcast Cable Communications, Inc. d/b/a/Comcast Cable of Washington, D.C., Complainant, v. Verizon Communications Inc. – Washington, D.C., Respondent, filed September 21, 2001.

Before the **Public Utility Commission of Texas**, State Office of Administrative Hearings, SOAH Docket No. 473-00-1014, PUC Docket No. 22349, *Application of Texas-New Mexico Power Company for Approval of Unbundled Cost of Service Rate Pursuant to PURA § 39.201 and Public Utility Commission Substantive Rule §25.344*, on behalf of Cities Served by Texas-New Mexico Power, filed January 25, 2001.

2000

Before the **Puerto Rico Telecommunications Regulatory Board**, in *AT&T of Puerto Rico, Inc. et al v. Puerto Rico Telephone Company, Inc., Re: Dialing Parity*, Docket Nos. 97-Q-0008, 98-Q-0002, on behalf of Lambda Communications Inc., Cross-examination October 19-20, 2000.

Before the **Department of Telecommunications and Energy of the Commonwealth of Massachusetts**, Docket No. DTE 98-57 – Phase III, *Re: Bell Atlantic- Massachusetts Tariff No. 17 Digital Subscriber Line Compliance Filing and Line Sharing Filing*, (Panel Testimony with Joseph Riolo, Robert Williams, and Michael Clancy) on behalf of Rhythms Links Inc. and Covad Communications Company, filed July 10, 2000.

Before the **New York State Public Service Commission** in *Re: Proceeding on Motion of the Commission to Examine New York Telephone Company's Rates for Unbundled Network Elements* on behalf of the Cable Television & Telecommunications Association of New York, Inc., Direct Testimony filed June 26, 2000, Supplemental Testimony filed November 29, 2000.

Before the **Maryland Public Service Commission**, on behalf of Rhythms Links Inc. and Covad Communications Company, filed jointly with Terry L. Murray and Richard Cabe, May 5, 2000.

Before the **Public Utility Commission of Texas**, in *Re: Proceeding to Examine Reciprocal Compensation Pursuant to Section 252 of the Federal Telecommunications Act of 1996*, CC Docket No. 21982, on behalf of AT&T Communications of Texas, L.P., TCG Dallas, and Teleport Communications Houston, Inc., filed March 31, 2000.

Before the **Federal Communications Commission**, in *Re: In the Matter of Price Caps Performance Review for Local Exchange Carriers, Access Charge Reform*, CC Dockets 94-1, 96-262, on behalf of Ad Hoc Telecommunications Users Committee, filed January 24, 2000.

Before the **Federal Energy Regulatory Commission**, in *Re: In the Matter of Northern Border Pipeline Company*, on behalf of the Canadian Association of Petroleum Producers and the Alberta Department of Resource Development, filed January 20, 2000.

1999

Before the **Connecticut Department of Public Utilities**, in *Re: Evaluation and Application to Modify Franchise Agreement by SBC Communications Inc., Southern New England telecommunications Corporation and SNET Personal Vision, Inc.*, Docket No. 99-04-02, on behalf of the Office of Consumer Counsel, filed June 22, 1999; cross-examination July 8, 1999

Before the **Illinois Commerce Commission**, in *Re: Illinois Commerce Commission on its own Motion v. Illinois Bell Telephone Company; et al: Investigation into Non-Cost Based Access Charge Rate Elements in the Intrastate Access Charges of the Incumbent Local Exchange Carriers in Illinois, Illinois Commerce Commission on its own Motion Investigation into Implicit Universal Service Subsidies in Intrastate Access Charges and to Investigate how these Subsidies should be Treated in the Future, Illinois Commerce Commission on its own motion Investigation into the Reasonableness of the LS2 Rate of Illinois Bell Telephone Company*, Docket No. 97-00601, 97-0602, 97-0516, Consolidated, on behalf of City of Chicago, filed January 4, 1999; rebuttal February 17, 1999.

Before the **Puerto Rico Telecommunications Regulatory Board**, in *Re: In the Matter of Arbitration of Interconnection Rates, Terms and Conditions between Centennial Wireless PCS Operations Corp., Lambda Communications Inc., and the Puerto Rico Telephone Company*, behalf of Centennial Wireless PCS Operations Corp. and Lambda Communications Inc., cross-examination February 16, 1999.

1998

Before the **California Public Utilities Commission**, in *Re: In the Matter of the Application of Pacific Bell (U 1001 C), a Corporation, for Authority for Pricing Flexibility and to Increase Prices of Certain Operator Services, to Reduce the Number of Monthly Assistance Call Allowances, and Adjust Prices for Four Centrex Optional Features*, Application No. 98-05-038, on behalf of County of Los Angeles, filed November 17, 1998, cross-examination, December 9, 1998.

Before the **Puerto Rico Telecommunications Regulatory Board**, in *Re: In the Matter of PRTC's Tariff K-2 (Intra-island access charges)*, Docket no. 97-Q-0001, 97-Q-0003, on behalf of Lambda Communications, Inc., filed October 9, 1998, cross-examination October 9, 1998.

Before the **Connecticut Department of Public Utility Control**, in *Re: Application of the Southern New England Telephone Company*, Docket no. 98-04-03, on behalf of the Connecticut Office of Consumer Counsel, filed August 17, 1998, cross-examination February 18, 1999.

Before the **California Public Utilities Commission**, in *Re: Pacific Gas & Electric General Rate Case*, A.97-12-020, on behalf of Office of Rate Payers Advocates CA PUC, filed June 8, 1998.

1997

Before the **South Carolina Public Service Commission**, in *Re: Proceeding to Review BellSouth Telecommunications, Inc.'s Cost for Unbundled Network Elements*, Docket no. 97-374-C, on behalf of the South Carolina Cable Television Association, filed November 17, 1997.

Before the **State Corporation Commission of Kansas**, in *Re: In the Matter of and Investigation to Determine whether the Exemption from Interconnection Granted by 47 U.S.C. 251(f) should be Terminated in the Dighton, Ellis, Wakeeney, and Hill City Exchanges*, Docket No. 98-GIMT-162-MIS, on behalf of classic Telephone, Inc., filed October 23, 1997.

Before the **Georgia Public Services Commission**, in *Re: Review of Cost Studies, Methodologies, and Cost-Based Rates for Interconnection and Unbundling of BellSouth Telecommunications Services*, Docket No. 7061-U, on behalf of the Cable Television Association of Georgia, filed August 29, 1997, cross-examination September 19, 1997.

Before the **Federal Communications Commission**, in *Re: In the Matter of Price Caps Performance Review for Local Exchange Carriers, Access Charge Reform*, CC Dockets 94-1, 96-262, on behalf of Ad Hoc Telecommunications Users Committee, filed July 11, 1997.

Before the **Federal Communications Commission**, in *Re: In the Matter of Amendment of Rules and Policies Governing Pole Attachments*, CS Docket 97-98, on behalf of NCTA, filed June 27, 1997.

Before the **Public Utilities Commission of the State of California**, in *Re: Rulemaking on the Commission's Own Motion to Govern Open Access to Bottleneck Services and Establish a Framework for Network Architecture Development of Dominant Carrier Networks*, R.93-04-003, I.93-04-002AT&T, filed March 19, 1997, reply April 7, 1997.

Before the **Puerto Rico Telecommunications Regulatory Board**, in *Re: In the Matter of Centennial Petition for Arbitration with PRTC*, on behalf of Centennial Cellular Corporation, filed February 14, 1997, supplemental March 10, 1997.

Before the **Federal Communications Commission**, in *Re: In the Matter of Access Charge Reform*, CC Docket 96-262, on behalf of AT&T, filed January 29, 1997, reply February 14, 1997.

1996

Before the **New Jersey Board of Public Utilities**, in *Re: In the Matter of the Investigation Regarding Local Exchange Competition for Telecommunications Services*, TX95120631, on behalf of New Jersey Cable Television Association, filed on August 30, 1996, reply September 9, 1997, October 20, 1997, cross-examination September 12, 1996, December 20, 1996.

Before the **State Corporation Commission of the State of Kansas**, in *Re: In the Matter of a General Investigation Into Competition Within the Telecommunications Industry in the State of Kansas*, 190, 492-U 94-GIMT-478-GIT, on behalf of Kansas Cable Telecommunications Association, Inc., filed July 15, 1996, cross-examination August 14, 1996.

Before the **Federal Communications Commission**, in *Re: Price Caps Performance Review for Local Exchange Carriers*, CC Docket 94-1, on behalf of Ad Hoc Telecommunications Users Committee, filed July 12, 1996.

Before the **State Corporation Commission of the State of Kansas**, in *Re: In the Matter of a General Investigation Into Competition Within the Telecommunications Industry in the State of Kansas*, 190, 492-U 94-GIMT-478-GIT,

on behalf of Kansas Cable Telecommunications Association, Inc., filed June 14, 1996, cross-examination August 14, 1996.

Before the **Federal Communications Commission**, in *Re: In the Matter of Implementation of the Local Competition Provisions of Telecommunications Act of 1996*, CC Docket 96-98, filed May 1996.

Before the **Federal Communications Commission**, in *Re: Puerto Rico Telephone Company (Tariff FCC No. 1)*, Transmittal No. 1, on behalf of Centennial Cellular Corp., filed April 29, 1996.

Before the **United States District Court for the Eastern District of Tennessee at Greeneville**, in *Re: Richard R. Land, Individually and d/b/a The Outer Shell, and on behalf of all others similarly situated, Plaintiffs, vs. United Telephone-Southeast, Inc., Defendant*, CIV 2-93-55, filed December 7, 1996.

1995

Before the **Federal Communications Commission**, in *Re: Bentleyville Telephone Company Petition and Waiver of Sections 63.54 and 63.55 of the Commission's Rules and Application for Authority to Construct and Operate, Cable Television Facilities in its Telephone Service Area*, W-P-C-6817, on behalf of the Helicon Group, L.P. d/b/a Helicon Cablevision, filed November 2, 1995.

Before the **US District Court for the Eastern District of Tennessee**, in *Re: Richard R. Land, Individually and d/b/a The Outer Shell, and on behalf of all others similarly situated, Plaintiffs, vs. United Telephone-Southeast, Inc., Defendant*, 2-93-55, Class Action, filed June 12, 1995.

Before the **Connecticut Department of Public Utility Control**, in *Re: Application of SNET Company for approval to trial video dial tone transport and switching*, 95-03-10, on behalf of New England Cable TV Association, filed May 8, 1995, cross-examination May 12, 1995.

Before **Canadian Radio-Television and Telecommunications Commission**, in *Re: CRTC Order in Council 1994-1689*, Public Notice CRTC 1994-130 (Information Highway), filed March 10, 1995.

Before the **Federal Communications Commission**, in *Re: GTE Hawaii's Section 214 Application to provide Video Dialtone in Honolulu, Hawaii*, W-P-C- 6958, on behalf of Hawaii Cable TV Association, filed January 17, 1995 (Reply to Amended Applications).

Before the **Federal Communications Commission**, in *Re: GTE Hawaii's Section 214 Application to provide Video Dialtone in Ventura County*, W-P-C 6957, on behalf of the California Cable TV Association, filed January 17, 1995 (Reply to Amended Applications).

Before the **Federal Communications Commission**, in *Re: GTE Florida's Section 214 Application to Provide Video Dialtone in the Pinellas County and Pasco County, Florida areas*, W-P-C 6956, on behalf of Florida Cable TV Association, filed January 17, 1995 (Reply to Amended Applications).

Before the **Federal Communications Commission**, in *Re: GTE Virginia's Section 214 Application to provide Video Dialtone in the Manassas, Virginia area*, W-P-C 6956, on behalf of Virginia Cable TV Association, filed January 17, 1995 (Reply to Amended Applications).

1994

Before the **Federal Communications Commission**, in *Re: NET's Section 214 Application to provide Video Dialtone in Rhode Island and Massachusetts*, W-P-C 6982, W-P-C 6983, on behalf of New England Cable TV Association, filed December 22, 1994 (Reply to Supp. Responses).

Before the **State Corporation Commission of the State of Kansas**, in *Re: General Investigation into Competition*, 190, 492-U 94-GIMT-478-GIT, on behalf of Kansas CATV Association, filed November 14, 1994, cross-examination December 1, 1994.

Before the **Federal Communication Commission**, in *Re: Carolina Telephone's Section 214 Application to provide Video Dialtone in areas of North Carolina*, W-P-C 6999, on behalf of North Carolina Cable TV Association, filed October 20, 1994, reply November 8, 1994.

Before the **Federal Communication Commission**, in *Re: NET's Section 214 Application to provide Video Dialtone in Rhode Island and Massachusetts*, W-P-C 6982, W-P-C 6983, on behalf of New England Cable TV Association, filed September 8, 1994, reply October 3, 1994.

Before the **California Public Utilities Commission**, in *Re: Petition of GTE-California to Eliminate the Preapproval Requirement for Fiber Beyond the Feeder*, I.87-11-033, on behalf of California Bankers Clearing House, County of LA, filed August 24, 1994.

Before the **Federal Communications Commission**, in *Re: BellSouth Telecommunications Inc., Section 214 Application to provide Video Dialtone in Chamblee, GA and Dekalb County, GA*, W-P-C 6977, on behalf of Georgia Cable TV Association, filed August 5, 1994.

Before the **Federal Communications Commission**, in *Re: Bell Atlantic Telephone Companies Section 214 Application to provide Video Dialtone within their Telephone Services Areas*, W-P-C 6966, on behalf of Mid Atlantic Cable Coalition, filed July 28, 1994, reply August 22, 1994.

Before the **Federal Communication Commission**, in *Re: GTE Hawaii's 214 Application to provide Video Dialtone in Honolulu, Hawaii*, W-P-C 6958, on behalf of Hawaii Cable TV Association, filed July 1, 1994, and July 29, 1994.

Before the **Federal Communication Commission**, in *Re: GTE California's Section 214 Application to provide Video Dialtone in Ventura County*, W-P-C 6957, on behalf of California Cable TV Association, filed July 1, 1994, and July 29, 1994.

Before the **Federal Communication Commission**, in *Re: GTE Florida's 214 Application to provide Video Dialtone in the Pinellas and Pasco County, Florida areas*, W-P-C 6956, on behalf of Florida Cable TV Association, filed July 1, 1994, and July 29, 1994.

Before the **Federal Communication Commission**, in *Re: GTE Virginia's 214 Application to provide Video Dialtone in the Manassas, Virginia area*, W-P-C 6955, on behalf of the Virginia Cable TV Association, filed July 1, 1994, and July 29, 1994.

Before the **Federal Communications Commission**, in *Re: US WEST's Section 214 Application to provide Video Dialtone in Boise, Idaho and Salt Lake City, Utah*, W-P-C 6944-45, before the Idaho and Utah Cable TV Association, filed May 31, 1994.

Before the **Federal Communication Commission**, in *Re: US WEST's Section 214 Application to provide Video Dialtone in Portland, OR; Minneapolis, St. Paul, MN; and Denver, CO*, W-P-C 6919-22, on behalf of Minnesota & Oregon Cable TV Association, filed March 28, 1994.

Before the **Federal Communications Commission**, in *Re: Ameritech's Section 214 Application to provide Video Dialtone within areas in Illinois, Indiana, Michigan, Ohio, and Wisconsin*, W-P-C-6926-30, on behalf of Great Lakes Cable Coalition, filed March 10, 1994, reply April 4, 1994.

Before the **Federal Communications Commission**, in *Re: Pacific Bell's Section 214 Application to provide Video Dialtone in Los Angeles, Orange County, San Diego, and Southern San Francisco Bay areas*, W-P-C-6913-16, on behalf of Comcast/Cablevision Inc., filed February 11, 1994, reply March 11, 1994.

Before the **Federal Communications Commission**, in *Re: SNET's Section 214 Application to provide Video Dialtone in Connecticut*, W-P-C 6858, on behalf of New England Cable TV Association, filed January 20, 1994, reply February 23, 1994.

1993

Before the **Arkansas Public Service Commission**, in *Re: Earnings Review of Southwestern Bell Telephone Company*, 92-260-U, on behalf of Arkansas Press Association, filed September 2, 1993.

Before the **United States District Court for the Eastern District of Tennessee at Greenville**, in *Re: Cleo Stinnett, et al. Vs. BellSouth Telecommunications, Inc. d/b/a/ South Central Bell Telephone Company, Defendant*, Civil Action No 2-92-207, Class Action, cross-examination May 10, 1993, and February 10, 1994.

Before the **Federal Communications Commission**, in *Re: NJ Bell's Section 214 Application to provide Video Dialtone service within Dover Township, and Ocean County, New Jersey*, W-P-C-6840, on behalf of New Jersey Cable TV Association, filed January 21, 1993.

1992

Before the **New Jersey Board of Regulatory Commissioners**, in *Re: NJ Bell Alternative Regulation*, T092030358, on behalf of NJ Cable TV Association, filed September 21, 1992.

Before the **New Hampshire Public Utilities Commission**, in *Re: Generic competition docket*, DR 90-002, on behalf of Office of the Consumer Advocate, filed May 1, 1992, reply July 10, 1992, Surrebuttal August 21, 1992.

Before the **New Jersey General assembly Transportation, Telecommunications, and Technology Committee**, *Concerning A-5063*, on behalf of NJ Cable TV Association, filed January 6, 1992.

1991

Before the **New Jersey Senate Transportation and Public Utilities Committee**, in *Re: Concerning Senate Bill S-3617*, on behalf of New Jersey Cable Television Association, filed December 10, 1991.

Before the **119th Ohio General Assembly Senate Select Committee on Telecommunications Infrastructure and Technology**, in *Re: Issues Surrounding Telecommunications Network Modernization*, on behalf of the Ohio Cable TV Association, filed March 7, 1991.

Before the **Tennessee Public Service Commission**, in *Re: Master Plan Development and TN Regulatory Reform Plan*, on behalf of TN Cable TV Association, filed February 20, 1991.

1990

Before the **Tennessee Public Service Commission**, in *Re: Earnings Investigation of South Central Bell*, 90-05953, on behalf of the TN Cable Television Association, filed September 28, 1990.

Before the **New York Public Service Commission**, in *Re: NYT Rates, 90-C-0191, on behalf of User Parties NY Clearing House Association*, filed July 13, 1990, Surrebuttal July 30, 1990.

Before the **Louisiana Public Service Commission**, in *Re: South Central Bell Bidirectional Usage Rate Service*, U-18656, on behalf of Answerphone of New Orleans, Inc., Executive Services, Inc., King Telephone Answering Service, et al, filed January 11, 1990.

1989

Before the **Georgia Public Service Commission**, in *Re: Southern Bell Tariff Revision and Bidirectional Usage Rate Service*, 3896-U, on behalf of Atlanta Journal Const./Voice Information Services Company, Inc., GA Association of Telemessaging Services, Prodigy Services, Company, Telnet Communications, Corp., filed November 28, 1989.

Before the **New York State Public Service Commission**, in *Re: NYT Co. - Rate Moratorium Extension - Fifth Stage Filing*, 28961 Fifth Stage, on behalf of User Parties NY Clearing House Association Committee of Corporate Telecommunication Users, filed October 16, 1989.

Before the **Delaware Public Service Commission**, in *Re: Diamond State Telephone Co. Rate Case*, 86-20, on behalf of DE PSC, filed June 16, 1989.

Before the **Arizona Corporation Committee**, in *Re: General Rate Case*, 86-20, on behalf of Arizona Corporation Committee, filed March 6, 1989.

1988

Before **New York State Public Service Commission**, in *Re: NYT Rate Moratorium Extension*, 28961, on behalf of Capital Cities/ ABC, Inc., AMEX Co., CBS, Inc., NBC, Inc., filed December 23, 1988.

1989

Before **Rhode Island Public Utilities Commission**, in *Re: New England Telephone*, 1475, on behalf of RI Bankers Association, filed August 11, 1987, cross-examination August 21, 1987.

Before the **New York State Public Service Commission**, in *Re: General Rate Case Subject to Competition*, 29469, on behalf of AMEX Co., Capital Cities/ ABNC, Inc., NBC, Inc., filed April 17, 1987, cross-examination May 20, 1987.

Before the **Minnesota Public Utilities Commission**, in *Re: Northwestern Bell*, P-421/ M-86-508, on behalf of MN Bus. Utilities Users Counsel, filed February 10, 1987, cross-examination March 5, 1987.

1986

Before the **Kansas Public Utilities Commission**, in *Re: Southwestern Bell*, 127, 140-U, on behalf of Boeing Military, et al., filed August 15, 1986.

1985

Before the **Washington Utilities and Transportation Commission**, in *Re: Cost of Service Issues bearing on the Regulation of Telecommunications Company*, on behalf of US Department of Energy, filed November 18, 1985 (Reply Comments).

1984

Before the **Maine Public Utilities Commission**, in *Re: New England Telephone*, 83-213, on behalf of Staff, ME PUC, filed February 7, 1984, cross-examination March 16, 1984.

Before the **Minnesota Public Service Commission**, in *Re: South Central Bell*, U-4415, on behalf of MS PSC, filed January 24, 1984, cross-examination February 1984.

1983

Before the **Kentucky Public Service Commission**, in *Re: South Central Bell*, 8847, on behalf of KY PSC, filed November 28, 1983, cross-examination December 1983.

Before the **Florida Public Service Commission**, in *Re: Southern Bell Rate Case*, 820294-TP, on behalf of Florida Department of General Services, FL Ad Hoc Telecommunications Users, filed March 21, 1983, cross-examination May 5, 1983.

1982

Before the **Maine Public Utilities Commission**, in *Re: New England Telephone*, 82-142, on behalf of Staff, ME PUC, filed November 15, 1982, cross-examination December 9, 1982.

Before the **Kentucky Public Service Commission**, in *Re: South Central Bell*, 8467, on behalf of the Commonwealth of Kentucky, cross-examination August 26, 1982.

STATE OF NEW HAMPSHIRE

Before the

PUBLIC UTILITIES COMMISSION

Time Warner Entertainment Company L.P.
d/b/a Time Warner Cable

Petition for Resolution of Dispute with
Public Service Company of New Hampshire

DT 12-084

PREFILED REPLY TESTIMONY OF

PATRICIA KRAVTIN

ON BEHALF OF

TIME WARNER CABLE AND

COMCAST CABLE COMMUNICATIONS MANAGEMENT, LLC

COMCAST OF NEW HAMPSHIRE, INC.

COMCAST OF MASSACHUSETTS/NEW HAMPSHIRE, LLC

COMCAST OF MAINE/NEW HAMPSHIRE, INC.

October 31, 2012

1 **INTRODUCTION**

2 **Q. Please state your name, business address, and occupation.**

3 A. My name is Patricia D. Kravtin. My business address is 57 Phillips Avenue,
4 Swampscott, Massachusetts. I am an economist in private practice specializing in the analysis of
5 telecommunications, cable and energy regulation and markets.

6 **Q. Have you previously submitted testimony in this proceeding?**

7 A. Yes. I submitted prefiled direct testimony on July 20, 2012 on behalf of Time Warner
8 Cable (“TWC”) and Comcast Cable Communications Management, LLC, Comcast of New
9 Hampshire Inc., Comcast of Massachusetts/New Hampshire, LLC and Comcast of Maine/New
10 Hampshire, Inc. (collectively “Comcast”) addressing matters concerning the appropriate
11 methodology for determining just and reasonable rates for the attachment of cable television
12 service providers’ and competitive local exchange carriers’ (“CLEC”) facilities to utility owned
13 poles pursuant to RSA 374:34-a and the six factor rate review standard set forth in PUC 1304.06.

14 **Q. As part of that testimony, did you provide a detailed summary of your educational
15 and professional background?**

16 A. Yes, I did. A detailed resume summarizing my training, previous experience, prior
17 testimony and reports was provided as part of that testimony. *See* Direct Testimony of PDK
18 Attachment 1.

19 **Q. Have you reviewed the direct testimony filed in this docket by Mr. Edward A. Davis
20 on behalf of Public Service of New Hampshire (“PSNH”) on September 14, 2012?**

21 A. Yes, I have.

22 **Q. Are there areas of his testimony to which you wish to respond?**

1 A. Yes, there are. In my opening direct testimony, I explained why the historic FCC cable
2 rate formula (“Cable Formula”) is the methodology that will best serve to accomplish the six-
3 factor test in PUC 1304.06(a) and that produces pole rates that are more than compensatory to
4 pole owners. In addition, my testimony explained the numerous shortcomings of PSNH’s
5 reliance on the FCC’s old, rejected telecom formula (“Telecom Formula”) for “communications”
6 attachments as set forth in its June 8, 2012 pole rate calculations. In its recently filed testimony,
7 PSNH advocates alternative rate methodologies that would increase pole rates by factors of 200
8 to 300 percent, but indicates it would also find acceptable a uniform pole rate based on the old
9 Telecom Formula. PSNH’s apparent strategy of proposing absurdly high pole rates should not
10 mislead the Commission into believing that PSNH’s ultimate willingness to use the old, FCC
11 Telecom Formula as the basis of a uniform pole rate is in any way reasonable. Accordingly, in
12 this reply testimony I will show that PSNH has no principled rationale for its proposals other
13 than to allow it to exercise its monopoly control of poles to charge rents that greatly exceed its
14 costs associated with the attachment.

15 **Q. What is the purpose of your reply testimony?**

16 A. The purpose of this reply testimony is to respond to Mr. Davis in two principal respects:
17 1) areas in Mr. Davis’s testimony where he has made erroneous, misleading, and/or unsupported
18 assertions; and 2) areas in his testimony that Mr. Davis has appeared to concede in responses to
19 data requests, and as a result, would appear to agree, rather than disagree with my testimony on
20 these matters. Specifically, I will respond to Mr. Davis’s testimony in the following key subject
21 areas:

22 Rate Settlement and Impact-Related Issues: In the first section of this testimony, I

1 respond to Mr. Davis's overarching position that any changes from the current pole attachment
2 methodology should be delayed until 2015. I explain why Mr. Davis is incorrect that the PSNH
3 Rate Settlement is reason for delaying implementation of a unified pole attachment rate using the
4 FCC's historic cable rate formula ("Cable Formula"), and that there are also strong economic
5 and public policy reasons for immediate implementation.

6 Recovery of Pole Costs and Subsidy-Related Issues: In the second section of my
7 testimony, I address the numerous misrepresentations or misunderstandings Mr. Davis makes
8 with respect to the Cable Formula, explaining why Mr. Davis is incorrect in asserting that the
9 Cable Formula (i) does not allow PSNH to recover its full pole-related costs from third party
10 attachers and (ii) constitutes a subsidy to attachers from electric ratepayers. In fact, contrary to
11 Mr. Davis's testimony, and as recognized by the U.S. Congress, the Federal Communications
12 Commission ("FCC"), multiple state public service commissions and courts, including the U.S.
13 Supreme Court, the Cable Formula is not a subsidy rate and provides more than adequate and
14 just compensation for pole owners.

15 PSNH's Alternative Proposed Pole Rent Formula Methodologies: In the third section, I
16 address the three alternative pole attachment rate formulas presented by Mr. Davis, which
17 produce solely owned ("SO") pole rates of approximately \$39.87, \$29.21 and \$20.68
18 respectively compared with the current SO Cable Formula rate of about \$10. I explain why each
19 of the alternative rate formulas proposed by Mr. Davis, which range from doubling to
20 quadrupling the existing rates paid by cable operators in New Hampshire, would not only further
21 distinguish New Hampshire as an outlier. Not only do PSNH's proposed formulas create pole
22 rates some three hundred to five hundred percent higher than the national average, they would

1 also discourage broadband deployment and competition in New Hampshire in conflict with the
2 factors set forth in N.H. Admin. Rule, PUC 1304.06(a).

3

4

RATE SETTLEMENT AND IMPACT-RELATED ISSUES

5 **Q. On pages 4 and 5 of his testimony, Mr. Davis states that “if there were to be a**
6 **reduction to [pole attachment] rates due to a change in methodology during the 5-year Rate**
7 **Settlement period, the Company would have a revenue shortfall unless the Commission**
8 **provided an opportunity to make an equal reconciling change to the Company’s**
9 **distribution service rates...The Commission cannot now eliminate a part of those revenues**
10 **in isolation without upsetting the overall revenue requirement calculus.” On that basis, he**
11 **recommends no change occur in pole rate methodology “until at least the end of the Rate**
12 **Settlement period, June 30, 2015.” Do you agree with his assertion of a “revenue**
13 **shortfall,” or the conclusion reached on that basis that no change in methodology be made**
14 **until 2015 at the earliest?**

15 **A.** I do not agree with either Mr. Davis’s assertion that the Company would experience a
16 revenue shortfall that would need to be offset by changes to electric distribution rates if there was
17 a reduction to pole attachment rates due to a change in methodology (*i.e.*, adoption of the FCC
18 Cable Formula methodology as a unified broadband rate), or his conclusion that no change in
19 methodology should be made until after June 2015.

20 First, under the terms of the Settlement Agreement, the Commission anticipated that
21 PSNH revenues might increase or decrease from the projected levels. Specifically, if
22 “exogenous events” in the aggregate cause revenue in a particular calendar year after 2010 to

1 decrease by more than \$1 million, PSNH is authorized to seek a rate adjustment from electric
2 customers in order to recover that revenue. Implicit in this mechanism is the recognition that
3 “exogenous” revenue changes that do not reach the \$1 million threshold are not material enough
4 to the company to justify revising customer rates. Thus, the Commission has essentially
5 determined that PSNH’s rates are just and reasonable unless the Company experiences a revenue
6 shortfall above \$1 million, in which case the Company may petition the Commission for a rate
7 adjustment. PSNH admits that it does not anticipate that any change in pole revenue would
8 trigger the \$1 million threshold, making this by PSNH’s own admission “a moot point” to begin
9 with. *See* PSNH Response to TWC-Comcast-005 reproduced in this reply testimony as
10 TWC/Comcast Reply Attachment PDK-1.

11 Second, the issue of a potential revenue shortfall is a red herring argument in any event,
12 given the very small effect of pole attachment revenues on the Company’s bottom line. The total
13 amount of pole attachment revenues included in the Company’s revenue requirement calculation
14 in DE 09-035 in the Cost of Service Study (“COSS”) underlying the Settlement Agreement are
15 \$1.89 million relative to a total Company distribution revenue requirement of approximately
16 \$312-million. *See* DE-09-935, Exhibit 2 Table 5 at 9, and Exhibit 3 Table 1B at 3 and Table 5 at
17 11, reproduced in TWC/Comcast Reply Attachment PDK-2 to this reply testimony. This amount
18 is only approximately .6% of the Company’s distribution revenue requirement. Assuming there
19 is any pole revenue reduction at all resulting from adoption of a unified rate using the Cable
20 Formula (a fact that PSNH has failed to demonstrate would occur) such reduction would be
21 relatively insignificant and represent an even smaller percentage of the Company’s overall
22 distribution revenue requirement. For example, if pole revenue fell by ten (10) percent -

1 \$189,900 – this reduction would be just .06% of the Company’s distribution revenue
2 requirement. Of course, PSNH has failed to show that any reduction in pole revenue would in
3 fact occur as explained further below.

4 Third, Mr. Davis’s testimony might lead one to believe that the Company has kept pole
5 attachment rates fixed during the period of the Settlement Agreement to date, and that is simply
6 not the case. As acknowledged in Mr. Davis’s response to TWC-Comcast Data Request 009 (*see*
7 TWC/Comcast Reply Attachment PDK-3), PSNH has adjusted its pole attachment rates annually
8 based on the most recent cost data reported in the FERC Form 1. In some years, rates have been
9 adjusted lower than the 2008 test year rates (*i.e.*, 2010 and 2011), and in others (*i.e.*, 2012),
10 PSNH increased its cable and telecom attachment rates above the 2008 test year rates. Mr. Davis
11 asserts in response to TWC/Comcast data requests that if a change in the Commission’s pole rent
12 formula results in a reduction in pole revenues below the 2008 “test year” projection this “would
13 result in a change in revenue requirements responsibility and, accordingly, delivery rates (*i.e.*,
14 distribution rates) that the Company would seek approval of by the Commission in a contested
15 proceeding.” *See* TWC-Comcast Data Request 010 reproduced here as TWC/Comcast Reply
16 Attachment PDK-4. It is noteworthy, however, that PSNH did not seek any such rate change
17 when its pole attachment rates declined below the 2008 test year in 2010 and 2011. There is no
18 real distinction between a reduction in pole attachment revenue arising from a change in
19 methodology and a revenue reduction that occurs under the same methodology that would justify
20 a contested rate case to adjust distribution rates. Accordingly, Mr. Davis’s statement made in
21 response to TWC-Comcast Data Request 010 would appear to be more posturing on his part than
22 reflective of the economic reality of the situation.

1 Fourth, even putting aside the immateriality of PSNH's aggregate pole attachment
2 revenues (or any potential diminution thereof) on the Company's bottom line, PSNH has
3 produced no evidence demonstrating that immediate adoption of the Cable Formula would, in
4 fact, cause PSNH's pole rental revenues to decline below the \$1.89 million 2008 test year
5 projection over the Rate Settlement period. Under such circumstances, in the absence of any
6 data demonstrating otherwise, it is fair to presume that PSNH will not experience a material, if
7 any, pole revenue shortfall over the Rate Settlement period if the Cable Formula is adopted by
8 the Commission and no delay in the effective date of such an adoption of the Cable Formula is
9 appropriate.

10 **Q. Why do you say there is no basis to believe, as Mr. Davis asserts, that adoption of**
11 **the Cable Formula as the unified pole attachment formula in New Hampshire would result**
12 **in a revenue shortfall for PSNH if adopted prior to the end of the Settlement Period?**

13 A. There are a number of reasons why Mr. Davis's assertion is unsupported. First, in Mr.
14 Davis's response to TWC-Comcast 006 he explains that the figure of \$1.89 million in total pole
15 attachment revenues included in the Company's revenue requirement underlying the Settlement
16 Agreement "was obtained from the Company's accounting records from January 1 to December
17 31, 2008," and was not subject to any "proforma adjustments" by the Company. As suggested
18 by this response, and confirmed by a comparison of the per-book and pro-forma revenues for
19 pole attachments as set forth in the COSS accompanying the Settlement Agreement (attached in
20 TWC/Reply Attachment PDK-2), the \$1.89 million pole attachment revenues projection was
21 based strictly on PSNH's 2008 accounting records without any forward looking adjustments.
22 Accordingly, the PSNH settlement pole attachment revenue figure does not take into account (1)

1 growth in the number of third-party pole attachments between 2008 and 2015, or (2) any
2 additional revenues from increases in rental rates charged by the Company or in make-ready or
3 other ancillary pole attachment related fees paid by third-party attachers over the Rate Settlement
4 period.

5 **Q. Is there reason to believe PSNH has experienced increases in total pole attachment-**
6 **related revenues since 2008 that would offset any potential decreases in the pole revenues**
7 **associated with adoption of the Cable Formula as a unified broadband rate?**

8 A. Yes, there is. According to PSNH, the Company has licensed an additional 31,769 pole
9 attachments in the years 2009 through the end of September 2012, and charged billable make-
10 ready on 661 poles. *See* PSNH's response to SEGTEL-013 reproduced in TWC/Comcast Reply
11 Attachment PDK-6. In addition to the revenues billed for the make-ready work, it is important to
12 note that PSNH, as pole owner, receives the benefit of the increased asset value of the poles
13 replaced in make-ready (paid for by the attacher) that are now part of PSNH's asset base.
14 Moreover, PSNH informed us in response to data requests that the rates charged for cable
15 attachments have increased 13.5% from \$8.87 in 2009 for an SO pole to \$10.07 in 2012. *See*
16 PSNH's response to SEGTEL-013 reproduced in TWC/Comcast Reply Attachment PDK-7.
17 Since PSNH's pole attachment rental rates in 2009 were virtually identical to its 2008 rental rates
18 (*see* TWC/Comcast Reply Attachment PDK-7), this percentage increase is representative of the
19 Rate Settlement period increase to date.

20 **Q. Have you undertaken a detailed analysis of the change in total pole attachment**
21 **rental revenues over the Rate Settlement period that PSNH would obtain from third party**

1 **attachers vis-à-vis the 2008 revenues incorporated in the Rate Settlement revenue**
2 **requirement if the Cable Formula was adopted as a unified broadband rate methodology?**

3 A. No, I have not. As noted earlier, PSNH did not respond to TWC-Comcast's data request
4 006 asking it to provide a detailed breakdown of the revenues comprising the pole attachment
5 revenues incorporated in the revenue requirement reflected over the Rate Settlement period by
6 component revenues, type of attachments, and attaching entity. Without this information, such
7 an analysis of the change in pole attachment revenues vis-à-vis the 2008 level (and hence the
8 impact on PSNH's Rate Settlement revenue requirements) cannot be made. I would add,
9 however, that PSNH recently agreed to provide additional responsive information to TWC-
10 Comcast 006 pertaining to the 2008 test year \$1.89 million pole revenues included in its COSS
11 in support of its Rate Settlement revenue requirement and I reserve the right to supplement this
12 reply testimony to the extent necessary based on such additional data.

13 That said, as mentioned above, given the significant growth in the number of third party
14 pole attachments since 2008, combined with the increase in pole attachment rates from 2008 to
15 the present time, it is unlikely that total pole attachment-related revenues for PSNH would
16 decline materially, if at all, from the 2008-based level reflected in the Settlement Agreement.
17 Moreover, particularly if make-ready and other ancillary pole attachment fees (*e.g.*, fees for
18 application processing, field surveys, inspections, and audits) charged third-party attachers were
19 taken into account, it is as likely, if not more so, that total pole attachment related revenues have
20 actually increased vis-à-vis 2008 levels. However, regardless of whether total pole attachment
21 revenues have increased or decreased compared to the 2008 amounts reflected in the Rate
22 Settlement revenue requirements, the impact on residential electric customers would be

1 miniscule, as the revenue impact analysis I provided in response to PSNH Data Request 12
2 demonstrates. *See* TWC/Comcast Reply Attachment PDK-8.

3 **Q. In his response to TWC-Comcast Data Request 011 (*see* TWC/Comcast Reply**
4 **Attachment PDK-9), Mr. Davis states that he disagrees with your impact analysis on**
5 **PSNH residential customers if the Cable Formula is adopted as the uniform attachment**
6 **rate in New Hampshire. What is your response to Mr. Davis’s criticism of the impact**
7 **analysis you provided in response to PSNH Data Request 12?**

8 A. Mr. Davis’s criticisms of the revenue impact analysis I performed in response to the
9 PSNH data request do not substantively refute my analyses in any way. First, Mr. Davis has
10 chosen not to provide any alternative revenue impact analysis of his own to directly refute mine,
11 notwithstanding the data request TWC-Comcast 011 which asked him to provide any such rate
12 impact analyses by PSNH, its experts, or its consultants, directly analogous to those requested of
13 me in PSNH Data Request 12 and to which I responded using the best information available to
14 me at the time. *See* TWC/Comcast Reply Attachment PDK-8. Mr. Davis also declined to
15 answer TWC-Comcast data requests 014 and 015 regarding the impact on PSNH customers (on a
16 cents per kilowatt hour basis) if a unified Cable Formula rate (or revised Telecom Formula rate)
17 were adopted in New Hampshire, asserting to do so would entail conducting an “allocated cost of
18 service study and comprehensive set of distributed test year revenue requirements.” *See* PSNH
19 responses to TWC-Comcast data requests 014 and 015 reproduced in TWC/Comcast Reply
20 Attachment PDK-10.

21 He similarly declined to respond to TWC-Comcast 012 (the PSNH response to which is
22 reproduced here as TWC/Comcast Reply Attachment PDK-11) asking him to state his agreement

1 or disagreement with my testimony that the price elasticity of demand for broadband services is
2 greater than that of PSNH's electric delivery service – a matter that directly pertains to the
3 question of impact of an increase in the pole rate on PSNH residential electric customers as
4 broadband customers. PSNH's response that the requested information on the price elasticity of
5 demand for broadband service as compared with PSNH's electric delivery service is "neither
6 relevant ...nor reasonably calculated to lead to the discovery of material and admissible
7 evidence" reflects an inherent lack of understanding on Mr. Davis's part of this most basic
8 economic concept. As discussed in my direct testimony (at p. 25), it is widely acknowledged that
9 the demand for electric distribution service is price inelastic (*i.e.*, not sensitive to changes in
10 price) such that even if it could be shown that rates for electric customers would increase (which
11 is unlikely), there would be little if any real impact on demand for elasticity, whereas the
12 converse is true for broadband service. In the case of broadband service, even relatively small
13 changes in price will have a significant dampening effect on service adoption rates (*see* Kravtin
14 Direct Testimony at 30).¹

15 Second, and perhaps most significantly, to the extent my analyses (again which were
16 based on inputs used in PSNH's own rate calculations) overstated total attachment revenue that
17 would be billed by the Company, the effect of any such overstatement would have been as much
18 to overstate the potential *positive* impact of PSNH's proposed rates (relative to my proposal for a
19 unified broadband rate set using the Cable Formula) on its own electric subscribers as it would
20 have been to overstate the negative impact of PSNH's proposed rates on broadband subscribers.

¹ See National Broadband Plan Connecting America Chapter 6 Infrastructure reproduced as TWC/Comcast Reply Attachment PDK-12.

1 In other words, Mr. Davis's criticisms that my rate impact analysis overstates the total pole
2 attachment revenues cuts against his own assertions of a significant revenue shortfall for the
3 Company that would need to be made up from increases in electric distribution rates. The
4 smaller the amount of potentially reduced levels of pole attachment revenues for PSNH that
5 would result from adopting a unified broadband rate using the Cable Formula rate, the smaller
6 any potential impact on PSNH's electric distribution customers.

7 **Q. You note above that the rate impact analyses you provided in response to PSNH**
8 **Data Request 12 were based on the average number of attaching entities figure PSNH used**
9 **in its own rate calculations filed with the Commission, which was the best information**
10 **available to you at the time of PSNH's request. Is there now better information available**
11 **to use?**

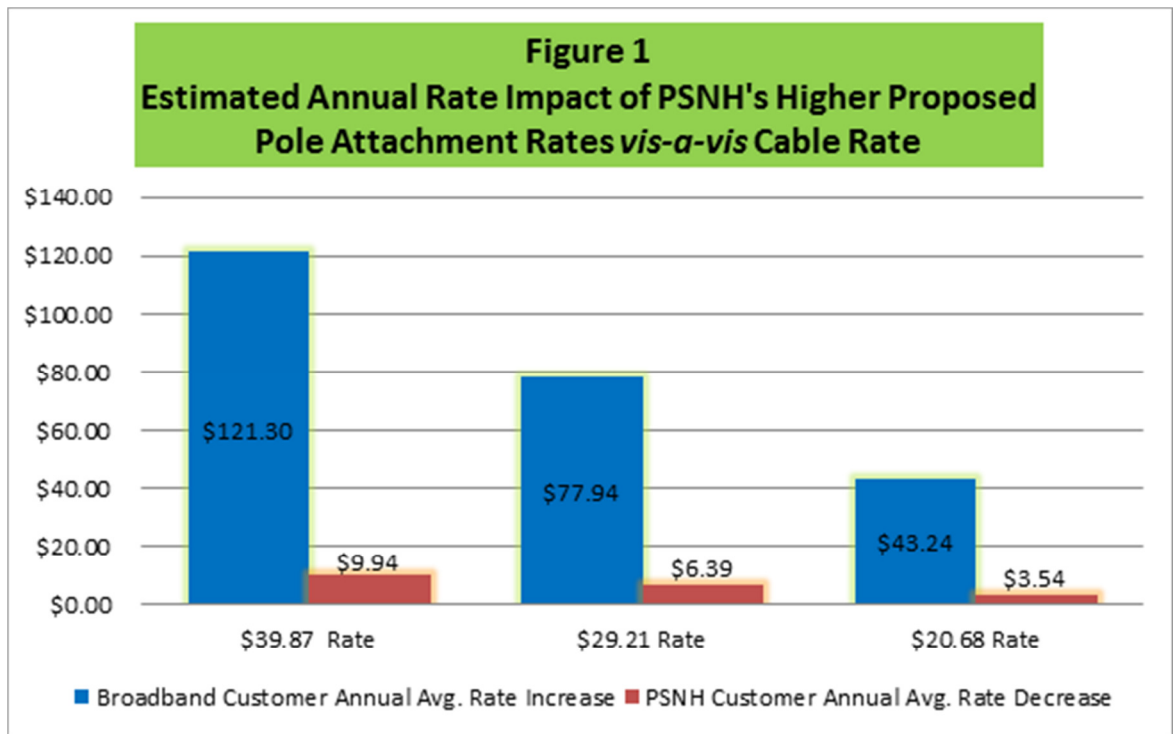
12 A. For this purpose, there is. In response to data requests, PSNH provided billing data
13 showing the number of invoiced third party attachments. *See* PSNH response to TWC-Comcast
14 057 reproduced in TWC/Comcast Reply Attachment PDK-13. While, as recognized by the FCC,
15 there are problems with relying on billing data for purposes of rebutting the FCC presumptive
16 number of attaching entities to be used in the FCC's Telecom Formula (as it excludes a
17 potentially significant number of non-billed attachments),² this data is appropriate for use in a
18 revenue impact analysis as it directly pertains to billable units. Now that PSNH has provided
19 this additional data, I have updated my revenue impact analyses to reflect the number of billed

² *Teleport Communications Atlanta, Inc. v. Georgia Power Co.*, Order on Review, 17 FCC Rcd 19859 (2002) (rejecting "number that represents the number of 'paying attachments' without explaining how this number was derived. Georgia Power Company admits it does not include itself or government attachments in its count").

1 third party attachments identified by PSNH, disaggregated by fully owned and jointly owned
2 poles. *See* Figure 1 and my supporting work papers reproduced in TWC/Comcast Reply
3 Attachment PDK-14. I have also updated my analyses to reflect Mr. Davis's uniform pole rate
4 proposals, as identified in Tables 5 to 7 of Mr. Davis's testimony. *Id.*

5 **Q. What are the results of your updated revenue impact analyses?**

6 A. The results of my updated analyses are provided in Figure 1 on the following page
7 alongside those of my initial analysis provided in response to PSNH Data Request 12 (supporting
8 calculations are provided in TWC/Comcast Reply Attachment PDK-14). For the reasons
9 described above, Figure 1 below shows a smaller annual revenue impact of changes in pole
10 attachment methodology on residential electric distribution subscribers than did my original
11 analysis. Importantly, because the updated impact analyses show an even smaller impact on
12 PSNH's residential electric customers from PSNH's proposals to increase pole attachment rates
13 than the original, they serve to reinforce the points made in my direct testimony (*see* pages 25 -
14 26), namely that the negative economic impact of high pole attachment rates such as proposed by
15 PSNH for broadband service subscribers is magnified by the little to any offsetting value of those
16 higher rates for residential electricity subscribers (who are also subscribers of broadband, since
17 the impact of higher pole attachment rates on a per electric subscriber or per kilowatt hour basis
18 is very small in contrast to the relatively large impact per broadband subscriber).



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My updated analyses similarly confirm the significant negative impact on broadband subscribers of charging higher pole attachment rates – even under PSNH’s least aggressive alternative pricing proposal presented in Table 7 of Mr. Davis’s testimony (*i.e.*, a uniform pole rate of \$20.68), which is still more than double the \$10.07 rate I am recommending for the unified broadband rate based on the Cable Formula, although slightly below PSNH’s current communications rate of \$22.96 (based on the old Telecom Formula). Moreover, for the reasons mentioned above (and in my direct testimony at 25) regarding price elasticity of demand, these updated results, as with the original analyses, understate the true relative impact on broadband service subscribers versus electric distribution subscribers of higher pole attachment rates. This is because, as discussed above, the demand for, and hence adoption rates of, broadband services is very sensitive to price (*i.e.*, relatively price elastic), whereas the demand for electric

1 distribution is not (*i.e.*, price inelastic). Accordingly, the true economic impact on the underlying
2 demand for broadband (as measured by the percent change in quantity demanded of the service)
3 is even more magnified than the changes in rates shown in Figure 1 would suggest.

4 **Q. In the response referenced above (TWC-Comcast Data Request 011 reproduced in**
5 **TWC/Comcast Reply Attachment PDK-9), Mr. Davis states that it is not clear that the**
6 **nationwide figures from the National Broadband Report used in your impact analysis are**
7 **“representative of actual subscribers in New Hampshire or of the electric service customers**
8 **of PSNH.” How do you respond to his comments?**

9 A. First, I would note that Mr. Davis was specifically asked in this request to provide
10 PSNH’s own analysis of relative rate impacts analogous to that asked of me in PSNH Data
11 Request 12, and to provide any studies, reports, or analyses that support the use of input
12 assumptions that differ from those I used in my analysis. He declined to provide his own impact
13 analysis, stating that “[t]he Company has not performed such impact analysis,” or to provide any
14 alternative input assumptions to those I used to calculate the impact of a change in pole
15 attachment rate on the average broadband service. *See* PSNH response to TWC/Comcast data
16 request 011 reproduced as TWC/Comcast Reply Attachment PDK-9.

17 Second, because pole plant is homogenous in nature (or as more commonly said, “a pole
18 is a pole is a pole”), and the technology of pole installation very basic, there is no reason to
19 expect that such basic relationships concerning the average number of households/mile,
20 subscribers/mile, and poles per mile in New Hampshire would vary remarkably from the national
21 representative data identified in the National Broadband Report and upon which I relied to
22 perform my analysis. Again, Mr. Davis was given the opportunity to provide New Hampshire-

1 specific data for these inputs and declined to do so. More importantly, however, because the
2 potential relative impact on electric subscribers (*i.e.*, an electric rate reduction) from a change in
3 pole rental rates is so small relative to the impact on broadband subscribers (*i.e.*, a broadband
4 rate increase), it is very unlikely that any incremental changes to these inputs to reflect New
5 Hampshire specific data would have a material difference on the overall conclusions that I
6 reached.

7 **Q. In response to TWC-Comcast-013 (reproduced as TWC/Comcast Reply Attachment**
8 **PDK-15), Mr. Davis acknowledges the point you make in your direct testimony (at 24, 26)**
9 **that electric utility subscribers are also potential subscribers of broadband services - the**
10 **underpinning of your position that the benefits to electric subscribers from lower pole**
11 **attachment rates that would derive to them as users of broadband services are**
12 **appropriately taken into account. However, in his response, Mr. Davis appears to qualify**
13 **his acknowledgement of this key fact by noting that “the broadband service a potential**
14 **customer chooses may not be related to wire pole attachments in PSNH’s territory,” and**
15 **citing to service options available via satellite or wireless alternatives. Does the existence of**
16 **alternative delivery technologies affect the validity of your impact analysis?**

17 A. No, it does not. Indeed, one of the most compelling reasons behind the National
18 Broadband Report’s recommendation for a unified broadband pole attachment rate set at, or as
19 close as possible to, the rate produced using the Cable Formula was to encourage innovation and
20 competition for broadband services and to provide a level playing field among all competitors
21 and potential competitors across the spectrum of the increasingly convergent marketplace of

1 wired and wireless technologies.³ Mr. Davis may not be aware, but access to utility poles is also
2 used in the case of wireless technologies (and this is increasingly the case with newer micro-cell
3 technologies such as Distributed Antenna Service, which have both wired and wireless
4 components). Indeed, the FCC's April 7, 2011 Pole Rate Decision deals specifically with issues
5 surrounding wireless access to utility poles in order to ensure a more level playing field between
6 wired and wireless technologies.⁴

7 Moreover, whether or not some technologies exist that may not require access to utility
8 poles now or in the future (such as the satellite offerings identified by Mr. Davis in response to
9 TWC-Comcast Data Request 013), does not in any way diminish the importance of and
10 justification from an economic and public policy perspective of precluding a pole owning utility
11 from exploiting its monopoly control over a facility deemed essential to other providers using
12 other technologies or mixes of technology. For the reasons I discuss at pages 21-22 of my direct
13 testimony pertaining to Factor 2, the more competition that broadband pole attachers face, the
14 greater the harm in terms of lost economic efficiency and overall societal welfare that result from
15 allowing the monopoly pole owner to charge an excessive price vis-à-vis a competitive level
16 benchmark.⁵

17

³ As explained in my response to PSNH-PDK Data Request 005 (reproduced here as TWC/Comcast Reply Attachment PDK-16), establishing a unified broadband rate using the Cable Formula in the convergent marketplace is the correct policy regardless of whether the electric company has actually deployed competitive communications offerings. Mr. Fiore and Hodgedon further explain the highly competitive marketplace for voice, video and data services in response to PSNH-Comcast Data Request 015, reproduced here as TWC/Comcast Reply Attachment PDK-17.

⁴ *Implementation of Section 224 of the Act- A National Broadband Plan for Our Future*, Report and Order and Order on Reconsideration, 26 FCC Rcd 5240 ¶¶ 74-77 (2011) ("April 7, 2011 Order").

⁵ See TWC Response to PSNH Data Request No. 007 reproduced here as TWC/Comcast Reply Attachment PDK-18.

1 **RECOVERY OF POLE COSTS AND SUBSIDY-RELATED ISSUES**

2 **Q. In Mr. Davis’s testimony at page 8, lines 2-4 and 8-10 he states that no costs**
3 **associated with the unusable space on a pole are included in the FCC Cable Formula. In**
4 **his responses to Data Requests 016 and 017 (reproduced here as TWC/Comcast Reply**
5 **Attachment PDK-19), Mr. Davis retracts his earlier testimony, admitting that “the costs**
6 **attributable to the unusable space are found within the overall calculation” under the**
7 **Cable Formula. Based on his discovery responses, is Mr. Davis’s understanding of the way**
8 **the Cable Formula works now correct?**

9 **A. With regard to the unusable space issue, yes. Mr. Davis’s responses to TWC-Comcast**
10 **Data Requests 016 and 017 correct a fundamental misstatement and/or misunderstanding of the**
11 **Cable Formula articulated in his testimony at page 8. The Cable Formula, as now acknowledged**
12 **by Mr. Davis, allocates the costs of the *entire* pole (including costs of unusable space) to third**
13 **party attachers. As explained in my initial direct testimony at 43, the Cable Formula’s use of a**
14 **proportional allocator (*i.e.*, based on the percent of usable space occupied by an attacher) to**
15 **attribute costs associated with the entire pole is directly analogous to how landlords charge**
16 **tenants for use of common space in an apartment building (*e.g.*, lobby, elevators, parking lots).**
17 **The type of method used to allocate costs should not be confused, as Mr. Davis originally did in**
18 **his testimony, with the universe of costs being allocated.**

19 However, while Mr. Davis has now corrected the fundamental misstatement or
20 misunderstanding of the Cable Formula articulated in his testimony, he nonetheless clings
21 mistakenly to the notion that the Cable Formula’s use of a proportional or relative use allocator
22 results in an under-allocation of the costs of the pole facility.

1 **Q. Please elaborate on Mr. Davis' mistaken notion of under-allocation or under-**
2 **recovery of costs under the FCC Cable Formula.**

3 A. In response to TWC-Comcast Data Requests 016, Mr. Davis states that although the
4 Cable Formula does in fact allocate costs for the entire pole to attachers within the space
5 allocation factor, he does not believe that “enough of these costs are being allocated to the
6 attacher via the space factor.” This is consistent with assertions made in his testimony on pages
7 6 (lines 13-16) and 12 (lines 10-17) that the Cable Formula does not allow PSNH to recover its
8 pole costs associated with cable and CLEC pole attachments.

9 **Q. Do you agree with his assessment?**

10 A. No, I do not. I explain at length in my initial direct testimony (*see* discussion at pages 23
11 -25 and 41-45) the many reasons why the Cable Formula provides for more than full recovery of
12 the appropriate economic costs of third party- pole attachments. This is a point that also has
13 been recognized numerous times by the FCC and the courts, most recently in the FCC's April 7,
14 2011 pole rate decision.⁶ In alleging that an under-recovery of costs occurs under the Cable
15 Formula associated with the space factor – notwithstanding his acknowledgment that the space
16 factor does allocate costs associated with the entire pole inclusive of unusable space (*see* PSNH
17 Response to TWC-Comcast-016 and 017) and inclusive of the “safety”⁷ space (*see* Response to
18 TWC-Comcast-037 reproduced as TWC/Comcast Reply Attachment PDK-21) - Mr. Davis
19 presents no specific evidence in support of his claims. Rather, he presents undocumented and

⁶ These points are also addressed in my response to PSNH's Data Request 1, which is reproduced here as TWC/Comcast Reply Attachment PDK-20.

⁷ I disagree with Mr. Davis's characterization of this pole space as the “safety” space other than to note that it is space not occupied by communications attachers by virtue of the hazards created by PSNH's facilities. In my view the space is more appropriately and commonly referred to as the “neutral” space and this testimony will identify it as such.

1 unsupported assertions that the Company has invested in taller poles to accommodate third party
2 attachers for which the Company is not fully compensated, and has specifically reserved space
3 on its poles for third party attachments, including that related to the neutral space. These
4 allegations are invalid for the many reasons that I expand upon in more detail below addressing
5 Mr. Davis's subsidy arguments relating to taller poles and neutral space. There are two
6 overarching points I would make here, however, in regard to Mr. Davis's flawed assessment of
7 an under-allocation of costs under the Cable Formula.

8 First, in response to TWC-Comcast data requests, Mr. Davis has either recanted or
9 provided countervailing evidence that directly refute his allegations of an under-allocation of
10 costs under the Cable Formula. In particular, in response to TWC-Comcast 029 (reproduced
11 here as TWC/Comcast Reply Attachment PDK-22), Mr. Davis recants his former claim that the
12 Company installs taller poles to meet anticipated third party demand, acknowledging the
13 economic reality that "PSNH installs taller poles to meet the requirements of PSNH electric
14 customer demand and to accommodate a joint owner." He further acknowledges in response to
15 TWC-Comcast 030 (reproduced here as TWC/Comcast Reply Attachment PDK-23) that the
16 Company has performed no such study "demonstrating that PSNH's investment in taller poles
17 would not have been made 'but for' the communications attachers, excluding any joint owner."⁸
18 And, when asked to support his statement that space is specifically reserved for third parties, he

⁸ To this pivotal point, it is telling therefore that in response to TWC-Comcast 031 (see TWC/Comcast Reply Attachment PDK- 24), PSNH indicates it has no study that could separately quantify the additional investment in taller poles made in anticipation of third party communications attachers *that was not recovered in make ready fees*. Nor does PSNH have any study that identifies the additional investment required to accommodate third party attachers on a per pole or per attacher basis or any explanation regarding what data PSNH may have sampled to support Mr. Davis's claim (see Response to TWC-Comcast Data Request 032, TWC/Comcast Reply Attachment PDK- 25).

1 referenced his data response to segTEL concerning only the safety space. *See* PSNH Response
2 to TWC/Comcast PSNH 038 and Response to segTEL 009 reproduced as TWC/Comcast Reply
3 Attachment PDK-26). However, Mr. Davis admits that PSNH in fact has the ability to place a
4 variety of different kinds of attachments within the neutral space, thus contradicting his
5 testimony on page 10, lines 3-4 that the “safety space” (*i.e.* the neutral space) is “specifically
6 reserved” for third party attachers. *See* PSNH responses to TWC-Comcast 018 and 019
7 reproduced as TWC/Comcast Reply Attachment PDK-27). It is logically inconsistent to argue
8 that space is specifically reserved for third party communications attachments when in fact that
9 space can and is routinely used by the Company for attachments of its own and other entities,
10 such as municipal street lights. As illustrated in the photographs of PSNH poles attached to this
11 Reply Testimony in TWC/Comcast Reply Attachment PDK-28), PSNH does in fact routinely
12 install other facilities in the neutral space such as street lights, transformers and even its own (or
13 licensed) communications conductors⁹ thereby validating the approach of the Cable Formula to
14 treat the 40 inch neutral space as “usable” space under the formula.¹⁰

15 Aside from being unsupported and/or refuted by Mr. Davis’s discovery responses, a
16 second threshold point to make is that Mr. Davis’s contention that the pole costs associated with
17 third party attachers are under-recovered in the Cable Formula implicitly assumes a parity or

⁹ In the PSNH response to TWC-Comcast Data Request 19 (reproduced at PDK-27), PSNH suggests that its communications conductors are only installed in the communications space and not the neutral space. However, photographs of PSNH poles show that PSNH does allow communications fiber (owned or licensed) to be installed in the neutral space. *See* TWC/Comcast Reply Attachment PDK-28.

¹⁰ As clearly stated by the FCC, it is the “common practice of electric utility companies to make resourceful use of this safety space by mounting street light brackets, step-down distribution transformers, and grounded shielded power conductors therein...be[ing] of practical benefit to the electric utility.” *Adoption of Rules for the Regulation of Cable Television Pole Attachments*, Mem. Op. and Second Report and Order, 72 F.C.C. 2d 59, 70-71 ¶ 24 (1979), *aff’d*, *Monongahela Power Co. v. FCC*, 655 F.2d 1254 (D.C. Cir. 1981).

1 equivalency in cost causation or cost burden of third party attachers and those of the pole owner.
2 Such an assumption is at odds with the economic reality of poles. There is a very important
3 distinction between pole owners and third party attachers - as mere licensees on the pole - that
4 Mr. Davis ignores.

5 Unlike pole owners, third party attachers do not play a role in the planning, control,
6 management and oversight of the utility pole network, including decisions as to what height
7 poles to install or where they should be installed. Nor do licensees have the ability that pole
8 owners have to place facilities where they wish on the pole (including within the neutral space).
9 As licensees, their occupancy of space on utility poles is subject to terms and conditions under
10 the control of the pole owner, which typically include the right of the owner to move, displace, or
11 even remove third party attachments (at the attacher's own expense) to meet the needs of the
12 owner. Third party attachers are subject to an application and permit process which involves
13 fees and proceed along timelines largely outside the attacher's control but that can involve
14 significant delays, or at minimum, do not afford close to the same level of accessibility as the
15 owner enjoys.

16 In addition, as discussed in my initial direct testimony (*see* pages 24-26), licensees are
17 subject to make-ready fees – over and above the rental rate – that are set to recover any out of
18 pocket costs incurred by the pole owner to accommodate the third party attachment, *including*
19 *the cost of installing a taller or stronger pole necessitated by the third party attachment.* For
20 these reasons, Mr. Davis's contention that third party attachers should bear additional cost
21 responsibility for decisions concerning the height of poles or the neutral space – decisions that
22 are made unilaterally and at the full discretion of the pole owner – simply does not reflect the

1 economic reality of poles or the inferior rights and privileges of third party licensees vis-à-vis
2 pole owners.

3 **Q. On pages 6-9 of his testimony, Mr. Davis asserts that the Cable Formula results in a**
4 **subsidy from electric ratepayers to cable and CLEC attachers in numerous respects.**
5 **Specifically, Mr. Davis states “the primary subsidy at issue with the FCC cable rate**
6 **methodology is the allocation of only ‘usable space’, which excludes and assigns to PSNH**
7 **and its electric customers a portion of space dedicated to users of the communications**
8 **space.” Mr. Davis testimony at 8. According to Mr. Davis’s testimony, “this dedicated**
9 **space includes the safety space [i.e., the neutral space], along with the communications**
10 **gain, which would not be needed, and therefore would not require PSNH to invest in a**
11 **taller pole but for the accommodation of pole attachments.” Do you agree with his**
12 **analysis?**

13 A. No, I do not. Mr. Davis’s erroneous claims of a subsidy from electric ratepayers to cable
14 hinge on the very same erroneous assertions by Mr. Davis that there is an under-recovery of
15 costs under the Cable Formula discussed above. As noted above, in his responses to
16 interrogatories, Mr. Davis has effectively retracted a number of key premises underlying the
17 subsidy/under-allocation arguments presented in his testimony concerning the installation of
18 taller poles and safety space for the benefit of third party attachers. Mr. Davis’s data responses
19 provide clear evidence to the contrary, *i.e.*, that the costs associated with this space are caused by
20 and hence properly attributed to the provision of the Company’s core electric distribution
21 business.

22 As further indicia that the Cable Formula does not result in under recovery of costs, it is

1 significant that Unitil Energy Services applies formulas for attachments that substantially follow
2 the FCC's Cable Formula and the new revised FCC Telecom Formula (that results in attachment
3 rates very close to the Cable Formula rate) as shown in Attachment 3 to my initial direct
4 testimony. Moreover, no other pole owner (except PSNH) in New Hampshire, including
5 FairPoint, has sought to impose a bifurcated rate structure for television, Internet and voice
6 services or a surcharge on attachments carrying voice services. *See* Pre-filed Testimony of Julie
7 P. Laine at 21 lines 21-23. It is difficult to give credence to PSNH's claims of under recovery of
8 costs in light of these facts and the fact that most of the 20 states that have certified to regulate
9 pole rates have adopted either the Cable Formula or a close variation thereof.¹¹ *See* PDK-UES 1
10 provided in TWC/Comcast Reply Attachment PDK-30.

11 **Q. Are there instances where third party attachers are the cost causers of pole space,**
12 ***i.e.*, but for the need to accommodate third party attachments, the Company could be using**
13 **shorter poles or would not have needed to replace poles prematurely or to make**
14 **rearrangements of existing wires on poles?**

15 A. Yes, there are. However, the costs of replacement and rearrangement attributable to third
16 party attachers *are already recoverable in full* in the make-ready charges that the Company can
17 and does charge third-party attachers. The payment of make-ready has historically been, and
18 remains a fundamental component of the FCC Cable Formula methodology. To ignore this
19 additional source of cost recovery to the Company is a major flaw in Mr. Davis's subsidy
20 argument. Indeed, it is a rather disingenuous omission in light of Mr. Davis's acknowledgment in

¹¹ As explained in my response to PSNH Data Request 8, application of the Cable Formula has proven over time to not affect the utilities' investment in pole plant. *See* TWC/Comcast Reply Attachment PDK-29.

1 response to TW-Comcast-039 (reproduced here as TWC/Comcast Reply Attachment PDK-31)
2 that “PSNH routinely charges a third party, including Time Warner and Comcast, to
3 accommodate a new attachment through the third party make-ready survey process and any
4 subsequent make-ready work required to accommodate such attachments.” In response to
5 segTEL-013 (*see* TWC/Comcast Reply Attachment PDK-6), the Company actually quantifies
6 “the total number of poles that were replaced as billable make-ready charged to a new attaching
7 entity or cost causer.” As shown in that response, the number of make-ready poles replaced at
8 third-party attacher expense between 2009 and the present has totaled close to 700 poles.

9 While Mr. Davis suggests in response to TW-Comcast 050 (*see* TWC/Comcast Reply
10 Attachment PDK-32) that there may be some incremental costs of adding pole plant for third
11 party use that are not paid for through make-ready charges, there is no valid economic or
12 regulatory basis for that to be so. Unlike the formula component of the FCC rate methodology,
13 the Company has control and discretion as to what is charged through the make-ready process.
14 Indeed, as found by the FCC in the April 7, 2011 Order, it would be contrary to the Company’s
15 fiduciary responsibility to invest its own capital on extra tall poles caused by third-parties (*i.e.*,
16 expenditures the Company would not have incurred absent the third-party). This is especially
17 the case given the Company has the right to avoid that expense by charging pole attachers for a
18 change-out. The FCC, in its thorough review of the record including voluminous pole owner
19 comments, further found that the pole owners could not support a finding that extra tall pole
20 investment occurred for the benefit of third party attachers.¹²

¹² April 7, 2011 Order at ¶ 144 , n. 433 (“We agree with Pecaro, as explained below, that it would typically not be economically rational for utilities to build taller poles solely for the possibility of

1 As explained in my initial direct testimony (at 23-24), the well-established economic
2 standard for a subsidy-free rate (and the same principle applied under the legal standard of just
3 compensation) is the requirement that attachers be held responsible for the additional or
4 incremental costs they actually cause the pole owner to incur. If this condition is met, there can
5 be no valid claim that a subsidy exists. As I explain in detail in the cited pages of my direct
6 testimony, the economic reality of poles is that the Cable Formula, as a fully allocated cost
7 formula, and in combination with make-ready charges, provides the pole owner with cost
8 recovery well in excess of incremental costs. Not only can it be demonstrated the pole owner
9 and its ratepayers are “no worse off” (which is all that is needed to satisfy the economic and legal
10 standard of a subsidy-free rate), the benefits to the pole owner and its ratepayers of renting
11 otherwise vacant space on its poles results in them being made much better off than in the absence
12 of third party attachments.

13 As further evidence of this point, Mr. Davis admits in response to segTEL-6 that the
14 Company would not recognize cost savings related to unusable space in the absence of third
15 party attachments, which is a direct indication of the negligible, if any, incremental costs
16 associated with third-party attachments. *See* TWC/Comcast Reply Attachment PDK-33. When
17 this economic reality is combined with the fact that Company receives an ongoing rental rate
18 under the annual Cable Formula based on fully allocated costs (which by definition, and
19 confirmed by Mr. Davis’s response, far exceed any recurring incremental costs), *plus* full

accommodating attachers and therefore incur unreimbursed capital costs: “[I]nstalling a pole that is taller than necessary is strictly speculative and contrary to efficient capital management. . . . Therefore, it would be wholly irrational for the utility, as well as inconsistent with a utility’s capital preservation obligations, to risk non-recovery of these costs absent a direct economic benefit.”)

1 recovery of non-recurring incremental costs through make-ready, the inescapable conclusion is
2 that there simply is no valid subsidy claim under these conditions.

3 The only thing that could be alleged as “under-recovered” by the Company - and
4 underlying its erroneous claims of subsidy under the Cable Formula- is lost monopoly rent, *i.e.*,
5 the ability of the monopoly pole owner to charge “what the market would bear.” In a monopoly
6 market, however, the price that the market would bear, in the absence of effective regulation, is
7 well in excess of a competitive or well-functioning market price. As found by the 11th Circuit
8 Court of Appeals, such monopoly rent is not properly considered as a cost that the pole owning
9 monopolist is entitled to recover.¹³

10 **Q. On page 12 (lines 15-16) Mr. Davis claims that PSNH has “financial and operational**
11 **costs” that it does not recover under the Cable Formula. Has PSNH provided any studies**
12 **isolating and quantifying the effect of third party attachment demand on PSNH operating**
13 **expenses, and what is your opinion as to whether PSNH experiences such unrecovered**
14 **operating costs?**

15 A. For the reasons discussed in the previous response, there is no valid basis to believe
16 PSNH experiences any unrecovered costs under the Cable Formula. As with his other claims,
17 Mr. Davis presents no studies isolating or quantifying the effect of third party attachment
18 demand on PSNH operating or capital expenses that would support his claim, including any
19 studies that would identify any operating costs “that would not have been made ‘but for’ the

¹³ See *Alabama Power Co. v. F.C.C.*, 311 F.3d 1357 at 1369 (“it would not make sense for the power companies to say, “Even though we are not out any more money that we were before the taking [of pole space at the regulated rate], we are missing out on the opportunity to sell to the [cable company] at what we deem the ‘full market price’ of this pole space.”)

1 communication attacher.” *See* PSNH Response to TW-Comcast-048, reproduced here as
2 TWC/Comcast Reply Attachment PDK-34.

3 In response to segTEL-01, Mr. Davis makes further unsupported and vague assertions of
4 possible unrecovered costs due to pole construction standards, and “depending on how the
5 Company books certain storm-related expenses, these costs may not be included in the pole
6 attachment calculations.” *See* TWC/Comcast Reply Attachment PDK-35. In addition to the fact
7 that Mr. Davis fails to provide any evidence to support these claims, there is little merit to them
8 in the first instance.

9 First, I address the issue of storm related expenses at length in the context of my
10 discussion of Unitil’s inappropriate adjustments to the formula for regulatory assets in my initial
11 direct testimony at 60-63. In that discussion, I identify the numerous reasons why the type of
12 extraordinary costs in question, from a cost causation perspective, are properly attributed to and
13 recovered by rates for core electric service and not from third party attachers, who must bear
14 their own storm related costs. I also explain how the inclusion of such expenses in the Cable
15 Formula rate is likely to result in an over-recovery of such costs, since these expenses typically
16 are amortized and there is no mechanism for a true-up between the Cable Formula rates and the
17 end of the amortization period set for recovery of qualified storm-related expenses.

18 Second, as to the point Mr. Davis raises in regard to the specificity of accounts included
19 in the Cable Formula, which he opines could serve to exclude certain costs incurred by the
20 Company related to poles, the Cable Formula works both ways. While the Cable Formula
21 methodology may exclude some accounts with a small amount of pole related costs, it also
22 includes accounts with portions of costs unrelated to poles. The FCC in developing and fine-

1 tuning its Cable Formula methodology over the years has sought to balance any gain from
2 additional precision with the cost and complexity of doing so.¹⁴ Thus, one cannot make a
3 legitimate claim of under-recovery merely by citing to some small amount of costs that may be
4 excluded from the formula “depending on how those costs are booked,” without also taking into
5 consideration the costs booked to accounts included in the formula that are unrelated to pole
6 attachments.

7 **Q. On page 7 of Mr. Davis’s testimony he asserts that “in the telecom methodology,**
8 **subsidies are included by using rebuttable presumptions instead of actual data,”**
9 **specifically referring to the actual number of attachments and the assignment of one third**
10 **of unusable pole space to PSNH. Do you agree that use of these FCC presumptions**
11 **constitute a “subsidy”?**

12 A. No, I do not. First, as a threshold matter, it makes no economic sense to talk in terms of a
13 “subsidy” when the rate is well in excess of incremental cost. As discussed, the Cable Formula
14 rate exceeds incremental cost, and the old Telecom Formula rate (using the FCC presumptive
15 values) is typically double or triple the Cable Formula rate. Accordingly, the old telecom rate
16 builds in a substantial amount of contribution in excess of economic cost, so that to suggest there
17 is a built-in subsidy in that rate again is a nonsensical argument from an economics perspective.

18 Second, the Telecom Formula’s 2/3 cost allocation factor applied to the unusable space
19 allocation factor (which results in an initial 1/3 share of cost recovery being assigned to PSNH as

¹⁴ *In the Matter of Amendment of Rules and Policies Governing Pole Attachments*, Consolidated Partial Order on Recon., 16 FCC Rcd 12103 ¶ 128 (2001). (“Our inclusion of unrelated expenses in certain accounts and our exclusion of possible minor expenses in other accounts provides a balanced overall allocation of costs while avoiding a prolonged and contentious ratemaking process.”).

1 the pole owner), properly recognizes the pole owner's special rights, privileges, and cost
2 causation responsibility associated with that space. Indeed, even with that 1/3 cost assignment to
3 the pole owner, the assignment of cost responsibility to third party telecom attachers under the
4 old Telecom Formula is still double or even triple that of the Cable Formula rate, reflects an
5 economically appropriate allocation of costs consistent with cost-causation principles. By
6 contrast, the per capita allocation methodology embodied in the Telecom Formula rate, at least
7 for the range of attaching entities embodied in the FCC presumptions (*i.e.*, 3 or 5 attaching
8 entities, or even lower number if using "actual" data provided by the pole owner), assigns more
9 than a cost causative share of costs.

10 In this context, the 2/3 factor built into the old Telecom Formula, analogous to the .66
11 and .44 cost factors built into the revised (and now current) Telecom Formula for urbanized and
12 non-urbanized areas respectively, serves to reduce the inherent *over recovery* of costs resulting
13 from the Telecom Formula's use of a per capita space allocator applied to an already fully
14 allocated cost methodology (which by definition exceeds incremental or cost causative costs) to
15 a level more approximating the Cable Formula rate. In this context, Mr. Davis's criticisms of the
16 revised, current version of the Telecom Formula as expressed on pages 11- 12 of his testimony
17 are similarly without merit in that they are based on the same flawed myth that current FCC rate
18 formulas result in subsidies of communications attachments by electric customers – a myth that
19 flies in the face of economic reality. On one point, Mr. Davis and I agree, however, namely that
20 the revised Telecom Formula was specifically designed by the FCC, consistent with the
21 limitations imposed by the language of Section 224(e), to bring cable and telecom rates into
22 harmony at the level of the Cable Formula rate. Indeed, this is one of the reasons I do not

1 recommend that the Commission adopt the revised Telecom Formula rate as the unified
2 broadband rate. It offers no real benefit over the Cable Formula, but is more complicated to
3 administer and will result in more controversies among pole owners and attachers. Where he and
4 I strongly disagree, however, is with the notion that the Cable Formula, and by extension, the
5 revised Telecom Formula, in his words somehow “avoids responsibility for pole costs associated
6 with the unusable space and the safety space.” The total fallacy of this notion has been fully
7 addressed in my previous answers.

8 **Q. What about PSNH’s arguments regarding the use of the FCC’s presumptive**
9 **average number of attaching entities that is higher than the purported actual number?**

10 A. For the same reasons explained in the preceding answer, while it is possible that the
11 FCC’s presumptive number of attaching entities may exceed the actual number in a given
12 jurisdiction for a particular pole on which particular third party entities are attached (after all it is
13 a rebuttable presumption), it makes no sense to talk in terms of that constituting a source of
14 “subsidy.” Pursuant to the FCC’s rules, any party to a pole rate dispute may offer up its own
15 figure for the average number of attaching entities on the poles occupied by the attacher to use in
16 lieu of the FCC presumptions.

17 That said, the FCC has set very specific guidelines for any such figure so as to protect the
18 integrity of the formula. The number of attaching entities input can have a significant effect on
19 the rate result, and it is one of the few inputs that is not directly taken from publically reported
20 FERC Form 1 data. Accordingly, there is the incentive, particularly on the part of the pole owner
21 to understate this figure so as to justify a higher rate.

22 For this reason, in order to rebut the attaching entity presumptions, the FCC requires that

1 a pole owner determine the number of attaching entities in areas specific to each attacher.¹⁵ This
2 would normally entail conducting a full physical inventory or audit of utility poles in areas
3 specific to each attacher, or alternatively to conduct a statistically significant sample of poles in
4 areas specific to each attacher.¹⁶ The FCC specifically does not allow the use of attaching entities
5 figure based on billing data, such as provided by PSNH in response to TW-Comcast-057 and
6 relied on by Mr. Davis in at least one of his alternative rate proposals. *See* TWC/Comcast Reply
7 Attachment PDK-12. As found by the FCC, billing data is not a reliable or accurate source of
8 the average number of attaching entities for many reasons, including the exclusion of unbilled
9 attachments (*e.g.*, municipal attachments for which the Company does not bill),¹⁷ and the
10 inability to determine from billing records alone specific data as to which and how many third
11 party attachments are on the relevant subset of poles applicable to a particular attacher.

12

13 **PSNH’S ALTERNATIVE PROPOSED POLE RENT FORMULA METHODOLOGIES**

14 **Q. On pages 14 through 16 of his testimony, Mr. Davis explains what changes PSNH**
15 **proposes to the Cable Formula and the recently rejected FCC Telecom Formula (which he**
16 **incorrectly refers to as the “currently applied” methodology), in the event those formulas**

¹⁵ *Teleport* ¶ 25 (“[F]or example, an attacher is only responsible to pay its Telecom Formula share of the costs of unusable space for the poles to which it is actually attached...In order to be a reasonable reflection of the actual poles to which an attacher is affixed, the average must reflect only those poles in areas where the attacher is actually affixed.”)

¹⁶ Consolidated Order on Recon. at ¶ 70 (“As with all of our presumptions, either party may rebut this presumption with a statistically valid survey or actual data”); *Teleport v. Georgia Power*, at ¶¶ 25-26 (rejecting Georgia Power Company attaching entity “actual data” as unreliable noting that a study based only on “paying attachments” is insufficient.”).

¹⁷ *See* segTEL’s response to PSNH Data Request 4 (reproduced here as TWC/Comcast Reply Attachment PDK-36) in which segTEL notes that there are numerous municipal and other attachers on PSNH’s poles that do not pay attachment rental. These non-paying attachers would not be included in PSNH billing records.

1 **are adopted by the Commission in this proceeding. For the Cable Formula, PSNH**
2 **proposes adjustments to the pole height, unusable space and usable space presumptions**
3 **based upon regulatory decisions in Connecticut. Specifically, at page 14 of his testimony,**
4 **Mr. Davis asserts that the Cable Formula space factor should be 1/12.33 instead of 1/13.5,**
5 **based on a pole height of 40 feet and unusable space of 27.67 feet (6 feet below grade plus**
6 **21.67 feet above ground clearances) based on a single 1993 decision in Connecticut. Do you**
7 **agree with PSNH's proposal to adopt these revised presumptions?**

8 A. No, I do not. As discussed above in the context of the Company's proposed use of an
9 average attaching entity figure different from the FCC's Telecom Formula presumptions, the
10 FCC presumptive values relating to pole height, unusable and usable space are rebuttable
11 presumptions. As such, PSNH certainly has the opportunity to propose figures that differ from
12 the FCC presumptions. That said, as with the average attaching entity presumption, in order to
13 preserve the integrity of the formula approach, the use of numbers other than the presumptive
14 values (which are widely used and commonly accepted as representative of utility data
15 nationwide) must be based on actual data based on a full inventory or a statistically significant
16 sampling of the utility's poles and determined for areas specific to each attacher.

17 In this instance, Mr. Davis admits in response to TW-Comcast-033 (reproduced as
18 TWC/Comcast Reply Attachment PDK-37) that "[n]o study exists" that would "demonstrate that
19 the terrain in New Hampshire requires installation by PSNH of poles taller than the FCC's
20 presumptive 37.5 foot average height to maintain required clearances. There is simply no
21 credible basis for Mr. Davis to ask this Commission to substitute figures specific to a utility
22 operating in Connecticut in lieu of the FCC presumptive values or values based on actual poles

1 occupied by specific attachers and conditions in the state of New Hampshire. It is nothing more
2 than a thinly veiled attempt to manipulate the formula in order to produce a higher rate.

3 **Q. On page 14, Mr. Davis also suggests that the Commission adopt the Connecticut**
4 **formula approach of weighting the marginal cost of a taller 40-foot pole into the pole**
5 **investment data for the cable pole formula. Do you agree with this approach?**

6 A. No, I do not. As with the space presumptions, Mr. Davis offers no data or support with
7 respect to its pole investment in New Hampshire that would justify use of this approach in New
8 Hampshire, instead relying on the one 1993 Connecticut decision as the “origin of the 10%/90%”
9 factor. *See* Response to TW-Comcast 053 (reproduced here as TWC/Comcast Reply Attachment
10 PDK-38). Mr. Davis refers generally to the “significant number of new poles installed and
11 included in the Company’s pole plant records, and that are greater than the presumptive lengths,”
12 but even assuming these facts to be true, they are only applicable in relation to PSNH’s electric
13 distribution service. Mr. Davis provides no cost causal linkage to third party attachments that
14 would warrant the inclusion of marginal costs, which are measured here to be (to the best of my
15 knowledge) as current or replacement cost data (although Mr. Davis does not provide specific
16 sources or supporting documentation for his marginal cost figures).

17 In addition to lack of supporting documentation for New Hampshire, there is an even
18 more fundamental problem with the use of any kind of replacement cost figure in the pole rate
19 formula. The use of a replacement cost standard has been rejected repeatedly by the FCC and by
20 the Courts on many grounds including: the absence of a competitive market for poles to drive
21 down costs to competitive levels, the long-lives and slow rate of obsolescence for poles
22 rendering replacement costs largely irrelevant vis-à-vis embedded costs for this type of asset, the

1 fact that pole attachment rates do not guide optimal pole investment decisions by the pole owner,
2 the fact that pole owners receive full cost recovery for the relatively few poles on average that
3 are replaced each year, and most importantly, from a cost causation perspective, the fact that
4 make-ready charges *already* cover the true marginal cost of replacement on an individual pole
5 and individual attacher basis. Given the existence of make-ready charges, building in a higher
6 replacement cost in the rental formula, at any level, provides for a double recovery of cost for the
7 pole owner (and a double charge for the attaching entity).¹⁸

8 **Q. Do you have any other concerns with Mr. Davis's proposed use of a replacement**
9 **cost component in the calculation of net bare pole cost in the Cable Formula?**

10 A. Yes, I do. While of a lesser nature than the threshold problems with this approach
11 described in the preceding answer, there are problems with the manner in which Mr. Davis
12 calculates the marginal cost of a pole as presented in his attachment 1 to PSNH Response to TW-
13 Comcast-055 (reproduced here as TWC/Comcast Reply Attachment PDK-39). Mr. Davis's
14 calculation of the marginal cost of an average pole is based on fully owned poles. This is a
15 problem because it excludes the universe of jointly owned poles on which the overwhelmingly
16 majority of third party attachments are placed, and in addition may have a lower average cost
17 basis. According to data presented by PSNH in Response to TW-Comcast-057, about 95% of
18 third party attachments are on jointly-owned poles. *See* TWC/Comcast Reply Attachment PDK-
19 13.

20 **Q. On page 15 of his testimony, Mr. Davis proposes that if the rejected FCC Telecom**
21 **Formula were adopted by the Commission as a separate rate for CLEC attachers, that the**

¹⁸ *See, e.g., Teleport* note 15.

1 **2/3 factor be eliminated from the formula to increase the allocation of unusable space costs**
2 **assigned to communications attachers in order to “reduce subsidies in the telecom rate.”**
3 **Do you agree with Mr. Davis’s proposed revision to the old Telecom Formula.**

4 A. No, I do not. I address the numerous fallacies in Mr. Davis’s arguments against the
5 inclusion of the 2/3 factor in the rejected FCC Telecom Formula and his assertions of subsidy in
6 the FCC formula rates earlier in this testimony.

7
8 **Q. On pages 16 – 17 of his testimony, Mr. Davis proposes that the Commission adopt a**
9 **uniform pole rate methodology based upon the rejected FCC Telecom Formula that PSNH**
10 **now uses for CLEC attachers, subject to two adjustments: The first adjustment is to use**
11 **PSNH’s internally generated figure for average attaching entities per pole (which PSNH**
12 **reports as 2.4) instead of the FCC’s presumptions of 3 attaching entities in non-urban areas**
13 **and 5 attaching entities in urban areas. The second adjustment is to eliminate the 2/3**
14 **factor from the formula as described previously. What is your assessment of PSNH’s**
15 **proposed uniform pole rate as proposed by Mr. Davis?**

16 A. I strongly disagree with PSNH’s uniform rate proposal. It is at direct odds with the
17 objectives of effective pole rate regulation historically and the specific criteria adopted here in
18 New Hampshire. The old Telecom Rate was abandoned by the FCC because of the high rates it
19 produced relative to appropriate cost-causative recovery and its deleterious impact on broadband
20 competition and service deployment. With the two changes proposed by Mr. Davis, PSNH’s
21 proposed uniform rate would be \$39.87. This proposed rate is some 74% higher than the
22 unadjusted old Telecom Rate of \$22.96 identified in PSNH’s June 8, 2012 rate calculation filing.

1 Even more troubling, PSNH's proposed uniform broadband rate of \$39.87 is nearly four times
2 (300%) higher than PSNH's current cable rate of \$10.05, and close to six times higher than the
3 national average cable rate of \$7.00 – a rate repeatedly found to be just and reasonable and more
4 than fully compensatory to the pole owner by the FCC and the courts and a rate that best
5 promotes the goal of increased broadband competition and service deployment.¹⁹

6 **Q. Has PSNH provided any data or other support for its proposed “actual” average**
7 **number of attaching entities figure of 2.4?**

8 A. PSNH provided a derivation of this figure in its Response to TW-Comcast-057 (*see*
9 TWC/Comcast Reply Attachment PDK-13), however, the manner in which PSNH derived that
10 figure does not hold up to the standards established by the FCC. *See* PDK Reply Testimony at
11 31-32.

12 PSNH was given the opportunity to clarify which attachments were intended for
13 inclusion in its count of the number of attachments reflected in the 2.4 figure, but declined to do
14 so. In his response to segTEL Data Request-014 (reproduced here as TWC/Comcast Reply
15 Attachment PDK-41), Mr. Davis responds only very vaguely that the figure of “total attachers”
16 identified in his testimony “is intended to include all billed pole attachments” without addressing
17 the specific question posed in the data request, which was whether the “total attachers” figure
18 was intended to include “ILEC, CLEC, CATV, wireless, dark fiber, private entity, municipal,
19 traffic control, any attachers that attach in the power space, as well as any other attachers in its

¹⁹ In their direct testimony, Glenn Fiore and Chris Hodgdon describe the aggressive deployment of new broadband services by Comcast in New Hampshire that have been facilitated under Cable Formula rates. *See* PSNH Data Request to Comcast 010 reproduced here as TWC/Comcast Reply Attachment PDK-40.

1 records, and in its proposal” – billable or not.

2 **Q. Has PSNH provided any data to identify the average number of attaching entities**
3 **that are present (including itself and the ILEC for a jointly owned pole) on poles occupied**
4 **by Comcast and Time Warner Cable separately?**

5 A. No, and it states that it does not have the information required to do so. *See* PSNH
6 Response to TWC-Comcast -047 reproduced here as TWC/Comcast Reply Attachment PDK-42.

7 **Q. Have you calculated the resulting impact on Time Warner Cable and Comcast**
8 **average broadband subscriber if the PSNH proposal were adopted and pole rates were**
9 **increased to \$39.87 per fully owned pole (\$19.94 on a jointly-owned pole) from their**
10 **present level of \$10.05 (\$5.03 on a jointly-owned pole)?**

11 A. Yes, I have. The results of my analysis are presented in Figure 1 on page 14 above, with
12 supporting calculations presented in see TWC/Comcast Reply Attachment PDK-14. As shown
13 there, the impact on the average cable broadband subscriber would be upwards of \$120 per year
14 weighted for sole and jointly-owned poles (*i.e.*, calculated on a weighted basis using the
15 percentage of sole and jointly-owned poles on which third party entities in the aggregate are
16 attached). On a sole-owned pole, where the attacher bears the full brunt of the monopoly level
17 rate increase, the rate impact almost doubles to \$232 per year; although even for an attacher
18 located only on jointly-owned poles, its subscribers would feel a rate impact of \$116 (*see* Figure
19 1 and PDK-14). By contrast, my analysis shows that at most, the average electricity subscriber
20 would see a corresponding reduction in their bill of under \$10 a year, or \$0.00133 per kilowatt
21 hour of electricity.

22 **Q. In your opinion, what would the effect be on broadband deployment in New**

1 **Hampshire if the Commission were to adopt the PSNH proposal to quadruple the pole rent**
2 **payments made by cable and CLEC attachers to New Hampshire pole owners?**

3 A. Given the price sensitivity of broadband services, and based upon the analyses of
4 broadband service demand presented in the recent FCC pole rate proceeding and earlier National
5 Broadband Report with which I am familiar, this magnitude of price increase would likely have a
6 serious negative impact on broadband service adoption rates in the state. Moreover, given the
7 inelastic demand for electricity service, and the very small impact on the rates for electricity
8 service of a pole rate increase, even of this magnitude, there would be very little to any offsetting
9 positive impact on PSNH's electric subscribers, who are also subscribers of broadband services.

10 **Q. Has PSNH provided any support for its prediction that the average number of**
11 **attaching entities on its poles would increase “over some period of time” from 2.4 to 3.4**
12 **with pole attachment rates set at \$39.87?**

13 A. No, it has not. Nor do I believe that it would happen. The economic logic underlying
14 PSNH's prediction is backwards. Pole attachments are a vital input to broadband providers,
15 which is why the FCC has put so much emphasis on them and other vital infrastructure in the
16 National Broadband Report. Basic economic principles of supply and demand dictate that the
17 higher the price that must be paid for an input, especially a vital component of a firm's cost
18 function, all else being equal, will reduce that firm's demand for the input– not increase it.
19 These basic economic principles led the FCC to abandon the old Telecom Formula and to
20 embrace a new one that generally results in Cable Formula rates in order to better achieve the
21 national policy goal of increased broadband competition and service adoption. As mentioned
22 earlier, PSNH's proposed uniform broadband rate of \$39.87 is almost 6 times the national

1 average cable rate of \$7, and well over double the national average (old) Telecom Formula rate –
2 the latter having been found by the FCC to dampen investment in broadband services and the
3 roll-out of broadband services, especially in more rural areas.²⁰

4 In light of basic economic principles, and the magnitude of PSNH’s proposed rate
5 relative to the Cable Formula rate and the old Telecom Formula rate, PSNH’s suggestion that the
6 number of attaching entities in New Hampshire on PSNH pole is likely to grow to 3.4 “over
7 some period of time” of his testimony, thereby having the effect of reducing pole attachment
8 rates under the proposed methodology to “just” \$29.21 is totally illogical and unrealistic.

9 Moreover, even the “lower” rate of \$29.21 is still many multiples of a rate level that
10 would be likely to have the desired impact of stimulating competitive entry into the broadband
11 market and increased demand for pole attachments. Moreover, as shown in Figure 1 and in more
12 detail in *see* TWC/Comcast Reply Attachment PDK-14, the rate impact on the average
13 broadband subscriber of an increase of this magnitude is still substantial: \$78 calculated on a
14 weighted basis using the percentage of sole and jointly-owned poles on which third party entities
15 in the aggregate are attached, \$149 annually for sole owned poles, and \$75 annually for jointly-
16 owned poles.

17 **Q. How does PSNH’s proposed uniform rate of \$39.87 or even the “lower” \$29.21**
18 **uniform rate stack up against pole rates in other certified states?**

19 A. Rate levels of this magnitude would represent an extreme outlier among states certified to
20 set pole attachment rates – where the vast majority apply the Cable Formula (or some close

²⁰ See the response of Julie Laine to PSNH Data Request 8 with respect to these issues. TWC/Comcast Reply Attachment PDK-43.

1 variation of it) to all third-party attachments.²¹ Of particular significance, is that rate levels of
2 this magnitude would stand in stark contrast to pole rates in effect in the neighboring state of
3 Massachusetts with which New Hampshire competes for economic development capital and
4 skilled labor (for which broadband service availability and adoption rates are a vital component
5 of a state's ability to compete).²²

6 **Q. On page 17 of his testimony, Mr. Davis provides an alternative pole rate**
7 **methodology that consists of using the FCC's recently rejected Telecom Formula**
8 **(including the current FCC presumptions for pole height, unusable and usable space and**
9 **the 2/3 unusable space allocation), but applying the "actual number of attaching entities"**
10 **and "setting the rate on the basis of the actual attachments using communications space."**
11 **Mr. Davis suggests that using the "actual number of attaching entities" in the recently**
12 **rejected FCC Telecom Formula will "further maintain the dynamic nature of the design by**
13 **which greater deployments of broadband and other services via increased numbers of**
14 **attachments would lower the rate." Do you agree with his assessment?**

15 A. No, I do not. As shown in Figure 1, Mr. Davis's alternative proposal which produces a
16 uniform pole rate of \$20.68 represents a substantial mark-up (over 100%) over the just and
17 reasonable cable rate of \$10.05, and would have a large negative impact of over \$80 a year on
18 the average broadband subscriber. As with the other two rate scenarios "put on the table" by Mr.
19 Davis, there is little to no offsetting benefit to the average electric subscriber. The notion that

²¹ A summary of these states is provided in my response to Unitil's Data Request 1. *See* TWC/Comcast Reply Attachment PDK-29.

²² Comcast explains the relevance of increases in pole costs in decisions about where to invest capital to expand its network in response to PSNH-Comcast Data Request No. 30. *See* TWC/Comcast Reply Attachment PDK-44.

1 rates as high as \$20 – double that of the Cable Formula and the revised FCC Telecom Rate –
2 would “maintain the dynamic nature” of the broadband market and encourage “greater
3 deployments of broadband” flies in the face of basic economic principles, sound public policy,
4 and the six factor test set forth in NH 1304.06.

5 **CONCLUSION**

6 **Q. Could you summarize Mr. Davis’ proposals for a unified pole rent rate and your**
7 **opinions as to whether they are consistent with the six-factor test in PUC 1304.06(a)?**

8 A. Mr. Davis proposes two alternative uniform methodologies for calculating pole rents in
9 New Hampshire. The first proposal would quadruple the average pole rent paid by Comcast and
10 Time Warner to \$39.87, or possibly “only” triple it to \$29.21 if a higher number of attaching
11 entities is used in the formula – although as explained in this testimony, there is no reason to
12 expect a higher number of attachers would result under the Company’s excessive pole
13 attachment rates. Indeed, rate levels of these magnitudes represent significant increase even with
14 respect to the old Telecom Formula – a rate abandoned by the FCC for being too high a rate
15 relative to the Cable Formula which the FCC and the vast majority of certified states have found
16 to be a just and reasonable rate best suited to promote broadband competition and service
17 deployment. Even Mr. Davis’s second alternative proposal would double the pole rent paid for
18 cable operators from \$10.05 to \$20.68.

19

1 Mr. Davis's proposed methodologies, in all of their incarnations, are totally inconsistent
2 with the six-factor test in PUC 1304.06(a) in that they:

- 3 • are markedly out of line with the vast majority of federal and state rules and policies
4 governing pole attachment rates;
- 5 • would have significant negative consequences on competitive alternatives; they would
6 serve at best only the very limited pecuniary interest of the pole owner;
- 7 • would have an overall negative impact on its electric customers given the negligible
8 positive impact on their electric rates would be more than offset by the negative impacts
9 on broadband competition and service deployment they would experience as consumers
10 of broadband; and finally;
- 11 • would result in a large rate shock and increasing divergence from the true economic cost
12 of pole attachments; and
- 13 • would have a very repressive effect on the broadband services market, in direct
14 contravention of key state goals to encourage broadband competition and service
15 deployment.

16 By contrast, and for the multitude of economic and public policy rationales presented in
17 my direct testimony and in this reply, a unified pole attachment rate set using the FCC's Cable
18 Formula best accomplishes the objectives of 1304.06(a).

19 **Q. Ms. Kravtin, does this conclude your testimony.**

20 A. Yes, it does. I would add, however, that PSNH recently agreed to provide additional
21 responsive information to TWC-Comcast 006 pertaining to the 2008 test year \$1.89 million pole
22 revenues included in its COSS in support of its Rate Settlement revenue requirement. PSNH

1 provided some clarifying information in a call that took place with TWC and Comcast counsel
2 the evening before this testimony was due (on October 30, 2012). PSNH also committed to
3 provide additional information. I have attempted to address this subject area in my testimony but
4 given the short time frame available to me and the additional forthcoming information, I would
5 like to reserve the right to amend this reply testimony to incorporate this additional information
6 if necessary.

7

8



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PUBLIC VERSION

August 29, 2013

VIA HAND DELIVERY

Joel H. Peck, Clerk
c/o Document Control Center
State Corporation Commission
1300 East Main Street – 1st Floor
Richmond, VA 23219

Re: *Application of Northern Virginia Electric Cooperative for approval of pole attachment rates and terms and conditions under § 56-466.1 of the Code of Virginia*
Case No. PUE-2013-00055
Comcast testimony, Part 2 (public)

Dear Mr. Peck:

On behalf of Comcast of California/Maryland/Pennsylvania/Virginia/West Virginia, LLC (“Comcast”), I have enclosed for filing in the above-referenced proceeding one copy of the **Part 2 (public)** of the Comcast testimony being filed in this proceeding, which consists of an original and one copy of the **redacted** versions of testimony filed by these witnesses: **Steve Hill** and **Patricia Kravtin**.

Unredacted versions of Steve Hill’s testimony and Patricia Kravtin’s testimony containing confidential and/or extraordinarily sensitive information are being filed under separate cover under seal pursuant to Rule 5 VAC 5-20-170 of the Commission’s Rules of Practice and Procedure and Ordering Paragraph (14) of the Hearing Examiner’s Protective Ruling issued in this proceeding on July 11, 2013.

Please contact me if you should have any questions about this filing. Thank you for your assistance.

Sincerely,

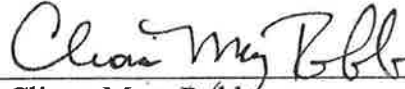

Cliona Mary Robb

cc: Certificate of Service

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CERTIFICATE OF SERVICE

I hereby certify that a public version of the foregoing was hand-delivered, emailed, and/or mailed, first-class postage prepaid, to the parties listed below on this 29th day of August, 2013. Confidential material and/or extraordinarily sensitive material was also sent to the parties so designated.


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**BEFORE THE
COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION**

APPLICATION OF

NORTHERN VIRGINIA ELECTRIC
COOPERATIVE

For approval of pole attachment rates and terms
and conditions under § 56-466.1 of the
Code of Virginia

CASE NO. PUE-2013-00055

**PREFILED DIRECT TESTIMONY OF
PATRICIA D. KRAVTIN**

ON BEHALF OF

**COMCAST CALIFORNIA/MARYLAND/PENNSYLVANIA/
VIRGINIA/WEST VIRGINIA LLC**

August 29, 2013

PUBLIC

Table of Contents

I.	Introduction and Summary	1
II.	Analysis of and Necessary Adjustments to NOVEC’s Proposed Approach.....	17
III.	“First Best” Approach for Determining Pole Attachment Rates: Cable Formula	61
	1. <u>Applicability of Cable Formula to Electric Cooperatives Generally</u>	69
	a. Virginia Statute Criteria (i): Any Effect of Such Rates on the Deployment or Utilization, or Both, of Broadband and Other Telecommunications Services	76
	b. Virginia Statute Criteria (ii): The Interests of Electric Cooperatives’ Members.....	80
	c. Virginia Statute Criteria (iii): The Overall Public Interest	85
	2. <u>Description of the Cable Formula Methodology and Its Specific Application to NOVEC</u>	89
	3. <u>Maximum Just and Reasonable Rates for NOVEC Calculated Using the Cable Formula</u>	99
IV.	“Second Best” Approach for Determining Pole Attachment Rates: Telecom Formula or Close State Variations.....	106
	1. <u>Differences Between Cable Rate and Telecom Rate Formulas</u>	106
	2. <u>Maximum Just and Reasonable Rates for NOVEC Calculated Based on the Telecom Formula</u>	115
V.	Conclusion	121

List of Figures and Tables

- Table 1: **NOVEC Proposed Costs vs. Adjusted Costs Prior to Offsets**
- Table 2: **Adjusted NOVEC Costs Net of Offsetting Payments, Contributions and Other Cost Offsets**

- Table 3: **Maximum J&R Pole Attachment Rates For NOVEC Under FCC Cable Rate Formula**
- Table 4: **Maximum J&R Pole Attachment Rates for NOVEC under FCC Telecom Rate Formula**
- Table 5: **Maximum J&R Pole Attachment Rates for NOVEC under NH Telecom Rate Formula**
- Table 6: **Maximum J&R Pole Attachment Rates for NOVEC under Revised NTELOs Approach All Poles w/Communications Attachments**
- Table 7: **Maximum J&R Pole Attachment Rates for NOVEC under Revised NTELOs Approach Poles w/Comcast Attachments**
- Figure 1: **Estimated Annual Rate Impact of NOVEC’s Higher Proposed Pole Attachment Rate vs Just & Reasonable Rates**

List of Exhibits

- PDK-1: Detailed Resume
- PDK-2: Adjusted NOVEC “Incremental Cost” Analysis
- PDK-3: Just and Reasonable Rates for NOVEC Using Formulaic Approach
- PDK-4: Impact Analysis of NOVEC’s Proposed Pole Attachment Rate v. Just and Reasonable Rate
- PDK-5: Select NOVEC Responses to Comcast Discovery
- PDK-6: Select NOVEC Responses to SCC Staff Discovery
- PDK-7: CONFIDENTIAL NOVEC Responses to Comcast Discovery
- PDK-8: EXTRAORDINARILY SENSITIVE Responses to Comcast Discovery
- PDK-9: Table of States Adopting FCC Formula

1 **I. INTRODUCTION AND SUMMARY**

2 **Q. PLEASE STATE YOUR NAME, POSITION, AND BUSINESS ADDRESS.**

3 A. My name is Patricia D. Kravtin. I am an economist in private practice specializing in the
4 analysis of telecommunications and energy regulation and markets. My business address is
5 57 Phillips Avenue, Swampscott, Massachusetts.

6 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND BUSINESS EXPERIENCE.**

7 A. I received a B.A. with Distinction in Economics from the George Washington University.
8 I studied in the Ph.D. program in Economics under a National Science Foundation Fellowship at
9 the Massachusetts Institute of Technology (M.I.T.). My fields of concentration at M.I.T. were
10 government regulation of industry, industrial organization, and urban and regional economics.
11 My professional background includes a wide range of consulting experiences in regulated
12 industries. Between 1982 and 2000, I was a consultant at the national economic research and
13 consulting firm of Economics and Technology, Inc. (ETI) in that firm's regulatory consulting
14 group, where I held positions of increasing responsibility, including Senior Vice President/Senior
15 Economist. Upon leaving ETI in September 2000, I began my own consulting practice
16 specializing in telecommunications, cable, and energy regulation and markets.

17 I have testified or served as an expert witness on telecommunications matters in
18 proceedings before over 30 state, provincial, and federal regulatory commissions, including the
19 Federal Communications Commission ("FCC"), the Federal Energy Regulatory Commission
20 ("FERC"), the Canadian Radio-television and Telecommunications Commission ("CRTC") and
21 the Ontario Energy Board. In addition, I have testified as an expert witness in litigation before a
22 number of state and federal district courts on matters relating to telecommunications

1 competition, market power, and barriers to entry, and concerning access and use of poles,
2 conduits, and public rights-of-way. I have also testified before a number of state legislative
3 committees and served as advisor to a number of state regulatory agencies.

4 **Q. PLEASE DESCRIBE YOUR EXPERIENCE OF PARTICULAR RELEVANCE TO**
5 **THIS PROCEEDING.**

6 A. Over the course of my career, I have been actively involved in a number of state and
7 federal regulatory commission proceedings involving cost methodologies and the allocation of
8 costs of incumbent local exchange carriers (“ILECs”) and electric utilities. One local network
9 component, essential for the provision of competitive communications services, with which I am
10 also very familiar, is access to poles, ducts, conduits, and rights-of-way. I have served as an
11 expert or advisor on pole attachment matters in proceedings involving investor-owned electric
12 utilities, non-profit consumer-owned utilities, and municipally-owned utilities, and before
13 various state (and provincial) regulatory commissions including the New Hampshire Public
14 Utilities Commission, Kentucky Public Service Commission, the Arkansas Public Service
15 Commission, the Public Utilities Commission of Texas, the New Jersey Board of Public Utilities,
16 the Virginia Corporation Commission, the Ohio Public Utilities Commission, and the Ontario
17 Energy Board. I have also testified on matters pertaining to these essential facilities before state
18 and federal regulatory agencies and district courts, including those in Florida, New York,
19 California, Tennessee, Washington, and North Carolina.

20 I have also testified on matters pertaining to access to poles and conduit of ILECs in
21 proceedings before the Georgia Public Service Commission, the South Carolina Public Service

1 Commission, the Public Service Commission of the District of Columbia, and the New York
2 Public Service Commission.

3 I have submitted reports in pole proceedings before the FCC, including both rounds of its
4 most recent pole rulemaking proceeding, *Implementation of Section 224 of the Act; A National*
5 *Broadband Plan for our Future*, Opinion and Further Notice of Proposed Rulemaking, 25 FCC
6 Rcd 11864 (2010) (“FCC 2010 FNRPM”) and *Implementation of Section 224 of the Act;*
7 *Amendment of the Commission’s Rules and Policies Governing Pole Attachments*, 22 FCC Rcd
8 20195 (2007). In 2006, I submitted testimony and was subject to live cross-examination before
9 the FCC’s Chief Administrative Law Judge, on issues pertaining to utility compensation for pole
10 attachments in *Florida Cable Telecommunications Association, Inc., et al. v. Gulf Power*
11 *Company*, Initial Decision, 22 FCC Rcd 1997 (2007), *aff’d*, *FCTA v. Gulf Power*, 26 FCC
12 Rcd 6452 (2011) (“*FCTA*”). I also submitted a declaration in the FCC’s earlier pole attachment
13 proceeding, CS Docket No. 97-98. Additionally, I submitted testimony before the FCC in pole
14 attachment complaint proceedings brought against electric utilities Gulf Power and Dominion
15 Virginia Power.

16 I have also been actively involved in related issues pertaining to broadband deployment.
17 I have authored a number of reports dealing with this subject and participated as a grant reviewer
18 for the Broadband Technology Opportunities Program (“BTOP”) administered by National
19 Telecommunications and Information Administration (“NTIA”).

1 **Q. HAVE YOU TESTIFIED PREVIOUSLY BEFORE THE VIRGINIA STATE**
2 **CORPORATION COMMISSION?**

3 A. Yes, I have. I submitted an affidavit dated June 22, 2011, and presented live testimony
4 before the Commission on July 13, 2011, in *In the Matter of Determining Appropriate*
5 *Regulation of Pole Attachments and Cost Sharing in Virginia*, Case No. PUE-2011-00033.

6 **Q. HAVE YOU PREPARED A SUMMARY CONTAINING DETAILS OF YOUR**
7 **EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE?**

8 A. Yes, I have. A detailed resume summarizing my training, previous experience, and prior
9 testimony and reports is provided as Exhibit PDK-1 to this testimony.

10 **Q. HAVE YOU READ NOVEC'S TESTIMONY FILED IN THIS CASE?**

11 A. Yes, I have reviewed the testimony and accompanying exhibits of NOVEC witnesses
12 Mssrs. Feurberg, Spinner, Bisson, and Booth, filed on July 16, 2013.

13 **Q. HAVE YOU READ NOVEC'S ANSWERS TO DISCOVERY SUBMITTED IN**
14 **THIS PROCEEDING?**

15 A. Yes, I have reviewed NOVEC's answers to Discovery received as of the date of this
16 filing.

17 **Q. WHAT OTHER MATERIALS HAVE YOU RELIED UPON IN PREPARING THIS**
18 **TESTIMONY?**

19 A. I have considered various data and information in forming my opinions and performing
20 my own pole rate calculations, including available data such as that provided in the Rural
21 Utilities Services ("RUS") Financial and Statistical Report and the SCC Annual Tax Report of
22 Electric Companies. I have also relied on my education, training, research, and experience in

1 economic analysis, and my extensive prior experience in the areas of telecommunications and
2 utility regulation as outlined above and further detailed in Attachment 1, and in particular in the
3 area of pole rate regulation at the state and federal level.

4 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

5 A. I have been asked by counsel for Comcast California/Maryland/Pennsylvania/
6 Virginia/West Virginia, LLC (“Comcast”) to provide testimony on matters raised in this
7 proceeding concerning the appropriate methodology for determining just and reasonable rates for
8 the attachments of cable television service providers to poles owned by Northern Virginia
9 Electric Cooperative (“NOVEC”) pursuant to applicable Virginia law (Va. Code §56-466.1).
10 Specifically, I was asked to (1) evaluate the cost proposal advanced by NOVEC in its filing,
11 including NOVEC’s specific cost calculations and associated rate proposal; (2) develop a set of
12 recommended modifications to NOVEC’s proposed calculations; (3) provide my own
13 recommendations as to the most appropriate or “first best” methodology for determining
14 maximum just and reasonable pole attachment rental rates applicable to Comcast’s attachment on
15 NOVEC’s poles; (4) calculate specific attachment rates on the basis of those recommendations
16 for the most recent year for which data is available (i.e, year-end 2012); and (5) show what the
17 rate would be using variations of the “first best” methodology.

18 **Q. PLEASE PROVIDE A SUMMARY OF YOUR ANALYSIS OF NOVEC’S**
19 **PROPOSAL AND YOUR OWN RECOMMENDATIONS.**

20 A. For the many reasons explained in my testimony, the “Incremental Revenue
21 Requirement” or “Incremental Cost” approach proposed by NOVEC is very problematic - both

1 in concept and as a practical matter - as a methodology for determining just and reasonable
2 (“J&R”) pole attachment rates. The problems with NOVEC’s proposed approach include:

3 A. NOVEC’s approach relies on data of a speculative and/or ad hoc nature, which is not
4 publicly or routinely tracked or reported, and that for the most part, cannot be subject to
5 independent verification.

6 B. NOVEC’s approach affords too much discretion to the pole owner, who, as the owner of
7 a scarce monopoly resource, is incentivized to over-allocate costs to the attacher – ever
8 more so because NOVEC is also a competitor in the market for broadband services.

9 C. NOVEC’s proposed methodology is a novel, untested approach as applied to pole
10 attachments, an essential facility needed by cable and other communications companies
11 to provide service and who compete with NOVEC in their final services
12 (communications) market. Since pole attachments are critical in the provision of many
13 essential services, the economic regulation of pole attachments is fundamentally different
14 from the application of the “traditional utility revenue requirement” model as applied to
15 the utility’s core electric services, and, is intended to, and hence as properly designed
16 does, serve an entirely different purpose.

17 D. NOVEC’s claim that it is incurring significant costs that would not exist “but for”
18 attachers does not hold up to closer scrutiny; for the types of costs identified by NOVEC,
19 it would be irrational for NOVEC to self-incur costs ahead of attachment requests: either
20 the incurrence of truly “but for” costs would not exist, or to the extent “but for” costs
21 existed, they would be subject to direct reimbursement under the terms of NOVEC’s
22 agreement with the attacher; and

1 E. Based on a plain reading of the applicable law, NOVEC would appear to be precluded
2 from recovering in a recurring pole rental rate many of the types of costs it identifies as
3 "incremental" costs - specifically those that, under standard pole agreements, would be
4 clearly classified as make ready. Excluding recovery of one-time non-recurring or
5 incident/attacher-specific costs from the recurring rental rate (and leaving then as up-
6 front costs) is also consistent with the economic principles of cost causation.

7
8 For these reasons, I recommend against NOVEC's proposed approach in favor of the widely
9 used formulaic approach, which is discussed in the latter part of this summary. Nonetheless, I
10 appreciate that the SCC has considerable discretion as to which methodology it chooses to adopt
11 for determining J&R rates for pole attachments. To the extent the SCC chooses to consider
12 NOVEC's proposed approach as an alternative to the widely used formulaic approach, I
13 recommend as a practical matter a number of critical adjustments, that in my opinion, would be
14 necessary in order to produce cost results that reasonably reflect the true "but for" costs directly
15 attributable to third-party attachers such as Comcast. While necessarily constrained by the very
16 limited and ad hoc nature of the data NOVEC has provided in support of its proposed approach, I
17 have developed a set of adjustments corresponding to each of the eight incremental cost
18 categories identified by NOVEC.

19 The adjustments I have made, as detailed in my testimony, are designed to produce costs
20 that are more consistent with fundamental economic principles of cost causation, sound public
21 policy objectives underlying the economic regulation of pole attachments, and my understanding
22 of the applicable law in Virginia. These objectives include promoting efficient use of resources,

1 maximizing overall societal welfare including that of the utility's member/customers, creating
2 desirable incentives for best practice joint use of the existing utility network of poles, and
3 promoting deployment of broadband services and competition along with resultant public
4 interest benefits to the greater Northern Virginia area and the entire Commonwealth.

5 The table below provides a summary of the adjusted NOVEC Incremental Cost results I
6 have developed as compared with NOVEC's figures. For the reasons explained in this
7 testimony, the adjusted figures identified in the table of **\$12.94** per cumulative pole and **\$11.18**
8 per attachment represent the maximum estimates of incremental or "but for" costs incurred by
9 NOVEC in connection with third party communications attachments, calculated *prior to*
10 adjustments to include a fair allocation of costs to NOVEC's communications affiliate, NOVEC
11 Solutions, and *prior to* the application of offsetting payments, fees, in kind services, or self-
12 incurred costs by communications attachers that are properly taken into account in this kind of
13 incremental approach. When estimated NOVEC Solutions communications attachments are
14 taken into account, the maximum adjusted incremental rates drop to **BEGIN**
15 **EXTRAORDINARILY SENSITIVE** [REDACTED] **END EXTRAORDINARILY SENSITIVE** and
16 **BEGIN EXTRAORDINARILY SENSITIVE** [REDACTED] **END EXTRAORDINARILY**
17 **SENSITIVE**, respectively, again prior to the application of offsetting revenues or other sources
18 of recovery to NOVEC from third party attachers. By excluding its own communications
19 affiliate from its fair proportionate share of attachment costs, NOVEC is effectively using
20 communications attachers to subsidize its own communications businesses with which the
21 attachers potentially compete.

22

1

NOVEC Proposed Costs vs. Adjusted Costs Prior to Offsets

Incremental Cost Categories (Prior to Application of Cost Offsets)	Annualized Cost Per NOVEC Response to Comcast V-41	Adjusted NOVEC Cost
Total Universe Communications Attached Poles		
Performing Periodic Communications Attachment Survey	\$47,616	\$3,948
Accommodate Communications Att Transfers When Replacing Poles	\$241,897	\$175,758
Performing Scheduled Tree Trimming & Tree Removal Work	\$275,736	\$101,955
Performing Addtl Work Securing Comm. Att - Service Restorations	\$67,781	\$0
Responding to Wires Down Reports	\$15,996	\$11,997
Joint Use Agreement Negotiations & Litigation	\$48,400	\$0
Joint Use Administration & Monitoring	\$116,500	\$90,119
Extra 5 Feet Height on All Joint Use Poles	\$269,879	\$74,607
Total Maximum "Incremental Revenue Requirement"	\$1,083,806	\$458,374
No Communications Attachments - Excludes NOVEC Solutions	41,006	41,006
Rate per Communications Attachment - Excludes NOVEC Solutions	\$26.43	\$11.18
EXTRAORDINARILY SENSITIVE [REDACTED]	[REDACTED]	[REDACTED]
Cumulative No of Communications Attached – Excludes N. Solutions	35,422	35,422
Rate per Cumulative Comm. Attached Poles - Excludes N. Solutions	\$30.60	\$12.94
EXTRAORDINARILY SENSITIVE [REDACTED]	[REDACTED]	[REDACTED]

2

3 As described further in my testimony and in the testimony of Comcast witness Mr. Steve
 4 Hill, under the terms of Comcast’s pole attachment agreement with NOVEC, as is common in
 5 such agreements, communications attachers are subject to a host of make ready charges (e.g., for
 6 pole replacements and rearrangements), permitting fees, other reimbursements (e.g., paying for
 7 transfers if work is not performed on the first visit), requirements to self-incur costs (e.g., for
 8 service restorations, tree trimming) and provision of in kind contributions to the pole owner (e.g.,

1 strands of optical fiber). Evidence obtained through discovery confirms that NOVEC has in fact
2 received considerable sums of money and in kind services from Comcast and other third party
3 attachers, and moreover, that it plans to continue to impose many of these such charges,
4 including notably make-ready, going forward. Unless these types of payments and the value of
5 the in kind contributions received by NOVEC are properly taken into account, one is not
6 accurately measuring the true “but for” effect on NOVEC and its members. One cannot choose
7 to account for only one side of the incremental calculus, i.e., the outflow of dollars, without also
8 taking into consideration the corresponding inflows of dollars (or cost savings) to NOVEC.

9 When one takes these offsetting inflows (or contributions) to NOVEC into account, as is
10 only appropriate, the computed rate per attachment drops from **\$11.18** to a negative **(\$0.39)** per
11 attachment and from **\$12.94** to a negative **(\$0.45)** per cumulative communications-attached pole.
12 As shown in my testimony, taking into account the actual payments and contributions Comcast
13 made to NOVEC (over and above rental rates), the net rates computed for Comcast specifically
14 based on a truly “but for” analysis are actually *negative*. This means that Comcast is actually a
15 net contributor to NOVEC’s net margin (excess of revenues over expenses) even Comcast had
16 paid NOVEC *no* recurring rental rate to attach to it poles.

17 As described in the testimony of Comcast witness Mr. Glenn Watkins, NOVEC enjoys a
18 substantial net margin (the excess of revenues over expenses) relative to its authorized revenue
19 requirement, and pole attachment revenues are a miniscule percentage of NOVEC’s revenues.
20 Thus, as Mr. Watkins demonstrates, there is no need to charge pole attachment rates that build in
21 significant levels of contribution over and above their true “but for” costs. When taking offsets
22 into consideration (as is appropriate per my later testimony) the analysis shows that NOVEC is

1 receiving a substantial positive contribution to its margin which it would not receive “but for”
2 Comcast attaching on its poles. The contribution, a negative (\$16.65) per attachment, is between
3 2 and 3 times the amount of the just and reasonable rate the J&R rate of \$6.35. But perhaps even
4 more importantly, for the reasons discussed in my testimony, there is the potential of serious
5 harm from permitting NOVEC to charge its proposed excessive rates. The potential for harm
6 exists both with respect to broadband services deployment and competition as a general
7 proposition, but also with respect to NOVEC’s owner/members -who are subject to *both* the
8 higher electric rates that help sustain NOVEC’s existing high margin levels and the potentially
9 significantly higher rates for broadband services for which pole attachments are widely
10 recognized to be vital inputs.

11 While the magnitude of these net “but for” cost figures may seem low, they are entirely
12 consistent with the payment evidence in this case and prior findings by other regulatory bodies
13 and courts concerning the true “but for” costs of third party pole attachments, and the purpose of
14 make-ready charges. By design, make-ready charges are set to recover any and all truly “but
15 for” or “out-of-pocket” costs incurred by the pole owner to accommodate the attacher. Many of
16 the cost categories identified in NOVEC’s analysis overlap with the types of costs that would be
17 recoverable through make-ready charges and/or other fees permitted under the terms of their pole
18 agreements.

19 Other costs of a more recurring nature included in NOVEC’s analysis primarily consist of
20 types of costs that would be incurred by the utility in connection with its provision of core
21 electricity service, and are very difficult to prove would not otherwise exist “but for” the
22 attacher. In other words, most costs of a recurring nature are more properly categorized as “fully

1 allocated costs” (i.e, costs that would exist regardless of the presence of attachments) as
2 explicitly recognized in the widely used formulaic approaches, rather than “incremental costs” as
3 NOVEC defines them.

4 The proper categorization of costs appropriately attributable to third party
5 communications attachments as costs of a more fully allocated (versus incremental) nature is one
6 of the many reasons I am recommending the SCC apply the formulaic approach widely used at
7 the state and federal level in setting J&R rates for third party pole attachments, and in particular,
8 the most commonly used formula known as the “Cable Formula.” The Cable Formula offers a
9 number of key advantages, including:

- 10 A. By allocating the fully allocated costs of the entire pole to third party attachers in
11 proportion to a reasonable allocation of usable space occupied - over and above any make
12 ready or other directly reimbursable charges paid by the attacher - the Cable Formula
13 assures that the pole owner is fully compensated for the costs directly and indirectly
14 reasonably attributable to the third party attacher, such that there is no subsidization of
15 the communications attacher or its customers at the expense of the utility or its electric
16 customers;
- 17 B. Uses a proportionate (per foot of space occupied) cost allocator most consistent with the
18 economic principles of cost causation as applied to the production of pole space and as
19 commonly applied in other familiar leasing arrangements (such as for a rental unit in an
20 apartment building);
- 21 C. Better promotes deployment of advanced broadband services in a competitive and
22 technology neutral fashion by not being based on the number of attaching entities, which
23 is beyond the control of any given attacher, and does not directly impact the cost burden
24 borne by the owner (again, any direct cost burdens are recoverable through make-ready);
- 25 D. Better promotes deployment of advanced broadband services in less populated, un-
26 served, or underserved areas, or where affordability of service is a key concern by
27 producing a lower, more efficient rental rate (closer but still in excess of true marginal
28 costs) for an input vital to the production of broadband services;
- 29 E. Best approximates a competitive market outcome such as would result if there were
30 multiple pole owners, each vying for buyers to rent space on their poles, and where prices
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32
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1 would tend to be bid down to levels approximating true marginal cost, which in the case
 2 of pole attachments, is essentially the cost of make-ready;
 3

4 F. Provides for a more straightforward, consistent and predictable formula application -
 5 qualities of utmost importance to firms in making business case decisions to invest in
 6 new technology and to roll-out new services; and a closely-related point;
 7

8 G. Is less costly to implement and administer, and engenders fewer areas of contention due
 9 to the formula's simplicity and the straightforward nature of its data inputs relative to
 10 other alternative methodologies; and
 11

12 H. Is the most widely used and time-tested formula, not just because of its mandated use at
 13 the federal level, but due to its widespread adoption by the overwhelming majority of
 14 states that regulate pole attachments (and have greater discretion with regard to
 15 methodology).
 16

17 The table below summarizes the J&R pole attachment rates I have calculated applicable
 18 to Comcast attachments on NOVEC's poles that result from the application of established fully
 19 allocated formulaic cost approaches. These methodologies include my recommended "first best"
 20 choice for determining J&R rates - i.e., the "Cable Formula," as well as an alternative "second
 21 best" formulaic approach used at the federal and, to a lesser extent, at the state level (including
 22 by SCC Staff in the prior NTELOs pole proceeding), known as the "Telecom Formula."

Maximum Just and Reasonable Pole Attachment Rates for NOVEC Using Formulaic Approach					
J&R Rates Calculated Using:	(1) Cable Formula	(2) FCC Telecom	(3) NH Telecom	(4) Revised NTELOs All Poles w/Comm. Attachments	(5) Revised NTELOs Poles w/ Comcast Attachments
Based on Year End 2012 Data					
Net Investment Per Bare Pole	\$408.24	\$408.24	\$408.24	\$408.24	\$408.24
x Carrying Charges	20.99%	20.99%	20.99%	20.99%	20.99%
x Space Factor	7.41%	11.20%	18.47%	18.97%	18.05%
x Cost Factor	n/a	.66	.44	.66	.66
Average No Attaching Entities	n/a	5.0	2.7	2.5	2.65
Maximum J&R Rate	\$6.35	\$6.33	\$6.96	\$10.73	\$10.20

Source: Exhibit PDK-2.

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The Telecom Formula is a second best option in my opinion, because, as found by both federal and state regulators alike, the use of this formula has resulted in rates well in excess of efficient cost levels and that serve to place a damper on broadband deployment, competition and the widespread availability and adoption of advanced broadband services. In addition to these disadvantages, the Telecom Formula is less straightforward than the Cable Formula to calculate and requires certain data inputs (e.g., average number of attaching entities) that require additional resources to calculate accurately and tend to be subject to contention among the parties.

As shown in Column 1 of Table 2, the Cable Rate result is **\$6.35**. Notably, this rate is very closely in line with the average pole attachment rate paid by investor-owned utilities (“IOUs”) in Virginia. The regulated, cost-based attachment rates charged by IOUs in Virginia provide a very good benchmark against which to compare the just and reasonableness of pole attachment rates applicable to NOVEC. As explained in my testimony, from both a production and operational perspective, there are no economically meaningful structural or functional differences in the underlying distribution facilities owned and operated by cooperatively owned utilities and IOUs.

With respect to the second best option based on the Telecom Formula, to best inform the Commission, I have calculated J&R rates using a number of different sets of input data, that produce rates ranging from **\$6.33** to **\$10.73**. The first set (shown in Column 2 of Table 2) is based on the application of the Telecom Formula using presumptions adopted by the FCC and that have withstood the test of time over the past thirty-plus years of pole rate regulation (“FCC

1 Telecom”). The second set of input data (shown in Column 3) uses assumptions contained in a
2 recent agreement between Comcast and an electric utility and adopted by the State of New
3 Hampshire Public Utilities Commission, a state that has certified to regulate pole attachment
4 rates for IOUs pursuant to Section 224, but in addition, pursuant to state statute (as in the case
5 here in Virginia) is charged with the regulation of cooperatively-owned utilities such as NOVEC
6 (“NH Telecom”).

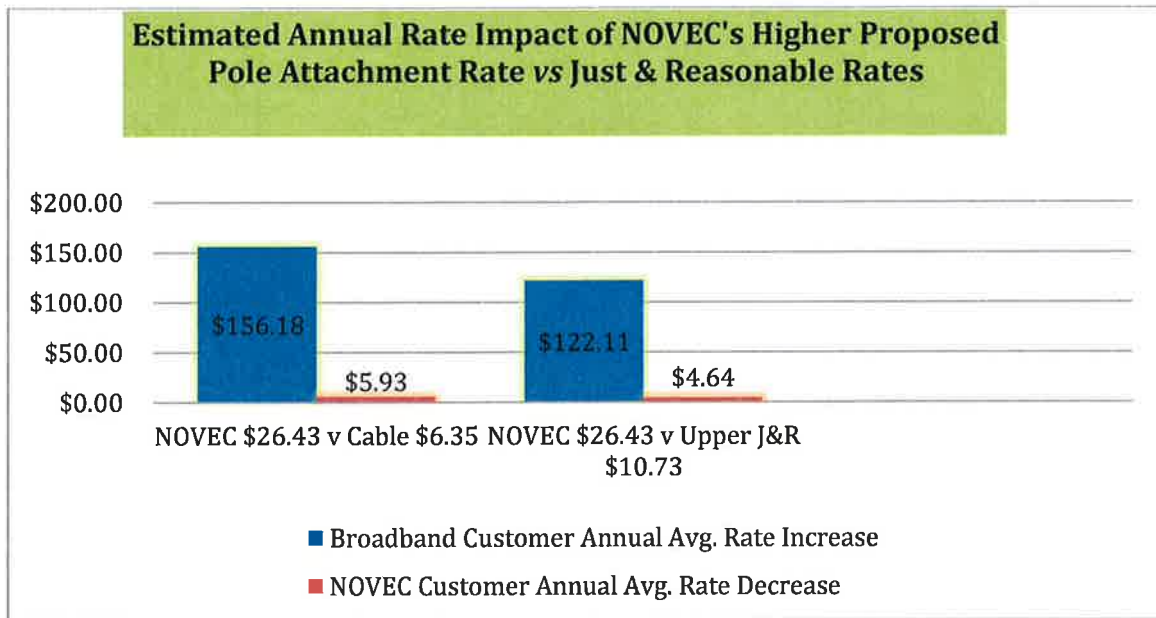
7 The third and fourth sets of input data use data specific to NOVEC, in a manner
8 consistent with an approach used by the SCC Staff in a 2003 case involving NTELOs Telephone
9 Company *et al* and cooperatives here in Virginia, updated and revised to reflect the current
10 version of the Telecom Formula and the application of that formula to a cable and/or standard
11 third party communications attachment occupying one foot of pole space (“Revised NTELOs
12 Telecom”). The two sets of Revised NTELOs Telecom calculations differ only with respect to
13 the input for the average number of attaching entities. The first uses an average number of
14 attaching entities figure derived over the entire universe of poles on which there are
15 communications attachments, whereas the second uses an average number derived specific for
16 those poles on which Comcast is attached. Under the formula methodology, the standard for
17 data generally, is to rely on the most disaggregated level of data for which records are kept and
18 the data can be reasonably supported and verified as to their accuracy and reliability. Using an
19 average number of attaching entity figure specific to poles on which Comcast is actually attached
20 produces a rate that more accurately reflects those of NOVEC’s costs that are just and reasonably
21 attributed to Comcast.

1 For the various reasons discussed in my testimony, the Cable Formula best achieves the
2 the three-fold criteria set forth in VA Code §56-466.1(f) for determining pole attachment rates
3 for all communications attachers. By far, it is most consistent with the Commonwealth's
4 statutory goal to promote broadband; it, together with make-ready reimbursements and other
5 fees, more than fully compensates pole owners and thus is consistent with interests of NOVEC's
6 members; and is in the public interest because it is reproducible by the Commonwealth's other
7 cooperatives and attachers, and relies on publicly or regularly reported and available data, which
8 is especially critical where, as here, the pole owner offers a competing service.

9 Moreover, because most of NOVEC's members are also customers of third party
10 communications attachers, they also stand to benefit from the broadband-promoting effect
11 associated with charging the lower Cable Formula rate - the impact of which far outweighs any
12 potential impact that the reduction in pole attachment revenues might have on their electric bills.
13 This point is demonstrated in Figure 1 on the following page, which presents a graphical
14 comparison of the potential impact on the average broadband customer with the corresponding
15 impact on the average electric customer that I have calculated based on the difference between
16 NOVEC's proposed incremental rate per attachment (\$26.43) and the range of J&R rates (\$6.33-
17 \$10.73) that I am recommending.

18 What the impact analysis demonstrates is that NOVEC's owners/members are decidedly
19 better off from lower pole rental rates, given their potentially significant positive impact on
20 broadband affordability (\$11 to \$13 dollars per month) vis-à-vis their potentially minor negative
21 impact (in the range of 40 to 50 cents per month) on rates for electricity service. The impact on
22 broadband subscribers would be even more pronounced based on a comparison of the J&R rates

1 with NOVEC’s proposed base year per pole charge of \$30.60. The relevant economic unit,
2 consistent with cost causation principles, is a pole attachment. Accordingly, the appropriate
3 cost-based rate, as is commonly adopted, applies on per attachment, not per pole, basis. For this
4 reason, the rates I am recommending apply per attachment, and my impact analysis as shown in
5 Exhibit PDK-4 and reproduced here in part is consistent with that recommendation.



6
7 **II. ANALYSIS OF AND NECESSARY ADJUSTMENTS TO NOVEC’S PROPOSED**
8 **APPROACH**

9 **Q. PLEASE DESCRIBE YOUR UNDERSTANDING OF NOVEC’S PROPOSAL AND**
10 **THE BASIS FOR IT.**

11 A. NOVEC describes its method as an “incremental cost based revenue requirements”
12 approach.¹ Specifically, NOVEC develops its rate proposal based upon eight categories of costs
13 that it identifies as costs that would not be incurred “but for” communications attaching entities,

¹See Exhibit PDK-5 (NOVEC Response to Comcast VI-25).

1 and which it uses to develop an “annual revenue requirement” to be recovered in a recurring pole
2 rental rate.² NOVEC specifically assigns a percentage of this “annual revenue requirement cost”
3 to Comcast based on the cumulative number of poles (weighted by the number of attaching
4 entities on the pole) that NOVEC has identified as having Comcast attachments as a percentage
5 of all NOVEC poles (similarly weighted) with communications attachments (but not including
6 NOVEC Solutions) to derive a proposed per pole annual rate of \$30.60. NOVEC uses this per
7 pole rate to develop a so-called “base year charge” (“BYC”), corresponding to the total base year
8 number of attachments for Comcast (15,034) as determined in a recent NOVEC pole survey.
9 The BYC is to be escalated annually based on the annual percentage increases as determined by
10 the Handy-Whitman index of construction costs.

11 NOVEC also calculates a “per attachment inc/dec rate” of \$26.43, but that rate, as I
12 understand it, would only be applied to the net increment/decrement or change in the number of
13 Comcast attachments from the base year level. The per attachment inc/dec rate is derived by
14 dividing the annual “revenue requirement” by the total number of communications attachments
15 on NOVEC’s poles (again, excluding NOVEC Solutions).

16 The annual total pole attachment fee that NOVEC would charge Comcast would be
17 “calculated as the BYC (escalated) plus the change in number of attachments –up or down –
18 from the base year amount multiplied by the inc/dec rate (escalated),” HMS Testimony at 16,
19 plus a charge for unauthorized attachments as determined by NOVEC. HMS Testimony at 6 line

²That figure, as revised in Response to Comcast V-41 and further clarified in IX-15, is \$1,083,806. NOVEC’s rate proposal is also described in the Prefiled Direct Testimony of Howard M. Spinner on behalf of NOVEC in this proceeding (“Spinner Testimony” at pages 6-7, 15-17 and 20-21) and in Appendix 1 of the Draft Tariff submitted by NOVEC in response to Staff II-4.

1 22 to 7 line 12. The charge per unauthorized attachment would be at the rate of \$170.06 per year
2 in the first year (and applicable to all past unauthorized attachments), but then would double to a
3 rate of \$340 for any newly deemed unauthorized attachments. NOVEC derived the rate per
4 unauthorized attachment based on the application of the (uncorrected) per pole rate of \$30.92 by
5 the number of unauthorized attachments as “back-casted” over the past ten years assuming “a
6 smooth progression of unauthorized attachments by Comcast over the period.³ NOVEC gives no
7 explanation as to the basis for its going forward charge of \$340 other than to say it doubled the
8 derived \$170 rate.⁴

9 **Q. DO YOU AGREE WITH NOVEC’S APPROACH?**

10 A. No, I do not. As a conceptual matter, I do not disagree with the notion of pole owners
11 recovering the incremental or “but for” costs of accommodating third party attachment. Indeed,
12 cable companies, including Comcast, historically have paid for the incremental cost of their
13 attachments through direct reimbursements for make-ready costs including pole replacements
14 and rearrangements, transfers, audits, compliance corrections and similar work necessitated by
15 their attachments. From an economics perspective, rates set close to true marginal or per-unit
16 incremental costs are efficient rates. However, I do not believe that NOVEC has actually
17 proposed a costing methodology that accurately captures incremental costs or justly and
18 reasonably distributes the costs of accommodating third party attachers on NOVEC poles. I also
19 have concerns that NOVEC’s approach is not reproducible or easily verifiable and thus does not
20 provide a good or workable solution for setting pole attachment rental rates for other

³ See Exhibit HMS_3.

⁴ See Exhibit PDK-5 (NOVEC response to Comcast VII-4).

1 cooperatives in the state. Moreover, because NOVEC's proposed charges for unauthorized
2 attachments are based on the unjust and unreasonable incremental per pole cost figures derived
3 by NOVEC, they too are unjust and unreasonable on that basis alone. In addition, there are a
4 number of other problems with the manner in which NOVEC has developed those charges that
5 result in rates that are punitively high, and fail to serve a valid economic or public policy
6 purpose.⁵

7 **Q. PLEASE EXPLAIN THE BASIS FOR YOUR STATEMENT THAT NOVEC'S**
8 **DERIVED INCREMENTAL COSTS DO NOT JUSTLY AND REASONABLY CAPTURE**
9 **OR DISTRIBUTE THE COSTS OF ACCOMMODATING THIRD PARTY ATTACHERS**
10 **ON NOVEC POLES.**

11 A. First, NOVEC's approach is inconsistent with accepted economic and regulatory
12 literature and practice on what constitutes an "incremental" or "but for" cost, by containing costs
13 that upon closer scrutiny, are more accurately categorized as "fully allocated costs," i.e., costs

⁵For example, there is no basis in my opinion for NOVEC's use of "smooth arithmetic progression of authorized poles attached to by Comcast" in the period 2002 to 2012. First, Comcast's pole attachment agreements give it the right to attach up to at least 17,153 attachments in the four counties governed by its pole attachment agreements. According to NOVEC, Davey identified only 15,034 attachments. Given that the primary purpose of an unauthorized attachment penalty is to compensate the pole owner for lost rent, there is no basis for NOVEC to collect additional rent (in fact, if anything, Comcast may be owed a refund). Moreover, based on my understanding that NOVEC conducted no survey of its pole plant during the 10 period preceding the Davey survey, and thus, there is simply no basis upon which to make the assumption that the alleged unauthorized attachments have been there for 10 years. Moreover, absent a survey being performed over the course of this ten-year period, it seems overly punitive for NOVEC to assess Comcast charges going back over such a long period of time (indeed, NOVEC seeks to recover its own costs for pole audits over a five year term). Further, as pole owner, and co-signer to the attachment agreement, NOVEC should bear some responsibility in overseeing attachments on its pole, including performing audits (which per the terms of its contract, it can charge the attacher as explained in the Prefiled Testimony of Steve Hill filed on behalf of Comcast in this proceeding) to the extent it believes a problem exists. It is also my experience that considerable disputes exist as to the determination of what constitutes an "attachment" or an "unauthorized attachment." Indeed, NOVEC is asking the Commission to define "attachment" prospectively. Finally, the doubling of the proposed base year for subsequent years would appear entirely arbitrary and again, highly punitive in nature.

1 that would exist with respect to the core electric utility service regardless of the attachment,
2 and/or costs that are subject to direct reimbursement by the attacher causally responsible for the
3 cost. NOVEC's approach also fails to differentiate between costs that are more properly
4 recoverable on a recurring (ongoing) basis versus a non-recurring (one time, upfront) basis. At
5 best, many of the types of costs NOVEC identifies in its cost analysis are of a non-recurring
6 nature (i.e, pole replacement, rearrangement and transfers) and of the type recoverable through
7 make ready charges. In addition to the economic inappropriateness or cost causation perspective,
8 of recovering costs of a non-recurring or attacher-specific nature, in recurring rates, the language
9 of the applicable law would appear to identify make ready work as not being part of the rental
10 rate.⁶

11 Second, the costs that NOVEC identifies are not reflective of actual historic costs, as
12 recorded on NOVEC's books of accounts and reported in NOVEC's RUS Form 7 filings and
13 annual state tax reports. When pricing an essential facility and long-lived, non-dynamic asset
14 such as poles, it is both appropriate economically, and also more administratively practical and
15 less costly, to rely on available historic, booked and recorded costs. As revealed in responses to
16 discovery requests from Staff and Comcast,⁷ NOVEC's cost analysis is of an ad hoc nature,
17 consisting of a number of disparate analyses and involving data sets for the various cost

⁶ See Va. Code § 56-466.1(F)(1) ("cost recovery for rearrangement, make-ready and pole replacements shall be addressed in terms and conditions, and shall not be included in annual rental rates.")

⁷ See, e.g., Exhibit PDK-5 (NOVEC Response to Comcast V-41) and Exhibit PDK-6 (Staff II-12, II-15, II-16 and II-18) all responding to Staff's request for 10 year data that NOVEC does not have data for these points (pole replacements, outage events, service restoration, or wires down calls), prior to 2011.

1 categories covering different time periods.⁸ Moreover, it cannot be determined, based on the
2 information provided by NOVEC, whether the various time periods for which costs have been
3 identified are reasonably representative of costs incurred by NOVEC “but for” communications
4 attachers.

5 Third, the costs that NOVEC identifies are seemingly internally designed and generated,
6 and not readily or independently subject to verification. As such, the cost inputs - which we are
7 essentially asked to accept at face value - depend too heavily on NOVEC’s discretion. The
8 problem here is two-fold: NOVEC not only owns and controls an essential facility which raises
9 concerns of monopoly pricing of the pole attachment (a vital input to communications
10 attachers),⁹ NOVEC also offers services that compete directly with those provided by the

⁸ For example, NOVEC’s analysis is based on data covering a 10 year period for identifying unauthorized attachments and agreement negotiations, the period 2010-2012 time frame for survey costs, the 2011-12 time frame for transfers, tree trimming and removal, service restoration, wires down reports, the current year value of salaried employees; and the current year inventory in its calculation of pole height costs.

⁹ That pole attachments are an essential facility does not require there to be no possible alternative to use of poles (i.e., going underground), as often countered by pole owners. Analogous to the established criteria for demonstrating the existence of an economically meaningful barrier to entry, the complete prohibition of a company’s ability to provide service is not required. Going underground entails materially higher costs than aerial installations (as well as greater delay in getting their services to end user customers) that substantially increase the cost of attachment to the communications company well above levels that would exist if a competitive market for pole attachments exist and that serve to thwart its ability to effectively compete. *See e.g.*, Questions and Answers Concerning Dominion NOVEC Warrenton Wheeler Gainesville 230 kV Reliability Project at <https://www.dom.com/about/electric-transmission/warrenton/index.jsp> (“labor and material costs for the installation of a 230 kV underground transmission line would significantly more expensive than an overhead option”); *Virginia SCC Report to the Governor and General Assembly Regarding the Feasibility of Placing Utility Distribution Lines Underground as Required by House Joint Resolution No. 153*, Executive Summary (January 2005) (recommending against requiring new distribution facilities to be placed underground noting that “[t]he cost associated with the placement of the currently existing overhead electric utility distribution facilities underground was estimated by utilities to be over \$80 billion. The resultant annualized revenue requirement on a per customer basis would be approximately \$3,000. The additional cost to bury existing overhead telecommunications and cable television lines was estimated to be approximately \$11 billion.”) But for the pole owner’s exercise of monopoly power, the decision to go underground would generally not be made. In effect, by charging excessive monopoly level rates on aerial attachments, the monopoly pole owner is able to leverage its monopoly power over aerial attachments into the underground as well, magnifying the impact of its monopoly power even more. Moreover, to the extent communications attachers go underground, they are doing so at the margin, for additional attachments. They are

1 attachers. As the owner of an essential facility, NOVEC has the natural incentive to over-
2 allocate costs of the resource to attachers with whom NOVEC competes. For these key reasons, a
3 formula that relies so heavily on the monopoly pole owner's own estimates and assignments of
4 costs is less inherently reliable than one that relies on historic, booked costs. In other cases of
5 which I am aware, where pole owners undertook similar efforts to price using "but for" or
6 avoided cost type methodologies, they were similarly not able to support their arguments with
7 data demonstrating unreimbursed or otherwise uncompensated capital costs.¹⁰

8 Fourth, NOVEC's proposed methodology is a novel, untested approach as applied to pole
9 attachments, which is, as noted above, an essential facility needed by cable and other
10 communications companies to provide service and who compete with NOVEC in their final
11 services (communications) market. For this key reason, the economic regulation of pole
12 attachments is fundamentally different from the application of the "traditional utility revenue
13 requirement" model as applied to the utility's core electric services, and as noted above, is
14 intended, and hence as properly designed, to serve an entirely different purpose. While the
15 application of a traditional utility revenue requirement model appropriately applies to the
16 regulation of the utility's core electric service, and to the method used by NOVEC to set rates to

still subject to excessive monopoly pricing on the significant number of existing aerial attachments on the utility's network of poles.

¹⁰ *In the Matter of Implementation of Section 224 of the Act, Report and Order and Order on Reconsideration*, 26 FCC Rcd 5240 (April 7, 2011) ("April 2011 Order") (paras. 189-190) (In which the FCC explained that electric utility pole owners "did not provide any cost study, let alone one that might demonstrate that pole owners incur capital costs outside the make-ready context solely to accommodate third-party attachers" and further stating and noting that utilities provided "only an *anecdotal* assertion of additional capital costs that would not be incurred 'but for' communications attachers." The FCC also explained that it had invited utility pole owners to submit evidence to support claims that they had put in taller poles for third parties but that, in response, electric utilities did not provide any cost study, let alone one that might demonstrate that pole owners incur capital costs outside the make-ready context solely to accommodate third party-attachments").

1 recover costs from electric service customers from whom NOVEC's network was originally (and
2 continues to be) built and maintained, for the reasons explained in this testimony, the traditional
3 utility revenue requirement does not appropriately apply to the setting of rates for pole
4 attachments, an essential facility used by third party communications companies to provide a
5 service with which NOVEC competes. In this context, NOVEC's efforts to portray its proposal
6 as a logical extension of, or as analogous to, traditional electric utility ratemaking should be
7 understood as totally inapposite.¹¹

8 As further evidence that NOVEC's approach is out of sync with the effective economic
9 regulation of pole regulation, NOVEC's approach produces rate that are inconsistent with the
10 best practice formulaic approaches used historically and by many state regulators, and even with
11 respect to what other cooperatives and municipal utilities have proposed be used. Electric
12 cooperatives themselves, including the Virginia Electric Cooperatives that participated in the
13 General Assembly proceeding (generally referred to herein as "coops"), typically have advanced
14 a variation of the widely used FCC formula approach - albeit with much different space
15 allocators than those used by the FCC - which develops fully allocated rental rates based upon
16 the straightforward multiplication of the same three basic components — net bare pole cost,
17 carrying charge factor (based on the same five cost categories (administrative, maintenance,
18 depreciation, tax and cost of debt or rate of return), and a space allocator (to be clear, the parties
19 don't disagree that a space allocator is appropriate, only as to the amount of the space allocator).

¹¹ See, e.g., Spinner Testimony at 15, referring to the allocated revenue requirement to attachers as a "allocated, lump sum payment for each of the communications attaching entities akin to a cost-based customer charge."

1 As detailed in the following section of my testimony, while I disagree with some of the
2 factors or variations to the formula employed by the coops in calculating the formula rate,¹² the
3 application of the formula is conceptually identical. The costs identified in NOVEC's analysis
4 that are properly recovered in a recurring rental rate are more accurately captured in the widely
5 used formulaic approach, in the three basic components of the formula: the net bare pole cost
6 (which is based on actual poles in service of all heights, including the very tallest), the carrying
7 charges for pole maintenance (which includes among many other costs, tree trimming) and
8 administration of poles (which includes among many other costs, legal fees); and the space factor
9 (which allocates an attacher's proportional share of the costs of the *entire* pole, including usable
10 and usable space).

11 As discussed further in the following section of this testimony, the widely used formulaic
12 approach – by contrast with NOVEC's approach as described above - relies on publicly reported
13 or available data and is reproducible; is the method with a long history of use in Virginia in
14 setting pole rates for IOUs; was the method advanced by SCC Staff witness Rosemary
15 Henderson in prefiled testimony in the 2003 case *NTELOs Telephone Company Inc., et al. v.*
16 *Barc Electric Cooperative, et al.*, Case No. PUC-2003-00087 albeit in a slightly modified
17 format; and is the formula relied upon by the majority of states that regulate pole attachments,
18 including those that regulate electric cooperative poles.

¹² The real significant difference is the percent of the total pole that gets allocated to the attaching entities. The pole owner, as reflected in the formula calculations provided by Mr. Booth in response to discovery requests, allocates a percentage of space at levels that over-recover costs, and that are way out of line with values used by the states and the FCC and that produce rates much closer to a competitive benchmark rate than a monopoly rate.

1 **Q. PLEASE ELABORATE AS TO WHY NOVEC’S “INCREMENTAL COST”**
2 **CALCULATION IS NOT A TRUE “BUT FOR” OR INCREMENTAL COST APPROACH**
3 **FOR DETERMINING A JUST AND REASONABLE RECURRING RENTAL RATE.**

4 A. NOVEC’s approach would recover costs in the recurring rental rate not properly
5 attributable to third party communications licensee attachments in several key respects. First,
6 costs included in NOVEC’s analysis, such as costs relating to extra pole height, include costs
7 properly attributable, from a cost causal or cost motivation perspective, to NOVEC’s provision
8 of core electric service. Documentation provided by NOVEC in response to discovery indicates
9 NOVEC’s policies of deploying taller poles are motivated by the need to meet the growing
10 requirements of its core electric service.¹³

11 Second, to the extent extra pole height was truly not needed “but for” attachers, it would
12 be irrational for NOVEC to self-incur such capital costs ahead of attachment requests, in mere
13 anticipation of the possibility of not being able to otherwise accommodate requests for
14 attachments. In doing so, NOVEC would be unnecessarily (and irrationally) putting its members
15 at risk for unreimbursed capital costs, when these costs are explicitly subject to direct
16 reimbursement under the terms of NOVEC’s agreement with the attacher.¹⁴ In the comparatively

¹³ See PDK Exh. _ (NOVEC response to Comcast V-27) (“When practical the larger, denser poles of the same class should be used at transformer, dead-end, angle, and corner locations. All wood poles for new construction or change out that have a primary assembly installed shall be a minimum of forty feet tall. This includes installing a transformer for a new underground service. Thirty and thirty-five foot poles shall be used for secondary, service and streetlights only.”); *see also* REB Testimony at 2 line 18 to 3 line 10 explaining the necessary upgrade and additional circuits that have been placed on NOVEC poles to provide the delivery capacity required to serve the demand and energy growth of its core electric service)

¹⁴ *See* FCC April 7, 2011 Order, citing Comcast Pecaro Decl. at para. 17(“[I]nstalling a pole that is taller than necessary is strictly speculative and contrary to efficient capital management. . . . Therefore, it would be wholly

1 few instances where work at a pole is actually needed or performed in order to accommodate a
2 new attachment (and not the core electric or competitive communications services of the pole
3 owner),¹⁵ the fees charged to the attacher directly as make-ready fees are designed to fully
4 recover those costs even though the utility will own the pole.

5 Third, costs included in NOVEC's analysis to the extent they truly are "but for" costs of
6 communications attachments are attributable (at least in part) to the fiber attachments of
7 NOVEC's own communications affiliate, NOVEC Solutions. As mentioned earlier, NOVEC has
8 inexplicably and unreasonably excluded its own affiliate from any attribution of its so identified
9 annual communications related "revenue requirement."¹⁶ In doing so, NOVEC is effectively
10 using third party communications licensee attachers to subsidize the communications businesses
11 offered by NOVEC, its affiliates, or entities with which NOVEC has an interest, and with which
12 the attachers potentially compete.

13 Fourth, costs identified as "but for" costs in NOVEC's analysis include costs that, per
14 NOVEC's agreements with the attacher, are to be independently incurred, or provided in kind,
15 such as tree trimming.¹⁷ Or in the case of negotiations and legal/litigation-related costs identified
16 by NOVEC, the attacher has to self-incur equal if not higher costs as a result of the asymmetric

irrational for the utility, as well as inconsistent with a utility's capital preservation obligations, to risk non-recovery of these costs absent a direct economic benefit.")

¹⁵ By way of example, based upon information obtained by Comcast attorneys when they visited NOVEC's Gainesville office to review responsive discovery documents, NOVEC presented boxes including close to 86,000 work requests dating from March 31, 1997 to December 13, 2011, no more than 100 of which were identified as being required for Comcast. While it is not clear that NOVEC properly identified all of the work performed for and paid for by Comcast it, is clear that the overwhelming majority of work performed by NOVEC is not for Comcast.

¹⁶ See Exhibit PDK-5 (NOVEC Responses to Comcast VI-20, 21).

¹⁷ See Exhibits SH-1 and SH-2 (Comcast Agreement Art. IV(i); Adelphia Agreement Art. IV(g)).

1 bargaining power and leverage enjoyed by the owner, which includes the ability to demand a
2 third party attacher remove its attachments from the poles.¹⁸

3 Fifth, NOVEC's approach would inappropriately include recovery of certain costs that it
4 asserts are related to alleged safety violations by third party attachers as part of the rental rate
5 imposed on all attachers. These include costs related to the new full time employee to monitor
6 third party attachers' construction practices (regardless of whether the attacher is engaging in
7 construction), the extra five feet of space (identified by Mr. Booth as the cost of dealing with
8 unsafe practices of third party attachers),¹⁹ dealing with downed communications wires, and
9 transfers of communications facilities to new poles. Costs related to dealing with safety issues
10 are appropriately addressed directly by the cost causer, and strictly motivated by the public
11 interest objective of ensuring safety pursuant to established safety codes, rather than indirectly
12 through charging a higher rate that penalizes all attachers in anticipation that violations will go
13 uncorrected. Moreover, it appears that in fact NOVEC's alleged cost per pole caused by
14 Comcast's alleged safety violations - \$1,200 per pole²⁰ – does not represent the booked cost of
15 actually correcting non-compliant NESC conditions but is instead based upon NOVEC's

¹⁸ See Exhibit SH-1 (Comcast Agreement at Art. XVII(a)(upon termination, attacher to immeidatley commence removal of attachments or pole owner shall have the right to remove); Extraordinarily Sensitive Exhibit SH-3 (Feb. 23, 2000 Letter from Pat Toulme to Kyle Birch, Comcast, telling Comcast to commence removal per the termination clause) (May 5, 2000 letter to Jay Gamble, Comcast, from Stan Fueurberg, extending limited permission to remain on the poles if certain conditions are met)

¹⁹ See Booth Testimony at 23.

²⁰ See *Id.* at 14; see, also Exhibit PDK-5 (NOVEC Response to Comcast V-48).

1 estimate of costs relating to its decision to install 40 foot poles, replace 35 poles and transfer
2 facilities, without any evidence demonstrating a causal relationship between the two.²¹

3 **Q. ASSUMING THE COSTING METHODOLOGY PROPOSED BY NOVEC WAS**
4 **ACCEPTABLE TO THE COMMISSION, DO YOU AGREE WITH NOVEC'S**
5 **APPLICATION OF THE METHODOLOGY?**

6 A. I appreciate that the SCC has considerable discretion as to which methodology it chooses
7 to adopt for determining rates for pole attachments. To the extent the SCC chooses to consider
8 NOVEC's proposed approach as an alternative to the widely used formulaic approach, I
9 recommend as a practical matter a number of critical adjustments, that in my opinion, would be
10 necessary in order to produce cost results that more reasonably reflect true, just and reasonable
11 "but for" costs directly attributable to third-party attachers such as Comcast. For the reasons
12 explained below, I believe that the amounts that NOVEC identifies in each of the eight cost
13 categories as a "but for" cost - individually and collectively - and accordingly proposes to
14 recover from Comcast, appear to be grossly overstated relative to independent benchmarks and
15 sound economic and public policy objectives.

16 The adjustments I have made, as detailed on the following pages of my testimony for
17 each of NOVEC's eight cost categories, and as further supported in workpapers prepared in
18 connection with this testimony, are designed to produce costs that are more consistent with
19 fundamental economic principles of cost causation, sound public policy objectives underlying
20 the economic regulation of pole attachments, and my understanding of the applicable law in

²¹ See Exhibit PDK-6 (NOVEC Response to Staff III-36)

1 Virginia. These objectives include promoting efficient use of resources, maximizing overall
2 societal welfare including that of the utility's member/customers, creating desirable incentives
3 for best practice joint use of the existing utility network of poles, and promoting deployment of
4 broadband services and competition along with resultant public interest benefits to the greater
5 Northern Virginia area and the entire Commonwealth.

6 Cost Category: Performing Periodic Communications Attachment Survey

7 NOVEC estimates an annualized apportionment to communications companies of
8 \$47,616 pertaining to periodic pole survey projects. As per REB Table 2, NOVEC's cost
9 estimate reflects a five-year annualization of total costs estimated at \$238,079, based on a stated
10 intention by NOVEC to conduct such surveys once approximately every five years.²² NOVEC's
11 costs are based on an attribution of costs across the following seven identified work components:
12 Data Collection, Pole Tagging, Clearance Measurements, Signage Removal, Verizon Pole Index,
13 Sampling, and Reconciliation and Administration.

14 Like most of the allocations in the NOVEC analysis, NOVEC's allocations are based on
15 assumptions made by either NOVEC or its contractors for purposes of supporting NOVEC's rate
16 proposal in this proceeding.²³ Based on the nature of the cost estimates, and the level and type of
17 documentation provided by NOVEC in its testimony and responses to discovery, there is no
18 systematic way to independently verify the accuracy or reasonableness of the specific
19 attributions to communications companies made by NOVEC in connection with each of the

²² See Bisson Testimony at 11.

²³ See, e.g., Exhibit PDK-6 (NOVEC Response to Staff II-11 ("Allocation of work based upon work definition" and "every five years")).

1 seven work components of the survey. For the reasons discussed in the preceding section of this
2 testimony, NOVEC as the monopoly power owner of an essential facility has the incentive to
3 over-allocate costs to communications attachers with which it competes.

4 Accordingly, it is appropriate best practice to evaluate the reasonableness of NOVEC's
5 cost figure by looking to other more independent cost figures involving similar survey work.
6 Such information is available for this purpose from a number of state and federal pole
7 proceedings of which I am aware, including a Florida proceeding and a proceeding before the
8 FCC involving a Colorado utility.²⁴ Figures from those proceedings identify survey costs per
9 communications attachment in the range of \$.60 to \$.70 per cable attachment. By comparison,
10 NOVEC's apportioned costs are substantially higher, at \$1.16 per communications attachment.

11 Some of the identified cost allocations to communications companies, on their face,
12 appear unreasonably high. For example, NOVEC has allocated 100% of costs associated with
13 Verizon Pole Index, identified in a NOVEC response to Comcast as "the creation of a cross
14 reference of pole numbers between Verizon owned poles and NOVEC owned poles" to
15 communications companies, and 0% to itself. While the most cost causative attribution of this
16 cost would be split 50/50 between the two pole owners with no attribution of costs to
17 communications licensee attachers, at a minimum, the costs should not be apportioned to
18 communications companies as a group inclusive of licensee attachers at anything greater than
19 50%. Similarly, NOVEC has allocated 100% of reconciliation and administration costs to

²⁴ See Florida PUC Obj & Resp. to Citizen's 1st RfPD, Nos. 1-4, FPUC Case No. 070300-EI, 11-15-07, Ex. 4.1 (identifying \$.60 per cable att); *Mile Hi Cable Partners, L.P. v. Public Service Co. of Colorado, Order*, 15 FCC Rcd. 11450 (Cable Services Bureau, 2000) at n. 62 (finding an audit fee of \$0.70 per pole to be reasonable).

1 communications companies, and 0% to itself. By definition, costs of this type of administrative
2 nature are joint or common costs and appropriately shared among all entities with attachments on
3 the poles being surveyed, including NOVEC. The fact that this work included reconciliation of
4 “the pole survey information with communication companies that filed applications to attach
5 permits” but not specific reconciliation of that information with electric facilities²⁵ does not
6 detract from the underlying nature of the costs. As with other cost components, NOVEC
7 indicates in response to discovery that it has “no documents reflecting hours and task completed
8 for each category of personnel listed.”²⁶ Accordingly, as with the other cost components, the
9 maximum attribution between the pole owner and its licensee attachers as a collective group, and
10 given the relative percentage of poles to which communications companies are attached, would
11 be 50%.

12 Another problem with NOVEC’s apportionment is the unreasonably short number of
13 years NOVEC has used to annualize the pole survey costs. NOVEC has spread costs over only
14 five years based on its stated intention to conduct such a survey every five years. However, in
15 response to discovery, NOVEC indicates the last time it performed such a survey was fifteen
16 years ago.²⁷ For these reasons, it is my opinion that a more reasonable annualization period over
17 which to divide costs would be no less than 10 years.

18 Based upon the foregoing discussion, my adjustment for this cost component is based
19 upon the average of three different cost estimates: the first estimate is developed using the

²⁵ See Exhibit PDK-5 (NOVEC Response to Comcast IX-6).

²⁶ *Id.*

²⁷ See Exhibit PDK-6 (NOVEC Response to Staff II-10).

1 available independent benchmark cost figures as applied to the number of total communications
2 attachments on NOVEC poles annualized using the five year period used by NOVEC; the second
3 estimate is developed using the available independent benchmark cost figures as applied to the
4 number of total communications attachments on NOVEC poles but annualized using a more
5 reasonable ten year period, and the third estimate is developed by adjusting NOVEC's own cost
6 estimates to correct the problems identified above annualized over a ten year period. The
7 reasonableness of this third estimate is supported by the fact it produces a cost per which is in the
8 same order of magnitude as the other independent benchmark cost figures. The average of the
9 three estimates apportions an annualized amount of **\$3,937** of pole survey costs to
10 communications companies based on an average total cost of \$30,488 (as compared with
11 NOVEC's annualized amount of \$47,616 based on a total cost apportionment to communications
12 attachers of \$238,079). *See* Exhibit PDK- 2 (Adjusted NOVEC "Incremental Cost" Analysis,
13 Tabs 2 and 2A).

14 One final observation on the subject of pole survey costs. NOVECs' claim that in the
15 future it, as the pole owner, will have no need to conduct periodic pole surveys to track its own
16 electric facilities, due to the integration of a work management system with its GIS system, to
17 inventory its own electric facilities,²⁸ besides not appearing to reflect best pole management
18 practice, as discussed by Comcast NESC witnesses, is instructive for purposes of my adjustments
19 in two respects. First, it belies NOVEC's stated intention or demonstration of need for NOVEC
20 to conduct a survey of communications attachments every five years, and second, it supports the

²⁸ *See* Bisson Testimony at 11, lines 6-9.

1 notion that NOVEC's analysis contained a built-in bias toward over-apportionment of survey
2 costs to communications attachers.

3 Cost Category: Accommodate Communications Attachment Transfers When Replacing
4 Joint Use Poles

5
6 NOVEC estimates an annualized apportionment to communications companies of
7 \$241,897 pertaining to work performed to accommodate the transfer of communications
8 attachments in connection with pole replacement. As per revised REB Table 5, NOVEC's cost
9 estimate reflects a two-year annualization of total costs estimated at \$483,794, based on data for
10 the 2011-2012 period.²⁹ NOVEC's costs are based on an attribution of costs for transfer-related
11 work broken down into three cost categories (transfer cost, cut off of the top of the pole, and
12 second visit pole removal costs) and as pertains to the following three identified types of poles:
13 angle poles, dead-end poles, and tangent poles.

14 As generally the case with NOVEC's incremental cost analysis, NOVEC's cost estimates
15 for transfer-related work cannot be independently verified as accurate, efficient, or representative
16 of a reasonable baseline revenue requirement to be used in developing rates going forward. Two
17 years of cost data is a relatively short time period over which to develop a base line level of
18 costs, absent data demonstrating the typicality of those years. As a general proposition, the
19 more years of cost experience one includes in a cost analysis, the greater the reliability and
20 confidence that the observed costs are reasonably representative of the cost experience of the
21 utility applicable to a longer period of time such as in NOVEC's proposed rate application.

²⁹ See Bisson Testimony at 12-16, and Confidential Exhibit PDK-7 (NOVEC Response to Comcast V-41).

1 In addition to the limited years of data used in the development of transfer costs pertaining
2 to all three types of poles, another key problem with NOVEC's analysis relates specifically to
3 NOVEC's calculation of second visit pole removal costs. NOVEC appears to have assumed that
4 two field visits per pole location will be required based on the assumption that "communications
5 companies do not always make the transfer after the notice through the NJUNS [National Joint
6 Utility Notification System]." ³⁰ This assumption is problematic at several levels.

7 First, NOVEC presents no evidence to back up its assumption or to identify with any
8 degree of specificity the percentage of time that communications companies do not make the
9 transfer on a timely basis so as to require NOVEC to incur a second visit cost. Second, it is
10 unreasonable to build into an incremental-based revenue requirement (that is to be used to set an
11 ongoing recurring charge) a cost developed based on a worst-case, inefficient cost scenario of
12 communications attachers not making the required transfer of their facilities upon proper notice.
13 Doing so serves to perpetuate a less than optimal practice into the future, and further to create an
14 undesirable disincentive for NOVEC to work in a cooperative fashion with attachers to comply
15 with best practices, increase operational efficiency, and lower costs going forward. Doing so is at
16 odds with the economic concept underlying forward looking incremental costs, both in theory
17 and also in practice as it has been applied by regulators (although again, it is important to
18 emphasize the concept of applying forward looking incremental costs has not been applied to
19 pole attachments, and in fact has been specifically rejected in favor of using actual embedded or
20 historic costs, for reasons expanded upon in the next section of my testimony). Furthermore, the

³⁰ See *id.* at 14.

1 rationale underlying NOVEC's estimate of second visit cost relates more to an operational issue
2 than a structural cost, and accordingly, is better addressed through efforts to improve joint use
3 practices rather than used as an excuse to build in an unreasonably high level of costs NOVEC
4 can recover from attachers year after year in the recurring rental charge.

5 To correct this shortcoming in NOVEC's analysis and to produce a more just and
6 reasonable forward looking incremental rate, I have applied an adjustment factor to Second Visit
7 Costs as identified by NOVEC that reduces those costs by a conservative 50% to reflect
8 NOVEC's failure to demonstrate a second visit is necessarily or reasonably required, either
9 currently or more importantly, each year on a going forward-basis. Application of this
10 adjustment produces an annualized cost amount of \$175,758 of transfer-related costs apportioned
11 to communications companies (as compared with NOVEC's annualized amount of \$241,897).
12 See Exhibit PDK-2 (Adjusted NOVEC "Incremental Cost" Analysis, Tab 2).

13 Cost Category: Performing Scheduled Tree Trimming and Tree Removal

14 NOVEC estimates an annualized apportionment to communications companies of
15 \$64,865 pertaining to tree trimming work, and \$210,871 for tree removal work, for a total annual
16 apportionment to communications companies of \$275,736. NOVEC's cost estimate reflects a
17 two-year annualization of total costs estimated at \$129,730 and \$421,742, respectively, based on
18 data for the 2011-2012 period.³¹ As per REB Table 6, NOVEC's tree trimming costs are based
19 on an attribution of costs for four types of tree trimming conditions: double sided trimming,
20 single sided trimming, open field, and trees planted under line, based on the number of joint use

³¹ See Bisson Testimony at 12-16, Confidential Exhibit PDK-7 (NOVEC Response to Comcast V-41).

1 miles as determined by the total number of right of way miles multiplied by the ratio of the
2 number of communications attached poles to the total number of wood distribution poles, and
3 assuming a 10% increase in cost due to the presence of communications attachments.³²
4 NOVEC's tree removal costs (as per REB Table 7) are similarly apportioned to communications
5 attachments based on the percentage of joint use miles, subject to an assumed multiple of costs,
6 i.e., percentage increase in cost which in the case of tree removal work, NOVEC claims to be "at
7 least thirty percent (30%) due to additional work and resources required removing trees in the
8 presence of communications attachments."³³

9 The amounts assessed by NOVEC are based on estimates provided by the vegetation /tree
10 contractors. As is generally the case with NOVEC's analysis, NOVEC's costs pertaining to tree
11 trimming and removal cannot be independently verified as accurate, efficient, or representative
12 as reasonable baseline revenue requirement to be used in developing rates going forward. More
13 specifically, however, NOVEC's tree related costs overstate the costs reasonably attributed to
14 communications attachments by using an incorrect ratio for determining either the number of
15 joint use miles (as used in the development of tree trimming costs) or the percentage of joint use
16 miles (as used in the development of tree removal costs) in apportioning costs to
17 communications attachers.

18 NOVEC errs by basing its apportionments on the ratio of poles with communications
19 attachments (25,627) over the number of wood distribution poles (49,028) rather than over the
20 total number of distribution poles as reported in its Annual Tax Report to Virginia. Those

³² See *id.* at 16-22, and Confidential Exhibit PDK-7 (NOVEC Response to Comcast V-41).

³³ See Bisson Testimony at 22.

1 reports identify a total number of distribution poles of NOVEC of 65,732 in its 2012 Annual Tax
2 Report to Virginia (year end 2011 data) and 64,703 in its 2013 Annual Tax Report to Virginia
3 (year end 2012 data).³⁴ Using the total number of distribution poles as reported by NOVEC – the
4 proper universe of poles over which communications attachments may be attached, and hence
5 the correct ratio to derive more reasonable cost causative "but for" attribution of costs - the
6 appropriate percentage of poles used in the allocations of costs to third party attachers is 38.99%
7 2011 and 39.61% for 2012 (as compared with the higher 52% factor applied in NOVEC's
8 analysis).

9 NOVEC does not explain why other distribution poles are excluded from the numerator,
10 although it is clear that by doing so, a greater percentage attribution of costs to communications
11 attachers results. Comcast Pole Agreements do not limit attachment rights to wood distribution
12 poles, and includes transmission poles.³⁵ Moreover, NOVEC's agreement with the Lewis Tree
13 Service Agreement specifically includes distribution and transmission plant right of way.³⁶
14 Similarly, the Davey Survey Proposal specifies its survey as encompassing a total universe of
15 some 60,000+ poles.³⁷

16 One other correction has been made to the tree removal cost component. As noted above,
17 NOVEC's costs for this category were based on the assumption of a percentage increase in cost

³⁴ See Exhibit PDK-5 (NOVEC Response to Comcast I-3).

³⁵ Exhibit SH-1 and SH-2 (Comcast and Adelphia pole attachment agreements) (both defining "structures" to which Comcast is afforded access as "electric distribution line support structures, whether wood, concrete, steel or other material").

³⁶ See Exhibit PDK-5 (NOVEC Response to Comcast- VI-10).

³⁷ See Exhibit PDK-5 (NOVEC Response to Comcast V-40).

1 attributable to communications attachers. For tree trimming that percentage increase attributed
2 to attachers was 10%. In the case of tree removal, NOVEC identified that percent of cost as at
3 least 30%, although NOVEC's workpapers appear to apply a range of what is labeled "multiple
4 of cost attributed to attachers" ranging from .10 to .50 (i.e., assuming attachers cause an
5 increased expenditure of between 10% to 50%).³⁸ For one of the percentage of removal
6 categories, NOVEC appears to have erroneously applied a multiple of 4.0, meaning that it
7 actually apportioned four times the baseline cost that NOVEC would incur if there were no
8 communications attachments, as opposed to a markup or cost increment of 40%, which would
9 fall within the range of the other components and the percentage identified in Mr. Bisson's
10 testimony. NOVEC's error was either inadvertent, or it represents a grossly unreasonable,
11 unsupportable, and inconsistent attribution of costs even in relation to NOVEC's relatively high
12 attributions. Accordingly, in addition to the correction to the joint use right of way calculation,
13 my adjustments also include a correction to the aberrant "multiples of cost" factor from 4.0 to .4,
14 still reflecting a very high multiple in my opinion (that has not been demonstrated to incorporate
15 best practice efficiency standards of operation), but at least a more plausibly defensible figure.

16 Application of the above described adjustments produces an annualized cost amount of
17 \$19,467 and \$82,488 for tree trimming and tree removal, respectively, producing a total for the
18 cost category of **\$101,955** apportioned to communications companies (as compared with
19 NOVEC's annualized amount of \$275,736). *See* Exhibit PDK-2 (Adjusted NOVEC
20 "Incremental Cost" Analysis, Tabs 2, 2B, and 2C).

³⁸ *See* Exhibit PDK-7 (Confidential NOVEC Response to Comcast V-41, Table 7).

1 Cost Category: Performing Additional Work Securing Communications Attachments
2 during Severe Weather Events
3

4 NOVEC estimates an annualized apportionment to communications companies of
5 \$67,782 pertaining to storm restoration work.³⁹ NOVEC's cost estimate reflects a two-year
6 annualization of total costs estimated at \$135,564, based on data for the 2011-2012 period. As
7 per revised REB Table 8, NOVEC's storm restoration costs are based on an attribution of costs
8 as broken down into the following three work categories: additional work to securing
9 communications attachments, secure and transfer communications attachments, and clear trees
10 and tree limb removal and secure communications attachments.

11 As is generally the case with NOVEC's analysis, NOVEC's costs pertaining to storm
12 removal work cannot be independently verified as accurate, efficient, or representative of a
13 reasonable baseline revenue requirement to be used in developing rates going forward. Given
14 the inherent variation and unpredictability of storm impacts, reliance on only two years of cost
15 experience is particularly problematic. In particular, given NOVEC's inability to provide the
16 information requested by Staff in Discovery Request II-15 seeking comparable data over the
17 preceding ten year period,⁴⁰ there is no meaningful way to assess the reasonableness of
18 NOVEC's estimated cost amounts and by extension, the apportionment of those cost amounts to
19 communications attachers.

³⁹ See Bisson Testimony at 22-25, and Confidential Exhibit PDK-7 (NOVEC Response to Comcast V-41).

⁴⁰ See Exhibit PDK-6 (NOVEC Response to Staff II-15 ("For calendar years 2000 through 2010, provide a list of comparable outage events as those listed for 2011 and 2012 (i.e., Hurricanes Irene and Sandy, the *Derecho*, and major snowstorms.) For each of those events, show the number of poles that required communications attachments to be secured or transferred." Response: "NOVEC does not have information, by comparable event, showing the number of poles that required communications attachments to be secured or transferred prior to 2011.")

1 In addition to this overarching problem with respect to the reliability of NOVEC's data
2 for this category of cost, there is the additional problem - the same as that discussed in
3 connection with tree trimming/tree removal above - of NOVEC overstating the amount of storm-
4 related costs reasonably attributed to communications attachments by attributing costs using a
5 Joint Use Percentage of Right of Way mileage allocator (52%) based on the ratio of
6 communications attached poles to wood distribution poles only as opposed to the ratio of
7 communications attached poles to the total universe of poles upon which attachers could be
8 attached (39%). Accordingly, as I did in connection with the tree trimming/tree removal cost
9 category, I have made an adjustment to apply the correct Joint Use Percentage factor joint so as
10 to derive more reasonable cost causative "but for" attribution of costs.

11 Application of the above-described adjustments produces an annualized cost amount of
12 **\$55,251** for this cost category apportioned to communications companies (as compared with
13 NOVEC's annualized amount of \$67,782). *See* Exhibit PDK-2 (Adjusted NOVEC "Incremental
14 Cost" Analysis, Tabs 2, 2D, and 2E).

15 However, there is one more very important additional consideration with respect to this
16 category of cost. As discussed earlier, in an incremental analysis such as proposed by NOVEC,
17 one cannot only consider cost outflows without also considering the potential sources of
18 offsetting revenues or contributions received by NOVEC that reasonably apply to the identified
19 costs. To do so would provide NOVEC with the opportunity of double recovery and the ability
20 to charge an unjustifiably high and inefficient pole attachment rate.

1 Based on information publicly reported from FEMA,⁴¹ and subsequently confirmed by
2 NOVEC in response to discovery,⁴² NOVEC is able to seek, and in fact has been granted,
3 considerable obligations of aid from FEMA, to help fund storm restoration work including work
4 related to pole damage and needed repair. Although NOVEC states in discovery that
5 reimbursements are not specifically tracked to pole plant damage, it is reasonable to assume that
6 pole related work would be a priority storm-related reimbursement item. Given the actual
7 FEMA obligations to NOVEC made during the 2011-2012 period related to two of the storms
8 identified in NOVEC's cost analysis (i.e., \$1,098,881 for Sandy and \$178,057 for the Derecho),
9 but also in consideration of NOVEC's ability to seek such reimbursement obligations from
10 FEMA on a forward looking basis, there would appear to be no just and reasonable basis upon
11 which to support an apportionment of storm related costs to communications attachers.
12 Accordingly, and in the absence of information from NOVEC demonstrating the costs of the
13 storm related work apportioned in its analysis to communications attachers were not subject to
14 FEMA reimbursement, the adusted analysis includes \$0 of net incremental revenue requirement
15 for this cost category. *See* Exhibit PDK-2 (Adjusted NOVEC "Incremental Cost" Analysis, Tabs
16 2, 2D, and 2E).

⁴¹ *Data.gov Public Assistance Subgrantee Summary, PA Grant Program Funded Projects as of 08-09-2013, FEMA's National Emergency Management Information System (NEMIS)*, available at <https://explore.data.gov/Other/FEMA-Public-Assistance-Funded-Projects-Summary-XLS/btjd-2xvr>

⁴² *See* Exhibit PDK-5 (NOVEC response to Comcast II-10). ("FEMA funds received since January 1, 1990 are not specifically identifiable to utility pole plant damage. Eligible costs for FEMA reimbursement under category F, Permanent Repair, are categorized by material, contractor expense, force account labor expense, rental equipment, owned equipment and administrative expense, by jurisdiction where the costs were incurred. The total eligible costs incurred for a storm event may or may not involve pole plant damage.") *See also* Exhibit PDK-5 (NOVEC Response to Comcast II-3, noting that CIAC amounts (contributions in aid of construction) associated with Account 364 for poles "could also include any contribution made from FEMA funds for 364 replacements during a FEMA eligible event.")

1 Cost Category: Responding to Wires Down and Cost to Investigate

2 NOVEC estimates an annualized apportionment to communications companies of
3 \$15,996 pertaining to investigation work related to downed wires.⁴³ Per REB Table 9,
4 NOVEC's cost estimate reflects a two-year annualization of total costs estimated at \$31,992,
5 based on data for the 2011-2012 period. NOVEC bases its cost estimate on the assumption "that
6 one service technician, at straight time pay, and one vehicle on average would take two hours to
7 respond to a wire down call that is determined to involve a communications wire."⁴⁴

8 As is generally the case with NOVEC's analysis, NOVEC's costs pertaining to costs of
9 investigating downed wires cannot be independently verified as accurate, efficient, or
10 representative of a reasonable baseline revenue requirement to be used in developing rates going
11 forward. By its very nature, investigative work is somewhat of an amorphous cost item, highly
12 variable in nature, and not readily tracked. Indeed, NOVEC acknowledges in response to
13 discovery that it "does not capture the actual time spent by employees who responds[sic] to each
14 wire down trouble call" and moreover, that "[t]he amount of time can vary depending upon
15 several factors: including travel time to the location, traffic congestion, walking into a right-of-
16 way, weather conditions etc."⁴⁵

17 In light of pole owner's incentive to overstate and/or over-apportion costs "but for"
18 attachers, particularly as involves a cost item so difficult to track as investigation, application of
19 an adjustment factor to both reflect and incentivize operational efficiency is reasonable. My

⁴³ See Bisson Testimony at 25-26, and Confidential Exhibit PDK-7 (NOVEC Response to Comcast V-41).

⁴⁴ See Exhibit PDK-6 (NOVEC Response to Staff II-17).

⁴⁵ Exhibit PDK-6 (NOVEC Response to Staff II-17).

1 analysis accordingly applies a 25% efficiency factor that effectively reduces the time assumed
2 that it takes NOVEC personnel to respond to wire down calls and determine those downed wires
3 turn out to be communications wires from 2.0 hours to 1.5 hours. In my opinion, even with this
4 downward adjustment, the classification of any investigation costs as a “but for” cost to attachers
5 is generous to NOVEC, as this type of cost, is just as reasonably, if not more so, more accurately
6 classified as directly attributable to the core electric service, or at a minimum as a joint and
7 common cost.

8 As explained by Mr. Bisson, the motivating cause for the investigation is “[n]ot knowing
9 if the downed wire is an energized electric wire or some other wire that may present a hazard or
10 safety condition to the public.”⁴⁶ But for the possibility the downed wire is electrified or in some
11 way posing a related threat, the need to investigate every call would not be required. The cost
12 causer of the investigation is primarily related to the safety hazards inherent in the provision of
13 electricity. Moreover, while NOVEC did not identify what proportion of total downed wire calls
14 investigated during the two year period examined did not involve one of its own wires, based on
15 data I have seen for other utilities, the number of such calls is quite small relative to the total
16 number of calls.

17 Application of the above-described adjustment produces an annualized cost amount of
18 \$11,997 to be apportioned to communications companies (as compared with NOVEC’s
19 annualized amount of \$15,996). See Exhibit PDK-2 (Adjusted NOVEC “Incremental Cost”
20 Analysis, Tab 2).

⁴⁶ See Bisson Testimony at 26.

1 Cost Category: Joint Use Agreements Negotiations and Litigation

2 NOVEC estimates an annualized apportionment to communications companies of
3 \$48,400 pertaining to work related to negotiation and litigation involving pole agreements.⁴⁷
4 According to information provided in response to discovery, NOVEC's cost estimates were
5 developed using a ten-year annualization of total costs of \$484,000, "based upon legal,
6 Consulting, and NOVEC staff work anticipated to negotiate an agreement and to undertake a
7 proceeding before the SCC," and calculated using employee wage and benefit data for consulting
8 and legal, analyst, supervisor, and manager level personnel.⁴⁸

9 Again, as is generally the case with NOVEC's analysis, NOVEC's identified costs cannot
10 be independently verified as accurate, efficient, or representative of a reasonable baseline
11 revenue requirement to be used in developing rates going forward. In addition, the level of "but
12 for" costs incurred by the pole owner in connection with the negotiation of pole agreements and
13 litigation related to pole attachments is largely under the control of the monopoly pole owner.
14 Pole agreements are not new, and can be largely self-renewing. In my experience, attachers do
15 not initiate costly litigation in those jurisdictions where they have access to pole attachments at
16 reasonable terms and conditions. Any material allocation of these types of costs to third party
17 communications attachers creates an undesirable incentive for NOVEC, as the pole owner and
18 gatekeeper to the bottleneck facility, to protract negotiations by insisting on its own proposed,
19 unreasonable rates and terms, knowing it will be able to recover the costs of an impasse or

⁴⁷ See Bisson Testimony at 26-28.

⁴⁸ See Confidential Exhibit PDK-7 (NOVEC Response to Comcast V-41) and Exhibit PDK-6 (NOVEC Response to Staff II-19).

1 resulting litigation from the attachers. In this way, apportionment of the pole owner's
2 negotiation and litigation costs to the attachers serves to further entrench the asymmetric
3 bargaining power of the pole owner.

4 Moreover, whatever amount NOVEC might estimate it would have to spend on
5 negotiations and litigation in connection with communications attachers, the attachers
6 themselves are likely to have to spend many multiples of that amount. As we have seen in this
7 case, as pole owner, NOVEC has control over the data and the flow of information, and that
8 alone gives the pole owner the upper hand in any negotiations or litigation matter and the ability
9 to increase the cost of litigation for a third party entity.

10 Accordingly, the adjusted analysis attributes a \$0 apportionment of NOVEC's
11 negotiation and litigation costs to communications attachers for this particular cost category. Of
12 course, as noted above, third party attachers will be self-incurring negotiations and litigation
13 related costs of their own at levels equal to or exceeding the amount estimated by NOVEC. *See*
14 Exhibit PDK-2 (Adjusted NOVEC "Incremental Cost" Analysis, Tab 2).

1 Cost Category: Joint Use Agreement Administration and Monitoring

2 NOVEC estimates an annualized apportionment to communications companies of
3 \$116,500 pertaining to costs related to work to administer and monitor the attaching entities'
4 activities associated with pole agreements.⁴⁹ NOVEC's cost estimate is based on the assumption
5 of one full time employee dedicated to these activities, supplemented with the assignment of
6 some additional supervisory, managerial and customer representative staff time.

7 As is generally the case with NOVEC's analysis, NOVEC's assumptions regarding
8 additional administrative and monitoring costs cannot be independently verified as accurate or
9 efficient, or representative of a reasonable baseline revenue requirement to be used in developing
10 rates going forward. In particular, it is difficult to meaningful assess, based upon the limited
11 information provided by NOVEC in connection with this cost category, and especially in
12 consideration of the limited number of third party entities attached to NOVEC's poles, the true
13 need for one fully dedicated employee. NOVEC has not provided a formal job description
14 setting forth the specific responsibilities and including a description of the daily or weekly duties
15 assigned to that job. It would seem reasonable to assume that the employee so charged with
16 administration and monitoring of third party attachers would be able to allocate some percentage
17 of his or her workweek to other related administrative duties in service to - and hence, properly
18 attributable to, from a but for cost perspective - either NOVEC's own communications services
19 or to NOVEC's core electric service. It is equally plausible that instead of the one full time
20 dedicated employee, supplemented by a limited number of hours by other personnel with

⁴⁹ See Bisson Testimony at 27-28.

1 supervisory, managerial and customer representative skills, that the tasks could more cost
2 effectively be distributed among the team, thereby eliminating the need for a fully dedicated
3 overhead employee apportioned to communications attachers.

4 For the reasons described in connection with other cost categories, the pole owner has a
5 natural incentive to overstate costs to be apportioned to communications companies with which
6 it competes. In recognition of this undesirable incentive, as well as to build in a positive
7 efficiency incentive consistent with the economic assumptions underlying a true incremental cost
8 analysis, my analysis applies a 25% efficiency adjustment to NOVEC's total cost projection.
9 While there would be many ways NOVEC could achieve this 25% reduction in costs, application
10 of the adjustment effectively reduces the dedicated employee to a $\frac{3}{4}$ time employee, with the
11 other $\frac{1}{4}$ time available to be spent on tasks related to NOVEC's own internal operations.
12 Application of the above-described adjustment produces an annualized cost amount of **\$90,119**
13 to be apportioned to communications companies (as compared with NOVEC's annualized
14 amount of \$116,500). See Exhibit PDK-2 (Adjusted NOVEC "Incremental Cost" Analysis, Tab
15 2).

16 Cost Category: Extra 5 ft. of Height on All Joint Use Poles

17 As the final cost category in NOVEC's incremental analysis, NOVEC includes costs
18 identified as in REB Table 10 as the "annual cost to support additional five foot taller poles" in
19 the amount of \$269,879. The costs are calculated based on application of a set of annual
20 carrying charges – associated with the capital cost elements of debt, depreciation, and property
21 taxes - as applied to the estimated incremental capital investment incurred by NOVEC in

1 connection with the installation of poles that are five feet taller.⁵⁰ From an economic perspective,
2 this last category of costs is not properly included in a true "but for" analysis of costs caused by
3 third party licensee attaching entities; the economic reality, as demonstrated by NOVEC's own
4 witnesses and documented in materials provided in discovery, is that NOVEC has been installing
5 taller poles to serve its growing core electric service. Mr. Bisson, the sponsor of the cost
6 analysis, cites to the rapid growth of the NOVEC system and making the direct connection
7 between system growth and new plant investment, including investment in the existing
8 "overhead line infrastructure:"

9 Since the beginning of 1998 through the year 2012, the number of customers has
10 increased by 69%, from 88,978 to 150,428; system demand and energy usage has
11 doubled, with demand growing from 446MW to 927MW and energy usage growing from
12 1.8 million MWhs to 3.7 million Mwhs; and gross utility plant has more than doubled
13 from \$326 million to \$704 million... While the overhead line infrastructure has grown in
14 length by less than 100 miles during this period, many of the existing circuits have been
15 upgraded and additional circuits have been place on the existing poles in order to provide
16 the delivery capacity required to serve the demand and energy growth that has occurred
17 on the NOVEC system... In order for NOVEC to provide consistently reliable service to
18 its customers, the overhead electric lines must be designed, constructed, and maintained
19 in a fashion to maximize robustness, and minimize outage duration.⁵¹
20

21 As also described by Mr. Bisson, "The design of [NOVEC's] overhead lines is based
22 upon NOVEC's material specifications and construction standards." That the design of
23 NOVEC's system of overhead distribution lines, and in particular, the need to install poles of at
24 least forty feet, is logically driven by the needs of NOVEC to meet the growing demand of its
25 core electric service - and not the needs of third party licensee attachments - is further supported

⁵⁰ See Bisson Testimony at 28-29; see also Confidential Exhibit PDK-7 (NOVEC Response to Comcast V-41).

⁵¹ See Bisson Testimony at pages 2- 4.

1 in source construction planning documents provided in response to discovery. These documents
2 set forth the requirement that all poles that are to “have a “primary assembly installed shall be a
3 minimum of forty feet tall.”⁵²

4 Moreover, the costs of those investment and placement decisions driven by the needs of
5 the core electric service are, as proper from an economic cost causation perspective, recoverable
6 through rates for the utility’s core electric service. There is no evidence here in Virginia, as is
7 true nationwide, that electric utilities have been deterred from investing in the optimal amount of
8 pole plant of the height, type and class they deem optimal for their own operational needs due to
9 the presence of third party licensee attachers. In the same vein, cable operators and other third
10 party attachers have not over-consumed pole space, as they would be required under the terms of
11 their pole agreements to pay for any over-consumption of pole space in the form of make-ready
12 costs applicable whenever a pole has to be replaced or changed-out to accommodate a third party
13 attachment request.

14 Indeed, true "but for" costs for taller poles attributable to third party attachers are most
15 efficiently recovered through pole-specific make-ready charges, as has been the practice with
16 NOVEC and as common throughout Virginia (and the country). Comcast, in particular, has
17 made significant make-ready payments to NOVEC over the years as explained in the Prefiled
18 testimony of Steve Hill filed on behalf of Comcast in this proceeding. Notwithstanding its
19 proposal to recover costs of installing taller poles to accommodate third party attachments in the

⁵²See Exhibit PDK-5 (NOVEC Response to Comcast-NOVEC V-27 – NOVEC SPECIFICATIONS AND DRAWINGS FOR OVERHEAD ELECTRIC DISTRIBUTION 2nd Ed. (“All wood poles for new construction or change out that have a primary assembly installed shall be a minimum of forty feet tall. This includes installing a transformer for a new underground service. Thirty and thirty-five foot poles shall be used for secondary, service and streetlights only.”)).

1 recurring rental rate with the inclusion of this incremental cost category, NOVEC has confirmed
2 in response to discovery, that it also plans to continue recovering make-ready through specific
3 charges for pole replacements and rearrangements.⁵³ This would effectively allow NOVEC to
4 recover costs associated with taller poles from third party attachers *twice*: once through the
5 recurring rental rate, and a second time in make-ready charges applied on a one-time pole by
6 pole basis.

7 In summary, the widely acknowledged economic reality of poles is that the majority of
8 poles are not being replaced in any given year and enjoy long economic lives. For these poles, it
9 really makes no economic sense to talk about an extra five feet of pole space. For the relatively
10 small percentage of poles that are replaced, for the ones that are being replaced by the electric
11 company to serve their core electric utility service, as noted above, costs incurred by the utility
12 are properly recoverable through regulated rates for those customers. For the poles that truly
13 would not be replaced but for third party attachers, the costs are recoverable through make-ready
14 charges, set unilaterally by the utility. If the third party attacher refuses to pay the make-ready as
15 unilaterally determined by the utility, the pole need not be replaced. In effect, make-ready
16 charges are replacement costs applied at the individual pole level, so there is no efficiency gain
17 in building in the costs of replacing a shorter pole with a taller one in the rental formula. There

⁵³ See Exhibit PDK-5 (NOVEC response to Comcast IX-16). See also Exhibit-SH-1 (Comcast NOVEC pole agreement Art. IV (“All charges for engineering, rearrangements, and removal of any Attachments from any Structure shall be based upon the actual cost (including overhead) and expense to the Owner for performing such work. The cost to the Owner shall be determined by the regular and customary methods used by the Owner in determining such costs.”) and Exhibit-SH-2 (Adelphia NOVEC pole agreement Art. IV provisions assigning costs to Comcast (“All charges for engineering, rearrangements, and removal of any Attachment from any Structure shall be based upon the full reasonable cost and expense to the Owner for performing such work, including reasonable overhead.”))).

1 is only duplication of cost recovery and extraction of monopoly rents, contrary to the principles
2 of cost causation.

3 For the reasons above, it would be most reasonable and fully consistent with cost
4 causation principles underlying a true "but for" analysis to apportion \$0 of the costs identified
5 for this category to communications attachers. That said, to be most generous to NOVEC, and
6 assuming if allowed to set a recurring rate that incorporated cost recovery for an extra five feet of
7 pole space in the aggregate, NOVEC would forebear from charging for make-ready work
8 specifically relating to the change out of a shorter pole, an argument could be made that a weak
9 causative linkage may exist based on the actual occupancy of the additional five feet of pole
10 space by third party entities. Such an adjustment would apportion costs to third party attachers
11 based on the percentage of space, on average, that was occupied, i.e. space that could be
12 reasonably be deemed unavailable or "lost" opportunity to NOVEC either to use, or have
13 available to use or to generate a future stream of revenue. Based on NOVEC's own data showing
14 an average number of third party attachers on its pole of 1.38, such an adjustment results in 28%
15 of the purported costs of the extra 5 feet allocated to third parties [(1.38 entities x 12 feet per
16 entity) divided by 60 feet = .28].

17 Another plausibly reasonable basis for allocation of the cost of the additional 5 feet of
18 pole space would be to assign 20% of the purported costs to any one attacher, since in theory, the
19 additional 5 feet could accommodate 5 third party attachments. However, for purposes of this
20 analysis, I have applied the higher of the two, based on occupancy data, but again, based on the
21 expectation NOVEC would forebear from charging for make-ready work that would lead to
22 double recovery of the same type of costs on a pole specific basis. The resulting apportionment

1 of costs derived in this manner is **\$74,607**, as compared with NOVEC's proposed amount of
2 \$269,879.

3 **Q. WHAT ARE THE RESULTING RATES AFTER APPLICATION OF YOUR**
4 **NECESSARY AND REASONABLE ADJUSTMENTS TO NOVEC'S ANALYSIS?**

5 A. As shown in Table 1 below, applying the adjustments, collectively, to NOVEC's
6 analysis, results in a lower per attachment rate of **\$11.18**, and a correspondingly lower per pole
7 rate of **\$12.94**, as compared with NOVEC's proposed rates of \$26.43 and \$30.60, respectively.
8 To better allow for comparison to NOVEC's proposed rates, these rates are all expressed prior to
9 adjustments to allocate a fair proportionate share of costs to NOVEC's communications affiliate,
10 NOVEC Solutions, and prior to proper consideration of offsetting sources of revenue or other
11 sources of cost recovery or contribution from communications attachers. When estimated
12 NOVEC Solutions communications attachments are taken into account, the maximum adjusted
13 rates drop to **BEGIN EXTRAORDINARILY SENSITIVE [REDACTED] END**
14 **EXTRAORDINARILY SENSITIVE** per attachment and **BEGIN EXTRAORDINARILY**
15 **SENSITIVE [REDACTED] END EXTRAORDINARILY SENSITIVE** per pole (as compared with the
16 equivalently adjusted NOVEC proposed rates of **BEGIN EXTRAORDINARILY SENSITIVE**
17 **[REDACTED] END EXTRAORDINARILY SENSITIVE** and **BEGIN EXTRAORDINARILY**
18 **SENSITIVE [REDACTED] END EXTRAORDINARILY SENSITIVE**, respectively), again prior to
19 the application of offsetting revenues or other sources of recovery to NOVEC from third party
20 attachers. Absent the adjustment to allocate a fair proportionate share of costs to NOVEC
21 Solutions attachments on NOVEC utility poles, NOVEC would be effectively using

1 communications attachers to subsidize its own communications businesses with which the
 2 attachers potentially compete.

3 **Table 1 - NOVEC Proposed Costs vs. Adjusted Costs Prior to Offsets**

Incremental Cost Categories (Prior to Application of Cost Offsets)	Annualized Cost Per NOVEC Response to Comcast V-41	Adjusted NOVEC Cost
Total Universe Communications Attached Poles		
Performing Periodic Communications Attachment Survey	\$47,616	\$3,948
Accommodate Communications Att Transfers When Replacing Poles	\$241,897	\$175,758
Performing Scheduled Tree Trimming & Tree Removal Work	\$275,736	\$101,955
Performing Addtl Work Securing Comm. Att - Service Restorations	\$67,781	\$0
Responding to Wires Down Reports	\$15,996	\$11,997
Joint Use Agreement Negotiations & Litigation	\$48,400	\$0
Joint Use Administration & Monitoring	\$116,500	\$90,119
Extra 5 Feet Height on All Joint Use Poles	\$269,879	\$74,607
Total Maximum "Incremental Revenue Requirement"	\$1,083,806	\$458,374
No Communications Attachments - Excludes NOVEC Solutions	41,006	41,006
Rate per Communications Attachment - Excludes NOVEC Solutions	\$26.43	\$11.18
EXTRAORDINARILY SENSITIVE [REDACTED]	[REDACTED]	[REDACTED]
Cumulative No of Communications Attached – Excludes N. Solutions	35,422	35,422
Rate per Cumulative Comm. Attached Poles - Excludes N. Solutions	\$30.60	\$12.94
EXTRAORDINARILY SENSITIVE [REDACTED]	[REDACTED]	[REDACTED]

1 **Q. ARE YOU ADVOCATING THE SCC APPLY ANY OF THESE ADJUSTED**
2 **RATES IN DETERMINING POLE ATTACHMENTS RATES APPLICABLE TO**
3 **COMCAST OR OTHER THIRD PARTY COMMUNICATIONS ATTACHERS?**

4 A. No, I am not. For the reasons described fully below in the next section of this testimony,
5 I am recommending the SCC apply one of the widely used fully allocated formulaic approaches,
6 the first best being the most widely used Cable Formula, and the second best being one of the
7 variations of the Telecom Formula that I have calculated using J&R data inputs (as distinguished
8 from the more unreasonable applications of these formulas by NOVEC). However, to the extent
9 the SCC considers accepting the NOVEC “but for” approach, the appropriate basis to recover the
10 incremental costs of pole attachment is on a *per attachment* basis – and not on the basis of
11 cumulative attached poles as proposed by NOVEC to be applied to the overwhelming majority of
12 attachments as part of the so-called BYC. Recall that NOVEC is proposing to apply the lower
13 per attachment rate only to increment/decrement to the base year level of attachments.

14 NOVEC’s approach is problematic in that the relevant economic unit, consistent with
15 cost causation principles, is a pole attachment. Indeed, to distribute costs to attachers on a per
16 pole basis results in an economic disconnect between the manner in which costs are caused by
17 the attacher and, correspondingly, how costs are actually incurred by the pole owner, and the
18 manner in which those costs are recovered from (and allocated among) the individual cost
19 causers. Attachers with a higher number of attachments relative to the number of poles to which
20 they are attached, should appropriately bear a commensurately higher share of pole attachments
21 costs determined on an aggregate basis, and conversely, attachers with a lower number of

1 attachments relative to the number of poles to which they are attached, should appropriately bear
2 a commensurately lower share of pole attachments costs.

3 Accordingly, the appropriate cost-based rate, as is commonly adopted, applies on a per
4 attachment, not a per pole, basis. For this reason, the rates I am recommending apply per
5 attachment. This is true regardless of whether the SCC adopts the formula method I am
6 recommending, or the “incremental cost” approach advanced by NOVEC. One additional
7 caveat, to the extent the SCC adopts NOVEC’s approach, it is important that the SCC also take
8 into consideration the application of offsetting payments, fees, in kind services, or self-incurred
9 costs by communications attachers that are properly taken into account in this kind of
10 incremental approach.

11 **Q. PLEASE ELABORATE ON WHAT YOU MEAN BY OFFSETTING PAYMENTS,**
12 **FEES, IN KIND SERVICES OR SELF-INCURRED COSTS BY ATTACHERS.**

13 A. As further described in the testimony of Comcast witness Mr. Hill, under the terms of
14 Comcast’s pole attachment agreement with NOVEC, as is common in such agreements,
15 communications attachers are subject to a host of make ready charges (e.g., for pole
16 replacements and rearrangements), permitting fees, other reimbursements (e.g., paying for
17 transfers if work is not performed on the first visit), requirements to self-incur costs (e.g., for
18 service restorations, tree trimming) and provision of in kind contributions to the pole owner (e.g.,
19 strands of optical fiber). Indeed, the strands of optical fiber provided by Comcast to NOVEC are
20 valued at \$2,075,319.⁵⁴ Although there were multiple discovery requests in which Comcast and

⁵⁴ See Prefiled Testimony of Steve Hill and accompanying Exhibits filed on behalf of Comcast in this proceeding.

1 Staff requested NOVEC to provide comprehensive and specific data about non-rent payments
2 made by third party communications attachers that they refused to answer, the evidence that has
3 been obtained through and produced by Comcast in discovery confirms that NOVEC has in fact
4 received considerable sums of money and in kind services from Comcast and other third party
5 attachers,⁵⁵ and moreover, that it plans to continue to impose many of these such charges,
6 including notably make-ready, going forward *in addition to* the incremental rate.⁵⁶ Unless these
7 types of payments and the value of the in kind contributions received by NOVEC are properly
8 taken into account, one is not accurately measuring the true “but for” effect on NOVEC and its
9 members. It is unreasonable, as NOVEC has done, to choose to account for only one side of the
10 incremental calculus, i.e., the outflow of dollars, without also taking into consideration the
11 corresponding inflows of dollars (or cost savings) to NOVEC. Accordingly, my analysis and
12 adjustments to NOVEC’s analysis also include consideration of these offsetting additional
13 sources of revenues and provision of self-incurred or in kind services provided by third party
14 attachers, and Comcast in particular.

15 **Q. WHAT ARE THE RESULTING RATES AFTER PROPER CONSIDERATION IS**
16 **MADE TO OFFSETTING INFLOWS OF REVENUE OR OTHER SOURCES OF**
17 **RECOVERY AVAILABLE TO NOVEC?**

18 A. When one takes these offsetting inflows or sources of recovery (or contributions in kind)
19 to NOVEC into account, as is only appropriate, the computed rate per attachment drops from

⁵⁵ *Id.*

⁵⁶ *See* Exhibit PDK-5 (NOVEC Response to Comcast IX-16).

1 **\$11.18** to **-\$0.39** per attachment and from **\$12.94** to **-\$0.45** per cumulative communications-
 2 attached pole (excluding NOVEC Solutions). Including NOVEC Solutions, those rates drop
 3 even further. *See* Exhibit PDK-2 (Adjusted NOVEC “Incremental Cost” Analysis). Moreover,
 4 when calculated on a Comcast specific basis, i.e., taking into account the actual payments and
 5 contributions Comcast made to NOVEC (over and above rental rates), the net rates computed for
 6 Comcast specifically based on a truly “but for” analysis are actually significantly *negative*. This
 7 means that Comcast is actually a net contributor to NOVEC’s net margin (excess of revenues
 8 over expenses) even Comcast had paid NOVEC *no* recurring rental rate to attach to it poles.

9 **Table 2 - Adjusted NOVEC Costs Net of Offsetting Payments, Contributions and**
 10 **Other Cost Offsets**
 11
 12

Adjusted NOVEC Costs with Application of Cost Offsets	All Third Pty Comm. Att Poles	Comcast Att Poles Only
Total Adjusted Costs (Pro-rated to Comcast based on % Thd PtyAtt)	\$458,374	\$168,053
Est. Offsets incl non-rent payments/contributions/in kind services	\$474,417	\$418,345
Rate per Communications Attachment - Excludes NOVEC Solutions	-\$0.39	-\$16.65
Rate per Communications Pole - Excludes NOVEC Solutions	-\$0.45	-\$17.06

13

14 **Q. IS THERE A PUBLIC POLICY BENEFIT TO NOVEC’S OWNER MEMBERS**
 15 **FROM ALLOWING NOVEC TO CHARGE COMCAST POLE ATTACHMENT RATES**
 16 **THAT ON A NET BASIS ADD TO NOVEC’S NET MARGIN?**

17 A. No, there is not. As described in the Prefiled Direct Testimony of Mr. Glenn Watkins on
 18 behalf of Comcast in this proceeding, NOVEC enjoys a substantial net margin (the excess of
 19 revenues over expenses) relative to its authorized revenue requirement, and pole attachment

1 revenues are a miniscule percentage of NOVEC's revenues. Thus, as Mr. Watkins demonstrates,
2 there is no need to charge pole attachment rates that build in significant levels of contribution
3 over and above their true "but for" costs. When taking offsets into consideration (as is
4 appropriate per my earlier testimony) the analysis shows that NOVEC is receiving a substantial
5 positive contribution to its margin which it would not receive "but for" Comcast attaching on its
6 poles. The contribution, a negative (\$16.65) per attachment, is between 2 and 3 times the just and
7 reasonable rate the J&R rate of \$6.35.

8 But perhaps even more importantly, as discussed further in later sections of my
9 testimony, there is the potential of serious harm from permitting NOVEC to charge rates that
10 build in levels of contribution well in excess of true "but for" costs. The potential for harm exists
11 both with respect to broadband services deployment and competition as a general proposition,
12 but also with respect to NOVEC's owner/members -who are subject to *both* the higher electric
13 rates that help sustain NOVEC's existing high margin levels and the potentially significantly
14 higher rates for broadband services for which pole attachments are widely recognized to be vital
15 inputs. While the magnitude of these net "but for" cost figures may seem extremely low, they are
16 as expected, given they are entirely consistent with prior findings by other regulatory bodies and
17 courts concerning the true "but for" costs of third party pole attachments, and the purpose of
18 make-ready charges.

1 **Q. PLEASE ELABORATE AS TO WHY LOW “BUT FOR” COSTS ARE AS**
2 **EXPECTED AND CONSISTENT WITH PRIOR FINDINGS ON TRUE “BUT FOR”**
3 **COSTS AND THE ROLE OF MAKE READY CHARGES.**

4 A. By design, make-ready charges are set to recover any and all truly “but for” or “out-of-
5 pocket” costs incurred by the pole owner to accommodate the attacher. Many of the cost
6 categories identified in NOVEC’s analysis overlap with the types of costs that would be
7 recoverable through make-ready charges and/or other fees permitted under the terms of their pole
8 agreements. Other costs of a more recurring nature included in NOVEC’s analysis primarily
9 consist of types of costs that would be incurred by the utility in connection with its provision of
10 core electricity service, and are very difficult to prove would not otherwise exist “but for” the
11 attacher. In other words, most costs of a recurring nature are more properly categorized as “fully
12 allocated costs” (i.e, costs that would exist regardless of the presence of attachments) as
13 explicitly recognized in the widely used formulaic approaches, rather than “incremental costs” as
14 NOVEC defines them. These findings are also consistent with prior findings of independent
15 analysts and by the FCC of relatively small incremental pole attachment costs.⁵⁷

⁵⁷ See, e.g., FCC April 7, 2011 Order ¶ 144 (“the record includes findings by economists and analysts that capital costs are justifiably excluded from the lower-bound rate because the attachers cause none or no more than a de minimis amount of these costs, other than those that are recovered up front through the make-ready fees.”); *id.* ¶ 190 (“Electric utilities in response to the Further Notice did not provide any cost study, let alone one that might demonstrate that pole owners incur capital costs outside the make-ready context solely to accommodate third-party attachers. ... We find it reasonable to conclude, therefore, based on our analysis of rational firm behavior and the lack of any evidence provided by the utilities to refute it, that pole owners do not incur such costs.”). The FCC’s analysis is consistent with Congress’s understanding that pole attachments generally do not impose any capital costs on utilities that are not recovered fully in make-ready charges: “Thus, the only added cost to the utility resulting from the pole attachment would be administrative costs.” 123 Cong. Rec. 5080 (1977) (statement of Rep. Wirth); S. Rep. No. 95-580, at 19, reprinted in 1978 U.S.C.C.A.N. 109 (1977) (“[A utility’s] avoidable costs...could be expected to be minimal since most of those costs are the outlays that should be fully recovered in the make-ready charges.”).

1 **III. “FIRST BEST” APPROACH FOR DETERMINING POLE ATTACHMENT**
2 **RATES: CABLE FORMULA**

3 **Q. WHAT DO YOU PROPOSE INSTEAD OF NOVEC’S APPROACH AND WHY?**

4 A. I am proposing the SCC adopt the widely used fully allocated formulaic approach, and in
5 particular, the formula known as the “Cable Formula, as a “first best” solution. As mentioned at
6 the outset of my testimony, I have also presented a number of other “second best” formulaic
7 options for the Commission’s consideration based on the formula used by the FCC to calculate
8 rates for telecommunications services providers, i.e., the “Telecom Formula.” The Cable
9 Formula - which I am first and foremost recommending be adopted by the Commission for
10 calculating NOVEC’s recurring pole attachment rental rates – is the formula applied not just by
11 the FCC but also by the overwhelming majority of states that regulate pole attachments,
12 including states such as Utah, Vermont, and Oregon that regulate cooperatively-owned electric
13 distribution companies pursuant to state statute.⁵⁸ A detailed listing of states adopting the FCC
14 formulaic approach or some close variation of that formula is provided in PDK Exhibit-9.

⁵⁸ See e.g., UT Admin. Code R646-345-5(A) (“A pole attachment rental rate shall be based on publicly filed data and must conform to the Federal Communications Commission’s rules and regulations governing pole attachments”); *In re Rulemaking to Amend and Adopt Rules in OAR 860, Divisions 024 and 028, Regarding Pole Attachment Use and Safety (AR 506) and Rulemaking to Amend Rules in OAR 860, Division 028 Relating to Sanctions for Attachments to Utility Poles and Facilities (AR 510), Order No. 07-137, AR 506/AR 510*, 2007 Ore. PUC LEXIS 115, at *22-24 (Apr. 10, 2007) (“We conclude that a modified cable rate formula is the most appropriate for calculating pole rental rates under ORS 757.282.... [T]he cable formula been found to fairly compensate pole owners for use of space on the pole. See *Alabama Power Co. v. FCC*, 311 F.3d 1357, 1370-71 (11th Cir. 2002). In addition, use of the cable rate will allow parties to rely on the case law interpreting that rate, providing guidance in forming their contracts. Based on the legislative history, as well as consideration of the many arguments made by the participants, we conclude that we will follow the cable rate formula and the subsequent FCC and court decisions interpreting it.”); *In re Columbus & S. Elec. Co., Case Nos. 81-1058-EL-AIR, 82-654-EL-ATA, Ohio Public Utilities Commission*, 50 P.U.R.4th 37 (1982) (“We have determined to use the FCC formula and its assumptions regarding the components of that formula to determine the pole attachment rate.... The commission must determine ‘just and reasonable charges’ for pole attachments, and we believe that the FCC formula, and the FCC presumptions, will, under most circumstances, produce a just and reasonable result. We hope, and expect, that this decision will simplify the process of determining pole attachment rates, without sacrificing the reasonableness of the result.”);

1 While I fully appreciate that the Commission is not required by statute to rely on this
2 approach, I believe that the Cable Formula, or a close variation thereof– provided such variation
3 allocates a reasonable, cost causative proportionate share of pole costs to attachers– would better
4 serve the Commonwealth’s objective of establishing just and reasonable rates that do not
5 effectuate a subsidy of the pole owner, its affiliate, or attachers, or negatively impact broadband
6 deployment. In my experience, industry sponsored formulas, such as the formula sponsored by
7 NRECA, a trade association for electric cooperatives and public power districts, and the various
8 formulaic calculations provided by NOVEC witness Mr. Booth (which I will address later in this
9 section of my testimony) contain unreasonably high allocations inconsistent with the cost
10 causation principles that lie at the very core of the FCC formulaic approaches.

11 **Q. YOU HAVE RECOMMENDED THE SCC ADOPT THE CABLE FORMULA**
12 **OVER THE TELECOM FORMULA. CAN YOU ELABORATE ON THE ADVANTAGES**
13 **THE CABLE FORMULA OFFERS VIS-À-VIS THE TELECOM FORMULA?**

14 A. Yes, there are many such advantages.

15 First, the Cable Formula most closely adheres to economically sound cost causation
16 principles, by using a proportionate (per foot of space occupied) cost allocator most consistent
17 with the economic reality of how pole space is produced and as commonly applied in other
18 familiar leasing arrangements (such as for a rental unit in an apartment building). An economic
19 reality of poles is that they can readily accommodate multiple attaching entities through the

Opinion and Order Setting Pole Attachment Rates, N.Y. P.S.C. Case No. 95-C-0341, Opinion No. 97-10, at 13 (1997) (“From our review of the FCC approach, we are satisfied that it provides [pole owners] allowances for the costs they incur.”); Complaint and Request for Hearing of Cablevision of Boston Co., et al., D.P.U./D.T.E. 97-82, at 17 (1998) (“In Greater Media, the Department concluded that reliance on publicly available utility annual report data is preferable to rate formulas dependent upon internal utility information.”).

1 normal make-ready process of rearrangements and change-outs (for which the attacher pays) by
2 which the pole owner is able to readily access and make available additional space on the pole
3 for use by third party attachers. This key feature of poles means that the addition of another
4 entity on the pole does not result in the displacement or exclusion of another user or use by the
5 utility, and thus, from an economic perspective, there is no underlying cost causative reason to
6 allocate unusable or common space on the pole on a basis other than in proportion to the actual
7 occupancy of space (i.e., the only space on which other entities, including the pole owner, are
8 actually precluded from making attachments).

9 Second, by allocating the fully allocated attacher's share of the costs of the entire pole
10 (including the unusable space and safety space contrary to what Mr. Booth suggests as I discuss
11 below) to third party attachers in proportion to a reasonable allocation of usable space occupied -
12 over and above any make ready or other directly reimbursable charges paid by the attacher - the
13 FCC Cable Formula, as repeatedly found by the courts, assures that the pole owner is fully
14 compensated for the costs directly and indirectly reasonably attributable to the third party
15 attacher. Accordingly, there can be no valid claim, under widely accepted economic definitions
16 of subsidy and the closely-related legal principle of just compensation, any subsidization of the
17 communications attacher or its customers at the expense of the utility or its electric customers.

18 Third, the Cable Formula better promotes deployment of advanced broadband services in
19 a competitive and technology neutral fashion by not being based on the number of attaching
20 entities, which is beyond the control of any given attacher, and that does not directly impact the
21 cost burden borne by the owner (again, any direct cost burdens are recoverable through make-
22 ready). In this respect, the FCC's Cable Formula (despite its name and when it is used by a state

1 regulatory body for all attaching entities as is the case in the states set forth in my Exhibit PDK-
2 3), is not inherently biased in favor of any one industry or competitor over another, and can be
3 readily applied in uniform fashion across different utilities, different areas of the state, and
4 different types of broadband providers using different technological platforms. In particular, by
5 not being based on the number of attaching entities, the Cable Formula does not effectively
6 penalize consumers, or conversely, reward utility owners of essential pole facilities, for the
7 failure of more widespread facilities- based competition to have materialized as expected in the
8 post-1996 Act period (since the fewer the number of attaching entities, the higher the rate
9 produced by a per capita formula, notwithstanding no commensurate increase in cost burden to
10 the pole owner). Similarly, it does not effectively penalize firms adopting innovative new
11 technologies, such as interconnected VoIP, which provides voice services by sending packets of
12 information over existing wires, and therefore require no additional space on the pole and do not
13 engender any new cost burden to the utility. In this key regard, the Cable Formula is
14 independent of, and hence more competitively neutral than, the old FCC telecom rate formula
15 with respect to the impact of technology and emerging competition.

16 Fourth, the FCC Cable Formula does a better job in promoting the deployment of
17 advanced broadband services in less populated, un-served, or underserved areas, or where
18 affordability of service is a key concern by producing a lower, more efficient rental rate (closer
19 but still in excess of true marginal costs) for an input vital to the production of broadband
20 services. It is a basic principle of economics that higher rates for a key input used to provide a
21 service, will serve to discourage investment in new infrastructure, the deployment of new
22 services, and the affordability of those service offerings. The Cable Formula's relative use cost

1 allocation methodology does not so penalize less served areas or other underserved areas that
2 would be most vulnerable to higher rates, a fact directly acknowledged by the FCC in its March
3 2010 National Broadband Plan, the FCC 2010 FNPRM that opened on its heels and in the
4 April 7, 2011 Order.⁵⁹

5 Fifth, of the various rate approaches under consideration, the Cable Formula best
6 approximates a competitive market outcome such as would result if there were multiple pole
7 owners, each vying for buyers to rent space on their poles, and where prices would tend to be bid
8 down to levels approximating true marginal cost, which in the case of pole attachments, is
9 essentially the cost of make-ready. In a truly competitive market, there would be multiple pole
10 owners with their own infrastructure, each vying for buyers to rent space on their poles. Under
11 these circumstances, prices would tend to be bid down to levels approximating marginal cost,
12 which is essentially the cost of make-ready, i.e., the costs of rearranging and adding space on an
13 owner's poles. In the absence of competitive market conditions, the FCC cable rate formula
14 methodology, which more closely applies a cost causative allocation methodology, better mimics
15 the outcome of a competitive market with its resultant benefits to consumers (including
16 NOVEC's owner/members of lower broadband rates and a greater array of innovative and
17 advanced service offerings).

⁵⁹ See FCC, Connecting America: The National Broadband Plan, at 110 (2010) available at <http://www.broadband.gov/download-plan/> ; In re Implementation of Section 224 of the Act, Order and Further Notice of Proposed Rulemaking (2010), 25 FCC Rcd. 11864 ¶¶ 110-118 (2010). See also April 7, 2011 Order ¶¶ 172-181.

1 Sixth, the Cable Formula provides for a more straightforward, consistent and predictable
2 formula application - qualities of utmost importance to firms in making business case decisions
3 to invest in new technology and to roll-out new services.

4 Seventh, as a closely-related point, the Cable Formula is the easiest and least costly cost-
5 based methodology to implement and administer, as it engenders fewer areas of contention due
6 to the formula's simplicity and the straightforward nature of its data inputs relative to other
7 alternative methodologies. The Cable Formula is used to set rates for investor owned utilities in
8 Virginia, and is easily reproducible by other electric cooperatives and attachers across the
9 Commonwealth. In particular, because the cable formula is strictly based on a proportionate cost
10 allocator, it does not need a number of inputs required to run the telecom formula, i.e., the
11 number of attaching entities and the feet of unusable space, and in the case of the revised telecom
12 rate formula, a just and reasonable cost factor. This is particularly important as these inputs are
13 often areas of dispute among the parties, and the utility and pole specific audit data that would be
14 needed to verify these numbers are often not available.⁶⁰

15 And finally, a particularly important advantage of the Cable Formula is that it is the most
16 widely used and time-tested formula - not just because of its mandated use at the federal level,
17 but due to its widespread adoption by the overwhelming majority of states that regulate pole
18 attachments (and have greater discretion with regard to methodology).

⁶⁰ The Ohio regulatory body tasked with regulating pole attachment rates agrees. *In re Columbus & S. Elec. Co., Case Nos. 81-1058-EL-AIR, 82-654-EL-ATA*, Ohio Public Utilities Commission, 50 P.U.R.4th 37 (1982) ("We hope, and expect, that this decision will simplify the process of determining pole attachment rates, without sacrificing the reasonableness of the result.")

1 **Q. IS THE FCC FORMULAIC APPROACH, AND THE CABLE FORMULA IN**
2 **PARTICULAR, IN YOUR OPINION AS AN ECONOMIST, CONSISTENT WITH**
3 **APPLICABLE LAW IN VIRGINIA AND WITH THE SCC FINDINGS IN 2011 REPORT**
4 **TO THE GENERAL ASSEMBLY?**

5 A. Yes. As the Commission recognized in its November 1, 2011 Report to the Virginia
6 General Assembly at 19-20, “there is a range of possible approaches for establishing pole
7 attachment rates with the lower end of the range represented by an incremental cost approach
8 and the upper end represented by a fully allocated approach” (citing earlier at pages 11-12 to
9 FCC definitions of the terms) with “neither end of the range necessarily appropriate or
10 inappropriate.” The Commission further concluded that “the best approach for Virginia is
11 dependent on the desired public policy objective,” citing to considerations for example, of such
12 factors as broadband deployment and avoidance of cross-subsidization.

13 In my opinion, the FCC’s formulaic approach, and the Cable Formula in particular,
14 recognizes and incorporates data inputs that are entirely consistent with the Commission findings
15 in the 2011 Report and also with respect to the three-fold criteria set forth in VA Code §56-
16 466.1(f)(2).

17 **Q. PLEASE EXPLAIN WHY IN YOUR OPINION THE CABLE FORMULA BEST**
18 **SATISFIES THE THREE FOLD CRITERIA IN VIRGINIA?**

19 A. VA Code §56-466.1(f)(2) (“the Statute”) identifies the following three criteria for J&R
20 attachment rates:

21 In determining pole attachment rates, the Commission shall consider (i) any effect of
22 such rates on the deployment or utilization, or both, of broadband and other

1 telecommunications services, (ii) the interests of electric cooperatives' members, and (iii)
2 the overall public interest
3

4 For reasons I will elaborate on later in this section of my testimony, the Cable Formula best
5 satisfies the three-fold criteria of the Statute. It is most consistent with the Commonwealth's
6 statutory goal to promote broadband; it, together with make-ready reimbursements, fully
7 compensates pole owners and thus is consistent with the interests of NOVEC's members (most
8 of whom are also customers of third party communications attachers); and, it is in the public
9 interest because it is reproducible by other cooperatives and attachers, and relies on publicly
10 reported and available data, which is especially critical where, as here, the pole owner offers a
11 competing service.

12 The Cable Formula is also consistent with the language in the Virginia Statute that
13 provides that "cost recovery for rearrangement, make-ready and pole replacement shall be
14 addressed in terms and conditions, and shall not be included in annual rental rates." Under the
15 FCC approach, such recovery is effectuated through direct reimbursements by the cost causer in
16 the form of make ready charges, and other fees that the pole owner may charge third party
17 attachers over and above the recurring rental rate set by the formula.

18 **Q. THE COMMISSION, IN ITS 2011 REPORT, DESCRIBED THE FCC FORMULA**
19 **AS A HYBRID APPROACH OF INCREMENTAL AND FULLY ALLOCATED. DO YOU**
20 **AGREE?**

21 A. I agree that the FCC's formulaic approach – to the extent that it allows the pole owner to
22 recover both incremental costs (through make ready and other direct reimbursement fees) and a
23 proportional amount of fully allocated costs (in the recurring rental rate)- is a blend of the two

1 approaches. Indeed, this aspect of the FCC methodology is cited favorably by courts, who over
2 the years have consistently found that the FCC formula produces rates that recover more than the
3 pole owner's incremental costs, are more than fully compensatory to the pole owner, and do not
4 effectuate a cross-subsidization of communications customers at the expense of the pole owner
5 or its customers.

6 **1. Applicability of Cable Formula to Electric Cooperatives Generally**

7 **Q. IS IT APPROPRIATE TO APPLY THE CABLE FORMULA TO ELECTRIC**
8 **COOPERATIVES, WHICH ARE NOT GOVERNED BY SECTION 224 OR THE FCC'S**
9 **JURISDICTION?**

10 A. Yes, in fact, there are compelling economic and public policy reasons for doing so. From
11 an economic cost perspective, the particular organizational charter or mission of the *attaching*
12 *entity* does not impact the amount of space occupied by the *attachment*, or the costs incurred by
13 the pole owner in connection with the cable attachment.

14 The foundation underlying the economic regulation of pole rates pursuant to Section 224
15 of the Communications Act is the fact that pole-owning utilities, by virtue of historical
16 incumbency, own and control existing pole plant to which cable operators and other third-parties
17 have no practical alternative but to attach. Where a utility has absolute control over essential
18 bottleneck facilities, in the absence of effective pole regulation, pole-owning utilities are in a
19 position to limit access to these essential bottleneck facilities and/or to extract excessive
20 monopoly rents.⁶¹

⁶¹ See *NCTA v. Gulf Power*, 534 U.S. 327, 330 (2002) ("Since the inception of cable television, cable companies have sought the means to run a wire into the home of each subscriber. They have found it convenient, and often

1 As mentioned earlier, that attachers may be able to run their cable underground, as an
2 alternative to attaching to the existing network of utility poles does not detract from the essential
3 facility nature of the pole attachments. What is relevant from an economics perspective, is not
4 that such an alternative siting location is available, or even that the alternative is currently being
5 used by an attacher. What is relevant is whether the practical, technical, and economic attributes
6 associated with that alternative make it a sufficiently close substitute in a real economic sense,
7 meaning whether the fact of its existence serves to materially limit the monopoly pole owner's
8 ability to charge an excessive monopoly level price for access to the pole facility.

9 Because the alternative of going underground generally entails materially higher costs
10 than aerial (as well as greater delay in getting their services to end user customers), it does not
11 provide an effective constraint on the pole owner's ability to exercise monopoly power over the
12 pole asset. (Indeed, as pointed out earlier in my testimony, Virginia electric utilities themselves
13 have noted the many cost-based and technological benefits of placing distribution facilities
14 aerially rather than underground). Indeed, but for the pole owner's exercise of monopoly power,
15 the decision to go underground would generally not be made. In effect, by charging excessive
16 monopoly level rates on aerial attachments, the monopoly pole owner is able to leverage its
17 monopoly power over aerial attachments into the underground as well, magnifying the impact of
18 its monopoly power even more. In any event, to the extent communications attachers make the
19 decision to go underground, they are doing so at the margin, for additional attachments. They

essential, to lease space for their cables on telephone and electric utility poles. Utilities, in turn, have found it convenient to charge monopoly rents.”).

1 are still subject to excessive monopoly pricing on the significant number of existing aerial
2 attachments.

3 Accordingly, even when the option of going underground exists, the control of the
4 essential bottleneck pole facility effectively affords the utility a key gatekeeper role with respect
5 to the roll-out and availability of new or advanced internet and broadband services in its service
6 area, an increasingly significant public policy concern in recent years. Again, this is particularly
7 undesirable when the pole owner, like NOVEC, competes with the communications attachers
8 who need access to the existing utility network of poles.

9 The same structural economic conditions underlying the need for effective economic
10 regulation of pole attachments apply equally to electric cooperatives such as NOVEC as they do
11 to investor owned utilities subject to Section 224 regulation. Where competitive market
12 conditions do not exist (as is the case with pole attachments), and in the absence of effective
13 regulatory involvement, there are no external pressures or self-imposed discipline on the utility
14 to constrain the prices it charges for these bottleneck facilities to levels remotely approximating
15 marginal costs - the true economic costs to the utility of third party attachment on surplus space
16 that would otherwise go unused on its poles. Under these conditions, it makes no sense to talk in
17 terms of a "free market" rate. Instead, rates are being set in a grossly unbalanced negotiating
18 environment where the pole owner, regardless of its size, or organizational charter, has an
19 inordinate amount of leverage over third-party attachers and can impose excessive monopoly
20 level rates. The monopoly pole owner always has the upper hand by its ability to threaten, and in
21 the absence of effective regulation, to carry out on its threat, to remove the third-party
22 attachments from its pole. This is especially undesirable, from an economic and public policy

1 perspective, where, as is the case with NOVEC, the pole owner competes with the attachers for
2 whom pole attachments are an essential facility.

3 Moreover, operationally, electric cooperatives use the same type of plant, technology,
4 and production techniques to provide electricity service to subscribers and in the same basic
5 manner as IOUs. Perhaps more importantly, they have inherently the same opportunity and
6 incentive to leverage their monopoly ownership and control over the existing distribution
7 network of poles - to which third party entities have found it essential to attach - to extract
8 excessive rates. If anything, electric cooperatives have a lower cost structure than IOUs owing
9 to, for example, their tax-exempt status and their ability to access low interest borrowing, such
10 that if a free market for pole attachments existed (which it does not), one would expect to see
11 rates for pole attachments charged by cooperatives set at lower levels than those charged by
12 IOUs. Over the past decade or so, this has not been the case, as cooperatives exempt from the
13 pricing constraints mandated in Section 224, have been free to raise rates to higher and higher
14 levels vis-à-vis those set for IOUs under economic regulation under either federal or state
15 jurisdiction.

16 **Q. NOVEC CITES SPECIFICALLY TO THE HISTORIC EXEMPTION OF**
17 **COOPERATIVES FROM THE DEFINITION OF UTILITY IN THE POLE**
18 **ATTACHMENT ACT. HOW, IF ANY, DOES THAT FACT AFFECT YOUR**
19 **RECOMMENDATION OF THE CABLE FORMULA TO THE SCC?**

20 A. That cooperatives such as NOVEC have historically been excluded from the definition of
21 utility in the Pole Attachment Act subject to FCC pole regulation is an issue related solely to the
22 FCC's jurisdiction (created by Congress in the context of the then applicable facts) and does not

1 in any meaningful way refute the applicability of the fundamental economic conditions of
2 demand and supply facing cable and other third-party attachers needing access to poles owned by
3 electric cooperatives. Any notion that the market dynamics would be different in the case of a
4 non-profit consumer-owned entity such as NOVEC is belied by the monopoly level rate rates
5 proposed by NOVEC in this case, consistent with similar actions by other electric cooperatives
6 around the country in recent years.

7 The Cable Formula was implemented by the FCC over thirty years ago (and by many
8 state regulators since then) to promote the development of what was at that time a relatively new
9 industry. This point is often made by pole owning utilities to suggest the formula is no longer
10 necessary. To the contrary, given the increased opportunities for utilities to compete with third-
11 party attachers (along with the increased economic and social benefits associated with the
12 deployment of new or advanced internet and broadband services), the benefits of adopting a
13 uniform, administratively simple, predictable, and economically efficient cost-based formula
14 methodology for setting pole attachment rates, such as the Cable Formula, is of even greater
15 importance in recent years than it was decades ago. These very same reasons highlighting the
16 increasing relevance of the Cable Formula apply to all manners of utilities, including coops such
17 as NOVEC.

18 In 1978, Congress opted to exclude poles owned by electric cooperatives from Section
19 224 FCC jurisdiction mainly because at that time rents charged by these entities were
20 significantly lower than rents charged by investor owned utilities. Specifically, Congress found

1 that in 1978, “cooperative utilities charge[d] the lowest pole rate to CATV pole users.”⁶² As
2 demonstrated by the rates paid by Comcast to pole owners in Virginia and Maryland, produced
3 in response to discovery, this is no longer true. Coop rates are four to five times more than IOU
4 rates in Virginia.⁶³

5 To this very point, the present exclusion of electric cooperatives from the FCC pole
6 attachment rules governing other electric utilities was identified as a “key gap” in its National
7 Broadband Plan Policy Framework.⁶⁴ In its final report to Congress, the FCC expressly
8 concluded “[t]he exclusion of co-operatives from Section 224 regulation may impede broadband
9 deployment in rural areas” and proposed that “Congress consider amending Section 224 of the
10 Act to establish a harmonized access policy for all poles, ducts, conduits and rights-of-way” that
11 would apply to currently excluded pole owners including cooperatives such as NOVEC.⁶⁵

⁶² 1977 Senate Report at 18, 1978 U.S.C.C.A.N. 109, 1t 126.

⁶³ See EXTRAORDINARILY SENSITIVE Exhibit PDK-8 (Comcast Response to NOVEC #47).

⁶⁴ See Press Release, Federal Communications Commission, *Options for A National Broadband Plan: Task Force Provides Framework for Final Phase in Development of Plan* (December 16, 2009) (“The American Recovery and Reinvestment Act of 2009 directed the FCC to submit a National Broadband Plan to Congress... that addresses broadband deployment, adoption, affordability, and the use of broadband to advance solutions to national priorities, including health care, education, energy, public safety, job creation, investment, and others.”) At its December 16, 2009 Open Meeting, the FCC presented a “National Broadband Policy Framework” that identified as an option under consideration: “amend section 224 to establish a consistent national framework for all poles, ducts, and conduit” that would have included cooperatives and municipalities.

⁶⁵ The FCC sent its final report to Congress on March 16, 2010. Press Release, Federal Communications Commission, *FCC Sends National Broadband Plan to Congress: Plan Details Actions for Connecting Consumers, Economy with 21st Century Networks* (March 16, 2010), <http://www.fcc.gov/>. The Final Report expands on the recommendation to amend Section 224 to apply to cooperatives. See Report at 130-131, inclusive of footnote 32. “(RECOMMENDATION 6.5: Congress should consider amending Section 224 of the Act to establish a harmonized access policy for all poles, ducts, conduits and rights-of-way.

Even if the FCC implemented all of the recommendations related to its Section 224 authority, additional steps would be needed to establish a comprehensive national broadband infrastructure policy. As previously discussed, without statutory change, the convoluted rate structure for cable and telecommunications providers will persist. Moreover, due to exemptions written into Section 224, a reformed FCC regime would apply to only 49 million of the nation’s 134 million poles. In particular, the statute does not apply in states that adopt their own system of regulation and exempts poles owned by co-operatives, municipalities and non-utilities.³² The nation needs a coherent and uniform

1 Moreover, by specifically subjecting electric cooperatives to state regulation of pole
2 attachments, the Virginia legislature appears to have recognized that the same reasons that gave
3 rise to the need for effective regulation of IOU pole attachments are not dependent on the
4 organizational charter of the pole-owning utility. As explained earlier, the same structural
5 economic conditions apply to electric cooperatives such as NOVEC as they do to IOUs that have
6 been subject to regulation for the past several decades. Preventing a pole-owning utility from
7 charging excessive rates to the detriment of competition and the consuming public, is precisely
8 what pole rate regulation is designed to address, and the same public policy rationale applies here
9 in Virginia for cooperatively owned electric distribution companies such as NOVEC pursuant to
10 VA Code §56-466.1 as for IOUs, which happen to be regulated by the FCC.

policy for broadband access to privately owned physical infrastructure. Congress should consider amending or replacing Section 224 with a harmonized and simple policy that establishes minimum standards throughout the nation—although states should remain free to enforce standards that are not inconsistent with federal law.”); see also Footnote 32 (“Nineteen states and the District of Columbia (representing approximately 45% of the U.S. population) have exercised this type of “reverse preemption” and have certified that they directly regulate utility-owned infrastructure in their regions. *See Corrected List of States That Have Certified That They Regulate Pole Attachments*, WC Docket No. 07-245, Public Notice, 23 FCC Rcd 4878 (WCB 2008). Section 224(a)(1) expressly excludes poles owned by cooperatives from regulation, an exemption that dates back to 1978. According to the National Rural Electric Cooperative Association, electric co-operatives own approximately 42 million poles. Letter from David Predmore, National Rural Electric Cooperative Association, to Marlene H. Dortch, Secretary, FCC, GN Docket Nos. 09-47, 09-51, 09-137, WC Docket No. 09-245 (Feb. 26, 2010). *The exclusion of co-operatives from Section 224 regulation may impede broadband deployment in rural areas*. For instance, one small broadband cable company claims that it ceased offering service in two rural communities in Arkansas because of an increase in pole attachment rates by unregulated electric cooperatives that owned the poles in those communities. Letter from Bennett W. Hooks, Jr., Buford Media Group, LLC, to Bernadette McGuire-Rivera, Assoc. Adm’r, Office of Telecom. & Info. Admin., Dep’t of Comm. (Apr. 13, 2009) at n.2, 3, *available at* <http://www.ntia.doc.gov/broadbandgrants/comments/79C5.pdf>.”)(*emphasis added.*)

1 **Q. COULD YOU PLEASE ELABORATE ON YOUR EARLIER TESTIMONY THAT**
2 **THE CABLE FORMULA BEST SATISFIES THE CRITERIA TO BE CONSIDERED IN**
3 **SETTING POLE RATES IDENTIFIED IN VA CODE §56-466.1?**

4 A. As identified above, the applicable Virginia law identifies three criteria to be used by the
5 Commission in determining pole attachment rates: (i) any effect of such rates on the deployment
6 or utilization, or both, of broadband and other telecommunications services; (ii) the interests of
7 electric cooperatives' members; and (iii) the overall public interest. I will address each one here.

8 **a. Virginia Statute Criteria (i): Any Effect of Such Rates on the**
9 **Deployment or Utilization, or Both, of Broadband and Other**
10 **Telecommunications Services**
11

12 It is widely acknowledged that pole attachments are a vital input needed for the delivery
13 of new, advanced broadband services and applications. It is fundamental economic theory that
14 pricing a vital input (i.e., pole attachments) at a lower, more efficient rate (such as the rate
15 produced using the Cable Formula), that more closely tracks a competitive rate level, will have
16 important beneficial impacts on both the supply of and demand for the final services market (i.e.,
17 broadband communications). This core economic concept is manifest in the real world in many
18 ways.

19 Having to absorb higher pole rents directly (and negatively) impacts the ability of
20 broadband service providers' ability to meet financial and investment obligations including those
21 related to the build out of infrastructure needed to support the widespread deployment of
22 advanced broadband services and technologies, including interconnected VoIP services.
23 Broadband companies are not generally in a position to flow through to customers higher pole
24 costs given the increasing price-constraining competition and market conditions they face –

1 conditions which are quite different from those facing the utility in regard to its provision of
2 electric distribution services.

3 However, to the extent broadband companies are able to do so in selected markets, in the
4 face of higher pole costs, they will raise the cost of broadband and interconnected VoIP services
5 in those markets, thereby reducing the ability of consumers (who include NOVEC's owner
6 members) to afford and enjoy the widely-acknowledged economic and social benefits of
7 affordable access to broadband services in today's information age economy.

8 As is generally the case, and especially so in less densely populated areas, many poles
9 can be required to serve an individual subscriber, such that the price charged per pole attachment
10 can have a very significant impact on the cost to serve any one broadband subscriber. As
11 described in more detail in my discussion of the second criteria, I have estimated the potential
12 impact of NOVEC's higher proposed pole rates (vis-à-vis the rate proposed using the Cable
13 Formula I am recommending be adopted) on the average broadband subscriber rate as being in
14 the range of \$5 to \$6 a month, or \$134 to \$156 per year. The impact effects I have estimated in
15 connection with NOVEC's proposed rates are consistent with levels identified in the FCC
16 Broadband Report and that supported the FCC's overall conclusions that lower pole rates could
17 have a significant positive effect on broadband penetration and affordability, and its specific
18 recommendation that rates for all pole attachments be set as low and as close to uniform (in the
19 vicinity of the current cable rate) as possible to support the goal of broadband services
20 deployment.⁶⁶

⁶⁶ See Chapter 6 of FCC National Broadband Report, at 110.

1 Moreover, consumer demand for broadband is relatively price sensitive or “price elastic.”
2 Accordingly, any increase in the price of broadband services is, all else being equal, likely to
3 result in a proportionately greater percentage reduction in the quantity of the service demanded -
4 further supporting the conclusion that higher pole rates that contribute (in the manner described
5 above) to higher broadband service rates will, all other things being equal, have a significant
6 dampening effect on broadband service penetration and adoption rates. And vice versa: any
7 decrease in the price of an elastic service such as broadband will, all else being equal, result in a
8 proportionately greater increase in the quantity of service demanded, such that lower pole rates
9 can be expected to have a significant stimulating effect on the purchase of broadband services.

10 For these basic reasons, setting rates for pole attachments at lower, economically efficient
11 levels will better promote a more well-functioning broadband services market from the
12 perspective of both the production (supply) side and the consumption (demand) side. As such,
13 charging efficient rates for a vital input to broadband services such as pole attachments is
14 necessary to help create an environment that is most conducive to the provision of a greater array
15 of innovative and advanced broadband services including associated advanced services like VoIP
16 - and at lower rates. And to the contrary, allowing pole attachment rates to be set at higher
17 monopoly rate levels works at cross purposes to the creation of such an environment, which, as
18 expressed by policymakers nationally, and in Virginia, is a highly desirable public policy
19 objective.

20 The need for, and resultant benefits of, broadband connectivity and its applications at
21 affordable prices, has made its way into almost every aspect of modern life including health,
22 education, public safety, recreation and culture, commerce, and government. These are all points

1 emphasized in the FCC’s National Broadband Report, and perhaps even more importantly, in
2 numerous planning documents and reports published here in Virginia, recognizing the growing
3 importance of broadband to Commonwealth residents in all areas of the state of promoting the
4 deployment and affordability of broadband services.⁶⁷

5 I would make one final observation regarding the effect of pole attachment rates on the
6 deployment or utilization of broadband and other telecommunications services. Virginia directly
7 competes with other states for economic development opportunities and in attracting and
8 retaining a highly educated and skilled labor force. If Virginia were to permit cooperatively
9 owned utilities such as NOVEC to adopt a pole rate formula for broadband services considerably
10 higher than at the rate produced using the Cable Formula, significant portions of the
11 Commonwealth could be placed at a distinct competitive disadvantage, expressly counter to the
12 expressed public policy goals of the Commonwealth.

⁶⁷ See, e.g., Office of Telework Promotion and Broadband Assistance Report, at 4. (“Access to affordable broadband service is no longer an option, it is an imperative.”); 2011 Annual Status Report on Broadband Activities in the Commonwealth (“Wired Report”), available at <http://www.wired.virginia.gov/pdf/Broadband%20Activities%20in%20the%20Commonwealth%20-%202011.pdf> at 4 (“The Commonwealth of Virginia and its partners are committed to bring affordable broadband to all Virginians.”); Daniel Mege, Thomas Jefferson Institute for Public Policy, Connecting America: The economic benefits to expanding advanced broadband internet access (Nov. 2011) (“Jefferson Report”), available at <http://www.thomasjeffersoninst.org/files/3/Connecting%20Virginia%20Policy.pdf> (“The benefits from expanding access, bandwidth, and speeds of broadband or high speed internet in the Commonwealth of Virginia are vast and vital, particularly for Virginia’s rural areas; and the need for expanding quality broadband has never been more clear. America, overall, is lagging the world in broadband access as well as in terms of the price Virginians pay for high speed service. Virginia, however, scores better than the national average on measures of penetration, with only about one percent of Virginians remaining without access to any form of broadband. Meanwhile, the benefits from broadband lie in its ability to spur job creation and innovation, drive cost reductions and increased market access, and improve the delivery of education and health-related services. Broadband can promote conservation by eliminating travel time via e-commerce and reducing paper consumption as businesses and households go digital. For maximum benefit, broadband access must be widely available (reaching the largest number of Virginians), deep (providing the necessary capacity/speed), and cost-competitive (low prices driven by competing providers). While Virginia does better than national norms on *measure of availability*, it scores poorly in terms of its depth and prices vary significantly across the Commonwealth.”)

1 **b. Virginia Statute Criteria (ii): The Interests of Electric Cooperatives'**
2 **Members**

3
4 The Cable Formula is a fully allocated rate formula, which, by definition, provides for
5 recovery of costs that would occur even in the absence of the third party attacher. Accordingly,
6 and for use of otherwise vacant space on the pole, the Cable Formula provides for recovery of
7 much more than the incremental costs – the criteria under well-established economic principles
8 and the related legal concept of just compensation – that is required to avoid a cross-subsidy of
9 the communications service by the utility and/or its customers (in the case of NOVEC, its
10 owner/members). Again, to the extent space is not already available on a pole (i.e., otherwise
11 vacant or surplus space), under the FCC methodology, the attacher is subject to additional make
12 ready charges to reimburse the pole owner for any out of pocket or true “but for” costs (such as
13 for rearrangements and pole modifications or replacements as necessary to accommodate the
14 attachment) and that apply over and above the Cable Formula rate that applies on an annual
15 recurring basis. On top of these charges, the utility also typically charges an attacher other direct
16 reimbursement fees, including fees for such administrative items as application processing, field
17 surveys, inspections and audits. In this case, NOVEC refuses to specifically identify how much
18 third party attaching entities reimburse it for directly, notwithstanding the fact the Comcast and
19 Staff have requested this information, and that it maintains an electronic data base that includes
20 this information, claiming that it is not required by the Statute to run such a report.⁶⁸

⁶⁸ Exhibit-PDK-6 (Staff-35 to NOVEC); Exhibit-PDK-5 (NOVEC Responses to Comcast I-14, Comcast-V-4, Comcast-V-43, Comcast VI-47, Comcast-VI-54, Comcast-VIII-3, Comcast-VIII-4, Comcast-XI-5, Comcast-XI-6, Comcast-XI-7, and Comcast-XI-8).


1 Because of this additional compensation (which as documented for Comcast in PDK
2 Exhibit-2 can be quite substantial) over and above the regulated rate, plus the fact that any
3 upgrades to the pole made and paid for by the attacher through the make-ready process become
4 property of the utility, NOVEC's owner/members stand to be made *much better off* financially
5 after the accommodation of an additional attachment. This can occur in any of the following
6 ways:

- 7 • The utility receives in excess of the incremental costs it incurs through the combination
8 of make-ready and other direct fees plus the rental rate, providing a source of
9 contribution to the cost of providing core electric distribution service that it otherwise
10 would not have, but for use of otherwise available pole capacity;
- 11 • When poles are modified or replaced (at the attaching entity's expense), the utility
12 typically ends up with greater available pole capacity as compared with pre-attachment,
13 because the modified or replacement poles are stronger, taller and/or in better condition;
- 14 • The utility has the benefit of a stronger and often a newer pole for its own operations at
15 the attacher's expense, and can realize savings (or deferred capital expenditures) to its
16 own build-out program; and
- 17 • With more potential space available on the pole to accommodate additional uses and/or
18 users, the utility can realize additional sources of revenue.

19
20 NOVEC's owner/members also stand to benefit financially from the shared use of utility
21 poles as consumers of electricity service. The contribution received by NOVEC for use of
22 otherwise available capacity, or to its capital program, through the process of make-ready
23 (including pole replacement) at the attacher's expense, should translate into a reduced revenue
24 requirement needed to be recovered through regulated electricity rates. The sharing of the
25 utility's existing pole network – an asset that has historically been paid for and maintained

1 primarily using owner/member dollars – allows for more effective utilization of the asset, and
2 hence a means of effectively enhancing the return on owner/member’s dollars.

3 In addition, as discussed in connection with the first criteria above, NOVEC’s
4 owner/members, as consumers of communications services, are also the beneficiaries of lower
5 rates and expanded and/or advanced service offerings in the convergent communications
6 marketplace and the growing number of markets dependent on advanced broadband services that
7 a pole rate set at or in the vicinity of the Cable Formula rate will promote. In contrast, the
8 negative economic impact of high pole attachment rates (i.e., at or near the level proposed by
9 NOVEC) in the broadband services market is magnified by the fact that there would be little to
10 any offsetting value gained by NOVEC’s owner/members in the electricity market, where very
11 different economic conditions exist. These conditions include:

12  The true marginal costs of pole attachments (i.e., the costs that truly, but for the existence
13 of third party attachers, would not otherwise exist for the utility in providing its core
14 electric distribution service as distinct from the types of costs identified by NOVEC, and
15 which as described in the preceding section of this testimony, the overwhelming majority
16 of which are not true “but for” costs under objective economic criteria) - are extremely
17 small when one looks at costs that are not already recovered in the set of make-ready or
18 direct reimbursable fees the utilities charge attachers.⁶⁹ This means, even if there were no
19 third party attachers, the electric distribution company’s actual pole attachment related
20 costs would not go down much.

21 • Unlike the demand for broadband service, the demand for electric distribution service is
22 what economists refer to as price *inelastic* (i.e., not sensitive to changes in price) such

⁶⁹ Along with the FCC and others, I have previously measured these recurring marginal costs to be in the order of magnitude of \$1.00 to \$1.50 annually per attachment for electric utilities.

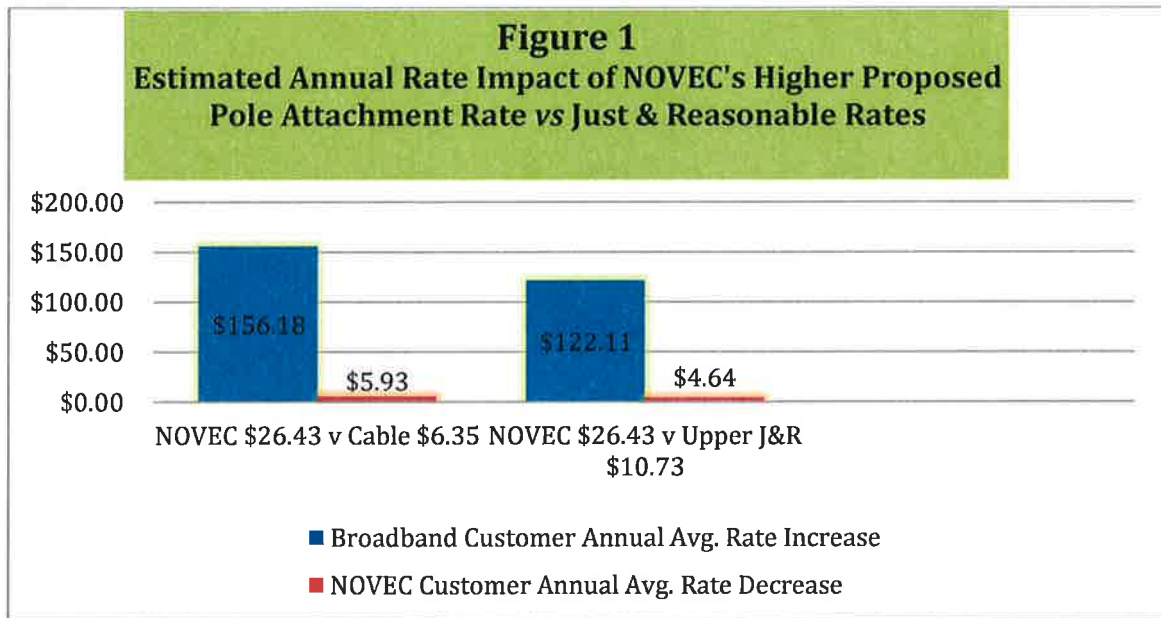
1 that even if it could be shown that rates for electric customers would increase (which is
2 unlikely), there would be little if any real impact on demand for elasticity, whereas the
3 converse is true for broadband service. As explained in connection with the first criteria,
4 in the case of broadband service, even relatively small changes in price will have a
5 significant dampening effect on service adoption rates.

- 6 • The negative impact of high pole attachment rates such as proposed by NOVEC on the
7 prices for broadband services paid by NOVEC owner/members is magnified by the little
8 to any offsetting positive impact that those higher pole attachment rates might have on
9 the rates NOVEC's owner/members pay for electricity service, since the impact of higher
10 pole attachment rates on a per electric subscriber or per kilowatt hour basis is very small
11 in contrast to the relatively large impact per broadband subscriber. (Given NOVEC's
12 very high level of retained earnings, there is no evidence to demonstrate the process by
13 which electric customers would actually see any reduction in the rates they paid for
14 electricity service if pole rentals from cable companies increase.)

15
16 This last bullet point is illustrated graphically in Figure 1 below, which summarizes the results of
17 an impact analysis I performed of the relative impacts of pole attachment rates on the average
18 prices customers paid for broadband and electricity services, respectively. The impact analysis I
19 performed compares the potential impact on the average broadband customer with the
20 corresponding impact on the average electric customer, that I calculated based on the difference
21 between NOVEC's proposed incremental rate per attachment (\$26.43) and the Cable Rate
22 (\$6.35) I am recommending as the first best option (as well the highest alternative J&R rate I
23 calculated based on the Telecom Formula rate of \$10.73.)

24 What the impact analysis demonstrates is that NOVEC's owners/members are decidedly
25 better off from lower pole rental rates, given their potentially significant positive impact on
26 broadband affordability (\$11 to \$13 dollars per month) vis-à-vis their potentially minor negative

1 impact (in the range of 40 to 50 cents per month) on rates for electricity service. The impact on
2 broadband subscribers would be even more pronounced based on a comparison of the J&R rates
3 with NOVEC's proposed base year per pole charge of \$30.60 as set forth in my Exhibit PDK-4
4 as shown in Figure 2 below.



5
6
7 In summary, because NOVEC's owner/members are also potential subscribers of broadband and
8 associated advanced services, they stand to benefit as much or more from a lower pole
9 attachment rate such as the Cable Formula rate that encourages a lower price for such broadband
10 services than from a higher pole attachment rate that will stifle broadband competition,
11 deployment and adoption.

12 For all the aforementioned reasons, the pole owners and their customers have much to
13 gain, and little if any to lose, from a pole attachment rate set equal to the cable rate. This finding
14 is corroborated by the fact that the National Association of State Utility Consumer Advocates

1 (“NASUCA”), a public interest group representing the interest of all consumers, including cable,
2 telephone and utility ratepayers, has consistently supported use of the Cable Formula, including
3 its most recent recommendation to the FCC to adopt a unified cable rate as the best way to
4 balance interests of the various consumer constituencies.⁷⁰ Similarly, the vast majority of utility
5 commissions in states certified to regulate pole attachment rates, expressly charged, pursuant to
6 Section 224(c)(2)⁷¹ to take into the account the impact on utility customers, have applied a
7 uniform pole attachment rate based on the cable rate, or close variation of it.

8 **c. Virginia Statute Criteria (iii): The Overall Public Interest**
9

10 The third criteria identified in the Virginia Statute reflects the overarching decision-
11 making criteria to be applied by the regulator where government regulation of industry occurs,
12 namely, the public interest standard. Applied to the instant proceeding, the public interest
13 standard dictates that the appropriate methodology for determining just and reasonable rates take
14 into consideration not only the interests of the pole owning utility or the third party seeking
15 access, and the interests of the consumers of both the utility and the third party attacher in terms
16 of the respective stakeholders’ private interests, but also the greater public good. Economists
17 refer to this concept as maximizing social welfare, and such analysis would include, but not be

⁷⁰ *Reply Comments of The National Association of State Utility Consumer Advocates* in FCC Docket 07-245, filed Apr. 22, 2008, at 1-2, 5 (“This rate was upheld against challenges that it was confiscatory. Thus this is the rate that should be used for all pole attachments, regardless of the exact service provided over the attachment, and regardless of the identity of the attacher.... Equally importantly, the Commission must not increase the rate paid by broadband service providers because this would be contrary to ‘the nation’s commitment to achieving universal broadband deployment and adoption.’”).

⁷¹ 47 U.S.C. § 224(c)(2) (“Each State which regulates the rates, terms, and conditions for pole attachments shall certify to the Commission that ... it does consider the interests of the subscribers of the services offered via such attachments, as well as the interests of the consumers of the utility services.”).

1 limited to, consideration of the public benefits of the policy in addition to the respective private
2 costs and benefits of the parties directly involved.

3 In addition to the demonstrated benefits to NOVEC and its owner/members associated
4 with allowing third party communications companies to attach to utility poles at an efficient,
5 J&R rate such as the Cable Rate (as discussed under the second criteria), there are significant
6 benefits that accrue to society at large to be considered. From a “social welfare” perspective,
7 there is economic value to society associated with the efficient use of resources, i.e., the use of
8 resources resulting in the lowest overall cost to society and the best possible utilization of those
9 resources vis-à-vis alternative uses.

10 Because utility distribution networks (including the pole component) are “natural
11 monopolies,”⁷² the shared use of a utility’s existing distribution network results in a lower overall
12 cost to the economy as a whole in terms of the consumption of societal resources. Resources that
13 would otherwise be used (unnecessarily and more expensively) to duplicate existing pole
14 networks are instead freed up and can be put to more productive uses – in particular, ones that
15 can provide concrete benefits to consumers, including the utility’s own electric ratepayers – such
16 as the provision of new and improved services, at lower prices, to consumers in the downstream
17 product markets in which access to poles are a key input.

18 In the case of utility pole attachments, these benefits are particularly significant given the
19 growing importance of the widespread availability of advanced broadband services to the

⁷² Natural monopolies mean that “economies of scale are so persistent that a single firm can serve the market at a lower unit cost than two or more firms.” F.M. Scherer, *Industrial Market Structure and Economic Performance* 482 (Rand McNally 1980).

1 economic, health, education, safety and well-being of the public (as discussed in connection with
2 the first criteria). Again, the public welfare includes NOVEC's owner/members (who are also
3 broadband customers), the customers of the attaching entity, as well as the business, educational,
4 medical, cultural, and governmental entities upon which they depend.

5 The economically appropriate standard of reasonableness, where there exists no
6 effectively competitive or well-functioning marketplace, is based on costs incurred by the pole
7 owner in relation to the cable companies' use of the pole – and *not* the benefits to the attacher,
8 such as the cost savings realized by not having to place their own duplicate facilities (not that
9 they could realistically or practically do so given existing legal, environmental, zoning, and/or
10 aesthetic constraints). Such a cost standard is consistent with the economic concept of a subsidy-
11 free rate, which holds that, as long as rates cover the incremental costs of an additional user, they
12 are economically efficient and avoid cross-subsidy. As discussed above, the Cable Formula has
13 been consistently found to provide cost recovery in excess of incremental or marginal costs,
14 especially when make-ready charges are taken into account.

15 Second, even if one goes beyond the economically appropriate standard of fairness, to
16 apply a broader, and inherently more subjective view as to what constitutes a reasonable rate,
17 i.e., to add the question of what is “fair” into the mix, the application of well-established social
18 welfare economic criteria would support the notion that a pole rental rate for third party attachers
19 that is based more closely on directly attributable or true incremental costs (as distinct from the
20 type of cost analysis NOVEC has performed, which as previously discussed is not a true “but
21 for” analysis) is “fair.” This applies not only for the private entities involved (i.e., the pole
22 owner and its electric subscribers and the attacher and its customers), but also to the greater

1 public constituency, including the residents, businesses, institutions, and visitors of Virginia who
2 benefit from broadband services.

3 In the context of a social welfare economic framework, and as explicitly recognized in
4 the first criteria of the rate review standard, the well acknowledged benefits to society of the
5 broadband services provided by the communications companies, including interconnected VoIP,
6 are essential components of any calculus as to what constitutes a just and reasonable rate.
7 Analysis by the FCC and others provides strong support for the notion that the profound, long-
8 term beneficial impacts of broadband services deployment promoted by keeping rates for access
9 to poles, conduit and rights-of-way as low as possible far outweigh any short term gain to the
10 pole owning utility from the imposition of pole rental rates at levels far in excess of the true
11 incremental or actual costs incurred in direct relation to third party attachment to its poles, such
12 as rates produced under NOVEC's proposed methodology, the highly flawed calculations of the
13 FCC Cable and Telecom formula provided by Mr. Booth in response to discovery, other
14 unsanctioned (and similarly unreasonable) industry-sponsored applications of the FCC formula
15 methodology, or the now abandoned old Telecom Formula.⁷³

⁷³ See, e.g., *FCC National Broadcast Plan* at 110; *April 7, 2011 Order* at ¶¶ 172-181.

1 2. Description of the Cable Formula Methodology and Its Specific Application
2 to NOVEC
3

4 **Q. PLEASE DESCRIBE THE FCC FORMULA METHODOLOGY APPROACH TO**
5 **SETTING POLE RATES IN GENERAL AS IT APPLIES TO BOTH CABLE AND**
6 **TELECOMMUNICATIONS ATTACHMENTS.**

7 A. The Cable Formula, which I am recommending be adopted for all communications
8 attachments, calculates a maximum annual pole attachment rent by taking the sum of the actual
9 capital costs and operating expenses of the utility attributable to the *entire* pole, expressed on an
10 annual basis, and apportioning those costs to the attacher based on an allocation of space on the
11 pole. The Cable Formula is an economically appropriate approach in that it follows cost
12 allocation principles well-established in the economics literature. Under the Cable Formula, the
13 recovery of the cost of the pole attachment is based upon the fundamental economic principle of
14 cost causation (i.e., cost-causer pays). Such costs reflect costs that would not be borne by the
15 utility *but for* the attacher, including a normal (reasonable) return to capital. Rates designed in
16 this manner prevent any potential situation of cross-subsidy between the utility pole owner and
17 the third-party attacher. As noted earlier, the Cable Formula has been well vetted over the past
18 several decades at both the federal and state levels and repeatedly found by regulatory agencies
19 and by the courts, including the U.S. Supreme Court, to produce rates that are just and reasonable
20 and fully compensatory to the utility.⁷⁴

⁷⁴ See, e.g., *In re Amendment of Commission's Rules and Policies Governing Pole Attachments, Consolidated Partial Order on Reconsideration*, 16 FCC Red. 12103, ¶¶ 15-25 (2001) ("2001 Reconsideration Order"); *FCC v. Florida Power Corp.*, 480 U.S. at 253-54 (1987) (finding that it could not be "seriously argued, that a rate providing for the recovery of fully allocated cost, including the cost of capital, is confiscatory."); *Alabama Power Co. v. FCC*, 311 F.3d at 1363, 1370; *Detroit Edison Co. v. Michigan Public Serv. Comm'n*, Nos. 203421, 203480,

1 **Q. PLEASE DESCRIBE THE MAJOR COMPONENTS OF THE FCC FORMULA**
2 **METHODOLOGY.**

3 A. Operationally, the FCC formulas for both cable and telecom attachments consist of the
4 following three major components: (1) the net investment per bare pole, (2) a carrying charge
5 factor (CCF), and (3) a space allocation factor (i.e., the percent of pole capacity attributable to
6 the attacher). Expressed as an equation, the FCC formula methodology is as follows:

7 FCC Pole Rate Formula (for both cable and telecom) = 8 9 Net Bare Pole Cost x Carrying Charge Factor x Space Allocation Factor
--

10
11 Under the federal approach, the the first two components of both the Cable Formula and
12 the Telecom Formula (old and revised), i.e., the net bare pole cost and the carrying charge factor,
13 are calculated in the same manner. Only the third component of the formulas i.e., the space
14 allocation factor - differs. The same is true of the so-called "Telecom Plus" formula advocated
15 by the coop trade association NRECA, as well as the various formula rate calculations provided
16 by Mr. Booth in response to discovery (with only a few minor exceptions about certain data
17 inputs employed by Mr. Booth). As noted earlier, the industry sponsored formula calculations,
18 in my opinion, do not produce a just and reasonable rate, but rather an excessive monopoly level

slip op., at 3-4 (Mich. Ct. App. Nov. 24, 1998) *affirming Consumers Power Co., Detroit Edison Co., Setting Just and Reasonable Rates for Attachments to Utility Poles, Ducts and Conduits*, Case Nos. U-010741, U-010816, U-010831, Opinion and Order (Mich. Pub. Serv. Comm'n Feb. 11, 1997), *appeal denied*, 461 Mich. 853, 602 N.W.2d 386, 1999 Mich. LEXIS 3252, 1999 WL 711854 (Mich.); *In the Matter of Trenton Cable TV, Inc. v. Missouri Public Serv. Co.*, PA-81-0037, ¶ 4 (rel. Jan. 25, 1985) ("Since any rate within the range assures that the utility will receive at least the additional costs which would not be incurred but for the provision of cable attachments, that rate will not subsidize cable subscribers at the expense of the public.").

1 price, by manipulating various input values used to calculate the various components of the
2 formula.

3 Under both the Cable and Telecom Formula, the net bare pole cost is calculated in the
4 following straightforward, four-step process. First, the utility's *gross* investment in pole cost is
5 determined based on amounts reported in the utility's books of account under Account 364
6 pursuant to the FERC uniform system of accounts.⁷⁵ Second, this gross investment amount is
7 converted to a *net* investment figure by subtracting accumulated depreciation for pole plant and
8 any accumulated deferred taxes applicable to poles. Third, the net investment in *bare* pole plant
9 is determined by making a further reduction (presumed by the FCC to be 15% in the case of
10 electric utilities, although as with all presumptions, actual utility data to the extent it is found
11 supportable, can be relied on instead) to remove amounts for "appurtenance" whose investment
12 is included in the pole account and not generally tracked separately, but which communications
13 attachers do not use. These include costs relating to both major appurtenances, such as cross-
14 arms, which possibly can be separately identified in the detailed subaccounts of Account 364 (as
15 appears to be true in the case of NOVEC), as well as to relatively minor appurtenances, such as
16 clamps and pins, which generally are not tracked separately from pole investment. The fourth
17 and final step is to divide the net investment in bare pole plant figure by the total number of
18 poles the utility has in service to derive a *per-unit* pole cost figure. It is this unitized net
19 investment figure that the formula multiplies by the other two components of the formula (i.e.,

⁷⁵ While only investor owned utilities are required to follow FERC uniform system of accounts, it is not uncommon for other electric utilities such as municipally-owned or electric cooperatives, such as NOVEC, to do so. Coops, like NOVEC, are subject to RUS reporting requirements that conform to the FERC. *See* 7 C.F.R. Part 1767 (Accounting Requirements for RUS Electric Borrowers).

1 the carrying charge factor and the space allocation factor) to derive a maximum per pole rental
2 rate.

3 In both the Cable and Telecom Formulas, the carrying charge factor (CCF) component is
4 used to convert the net bare pole cost into an annual rental amount that recovers the cost of
5 owning and maintaining utility poles from a fully allocated cost perspective. The carrying
6 charge factor is comprised of the sum of utility expense factors related to poles including
7 maintenance, depreciation, administrative, taxes, and overall rate of return, each expressed as a
8 percentage of expense to net plant in service. The appropriate net plant in service figure used to
9 calculate the various elements of the CCF will depend on the level of aggregation with which the
10 relevant expense data used in the numerator of the calculation is tracked in the FERC reporting
11 system or utility books of account.

12 An important principle to follow using the FCC methodology is one of consistency
13 between the level of aggregation of the expense data and the level of aggregation of the net plant
14 investment figure. The FCC methodology uses the lowest, i.e., most detailed, level of
15 accounting for which reliable, reported data is available. Once calculated, the five expense
16 elements are simply summed together prior to being multiplied against the net cost per bare pole
17 component of the formula. For example, if the carrying charge calculations yield 5% for each of
18 the five elements, the overall carrying charge factor would be 25%.

19 As mentioned above, the one place where the FCC Cable and Telecom Formulas differ is
20 in the calculation of the space allocation factor. In particular, the two formulas differ in the
21 manner in which the telecom formula allocates the costs associated with the *unusable* space on
22 the pole. The Cable Formula, like the Telecom Formula, allocates the costs of the *entire* pole

1 (i.e. costs associated with *both* usable and unusable space). It does so, however, in a more
2 straightforward manner commonly found in other commercial leasing applications, namely in
3 proportion to occupancy of the facility. As detailed further below, the Telecom Formula, on the
4 other hand, uses a per capita allocator to allocate costs associated with unusable space.

5 The overarching concept underlying the methodology employed for both the Cable and
6 Telecom Formulas is that it can be applied in a straightforward manner, using publicly available
7 information as reported in the FERC uniform reporting system where available, such that it can
8 be updated annually with a minimum of private, administrative effort, and little if any regulatory
9 involvement. (And without too much dependence upon the gatekeeper of a monopoly asset,
10 which in this case, happens to compete with the attaching entities, and that refuses to cooperate
11 in the provision of information essential to a true margin analysis). As with any formulaic
12 approach, however, the accuracy and integrity of the formula depends on the accuracy and
13 integrity of the underlying data inputs. For this reason, it is very important that the data used in
14 the formula be subject to careful scrutiny and held to a high standard as to their reliability,
15 accuracy, consistency, and ability to be verified and replicated.

16 **Q. PLEASE DESCRIBE THE CABLE FORMULA IN PARTICULAR THAT YOU**
17 **HAVE DETERMINED IS THE MOST APPROPRIATE METHOD FOR SETTING POLE**
18 **RATES IN VIRGINIA FOR COOPS SUCH AS NOVEC?**

19 A. Consistent with the principle of cost causation, Section 224(d), upon which the FCC
20 Cable Formula is based, links the pole attachment rental to marginal costs, by establishing a
21 range of reasonableness that has marginal costs as a lower bound, and fully allocated cost as an
22 upper bound. The FCC cable rate formula adheres to the greater fully allocated cost standard

1 described in Section 224(d), which, by definition, allows the utility to recover through the rental
2 rate ongoing costs much more than marginal cost.⁷⁶ It does so by allowing recovery of a cost-
3 causative portion (based on relative use or occupancy of usable space on the pole) of the utilities'
4 operating expenses and capital costs (including overall return to capital) attributable to the entire
5 pole, based on actual booked costs.

6 **Q. PLEASE EXPLAIN THE COSTS THAT ARE ALLOCATED TO ATTACHING**
7 **ENTITIES BY THE CABLE FORMULA?**

8 A. The Cable Formula, as applied to poles, allocates the cost of the entire pole to an attacher
9 in proportion to an attacher's direct use or occupancy of total usable space on the pole.

10 Expressed as an equation, the FCC Cable Formula is as follows:

11

$$\begin{aligned} & \text{FCC Cable Rate Formula} = \text{Net Bare Pole Cost} \times \text{Carrying Charge Factor} \times \\ & \quad [\text{Space Occupied by Attacher} / \text{Usable Space on Pole}] \end{aligned}$$

15

16 Using the FCC's presumptions of an average 37.5-foot joint-use pole (a blend of 35 and 40 feet
17 poles), 1 foot of space per communications attachment, and the availability of 13.5 feet of
18 "usable space" on the pole, the standard space allocator factor assigned using the Cable Formula
19 is 1/13.5 or 7.41%.⁷⁷ (Based on NOVEC specific data provided in discovery, identifying an

⁷⁶ See *Alabama Power Co.*, 311 F.3d at 1363, 1370.

⁷⁷ See *In the Matter of Amendment of Rules and Policies Governing Pole Attachments*, Report and Order, 15 FCC Red 6453 at ¶ 16 (Apr. 3, 2000) ("*FCC Fee Order*"). (Based on National Electrical Safety Code guidelines and data received during rulemaking proceedings, and "[t]o avoid a pole by pole rate calculation, the Commission adopted rebuttable presumptions of (1) an average 37.5 foot pole height; (2) 13.5 feet of usable space; and (3) one foot as the amount of space a cable television attachment occupies.")

1 average joint-use pole height of 39 feet, the corresponding space allocation factor for the Cable
2 Formula is 6.67%.)

3 **Q. IS THE FCC METHODOLOGY, AS A PRACTICAL MATTER, READILY**
4 **APPLICABLE TO COOPERATIVES SUCH AS NOVEC?**

5 A. Absolutely. As a practical matter, the FCC formula methodology is readily applicable to
6 electric membership corporations such as NOVEC, with only a few straightforward adjustments
7 pertaining to the data inputs required as described further below. The FCC rate methodology
8 relies on the investment and expense data utilities maintain in, or derive from, accounting books
9 and records. For investor-owned electric utilities, the FCC relies on uniform accounting data as
10 publically reported in the FERC Form 1 reporting system.⁷⁸ Although electric cooperatives are
11 not required to file Form 1 reports with FERC, the various pieces of data necessary to run the
12 FCC rate formula methodology for electric cooperatives are readily available, from the Rural
13 Utilities Services (“RUS”) Financial and Statistical Report and also from the SCC Annual Tax
14 Report Filings. Moreover, as a borrower of RUS funds, NOVEC is required to keep detailed
15 accounting records in accordance with the RUS system of accounts, which follow the FERC
16 system of accounts.⁷⁹ Accordingly, only a few relatively minor adjustments to the formula
17 inputs are needed in applying the Cable Formula (or Telecom Formula) to NOVEC.

18 The first adjustment pertains to the application of an appurtenance factor to the net
19 investment in *bare* pole figure used in the calculation of the net bare pole cost component of the

⁷⁸ For telephone utilities, the FCC relies on uniform system of accounting information as reported in the FCC’s ARMIS database.

⁷⁹ See 7 CFR Part 17.67.

1 formula. The FCC methodology applies a presumptive reduction of 15% to the net investment
2 figure associated with Account 364 pertaining to Poles, Tower, and Fixtures to account for
3 appurtenances directly attributable to the core electric service and which attachers do not use.
4 However, as with all FCC presumptions, the rules allow the substitution of actual utility data
5 where it is available and can be verified and supported. In the case of NOVEC, the Continuing
6 Property Records (CPR) reports provided in response to discovery requests contained detailed
7 information that separately identified major appurtenances such as cross arms.⁸⁰ Accordingly, in
8 lieu of using the standard 15% reduction factor, my calculations rely on the actual investment
9 amounts reported for poles in the CPR reports provided by NOVEC, exclusive of major
10 appurtenances separately identified on those reports.

11 The second adjustment pertains to taxes. Taxes come into play in the Cable and Telecom
12 Formulas in both the calculation of net investment figures, which are calculated net of any
13 accumulated deferred taxes, and in the calculation of the tax element of the carrying charge
14 factor. In the case of net investment, because electric cooperatives are not subject to income
15 taxes as would be an IOU, they have no reportable accumulated deferred taxes. Therefore, in
16 applying the FCC methodology to electric cooperatives, the calculation of net investment for
17 pole plant, as is the case for aggregate plant accounts used in the calculation of the various
18 carrying charge elements is calculated by deducting accumulated depreciation alone from gross
19 plant investment. In the case of the tax element of the carrying charge factor, because electric
20 cooperatives are not subject to income taxes, only a subset of the tax accounts included under the

⁸⁰ Exhibit PDK-5 (NOVEC Response to Comcast II-5).

1 FCC methodology in the tax component of the carrying charge factor are potentially applicable
2 to electric cooperatives. In the case of NOVEC, there do not appear to be any recorded book
3 amounts in any of the other FERC-equivalent tax accounts included in the FCC formula.⁸¹

4 The third adjustment pertains to the rate of return input. Under the FCC methodology,
5 this element of the carrying charge factor allows the utility to recover a normal or fair
6 (economic) return on capital from third-party attachers over and above actual cost recovery. For
7 an IOU, the capital cost element of the CCF component of the rate formula is the most current
8 authorized rate of return set by a state regulatory commission or in the absence of one, an FCC
9 default rate of return based on the weighed cost of debt and equity determined in the last FCC
10 return proceeding may be used. Because electric cooperatives are not subject to rate of return
11 regulation, have no allowed rate of return, and face a different set of capital costs than investor-
12 owned utilities, it is necessary and economically appropriate to substitute an effective “rate of
13 return” in lieu of either an allowed rate of return set by a regulatory commission or the FCC
14 default in order to calculate a maximum pole rate applicable to electric cooperatives. As a
15 cooperative, NOVEC does not need to access capital equity markets. Its sole source of capital
16 funding is through debt and borrowed funds primarily obtained from the RUS at relatively low
17 interest rates. Since NOVEC faces no actual equity risk, an economically appropriate approach
18 would be to use a “rate of return” that reflects its cost of debt, as measured by its booked interest
19 expenses. Such debt costs reflect the true opportunity cost of money as it would represent the
20 actual financing costs that an electric membership corporation such as NOVEC incurs in the

⁸¹ See Exhibit PDK-5 (NOVEC Response to Comcast II-4).

1 construction of the fixed assets underlying the net investment carried on its books. For this
2 reason, in my opinion, the cost of debt is the most reasonable proxy for the rate of return
3 component of the rate formula, and accordingly, and consistent with the actual equity risk facing
4 an electric cooperative, I have calculated a “rate of return” based on recorded interest expenses
5 reported in the RUS Form 7, effectively using the cooperative’s actual cost of long term debt as a
6 proxy for the cost of equity,⁸² of 5.4% (in the same range of, but actually somewhat higher than
7 the 4.98% return carrying charge calculated by Mr. Booth in his calculations and thus more
8 favorable to NOVEC).⁸³ My use of the cost of debt as the appropriate proxy for the rate of return
9 applicable to electric coops is also consistent with the approach taken by Staff of the Virginia
10 State Corporation Commission in a case involving NTELOS Telephone Inc.⁸⁴

⁸² The methodology I have employed is supported by the findings of the Indiana Utility Regulatory Commission (IURC) in a pole complaint proceeding involving a cooperative (Kankakee Valley Rural Membership Corporation) in which it specifically addressed the appropriate rate of return applicable to a cooperative:

We find, however, that there is some risk for owners of a co-op losing a portion of their equity deposited in the co-op and, therefore, a cost of equity should be determined. Among the measures that could be used include the cost of debt, the rate of inflation, risk-free rate or a yield on long term securities such as government or corporate bonds. KVREMC, by using the cost of debt to determine the cost of capital, assumes the cost of debt is equal to the cost of capital. Based on the evidence of record, and as proposed by KVREMC, we find the cost of debt (4.93%) to be the closest approximation to the cost of equity. *See In Re Complaint by United Tel. of Indiana, Cause No. 42755, Order at 18 (IURC Mar. 22, 2006).*

⁸³ See PDK Exhibit-6 (NOVEC Response to Staff II-23).

⁸⁴ *See* Testimony of Rosemary M. Henderson at 6, in PUE-2011-00033, recognizing the use of the cost of debt will “permit coverage for all the costs, without subsidy from the cooperative members.”

1 **3. Maximum Just and Reasonable Rates for NOVEC Calculated Using the**
2 **Cable Formula**
3

4 **Q. PLEASE IDENTIFY THE RATES YOU CALCULATED FOR NOVEC USING**
5 **THE FCC CABLE RATE FORMULA.**

6 A. In calculating maximum just and reasonable pole attachment rates using the FCC Cable
7 Formula, I have adhered strictly to the methodology and presumptive averages pertaining to
8 space on poles set forth in the FCC rules and guidelines and described in the preceding
9 discussion, with only a few minor adjustments relating to choice of data inputs used to run the
10 formula in order to properly apply the formula to a coop.

11 A summary of my rate results using the Cable Formula, in comparison with the rates
12 proposed by NOVEC (based on its incremental approach, are provided in Table 3 below. The
13 underlying calculations are provided in PDK Exhibit-3 to my testimony.

14

15

16

Table 3 Maximum J&R Pole Attachment Rates For NOVEC Under FCC Cable Rate Formula		
Based on Year Ending 2012	J&R	NOVEC
Net Inv. Per Bare Pole	\$408.24	n/a
x Carrying Charges	20.99%	n/a
x Space Factor	7.41%	n/a
Rate/Attachment	\$6.35	\$26.43

1 **Q. HOW DO YOUR CALCULATIONS OF THE CABLE RATE FORMULA DIFFER**
2 **FROM THOSE PROVIDED BY MR. BOOTH IN DISCOVERY?**

3 A. It is a testament to the straightforward nature of the FCC rate methodology, and the Cable
4 Formula in particular (in contrast to NOVEC's proposed approach) that there is effectively little
5 dispute as to the basic mechanics of the formula. NOVEC did not present any calculations of the
6 Cable Rate in its direct case and has reiterated a number of times that it is not using the FCC
7 Cable Formula or its formulaic methodology. However, in response to discovery, NOVEC
8 witness Mr. Booth has offered four calculations which he labels as FCC calculations: two
9 variations he has labeled as "FCC Cable-Only Rates," and two variations he labels as "FCC
10 Telecom Rate."⁸⁵

11 While again, it does not appear that NOVEC is proposing the SCC adopt rates based on
12 Mr. Booth's calculations, the rates produced by Mr. Booth are so out of line with what a proper
13 allocation of the FCC formula methodology would produce, that they warrant further discussion.
14 Indeed, Mr. Booth's calculations diverge from established FCC (and state) applications of the
15 formula methodology that it is really a misnomer in my opinion for him to have identified his
16 formulas using the nomenclature "FCC Cable" and "FCC Telecom" as those terms have come to
17 have very specific meanings in the regulatory arena. In particular, what Mr. Booth identifies as
18 the "attacher responsibility percentages" range from 30% to 40% in his formulations, whereas
19 using standard FCC presumptions, the appropriate cost allocation factors (factors that have been
20 repeatedly found over the years to result in just and reasonable allocations) are 7.41% for the

⁸⁵ See PDK Exhibit-6 (NOVEC Response to Staff II-23).

1 Cable Formula and between 11.20% and 16.89% for the Telecom Formula. When calculated
2 using certain NOVEC system data, such for as average pole height, those cost allocations under
3 the true FCC methodologies are even lower, as NOVEC's average joint use pole height is
4 somewhat taller and accordingly, attachers occupy a smaller percentage of available usage space
5 on the pole.

6 In this section of my testimony, I will address the many flaws in his calculations
7 pertaining to his calculation of the FCC Cable Rate, although many of them carry over into the
8 calculation of the Telecom Rate, given the first two components of the two rate formulas (net
9 bare pole cost and carrying charge factor) are identical under the FCC methodology.

10 a. Inputs to Net Bare Pole Cost

11 Mr. Booth's calculations produce a net bare pole cost figure of \$646.10, as compared
12 with the comparable figure from the J&R calculation as identified in Table 3 above of \$408.24,
13 reflecting an overstatement of 58%. Mr. Booth's overstated net bare pole cost is the result of a
14 number of compounding errors. First, he uses a "gross pole investment" amount that
15 inappropriately includes investment in major appurtenances, which are very explicitly excluded
16 from the FCC formula calculation, as is appropriate, since this investment is associated with
17 equipment that is either not used by attachers and/or not useful to them (i.e., pertain only to the
18 provision of the core electric service). As noted earlier, the FCC uses a presumptive value for
19 appurtenances of 15%, but NOVEC'S CPR data shows a much higher percentage of Account
20 364 investment is associated with appurtenances. By contrast, Mr. Booth applies no reduction
21 for appurtenances (as shown by his factor value of 1.0)

1 Second, he divides the net pole investment figure (itself overstated as just described) by
2 the wrong universe of poles. The formula, as his label suggests, uses the “total number of poles”
3 booked to Account 364. Mr. Booth uses a smaller number corresponding to wood poles only,
4 i.e., a count of 49,028, as compared to the proper total count reported on NOVEC’s 2013 annual
5 tax report to the SCC of 64,703 associated with pole investment booked to the 364 account. As
6 noted earlier, third party attachments are not generally limited to wood poles, and the Comcast
7 pole agreements expressly include the right to attach to non-wood poles.⁸⁶ Mr. Booth’s
8 overstated net bare pole cost figure is the result of an overstated investment figure divided by an
9 understated count of poles.

10 b. Inputs to Carrying Charge Factor (“CCF”)

11 Mr. Booth’s calculations of the carrying charge component of the formula contain a
12 number of inputs that are higher than amounts identified by NOVEC for the relevant FERC
13 equivalent RUS accounts specified in the FCC formula methodology. First, Mr. Booth’s
14 calculations use an expense figure for General and Administration of \$26,412,826, whereas the
15 total figure identified by NOVEC in discovery as booked to the relevant FERC Accounts 920-
16 935, is only \$18,713,986.⁸⁷ Second, Mr. Booth’s calculations use a tax expense figure of
17 \$5,940,088, whereas as noted above, there is no reported tax expense booked to the specific
18 FERC tax accounts included in the FCC methodology.⁸⁸ The combination of these two apparent
19 errors produces a CCF that is roughly 2% overstated (23.5% as compared with the CCF derived

⁸⁶ See Exhibit SH-1 and 2.

⁸⁷ See PDK Exhibit-5 (NOVEC Response to Comcast II-4).

⁸⁸ *Id.*

1 in the JR calculation of 20.99%). While this may not represent a material overstatement in
2 percentage terms, in and of itself, it further compounds the larger impact errors made by Mr.
3 Booth in connection with the other two major formula components.

4 c. Inputs to Space Allocation Factor (Safety Space)

5 Mr. Booth's formula calculations use a space allocation factor that applies a grossly
6 disproportionate share of costs to the attacher by erroneously treating the 40" inches (3.33 feet)
7 of space below the neutral line as usable space to communications attachers, rather than its
8 proper cost-causative treatment as usable space directly assignable to the utility (for the many
9 reasons summarized below).

10 In his first variation of the Cable Formula calculation, Mr. Booth's treatment of the safety
11 space leads to an over-attribution of costs to attachers, by artificially reducing the denominator of
12 the space allocation factor (i.e., the proportion of space actually occupied by the attacher by the
13 total usable space on the pole) from 14.166 to 10.833 feet. By doing so, Mr. Booth
14 inappropriately increases the space allocation percentage from 1 foot occupied/ 14.166 total
15 usable feet (7.06%) to 1 foot occupied /10.833 total usable feet (9.23%).

16 In his second variation of the formula, he further compounds the error of treating the
17 safety space as usable space to communications attachers (in the collective sense) rather than to
18 the utility (where from an economics and practical perspective it belongs), by treating the entire
19 40" (3.33 feet) as dedicated usable space for *each* communications attacher on the pole
20 individually. In other words, in this variation, Mr. Booth assumes the space occupied by each
21 attacher is 4.33 feet (1 foot occupied plus 3.33 feet of safety space), rather than the 1 foot of
22 space physically occupied (and that already builds in clearance space around the attachment,

1 since the attached wire is typically only a fraction of a foot). In his way, Mr. Booth *both*
2 decreases the denominator of the space allocation factor from 14.166 to 10.833 as in the first
3 variation of the formula, and increases the numerator from 1.0 to 4.33, increasing the space
4 allocator factor by nearly 6 times a just and reasonable percentage, i.e., from 7.06% (1.0/14.166)
5 to 39.98% (4.33/10.83). This 39.98% is an unusually high space allocation factor relative to the
6 most widely used and accepted factor of 7.41%, and produces a correspondingly excessive
7 recurring rental rate of \$60.69. Mr. Booth's calculated rate exceeds the average rates charged by
8 regulated IOUs in Virginia by a multiple of nearly 10, and by all reasonable standards, is wildly
9 excessive relative to the licensee's actual occupancy of 1 foot of otherwise surplus space on
10 NOVEC's existing utility pole network.

11 Mr. Booth's assignment of safety space is totally illogical from both an economics and
12 common sense perspective. First, there are on average multiple communications attachments on
13 NOVEC poles so that it makes no sense to treat that space as dedicated on an individual
14 basis. Moreover, the presence of communications attachments on any given pole does not
15 preclude electric or other non-communications attachments (e.g., street lights, signage, traffic
16 boxes, etc.) from actually occupying that space, and in fact such attachments are commonly
17 made. The economic criteria for determining that space is directly assignable to an attaching
18 entity is whether or not the space occupied is dedicated in a real economic sense, meaning that
19 the presence of that entity's attachment physically precludes any other attachment from
20 occupying that space. Otherwise, there is no actual lost opportunity or tangible economic cost to
21 the utility.

1 In NOVEC's discovery response, Mr. Booth explains his decision to disregard the FCC's
2 policy with regard to this space, an issue the FCC has revisited many times (and each time has
3 solidly rejected) arguments presented by the utilities, reaffirming its finding that 100% of this
4 space is used or useful to the utility, and accordingly, should be included 100% as usable space
5 assigned to the utility:

6 Additionally, the FCC formula fails to assign a communication worker safety zone to the
7 communication company, even though it is provided per the National Electrical Safety
8 Code for the communication company and its workers, not the electric utility or its
9 workers. We have, therefore, also shown the calculation with this space assigned to the
10 communication company exclusively as it should be, along with the formulas as included
11 in the FCC regulations per the request.

12
13 There are several flaws in Mr. Booth's reasoning. As a preliminary matter, this allocation of the
14 safety space to attaching entities, is based upon four basic misconceptions: (1) that electric
15 utilities cannot and do not place facilities in the 40" between cable and the communications
16 attachment; (2) that the NESC always requires 40" between the neutral and the communications
17 attachments; (3) that the electric utility doesn't require any clearance from neutral for its own
18 facilities; and (4) the FCC formulas do not already assign a value to the attacher associated with
19 this space.

20 None of these misconceptions has been shown to be valid, and again, these are arguments
21 that utilities have made to the FCC and that have been rejected on the following grounds: (1)
22 electric utilities can and do place facilities below neutral and above communications, including
23 street lights, risers and control rods;⁸⁹ (2) the NESC requires only 30" from transformers for

⁸⁹ Mssrs. Harrelson and Dagenhart corroborate these points in their prefiled testimonies filed in this proceeding.

1 communications attachments, which can below the neutral;⁹⁰ (3) in the absence of
2 communications attachments, NOVEC would still require separation from neutral for its own
3 equipment, such as transformers and diplex;⁹¹ (4) the FCC formulas allocate a fair share of the
4 entire pole to attaching entities, *including a share of the safety space*; and (5) to the extent there
5 is not sufficient clearance on the pole to accommodate an attacher, the attacher is subject to make
6 ready charges to replace or rearrange wires on the pole in order for it to be able to attach. In
7 addition, the overwhelming majority of regulators that apply the FCC formula, and the SCC staff
8 in the NTELOs case, have similarly rejected arguments to assign 100% of the safety space to
9 attaching entities.⁹²

10 **IV. "SECOND BEST" APPROACH FOR DETERMINING POLE ATTACHMENT**
11 **RATES: TELECOM FORMULA OR CLOSE STATE VARIATIONS**

12 **1. Differences Between Cable Rate and Telecom Rate Formulas**

13
14 **Q. PLEASE EXPLAIN THE DIFFERENCES BETWEEN THE FCC CABLE RATE**
15 **FORMULA AND THE TELECOM RATE FORMULA.**

16 A. As noted earlier, both the Cable and Telecom Formulas, and even other industry
17 sponsored formulas, derive a recurring pole attachment rental rate by multiplying the same three
18 basic formula components: net bare pole cost, carrying charge factor, and space allocation
19 factor. The one place where the Cable and Telecom Formulas differ is in the calculation of the
20 space allocation factor and, in particular, the manner in which the Telecom Formula allocates the

⁹⁰ *Id.*

⁹¹ *Id.*

⁹² *See* Henderson NTELOS Testimony at 2.

1 costs associated with the *unusable* space on the pole. Whereas as described earlier, Cable
2 Formula assigns costs relating to the entire pole – including both usable and unusable space – on
3 the basis of a proportionate-use allocator, the Telecom Formula methodology assigns the cost of
4 usable space on the pole based on the proportionate share of usable space occupied by the
5 attacher (exactly the same as the Cable Formula), but assigns costs relating to the unusable space
6 on the pole using a per-capita allocator. Specifically, as originally prescribed in the 1996
7 Telecom Act, the Telecom Formula 2/3 of the unusable space on the pole equally by the number
8 of attaching entities. Expressed as an equation, the FCC’s old telecom rate formula (without the
9 capital cost adjustment applied since 2011) is as follows:

10

11

Original (Old) FCC Telecom Rate Formula =

12

Net Bare Pole Cost x Carrying Charge Factor x
[Usable Space Percentage + Unusable Space Percentage] where:

13

Usable Space Percentage =

14

(Space occupied by attacher / Usable Space) x (Usable Space/Pole Height);

and

15

Unusable Space Percentage = 2/3 x (Unusable Space / Pole Height) x
(1/No. Attachers)

16

17 Based on a presumed 37.5 foot joint-use pole, 1 foot of space per communications attachment,
18 and 13.5 feet of usable space on the pole, the usable space percentage of the telecom space
19 allocator factor equals $(1/13.5) \times (13.5/37.5)$ or 2.67%. Given these same assumptions, there are
20 24 feet of unusable space to apportion, since unusable space under FCC rules is defined as the
21 space on the pole other than the usable space $(37.5-13.5 = 24)$, consisting of the 6 feet of the pole

1 that is below ground and the 18 feet of the pole above grade required to clear possible
2 interference and obstacles and on which attachments cannot be made.

3 The FCC rules establish two presumptive numbers of attaching entities to use in
4 calculating the Telecom Formula: 5 for urbanized areas (as applies to NOVEC), and 3 for non-
5 urbanized.⁹³ Using the FCC presumptive number of 5 attaching entities in urbanized areas, the
6 unusable space percentage equals $(2/3) \times (24/37.5) \times (1/5)$ or 8.53%. Adding the usable and
7 unusable space percentages together (2.67% + 8.53%) together produces a total space allocator
8 factor for the telecom formula of 11.20%. Similarly, using the FCC presumptive number of 3
9 attaching entities in non-urbanized areas, the unusable space percentage equals $(2/3) \times (24/37.5)$
10 $\times (1/3)$ or 14.22%. Adding the usable and unusable space percentages together (2.67% +
11 14.22%) together produces a total space allocator factor for the telecom formula of 16.89%.
12 (Based on NOVEC specific data from the Davey Pole Survey, identifying an average joint-use
13 pole height of 39 feet, the corresponding space allocation factor for the Telecom Formula would
14 be 10.77%).

15 **Q. WHY HAVE YOU RECOMMENDED THE TELECOM FORMULA ONLY AS A**
16 **SECOND BEST OPTION?**

17 A. The Telecom Formula is a second best option in my opinion, because, as found by
18 both federal and state regulators alike, the use of this formula has resulted in rates well in excess
19 of efficient cost levels and that serve to place a damper on broadband deployment, competition

⁹³ See 2001 Reconsideration Order ¶ 67 (“[W]e provide utilities the option of using our presumptive averages [3 for rural and 5 for urban] or developing averages for two areas: (1) urbanized (50,000 or higher population), and (2) non-urbanized (less than 50,000 population”); 47 C.F.R. §1.1417(c).

1 and the widespread availability and adoption of advanced broadband services. In addition to this
2 more structural problem with the formula, the Telecom Formula is also less straightforward than
3 the Cable Formula to calculate and requires certain data inputs (e.g., average number of attaching
4 entities) that require additional resources to calculate accurately, relies on information controlled
5 by the pole owner, and tend to be subject to contention among the parties.

6 While the Telecom Formula has been found to produce a just and reasonable rate for
7 telecom attachments (and this is especially the case with the newly revised formula), there are
8 several shortcomings of the formula that make it a distinct second best choice to the Cable
9 Formula. The most fundamental problem with the Telecom Formula vis-à-vis the Cable
10 Formula, and the one that ultimately led the FCC to adopt a revised formula in April 2011 is the
11 formula's use of a space allocation factor that is at odds with established cost causation
12 principles. In particular, the Telecom Formula's reliance on the number of attaching entities
13 (multiplied by a factor of two-thirds), introduces an artificial construct into the pricing formula.
14 The telecom formula's use of a per capita allocator has no direct connection to the consumption
15 of space on the pole or to any actual increase in cost burden placed on the utility or its ratepayers,
16 and in its historic formulation, has been found to produce higher rates less economically efficient
17 and conducive to promoting competition and broadband deployment. The problem was
18 exacerbated over the years as the number of facilities-based attachers failed to materialize as
19 originally expected at the time of the Telecommunications Act of 1996 was enacted, to the point
20 the FCC felt compelled to take action due to the potential, serious detrimental impacts the higher
21 pole attachment rates had on broadband deployment.

1 In the context of familiar commercial or residential leasing applications, the use of per
2 capita-based space allocation factor would be analogous to charging a tenant occupying only one
3 floor of a ten-story office or apartment building the same amount (i.e., 50%) of the common
4 costs such as elevators, lobby space, and parking lot, as a tenant occupying all of the other nine
5 floors of space, as opposed to a more reasonable (smaller) proportionate share (i.e., 10%) such as
6 would be assigned under the cable formula. Similarly, a company occupying two feet of space
7 could make two attachments on the pole, but under the Telecom Formula, it would be counted as
8 a single entity and assigned the same portion of common costs as an entity occupying just one
9 foot of space providing room for only one attachment. The Cable Formula avoids these types of
10 economic disconnects, by employing a cost allocation approach that follows cost causation
11 principles in a manner directly analogous to the common and widely-accepted practice in the
12 leasing of property and other facilities throughout the private and public sectors of the economy,
13 such as the apartment house/office building example above, i.e., by allocating costs based on a
14 proportionate use or direct occupancy of space.⁹⁴

15 **Q. PLEASE DESCRIBE THE FCC'S TELECOM RATE FORMULA AS REVISED**
16 **IN 2011 AND HOW IT DIFFERS FROM THE OLD FORMULA USED BY STAFF IN**
17 **THE NTELOS CASE.**

18 A. In its April 7, 2011 Order, the FCC formally adopted revisions to the old telecom rate
19 formula. As explained in the FCC's 2010 FNPRM and the FCC's National Broadband Plan,

⁹⁴This concept was recognized by Congress in the 1978 pole legislation. See 123 Cong. Rec. 5080 (1977) (Statement of Rep. Wirth) ("The renter of one of the ten units pays the cost of that unit plus one-tenth of the cost of all common areas. He does not pay one-half the cost of the common areas just because only one other person occupies the other nine units, but rather he pays his one-tenth share of all the costs attributable to the building.")

1 which gave rise to the FNPRM, revisions to the telecom rate formula were necessary in order to
2 achieve the vital national public policy goals of promoting broadband services deployment and
3 competition in telecommunications throughout all areas of the country. As mentioned above, the
4 pre-April 7, 2011 Telecom Formula generally produced rates much higher than the Cable
5 Formula.⁹⁵ Because pole attachments are a vital input to broadband providers, the FCC found the
6 significant price differential between the cable and telecom rates discouraged investment in
7 broadband infrastructure and raised the costs to end users of broadband services. In addition, as
8 found by the FCC, a higher telecom rate deterred cable companies from offering new and
9 advanced services such as interconnected VoIP that could potentially be classified as “telecom,”
10 since those companies would risk paying higher pole rental fees across their entire network.

11 The April 7, 2011 Order adopted a new Telecom Formula that produces rates that are
12 equal to the higher of the rate yielded by the preexisting Telecom Formula with a cost factor
13 reduction designed to align it with the Cable Formula and a rate set equal to a new fully allocated
14 rate limited to recovery of operating costs of pole attachments (i.e., maintenance and
15 administrative). The FCC affirmed its prior finding that capital costs attributed to pole
16 attachments under the preexisting cable and telecom rate formulas (i.e., depreciation, taxes, and
17 rate of return) are properly excluded from the lower bound rate for telecom, in that attachers are
18 “not the ‘cost causer’ of these costs,” as they “cause none or no more than a *de minimis* amount

⁹⁵ As described above, under FCC presumptions, the cable formula allocates to an attacher 7.41% of the fully allocated costs of pole attachments, whereas the pre-April 7, 2011 telecom formula allocated 11.2% of these same costs in urban areas and 16.89% of these costs in rural, resulting in telecom rates generally in the range of 50% to 130% higher than cable rates. In applications of the formula using lower utility-specific inputs for the number of attaching entity input, the telecom rate could exceed the cable rate by even greater percentages.

1 of these costs, other than those that are recovered up front through the make ready fees.”⁹⁶ The
2 lower bound Telecom Rate formula methodology represents a direct proxy for the economically
3 efficient marginal cost of pole attachment – the cost standard most conducive to achieving the
4 goals set forth in the FCC’s National Broadband Plan. Because the FCC rules set the maximum
5 just and reasonable rate at the *higher* of the upper and lower bound rate formulas, and the latter
6 excludes capital costs, it is most likely the case that the upper bound formula is the applicable
7 rate formula. Accordingly, unless specifically noted, references in this testimony to the Revised
8 Telecom Formula will be to the upper bound formula,

9 More specifically, to implement its goal of setting the telecom rate “as close to uniform
10 [in the vicinity of the current cable rate] as possible,” the FCC established a new just and
11 reasonable telecom rate, by “adopt[ing] a particular definition of cost” “[f]rom within the range
12 of possible interpretations of the term ‘cost’ for purposes of section 224(e).”⁹⁷ Specifically, the
13 FCC adopted a definition of cost for urbanized areas as “66 percent of the fully allocated costs
14 used for purposes of the pre-existing telecom rate,” and a definition of cost for rural or non-
15 urbanized areas as “44 percent of the fully allocated costs,” where fully allocated cost is defined
16 as net bare pole cost times carrying charge factor (i.e., the first two components of the rate
17 formula for both cable and telecom formulas).⁹⁸ Under this definition of cost and using FCC
18 presumptions (which remain unchanged under the new rules), the percentage of fully allocated

⁹⁶ April 7, 2011 Order ¶ 144.

⁹⁷ *Id.* ¶¶ 134, 146.

⁹⁸ *Id.* ¶ 149.

1 costs allocated under the revised telecom rate approximately equals that allocated under cable,
2 i.e., 7.41%.⁹⁹ Under the revised FCC rules, this definition of cost would be used to calculate the
3 telecom rate, unless it produced a rate that fell below the FCC's lower bound rate, in which case,
4 the lower bound formula as described above would apply.¹⁰⁰ The Revised Telecom Formula is as
5 follows:

6 Revised FCC Telecom Rate Formula (applies unless lower bound calculation is higher):

7
8 Net Bare Pole Cost x Carrying Charge Factor x
9 [Usable Space Percentage + Unusable Space Percentage] x Cost Factor where:

10
11 Usable Space Percentage =
12 (Space occupied by attacher / Usable Space) x (Usable Space/Pole Height); and

13
14 Unusable Space Percentage = $2/3 \times (\text{Unusable} / \text{Pole Height}) \times (1/\text{No. Attachers})$;
15 and

16 Cost Factor for Urbanized Area = .66; and for Non-urbanized area = .44
17

18
19 Despite the many benefits described above of adopting a single unified broadband rate
20 formula based on the Cable Formula, and the SCC's ability pursuant to applicable law to adopt a
21 single formula, should the SCC choose to adopt the Telecom Formula or a bifurcated approach
22 of having a separate telecom rate formula, I would recommend one refinement to the FCC
23 methodology in order to achieve the clearly articulated rationale for the revised formula. The two

⁹⁹ For urban areas: $.66 \times 11.2\%$ (based on the presumption of 5 attaching entities) = 7.39%; for rural areas: $.44 \times 16.89\%$ (based on the presumption of 3 attaching entities) = 7.43%.

¹⁰⁰ Based on calculations performed by FCC staff in the FNRPM, which I have also corroborated in my own rate calculations, the lower bound rate (calculated by including only operating cost elements of the carrying charge factor) is unlikely to be higher than the new just and reasonable telecom rate defined by the FCC.

1 identified FCC cost factors (.66 for urbanized areas, .44 for non-urbanized) are developed
2 specifically to achieve the desired result (a rate as close as possible to cable rate) at the FCC
3 presumptive values (e.g., number of attaching entities, usable and unusable space and pole height
4 presumptions). To the extent utility specific inputs other than these FCC presumptive values are
5 used – as is the case if one uses a NOVEC specific value for the average number of attaching
6 entities – the specific cost factors identified by the FCC do not achieve their stated purpose, and
7 could lead to a rate more divergent from the cable rate than intended.

8 The most straightforward approach to remedy this unintended outcome is to apply a
9 variable cost factor based on the ratio of the space factor from the cable formula to the space
10 factor of the old telecom formula calculated using the utility specific data – rather than the fixed
11 percentages identified by the FCC, calculated based on its presumptive number of attaching
12 entities. The proposed remedy is fully consistent with the FCC’s revised methodology, for
13 which there was no independent cost basis other than the ratio that algebraically produces a
14 telecom rate roughly equivalent to cable. The calculations I have performed and describe below,
15 using NOVEC specific data on the number of attaching entities do not incorporate my
16 recommended refinement in order to better inform the Commission, and to be most generous to
17 NOVEC in the range of options I present in my testimony for the Commission’s consideration.
18 Had I had done so, the observed differential between the Telecom Formula rate and the Cable
19 Formula rate produced by those calculations would have largely disappeared similar to the
20 results for the FCC Cable and FCC Telecom. As shown in Table 3 (above) and Table 4 (below)
21 those rates are nearly identical (\$6.35 for the Cable Rate as compared with \$6.33 for the FCC
22 Telecom rate).

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22

2. Maximum Just and Reasonable Rates for NOVEC Calculated Based on the Telecom Formula

Q. PLEASE IDENTIFY THE SECOND BEST RATE CALCULATIONS YOU HAVE PREPARED BASED ON THE FCC TELECOM FORMULA.

A. With respect to the second best option based on the Telecom Formula, to best inform the Commission, I have calculated J&R rates using a number of different sets of input data, that produce rates ranging from \$6.33 to \$10.73. The first set (presented in Table 4 below) is based on the application of the Telecom Formula using presumptions adopted by the FCC and that have withstood the test of time over the past thirty-plus years of pole rate regulation (“FCC Telecom”).

Table 4 Maximum J&R Pole Attachment Rates For NOVEC Under FCC Telecom Rate Formula		
Based on Year Ending 2012	J&R	NOVEC
Net Inv. Per Bare Pole	\$408.24	n/a
x Carrying Charges	20.99%	n/a
x Space Factor	11.20%	n/a
X Cost Factor (Urban)	.66	n/a
Rate/Attachment	\$6.33	\$26.43
Assumes FCC Presumptive Avg. Number of Attaching Entities of 5.		

1 The second set of input data (presented in Table 5 below) uses assumptions contained in a recent
 2 agreement between Comcast and an electric utility and adopted by the State of New Hampshire
 3 Public Utilities Commission, a state that has certified to regulate pole attachment rates for
 4 Investor-Owned Utilities (“IOUs”) pursuant to Section 224, but in addition, pursuant to state
 5 statute (as in the case here in Virginia) is charged with the regulation of cooperatively-owned
 6 utilities such as NOVEC (“NH Telecom”). In particular, the NH Telecom formula creatively
 7 deals with the contentious issue surrounding the average the number of attaching entities input
 8 by establishing a range of presumptive averages between 2.7 to 3.0 (the presumptive FCC
 9 average for rural areas applicable to that particular utility) for a limited number of years, subject
 10 to increases to levels higher than the FCC presumptive average after that time.

Table 5 Maximum J&R Pole Attachment Rates For NOVEC Under NH Telecom Rate Formula		
Based on Year Ending 2012	J&R	NOVEC
Net Inv. Per Bare Pole	\$408.24	n/a
x Carrying Charges	20.99%	n/a
x Space Factor	18.47%	n/a
X Cost Factor	.44	n/a
Rate/Attachment	\$6.96	\$26.43
Based on NH PUC Agreement Avg. No of Attaching Entities of 2.7.		

21 The third and fourth sets of input data use data specific to NOVEC, in a manner
 22 consistent with an approach used by the SCC Staff in a 2003 case involving NTELOs Telephone

1 Company *et al* and cooperatives here in Virginia, updated and revised to reflect the current
2 version of the Telecom Formula and the application of that formula to a cable and/or standard
3 third party communications attachment occupying one foot of pole space (“Revised NTELOs
4 Telecom”). The major refinements made by Staff in applying the Telecom Formula in the
5 NTELOs case included the use of cooperative specific values and staff determined carrying
6 charges.¹⁰¹

7 The two sets of Revised NTELOs Telecom calculations (as presented in Tables 6 and 7
8 below) differ only with respect to the input for the average number of attaching entities. The
9 first uses an average number of attaching entities figure derived over the entire universe of poles
10 on which there are communications attachments, whereas the second uses an average number
11 derived specific for those poles on which Comcast is attached. Under the formula methodology,
12 the standard for data generally, is to rely on the most disaggregated level of data for which
13 records are kept and the data can be reasonably supported and verified as to their accuracy and
14 reliability. Using an average number of attaching entity figure specific to poles on which
15 Comcast is actually attached produces a rate that more accurately reflects those of NOVEC’s
16 costs that are just and reasonably attributed to Comcast.

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¹⁰¹ See Testimony of Rosemary Henderson at 2, 4-5.

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Table 6 Maximum J&R Pole Attachment Rates For NOVEC Under Revised NTELOs Approach All Poles w/Communications Attachments		
Based on Year Ending 2012	J&R	NOVEC
Net Inv. Per Bare Pole	\$408.24	n/a
x Carrying Charges	20.99%	n/a
x Space Factor	18.97%	n/a
X Cost Factor (Urban)	.66	n/a
Rate/Attachment	\$10.73	\$26.43
Based on NOVEC pole data, adjusted to include attachments of NOVEC Solutions: Avg. No of Attaching Entities of 2.5.		

Table 7 Maximum J&R Pole Attachment Rates For NOVEC Under Revised NTELOs Approach Poles w/Comcast Attachments		
Based on Year Ending 2012	J&R	NOVEC
Net Inv. Per Bare Pole	\$408.24	n/a
x Carrying Charges	20.99%	n/a
x Space Factor	18.05%	n/a
X Cost Factor (Urban)	.66	n/a
Rate/Attachment	\$10.20	\$26.43
Based on NOVEC pole data, adjusted to include attachments of NOVEC Solutions: Avg. No of Attaching Entities of 2.65		

1 **Q. PLEASE DESCRIBE HOW YOUR CALCULATIONS USING THE TELECOM**
2 **FORMULA FOR NOVEC DIFFER FROM THE TELECOM RATE CALCULATIONS**
3 **PROVIDED BY NOVEC WITNESS BOOTH IN RESPONSE TO STAFF II-23.**

4 A. As in his calculations of the Cable Rate as described above, Mr. Booth provides two
5 variations of what he designates as the “FCC Telecom Rate.” As with the two versions of the
6 Cable Rate he provides, his Telecom Rate calculations are similarly based on misapplications of
7 the formula that individually and collectively produce a highly distorted and excessively high
8 rate. Because of the similarities between the two rate formulas, Mr. Booth’s calculations of the
9 Telecom Rate contain all of the same errors described in the preceding section of my testimony
10 with respect to the overstatement of net pole investment, the understatement of total pole count,
11 the misallocations of safety space, and expense inputs that vary from the amounts identified by
12 NOVEC in response to discovery for the specific RUS-equivalent FERC accounts included in
13 the formula. However, in addition to those errors, Mr. Booth’s calculations also misapply one
14 additional data input that is uniquely used in the Telecom Formula, i.e., the average number of
15 attaching entities.

16 Under the FCC rules, and as consistent with the cost causation principle underlying the
17 attribution of costs under a rate formula methodology, the appropriate population of poles over
18 which to calculate the average number of attaching entities input is the population of poles on
19 which there is at least one third-party communications attachment present. In the context of a
20 litigation or complaint involving a particular attaching entity, such as this proceeding, to the
21 extent attacher specific information is available - as is the case here where NOVEC has provided
22 information regarding attaching entities specific to those poles to which Comcast is attacher – the

1 FCC methodology would rely on the disaggregated attacher-specific pole data (i.e., data for the
2 population of poles on which the particular third party is attached). Using the more specific
3 population of poles will produce a rate most consistent with a cost causative allocation of the
4 fully allocated costs of the pole to the attacher in the context of a per-capita formula.¹⁰² As
5 discussed above, the most cost causative allocation of fully allocated costs would not be based on
6 a per capita allocation of costs, but rather based solely on a strictly proportional based allocation
7 such as embodied in the Cable Rate Formula.

8 Mr. Booth's calculations are flawed by either standard, by using an average number of
9 attaching entities figure (1.72) based on the entire population of wood distribution poles,
10 including poles on which there are no third party communications attachments. Including such
11 electric-only poles as Mr. Booth has done produces an average number of attaching entity figure
12 that is not representative of the relevant population of poles for purposes of determining a cost
13 causative allocation of the fully allocated costs of pole attachment, and produces an artificially
14 high and inefficient pole rental rate. As shown in Tables 4, 5, 6 and 7 above, the appropriate
15 average number of attaching entities figure for purposes of determining a just and reasonable rate
16 range from 2.5 to 5.0.

¹⁰² *Teleport Communications Atlanta, Inc. v. Georgia Power Co.*, Order on Review, 17 FCC Red 19859 (2002) (rejecting "number that represents the number of 'paying attachments' without explaining how this number was derived. Georgia Power Company admits it does not include itself or government attachments in its count").

1 **V. CONCLUSION**

2 **Q. PLEASE SUMMARIZE YOUR OVERALL CONCLUSIONS.**

3 A. Pole attachments are an essential facility provided by a monopoly pole owner, in this
4 instance, NOVEC, to communications companies with which it competes in the final market for
5 broadband services. Furthermore, as a vital input to the provision of broadband service, now
6 widely acknowledged as key to an area's economic and social well-being, it is more
7 economically efficient and productive for the prices for pole attachments to be kept as close to
8 true marginal costs as possible. Efficient pricing of the pole attachment input is also in the
9 greater public interest - including that of NOVEC's owner/members, who as subscribers of
10 broadband are beneficiaries of the benefits to society associated with broadband service
11 availability and affordability.

12 For these key reasons, the economic regulation of pole attachments is fundamentally
13 different from the application of the "traditional utility revenue requirement" model as applied to
14 the utility's core electric services, and as noted above, is intended to, and hence as properly
15 designed, does serve an entirely different purpose. While the application of a traditional utility
16 revenue requirement model appropriately applies to the regulation of the utility's core electric
17 service, and to the method used by NOVEC to set rates to recover costs from electric service
18 customers from whom NOVEC's network was originally (and continues to be) built and
19 maintained, for the reasons explained in this testimony, the traditional utility revenue
20 requirement does not appropriately apply to the setting of rates for pole attachments, an essential
21 facility used by third party communications companies to provide a service with which NOVEC
22 competes. While at some level, the regulation of utility pole attachments may look and feel like

1 electric rate making, it's simply not the same. Similarly, while it feel more "fair" to apportion a
2 much larger share of the costs of NOVEC's utility pole network to communications attachers as
3 NOVEC's proposed "incremental approach does. However, from an objective economic and
4 public policy standpoint, to do so is ultimately counterproductive to the overall economic well-
5 being of society at large, and to the constituents of Northern Virginia in particular, who as
6 consumers, are ultimately the ones who will be most negatively impacted by the inefficient
7 pricing of pole attachments leased by third party communications attachers.

8 As described in my testimony, NOVEC's proposed incremental approach is inconsistent
9 with the best practice formulaic approaches used historically and all around the country, and
10 even with respect to what other cooperatives and municipal utilities have proposed be used. For
11 the many reasons discussed in this testimony, I am recommending the SCC apply the fully
12 allocated formulaic approach widely used at the state and federal level in setting J&R rates for
13 third party pole attachments, and in particular, the most commonly used formula known as the
14 "Cable Formula" instead of NOVEC's novel cost approach.

15 In my opinion, the Cable Formula best achieves the three-fold criteria set forth in VA
16 Code §56-466.1(f) for determining pole attachment rates for all communications attachers. By
17 far, it is most consistent with the Commonwealth's statutory goal to promote broadband; it,
18 together with make-ready reimbursements and other fees, more than fully compensates pole
19 owners and thus is consistent with interests of NOVEC's members; and is in the public interest
20 because it is reproducible by the Commonwealth's other cooperatives and attachers, and relies on
21 publicly or regularly reported and available data, which is especially critical where, as here, the
22 pole owner offers a competing service.

1 Nonetheless, I very much appreciate that the SCC has considerable discretion as to which
2 methodology it chooses to adopt for determining J&R rates for pole attachments. To better
3 inform the Commission, as second best alternative, I have calculated rates using a number of
4 variations of a formula also used at the federal and, to a lesser extent, at the state level (including
5 by SCC Staff in the prior NTELOs pole proceeding), known as the “Telecom Formula.” Finally,
6 as what I would view as a very distant third best, I have calculated rates using NOVEC’s
7 proposed approach but that contain a number of critical adjustments, that in my opinion, would
8 be necessary in order to produce cost results that reasonably reflect the true “but for” costs
9 directly attributable to third-party attachers such as Comcast.

10 **Q. DOES THIS CONCLUDE YOUR TESTIMONY AT THIS TIME?**

11 **A. Yes, it does.**

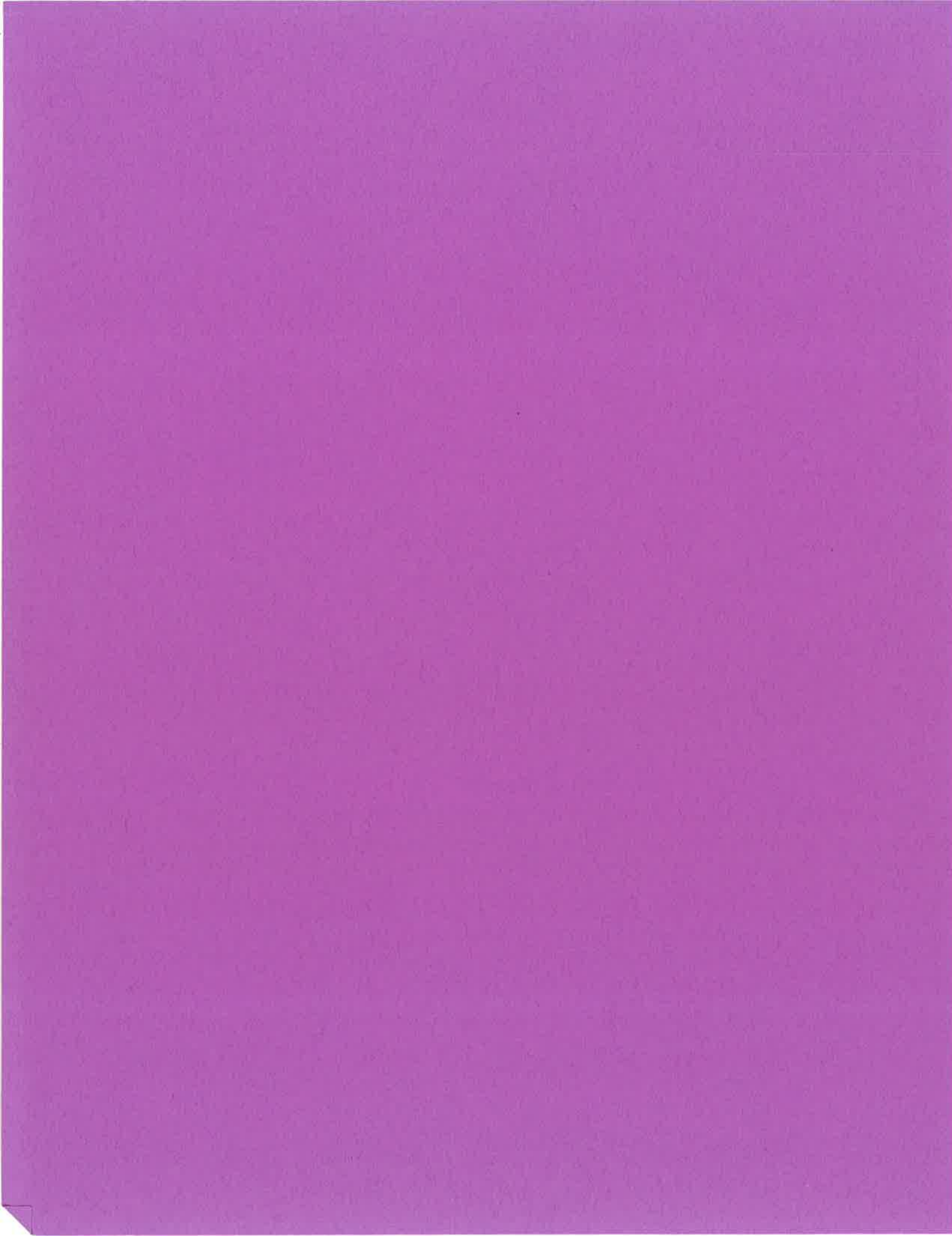


Exhibit PDK-1

**COMCAST CALIFORNIA/MARYLAND/PENNSYLVANIA/
VIRGINIA/WEST VIRGINIA LLC**

PATRICIA D. KRAVTIN

Patricia D. Kravtin

57 Phillips Avenue
Swampscott, MA 01907
pdkravtin@comcast.net

Summary

Consulting economist with specialization in telecommunications, cable, and energy markets. Extensive knowledge of complex economic, policy and technical issues facing incumbents, new entrants, regulators, investors, and consumers in rapidly changing telecommunications, cable, and energy markets.

Experience

CONSULTING ECONOMIST

2000–Present Independent Consulting Swampscott, MA
Providing expert witness services and full range of economic, policy, and technical advisory services in the telecommunications, cable, and energy fields.

SENIOR VICE PRESIDENT/SENIOR ECONOMIST

1982–2000 Economics and Technology, Inc. Boston, MA
Active participant in regulatory proceedings in over thirty state jurisdictions, before the Federal Communications Commission, Federal Energy Regulatory Commission, and other international regulatory authorities on telecommunications, cable, and energy matters.

Provided expert witness and technical advisory services in connection with litigation and arbitration proceedings before state and federal regulatory agencies, and before U.S. district court, on behalf of diverse set of public and private sector clients (see Record of Prior Testimony).

Extensive cable television regulation expertise in connection with implementation of the Cable Act of 1992 and the Telecommunications Act of 1996 by the Federal Communications Commission and local franchising authorities.

Led analysis of wide range of issues related to: rates and rate policies; cost methodologies and allocations; productivity; cost benchmarking; business case studies for entry into cable, telephony, and broadband markets; development of competition; electric industry restructuring; incentive or performance based regulation; universal service; access charges; deployment of advanced services and broadband technologies; and access to pole attachments and other rights-of-way.

Served as advisor to state regulatory agencies, assisting in negotiations with utilities, non-partial review of record evidence, deliberations and

drafting of final decisions.

Author of numerous industry reports and papers on topics including market structure and competition, alternative forms of regulation, patterns of investment, telecommunications modernization, and broadband deployment (see listing of Reports and Studies).

Invited speaker before various national organizations, state legislative committees and participant in industry symposiums.

Grant Reviewer for Broadband Technology Opportunities Program (BTOP) administered by National Telecommunications and Information Administration (NTIA), Fall 2009.

RESEARCH/POLICY ANALYST

1978–1980 Various Federal Agencies Washington, DC
Prepared economic impact analyses related to allocation of frequency spectrum (Federal Communications Commission).

Performed financial and statistical analysis of the effect of securities regulations on the acquisition of high-technology firms (Securities and Exchange Commission).

Prepared analyses and recommendations on national economic policy issues including capital recovery. (U.S. Dept. of Commerce).

Education

1980–1982 Massachusetts Institute of Technology Boston, MA
Graduate Study in the Ph.D. program in Economics (Abd). General Examinations passed in fields of Government Regulation of Industry, Industrial Organization, and Urban and Regional Economics.

National Science Foundation Fellow.

1976–1980 George Washington University Washington, DC
B.A. with Distinction in Economics.

Phi Beta Kappa, Omicron Delta Epsilon in recognition of high scholastic achievement in field of Economics. Recipient of four-year honor scholarship.

Prof. Affiliation

American Economic Association

Reports and Studies (authored and co-authored)

Report on the Ohio Municipal Electric Association Pole Attachment Rate Study, prepared for the Ohio Cable Telecommunications Association, November 9, 2012.

Report on the Financial Viability of the Proposed Greenfield Overbuild in the City of Lincoln, California, prepared for Starstream Communications, August 12, 2003.

"Assessing SBC/Pacific's Progress in Eliminating Barriers to Entry, The Local Market in California is Not Yet 'Fully and Irreversibly Open,'" prepared for the California Association of Competitive Telecommunications Companies (CALTEL), August 2000.

"Final Report on the Qualifications of Wide Open West-Texas, LLC For a Cable Television Franchise in the City of Dallas," prepared for the City of Dallas, July 31, 2000.

"Final Report on the Qualifications of Western Integrated Networks of Texas Operating L.P. For a Cable Television Franchise in the City of Dallas," prepared for the City of Dallas, July 31, 2000.

"Price Cap Plan for USWC: Establishing Appropriate Price and Service Quality Incentives in Utah" prepared for The Division of Public Utilities, March, 2000.

"Building a Broadband America: The Competitive Keys to the Future of the Internet," prepared for The Competitive Broadband Coalition, May 1999.

"Broken Promises: A Review of Bell Atlantic-Pennsylvania's Performance Under Chapter 30," prepared for AT&T and MCI Telecommunications, June 1998.

"Analysis of Opportunities for Cross Subsidies Between GTA and GTA Cellular," prepared for Guam Cellular and Paging, submitted to the Guam Public Utilities Commission, July 11, 1997.

"Reply to Incumbent LEC Claims to Special Revenue Recovery Mechanisms," submitted in the Matter of Access Charge Reform in CC Docket 96-262, February 14, 1997.

"Assessing Incumbent LEC Claims to Special Revenue Recovery Mechanisms: Revenue opportunities, market assessments, and further empirical analysis of the 'Gap' between embedded and forward-looking costs," FCC CC Docket 96-262, January 29, 1997.

"Analysis of Incumbent LEC Embedded Investment: An Empirical Perspective on the 'Gap' between Historical Costs and Forward-looking TSLRIC," Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, FCC CC 96-98, May 30, 1996.

"Reply to X-Factor Proposals for the FCC Long-Term LEC Price Cap Plan," prepared for the Ad Hoc Telecommunications User Committee, submitted in FCC CC Docket 94-1, March 1, 1996.

"Establishing the X-Factor for the FCC Long-Term LEC Price Cap Plan," prepared for the Ad Hoc Telecommunications User Committee, submitted in FCC CC Docket 94-1, December 1995.

"The Economic Viability of Stentor's 'Beacon Initiative,' exploring the extent of its financial dependency upon revenues from services in the Utility Segment," prepared for Unitel, evidence before the Canadian Radio-television and Telecommunications Commission, March 1995.

"Fostering a Competitive Local Exchange Market in New Jersey: Blueprint for Development of a Fair Playing Field," prepared for the New Jersey Cable Television Association, January 1995.

"The Enduring Local Bottleneck: Monopoly Power and the Local Exchange Carriers," Feb. 1994.

"A Note on Facilitating Local Exchange Competition," prepared for E.P.G., Nov. 1991.

"Testing for Effective Competition in the Local Exchange," prepared for the E.P.G., October 1991.

"A Public Good/Private Good Framework for Identifying POTS Objectives for the Public Switched Network" prepared for the National Regulatory Research Institute, October 1991.

"Report on the Status of Telecommunications Regulation, Legislation, and modernization in the states of Arkansas, Kansas, Missouri, Nebraska, Oklahoma and Texas," prepared for the Mid-America Cable-TV Association, December 13, 1990.

"The U S Telecommunications Infrastructure and Economic Development," presented at the 18th Annual Telecommunications Policy Research Conference, Airlie, Virginia, October 1990.

"An Analysis of Outside Plant Provisioning and Utilization Practices of US West Communications in the State of Washington," prepared for the Washington Utilities and Transportation Commission, Mar.1990.

"Sustainability of Competition in Light of New Technologies," presented at the Twentieth Annual Williamsburg Conference of the Institute of Public Utilities, Williamsburg, VA, December 1988.

"Telecommunications Modernization: Who Pays?," prepared for the National Regulatory Research Institute, September 1988.

"Industry Structure and Competition in Telecommunications Markets: An Empirical Analysis," presented at the Seventh International Conference of the International Telecommunications Society, MIT, July1988.

"Market Structure and Competition in the Michigan Telecommunications Industry," prepared for the Michigan Divestiture Research Fund Board, April 1988.

"Impact of Interstate Switched Access Charges on Information Service Providers - Analysis of Initial Comments," submitted in FCC CC Docket No. 87-215, October 26, 1987.

"An Economic Analysis of the Impact of Interstate Switched Access Charge Treatment on Information Service Providers," submitted in FCC CC Docket No. 87-215, September 24, 1987.

"Regulation and Technological Change: Assessment of the Nature and Extent of Competition from A Natural Industry Structure Perspective and Implications for Regulatory Policy Options," prepared for the State of New York in collaboration with the City of New York, February 1987.

“BOC Market Power and MFJ Restrictions: A Critical Analysis of the ‘Competitive Market Assumption,” submitted to the Department of Justice, July 1986.

“Long-Run Regulation of AT&T: A Key Element of a Competitive Telecommunications Policy,” *Telematics*, August 1984.

“Economic and Policy Considerations Supporting Continued Regulation of AT&T,” submitted in FCC CC Docket No. 83-1147, June 1984. “Multi-product Transportation Cost Functions,” MIT Working Paper, September 1982.

Record of Prior Testimony

2013

Before the General Court of Justice Superior Court Division, State of North Carolina, County of Rutherford, *Rutherford Electric Membership Corporation, Plaintiff, vs. Time Warner Entertainment– Advance/Newhouse Partnership d/b/a Time Warner Cable, Defendant*, 13 CVS 231, submitted July 10, 2013, Deposition July 22, 2013.

Before the Chancery Court for Davidson County, Tennessee at Nashville, *The Metropolitan Government of Nashville and Davidson County, Tennessee, Plaintiff v. XO Tennessee, Inc., Defendant, Docket No. 02-679-IV; The Metropolitan Government of Nashville and Davidson County, Tennessee, Plaintiff v. TCG Midsouth, Inc., Defendant, Docket No. 02-749-IV*, Affidavit dated January 25, 2013, Reply Affidavit dated February 19, 2013. Live testimony and cross-examination, May 14-15, 2013.

2012

Before the State of New Hampshire Public Utilities Commission, in *Time Warner Entertainment Company L.P. d/b/a Time Warner Cable, Petition for Resolution of Dispute with Public Service Company of New Hampshire*, DT 12-084, on behalf of Time Warner Entertainment Company L.P. d/b/a Time Warner Cable, Comcast Cable Communications Management, LLC, Comcast of New Hampshire, Inc., Comcast of Massachusetts/New Hampshire, LLC, and Comcast of Maine/New Hampshire, Inc. Initial Direct Testimony submitted July 20, 2012; Reply Direct Testimony submitted October 31, 2012; Live panel testimony, November 14, 2012.

Before the Ontario Energy Board, in *the Matter of the Application by Canadian Distributed Antenna Systems Coalition (“CANDAS”)*, File No. EB-2011-1020, Joint Written Statement (with J. Lemay, M. Starkey, A. Yatchew), submitted July 20, 2012.

Before the Chancery Court for Davidson County, Tennessee at Nashville, *The Metropolitan Government of Nashville and Davidson County, Tennessee, Plaintiff v. XO Tennessee, Inc., Defendant, Docket No. 02-679-IV; The Metropolitan Government of Nashville and Davidson County, Tennessee, Plaintiff v. TCG Midsouth, Inc., Defendant, Docket No. 02-749-IV*, Expert Report submitted May 15, 2012; Supplemental Report submitted November 6, 2012.

2011

Before the Ontario Energy Board, in *the Matter of the Application by Canadian Distributed Antenna Systems Coalition (“CANDAS”)*, File No. EB-2011-1020, Reply Evidence, filed December 16, 2011.

Before the Public Utilities Commission of Ohio, in *the Matter of the Application of Columbus Southern Power Company and Ohio Power Company, Individually and, if Their Proposed Merger is Approved, as a Merged Company (collectively, AEP Ohio) for an Increase in Electric Distribution Rates, Case No. 11-351-EL-AIR, Case*

No. 11-352-EL-AIR; *In the Matter of the Application of Columbus Southern Power Company and Ohio Power Company, Individually and, if Their Proposed Merger is Approved, as a Merged Company (collectively, AEP Ohio) for Tariff Approval, Case No. 11-353-EL-ATA Case No. 11-354-EL-ATA; In the Matter of the Application of Columbus Southern Power Company and Ohio Power Company, Individually and, if Their Proposed Merger is Approved, as a Merged Company (collectively, AEP Ohio) for Approval to Change Accounting Methods, Case No. 11-356-EL-AAM, Case No. 11-258-EL-AAM.* filed October 24, 2011.

Before the **Virginia State Corporation Commission**, *In the Matter of Determining Appropriate Regulation of Pole Attachments and Cost Sharing in Virginia*, Case No. PUE-2011-00033, Affidavit submitted June 22, 2011, Live Testimony given July 13, 2011.

Before the **Public Utility Commission of Texas**, State Office of Administrative Hearings, *Petition of CPS Energy for Enforcement Against AT&T Texas and Time Warner Cable Regarding Pole Attachments*, SOAH Docket No. 473-09-5470, PUC Docket No. 36633, Supplemental Testimony submitted March 17, 2011; Further Supplemental Testimony submitted April 22, 2011, Cross-examination September 13, 2011.

2010

Before the **General Court of Justice Superior Court Division, State of North Carolina, County of Rowan**, *Time Warner Entertainment- Advance/Newhouse Partnership, Plaintiff, V. Town Of Landis, North Carolina, Defendant*, 10 CVS 1172, submitted October 20, 2010, Deposition December 1, 2010, Cross-examination July 20, 2011.

Before the **Federal Communications Commission**, *In the Matter of Implementation of Section 224 of the Act; Amendment of the Commission's Rules and Policies Governing Pole Attachments*, WC Docket No. 07-245, GN Docket No. 09-51. Report submitted August 16, 2010, Attachment A to Comments filed by the National Cable and Telecommunications Association.

Before the **Public Utility Commission of Texas**, State Office of Administrative Hearings, *Petition of CPS Energy for Enforcement Against AT&T Texas and Time Warner Cable Regarding Pole Attachments*, SOAH Docket No. 473-09-5470, PUC Docket No. 36633, Direct Testimony submitted July 23, 2010.

Before the **Kentucky Public Service Commission**, *In the Matter of: Application of Kentucky Utilities Company for An Adjustment of its Base Rates*, Case No. 2009-00548, submitted April 22, 2010.

Before the **Kentucky Public Service Commission** *In the Matter of: Application of Louisville Gas and Electric Company for An Adjustment of its Electric and Gas Base Rates*, Case No. 2009-00549, submitted April 22, 2010.

Before the **Arkansas Public Service Commission**, *Coxcom, Inc., D/B/A Cox Communications, Complainant V. Arkansas Valley Electric Cooperative Corporation, Respondent*. Docket No. 09-133-C, submitted March 17, 2010.

2009

Before the **Circuit Court of the Thirteenth Judicial Circuit in and for Hillsborough County, State of Florida**, *Tampa Electric Company, Plaintiff, vs. Bright House Networks, LLC, Defendant*, Case No. 06-00819, Division L. Expert Report submitted December 30, 2009, Deposition February 2, 2010, Cross-examination, March 24, 2010.

Before the **Superior Court of the State Of Washington for the County of Pacific**, *Pacific Utility District No. 2 Of Pacific County, Plaintiff, V. Comcast of Washington Iv, Inc., Centurytel of Washington, Inc., and Falcon Community Ventures I, L.P. D/B/A Charter Communications, Defendants*, Case No. 07-2-00484-1, Expert Report submitted September 18, 2009, Reply Report submitted October 16, 2009, Deposition December 21, 2009, Deposition December 21, 2009, Cross-examination October 12-13, 2010.

Before the **Public Utilities Commission of Ohio**, *In the Matter of the Application of Duke Energy Ohio, Inc., for an Increase in Electric Distribution Rates, Case No. 08-709-EL-AIR, In the Matter of the Application of Duke Energy*

Ohio, Inc., for a Tariff Approval, Case No. 08-710-EL-ATA, In the Matter of the Application of Duke Energy Ohio, Inc., for Approval to Change Accounting Methods, Case No. 08-11-EL-AAM, In the Matter of the Application of Cincinnati Gas & Electric Company for Approval of its Rider BDP, Backup Delivery Point, Case No. 06-718-EL-ATA, filed February 26, 2009.

2008

Before the **Arkansas Public Service Commission**, *In the Matter of a Rulemaking Proceeding to Establish Pole Attachment Rules In Accordance With Act 740 of 2007*, Docket No. 08-073-R, filed May 13, 2008, reply filed June 3, 2008, Cross-examination, June 10, 2008.

Before the **Federal Communications Commission**, *In the Matter of Implementation of Section 224 of the Act; Amendment of the Commission's Rules and Policies Governing Pole Attachments*, WC Docket No. 07-245, RM 11293, RM 11303, filed March 7, 2008, reply filed April 22, 2008.

2006

Before the **State of New Jersey Board of Public Utilities**, Office of Administrative Law, *in the Matter of the Verified Petition of TCG Delaware Valley, Inc. and Teleport Communications New York for an Order Requiring PSE&G Co. to Comply with the Board's Conduit Rental Regulations*, OAL Docket PUC 1191-06, BPU Docket No. EO0511005, filed September 29, 2006; rebuttal filed November 17, 2006.

Before the **Federal Communications Commission**, *In the Matter of Florida Cable Telecommunications Association, Inc., Comcast Cablevision of Panama City, Inc.; Mediacom Southeast, L.L.C.; and Cox Communications Gulf, L.L.C.; Complainants v. Gulf Power Company, Respondent*. EB Docket No. 04-381. Testimony on behalf of Complainants filed March 31, 2006, Deposition March 15, 2006, Cross-Examination April 26-27, 2006.

2005

Before the **United States District Court for the Eastern District of New York**, *Coastal Communication Service, Inc. and Telebeam Telecommunications Corporation, Plaintiffs - against -The City of New York and New York City Department of Information Technology and Telecommunications*, 02 Civ. 2300 (RJD) (SMG), Expert Report filed February 4, 2005; Rebuttal Expert Report, filed August 29, 2005, Deposition December 1, 2005.

2004

Before the **Ontario Energy Board**, *In the Matter of the Ontario Energy Board Act 1998, S.O.1998, c.15, (Schedule B); and In the Matter of an Application pursuant to section 74 of the Ontario Energy Board Act, 1998 by the Canadian Cable Television Association for an Order or Orders to amend the licenses of electricity distributors*, RP-2003-024, Reply Evidence, filed September 27, 2004 (jointly with Paul Glist), Cross-examination October 26-27, 2004.

2003

Before the **United States District Court for the Southern District of California**, *Level 3 Communications, LLC v. City of Santee*, Civil Action No. 02-CV-1193, Rebuttal Expert Report, filed July 18, 2003.

2002

Before the **New York State Public Service Commission**, *In the Matter of the Cable Television & Telecommunications Association of New York, Inc., Petitioner, v. Verizon New York, Inc., Respondent*, Affidavit filed December 19, 2002.

Before the **West Virginia Public Service Commission**, *Community Antenna Service, Inc. v. Charter Communications*, Case No. 01-0646-CTV-C, Live Direct Testimony and Cross-examination, June 12, 2002.

Before the **Public Service Commission of the District of Columbia**, Comcast Cablevision of the District, L.L.C., Complainant, v. Verizon Communications Inc. – Washington, D.C., Respondent, Formal Case No. 1006, Direct Testimony filed June 11, 2002; Rebuttal Testimony filed June 24, 2002.

Before the **Federal Communications Commission**, in *Cavalier Telephone, LLC, Complainant, v. Virginia Electric & Power Co., D/b/a Dominion Virginia Power, Respondent*, Case No. EB-02-MD-005, Declaration filed May 21, 2002.

Before the **Puerto Rico Telecommunications Regulatory Board**, in *Re: Petition of Centennial Puerto Rico License Corp. for arbitration pursuant to Sections 252(b) of the Telecommunications Act of 1996 to Establish an Interconnection Agreement with Puerto Rico Telephone Company*, on behalf of Centennial Puerto Rico License Corp., Direct Testimony filed April 16, 2002; Deposition May 7, 2002, May 14, 2002; Reply Testimony filed May 20, 2002, Cross-examination May 22, 2002.

Before the **Federal Energy Regulatory Commission**, in *Re: In the Matter of Transcontinental Gas Pipe Line Corporation*, Docket No. RP01-245, on behalf of the University of Maryland-College Park, Johns Hopkins University and Johns Hopkins University Health System, and the North Carolina Utilities Commission, Cross-answering Testimony filed January 23, 2002; Rebuttal Testimony filed May 31, 2002, Cross-examination July 31, 2002.

2001

Before the **United States District Court for the Northern District of New York**, *TC Systems, Inc. and Teleport Communications-New York vs. Town of Colonie, New York*, Civil Action No. 00-CV-1972, Expert Report filed November 16, 2001; Deposition December 7, 2001, Rebuttal Expert Report filed December 20, 2001, Deposition January 9, 2002.

Before the **Federal Energy Regulatory Commission**, in *Re: In the Matter of Transcontinental Gas Pipe Line Corporation*, Docket No. RP01-245, on behalf of the University of Maryland-College Park, Johns Hopkins University and Johns Hopkins University Health System, and the North Carolina Utilities Commission, filed November 15, 2001.

Before the **Public Service Commission of the District of Columbia**, Comcast Cable Communications, Inc. d/b/a/Comcast Cable of Washington, D.C., Complainant, v. Verizon Communications Inc. – Washington, D.C., Respondent, filed September 21, 2001.

Before the **Public Utility Commission of Texas**, State Office of Administrative Hearings, SOAH Docket No. 473-00-1014, PUC Docket No. 22349, *Application of Texas-New Mexico Power Company for Approval of Unbundled Cost of Service Rate Pursuant to PURA § 39.201 and Public Utility Commission Substantive Rule §25.344*, on behalf of Cities Served by Texas-New Mexico Power, filed January 25, 2001.

2000

Before the **Puerto Rico Telecommunications Regulatory Board**, in *AT&T of Puerto Rico, Inc. et al v. Puerto Rico Telephone Company, Inc., Re: Dialing Parity*, Docket Nos. 97-Q-0008, 98-Q-0002, on behalf of Lambda Communications Inc., Cross-examination October 19-20, 2000.

Before the **Department of Telecommunications and Energy of the Commonwealth of Massachusetts**, Docket No. DTE 98-57 – Phase III, *Re: Bell Atlantic- Massachusetts Tariff No. 17 Digital Subscriber Line Compliance Filing and Line Sharing Filing*, (Panel Testimony with Joseph Riolo, Robert Williams, and Michael Clancy) on behalf of Rhythms Links Inc. and Covad Communications Company, filed July 10, 2000.

Before the **New York State Public Service Commission** in *Re: Proceeding on Motion of the Commission to Examine New York Telephone Company's Rates for Unbundled Network Elements* on behalf of the Cable Television

& Telecommunications Association of New York, Inc., Direct Testimony filed June 26, 2000, Supplemental Testimony filed November 29, 2000.

Before the **Maryland Public Service Commission**, on behalf of Rhythms Links Inc. and Covad Communications Company, filed jointly with Terry L. Murray and Richard Cabe, May 5, 2000.

Before the **Public Utility Commission of Texas**, in *Re: Proceeding to Examine Reciprocal Compensation Pursuant to Section 252 of the Federal Telecommunications Act of 1996*, CC Docket No. 21982, on behalf of AT&T Communications of Texas, L.P., TCG Dallas, and Teleport Communications Houston, Inc., filed March 31, 2000.

Before the **Federal Communications Commission**, in *Re: In the Matter of Price Caps Performance Review for Local Exchange Carriers, Access Charge Reform*, CC Dockets 94-1, 96-262, on behalf of Ad Hoc Telecommunications Users Committee, filed January 24, 2000.

Before the **Federal Energy Regulatory Commission**, in *Re: In the Matter of Northern Border Pipeline Company*, on behalf of the Canadian Association of Petroleum Producers and the Alberta Department of Resource Development, filed January 20, 2000.

1999

Before the **Connecticut Department of Public Utilities**, in *Re: Evaluation and Application to Modify Franchise Agreement by SBC Communications Inc., Southern New England telecommunications Corporation and SNET Personal Vision, Inc.*, Docket No. 99-04-02, on behalf of the Office of Consumer Counsel, filed June 22, 1999; cross-examination July 8, 1999

Before the **Illinois Commerce Commission**, in *Re: Illinois Commerce Commission on its own Motion v. Illinois Bell Telephone Company; et al: Investigation into Non-Cost Based Access Charge Rate Elements in the Intrastate Access Charges of the Incumbent Local Exchange Carriers in Illinois, Illinois Commerce Commission on its own Motion Investigation into Implicit Universal Service Subsidies in Intrastate Access Charges and to Investigate how these Subsidies should be Treated in the Future, Illinois Commerce Commission on its own motion Investigation into the Reasonableness of the LS2 Rate of Illinois Bell Telephone Company*, Docket No. 97-00601, 97-0602, 97-0516, Consolidated, on behalf of City of Chicago, filed January 4, 1999; rebuttal February 17, 1999.

Before the **Puerto Rico Telecommunications Regulatory Board**, in *Re: In the Matter of Arbitration of Interconnection Rates, Terms and Conditions between Centennial Wireless PCS Operations Corp., Lambda Communications Inc., and the Puerto Rico Telephone Company*, behalf of Centennial Wireless PCS Operations Corp. and Lambda Communications Inc., cross-examination February 16, 1999.

1998

Before the **California Public Utilities Commission**, in *Re: In the Matter of the Application of Pacific Bell (U 1001 C), a Corporation, for Authority for Pricing Flexibility and to Increase Prices of Certain Operator Services, to Reduce the Number of Monthly Assistance Call Allowances, and Adjust Prices for Four Centrex Optional Features*, Application No. 98-05-038, on behalf of County of Los Angeles, filed November 17, 1998, cross-examination, December 9, 1998.

Before the **Puerto Rico Telecommunications Regulatory Board**, in *Re: In the Matter of PRTC's Tariff K-2 (Intra-island access charges)*, Docket no. 97-Q-0001, 97-Q-0003, on behalf of Lambda Communications, Inc., filed October 9, 1998, cross-examination October 9, 1998.

Before the **Connecticut Department of Public Utility Control**, in *Re: Application of the Southern New England Telephone Company*, Docket no. 98-04-03, on behalf of the Connecticut Office of Consumer Counsel, filed August 17, 1998, cross-examination February 18, 1999.

Before the **California Public Utilities Commission**, in *Re: Pacific Gas & Electric General Rate Case*, A.97-12-020, on behalf of Office of Rate Payers Advocates CA PUC, filed June 8, 1998.

1997

Before the **South Carolina Public Service Commission**, in *Re: Proceeding to Review BellSouth Telecommunications, Inc.'s Cost for Unbundled Network Elements*, Docket no. 97-374-C, on behalf of the South Carolina Cable Television Association, filed November 17, 1997.

Before the **State Corporation Commission of Kansas**, in *Re: In the Matter of and Investigation to Determine whether the Exemption from Interconnection Granted by 47 U.S.C. 251(f) should be Terminated in the Dighton, Ellis, Wakeeney, and Hill City Exchanges*, Docket No. 98-GIMT-162-MIS, on behalf of classic Telephone, Inc., filed October 23, 1997.

Before the **Georgia Public Services Commission**, in *Re: Review of Cost Studies, Methodologies, and Cost-Based Rates for Interconnection and Unbundling of BellSouth Telecommunications Services*, Docket No. 7061-U, on behalf of the Cable Television Association of Georgia, filed August 29, 1997, cross-examination September 19, 1997.

Before the **Federal Communications Commission**, in *Re: In the Matter of Price Caps Performance Review for Local Exchange Carriers, Access Charge Reform*, CC Dockets 94-1, 96-262, on behalf of Ad Hoc Telecommunications Users Committee, filed July 11, 1997.

Before the **Federal Communications Commission**, in *Re: In the Matter of Amendment of Rules and Policies Governing Pole Attachments*, CS Docket 97-98, on behalf of NCTA, filed June 27, 1997.

Before the **Public Utilities Commission of the State of California**, in *Re: Rulemaking on the Commission's Own Motion to Govern Open Access to Bottleneck Services and Establish a Framework for Network Architecture Development of Dominant Carrier Networks*, R.93-04-003, I.93-04-002AT&T, filed March 19, 1997, reply April 7, 1997.

Before the **Puerto Rico Telecommunications Regulatory Board**, in *Re: In the Matter of Centennial Petition for Arbitration with PRTC*, on behalf of Centennial Cellular Corporation, filed February 14, 1997, supplemental March 10, 1997.

Before the **Federal Communications Commission**, in *Re: In the Matter of Access Charge Reform*, CC Docket 96-262, on behalf of AT&T, filed January 29, 1997, reply February 14, 1997.

1996

Before the **New Jersey Board of Public Utilities**, in *Re: In the Matter of the Investigation Regarding Local Exchange Competition for Telecommunications Services*, TX95120631, on behalf of New Jersey Cable Television Association, filed on August 30, 1996, reply September 9, 1997, October 20, 1997, cross-examination September 12, 1996, December 20, 1996.

Before the **State Corporation Commission of the State of Kansas**, in *Re: In the Matter of a General Investigation Into Competition Within the Telecommunications Industry in the State of Kansas*, 190, 492-U 94-GIMT-478-GIT, on behalf of Kansas Cable Telecommunications Association, Inc., filed July 15, 1996, cross-examination August 14, 1996.

Before the **Federal Communications Commission**, in *Re: Price Caps Performance Review for Local Exchange Carriers*, CC Docket 94-1, on behalf of Ad Hoc Telecommunications Users Committee, filed July 12, 1996.

Before the **State Corporation Commission of the State of Kansas**, in *Re: In the Matter of a General Investigation Into Competition Within the Telecommunications Industry in the State of Kansas*, 190, 492-U 94-GIMT-478-GIT, on behalf of Kansas Cable Telecommunications Association, Inc., filed June 14, 1996, cross-examination August 14, 1996.

Before the **Federal Communications Commission**, in *Re: In the Matter of Implementation of the Local Competition Provisions of Telecommunications Act of 1996*, CC Docket 96-98, filed May 1996.

Before the **Federal Communications Commission**, in *Re: Puerto Rico Telephone Company (Tariff FCC No. 1)*, Transmittal No. 1, on behalf of Centennial Cellular Corp., filed April 29, 1996.

Before the **United States District Court for the Eastern District of Tennessee at Greeneville**, in *Re: Richard R. Land, Individually and d/b/a The Outer Shell, and on behalf of all others similarly situated, Plaintiffs, vs. United Telephone-Southeast, Inc., Defendant*, CIV 2-93-55, filed December 7, 1996.

1995

Before the **Federal Communications Commission**, in *Re: Bentleyville Telephone Company Petition and Waiver of Sections 63.54 and 63.55 of the Commission's Rules and Application for Authority to Construct and Operate, Cable Television Facilities in its Telephone Service Area*, W-P-C-6817, on behalf of the Helicon Group, L.P. d/b/a Helicon Cablevision, filed November 2, 1995.

Before the **US District Court for the Eastern District of Tennessee**, in *Re: Richard R. Land, Individually and d/b/a The Outer Shell, and on behalf of all others similarly situated, Plaintiffs, vs. United Telephone-Southeast, Inc., Defendant*, 2-93-55, Class Action, filed June 12, 1995.

Before the **Connecticut Department of Public Utility Control**, in *Re: Application of SNET Company for approval to trial video dial tone transport and switching*, 95-03-10, on behalf of New England Cable TV Association, filed May 8, 1995, cross-examination May 12, 1995.

Before **Canadian Radio-Television and Telecommunications Commission**, in *Re: CRTC Order in Council 1994-1689*, Public Notice CRTC 1994-130 (Information Highway), filed March 10, 1995.

Before the **Federal Communications Commission**, in *Re: GTE Hawaii's Section 214 Application to provide Video Dialtone in Honolulu, Hawaii*, W-P-C- 6958, on behalf of Hawaii Cable TV Association, filed January 17, 1995 (Reply to Amended Applications).

Before the **Federal Communications Commission**, in *Re: GTE Hawaii's Section 214 Application to provide Video Dialtone in Ventura County*, W-P-C 6957, on behalf of the California Cable TV Association, filed January 17, 1995 (Reply to Amended Applications).

Before the **Federal Communications Commission**, in *Re: GTE Florida's Section 214 Application to Provide Video Dialtone in the Pinellas County and Pasco County, Florida areas*, W-P-C 6956, on behalf of Florida Cable TV Association, filed January 17, 1995 (Reply to Amended Applications).

Before the **Federal Communications Commission**, in *Re: GTE Virginia's Section 214 Application to provide Video Dialtone in the Manassas, Virginia area*, W-P-C 6956, on behalf of Virginia Cable TV Association, filed January 17, 1995 (Reply to Amended Applications).

1994

Before the **Federal Communications Commission**, in *Re: NET's Section 214 Application to provide Video Dialtone in Rhode Island and Massachusetts*, W-P-C 6982, W-P-C 6983, on behalf of New England Cable TV Association, filed December 22, 1994 (Reply to Supp. Responses).

Before the **State Corporation Commission of the State of Kansas**, in *Re: General Investigation into Competition*, 190, 492-U 94-GIMT-478-GIT, on behalf of Kansas CATV Association, filed November 14, 1994, cross-examination December 1, 1994.

Before the **Federal Communication Commission**, in *Re: Carolina Telephone's Section 214 Application to provide Video Dialtone in areas of North Carolina*, W-P-C 6999, on behalf of North Carolina Cable TV Association, filed October 20, 1994, reply November 8, 1994.

Before the **Federal Communication Commission**, in *Re: NET's Section 214 Application to provide Video Dialtone in Rhode Island and Massachusetts*, W-P-C 6982, W-P-C 6983, on behalf of New England Cable TV Association, filed September 8, 1994, reply October 3, 1994.

Before the **California Public Utilities Commission**, in *Re: Petition of GTE-California to Eliminate the Preapproval Requirement for Fiber Beyond the Feeder*, I.87-11-033, on behalf of California Bankers Clearing House, County of LA, filed August 24, 1994.

Before the **Federal Communications Commission**, in *Re: BellSouth Telecommunications Inc., Section 214 Application to provide Video Dialtone in Chamblee, GA and Dekalb County, GA*, W-P-C 6977, on behalf of Georgia Cable TV Association, filed August 5, 1994.

Before the **Federal Communications Commission**, in *Re: Bell Atlantic Telephone Companies Section 214 Application to provide Video Dialtone within their Telephone Services Areas*, W-P-C 6966, on behalf of Mid Atlantic Cable Coalition, filed July 28, 1994, reply August 22, 1994.

Before the **Federal Communication Commission**, in *Re: GTE Hawaii's 214 Application to provide Video Dialtone in Honolulu, Hawaii*, W-P-C 6958, on behalf of Hawaii Cable TV Association, filed July 1, 1994, and July 29, 1994.

Before the **Federal Communication Commission**, in *Re: GTE California's Section 214 Application to provide Video Dialtone in Ventura County*, W-P-C 6957, on behalf of California Cable TV Association, filed July 1, 1994, and July 29, 1994.

Before the **Federal Communication Commission**, in *Re: GTE Florida's 214 Application to provide Video Dialtone in the Pinellas and Pasco County, Florida areas*, W-P-C 6956, on behalf of Florida Cable TV Association, filed July 1, 1994, and July 29, 1994.

Before the **Federal Communication Commission**, in *Re: GTE Virginia's 214 Application to provide Video Dialtone in the Manassas, Virginia area*, W-P-C 6955, on behalf of the Virginia Cable TV Association, filed July 1, 1994, and July 29, 1994.

Before the **Federal Communications Commission**, in *Re: US WEST's Section 214 Application to provide Video Dialtone in Boise, Idaho and Salt Lake City, Utah*, W-P-C 6944-45, before the Idaho and Utah Cable TV Association, filed May 31, 1994.

Before the **Federal Communication Commission**, in *Re: US WEST's Section 214 Application to provide Video Dialtone in Portland, OR; Minneapolis, St. Paul, MN; and Denver, CO*, W-P-C 6919-22, on behalf of Minnesota & Oregon Cable TV Association, filed March 28, 1994.

Before the **Federal Communications Commission**, in *Re: Ameritech's Section 214 Application to provide Video Dialtone within areas in Illinois, Indiana, Michigan, Ohio, and Wisconsin*, W-P-C-6926-30, on behalf of Great Lakes Cable Coalition, filed March 10, 1994, reply April 4, 1994.

Before the **Federal Communications Commission**, in *Re: Pacific Bell's Section 214 Application to provide Video Dialtone in Los Angeles, Orange County, San Diego, and Southern San Francisco Bay areas*, W-P-C-6913-16, on behalf of Comcast/Cablevision Inc., filed February 11, 1994, reply March 11, 1994.

Before the **Federal Communications Commission**, in *Re: SNET's Section 214 Application to provide Video Dialtone in Connecticut*, W-P-C 6858, on behalf of New England Cable TV Association, filed January 20, 1994, reply February 23, 1994.

1993

Before the **Arkansas Public Service Commission**, in *Re: Earnings Review of Southwestern Bell Telephone Company*, 92-260-U, on behalf of Arkansas Press Association, filed September 2, 1993.

Before the **United States District Court for the Eastern District of Tennessee at Greenville**, in *Re: Cleo Stinnett, et al. Vs. BellSouth Telecommunications, Inc. d/b/a/ South Central Bell Telephone Company, Defendant*, Civil Action No 2-92-207, Class Action, cross-examination May 10, 1993, and February 10, 1994.

Before the **Federal Communications Commission**, in *Re: NJ Bell's Section 214 Application to provide Video Dialtone service within Dover Township, and Ocean County, New Jersey*, W-P-C-6840, on behalf of New Jersey Cable TV Association, filed January 21, 1993.

1992

Before the **New Jersey Board of Regulatory Commissioners**, in *Re: NJ Bell Alternative Regulation*, T092030358, on behalf of NJ Cable TV Association, filed September 21, 1992.

Before the **New Hampshire Public Utilities Commission**, in *Re: Generic competition docket*, DR 90-002, on behalf of Office of the Consumer Advocate, filed May 1, 1992, reply July 10, 1992, Surrebuttal August 21, 1992.

Before the **New Jersey General assembly Transportation, Telecommunications, and Technology Committee**, *Concerning A-5063*, on behalf of NJ Cable TV Association, filed January 6, 1992.

1991

Before the **New Jersey Senate Transportation and Public Utilities Committee**, in *Re: Concerning Senate Bill S-3617*, on behalf of New Jersey Cable Television Association, filed December 10, 1991.

Before the **119th Ohio General Assembly Senate Select Committee on Telecommunications Infrastructure and Technology**, in *Re: Issues Surrounding Telecommunications Network Modernization*, on behalf of the Ohio Cable TV Association, filed March 7, 1991.

Before the **Tennessee Public Service Commission**, in *Re: Master Plan Development and TN Regulatory Reform Plan*, on behalf of TN Cable TV Association, filed February 20, 1991.

1990

Before the **Tennessee Public Service Commission**, in *Re: Earnings Investigation of South Central Bell*, 90-05953, on behalf of the TN Cable Television Association, filed September 28, 1990.

Before the **New York Public Service Commission**, in *Re: NYT Rates, 90-C-0191, on behalf of User Parties NY Clearing House Association*, filed July 13, 1990, Surrebuttal July 30, 1990.

Before the **Louisiana Public Service Commission**, in *Re: South Central Bell Bidirectional Usage Rate Service*, U-18656, on behalf of Answerphone of New Orleans, Inc., Executive Services, Inc., King Telephone Answering Service, et al, filed January 11, 1990.

1989

Before the **Georgia Public Service Commission**, in *Re: Southern Bell Tariff Revision and Bidirectional Usage Rate Service*, 3896-U, on behalf of Atlanta Journal Const./Voice Information Services Company, Inc., GA Association of Telemessaging Services, Prodigy Services, Company, Telnet Communications, Corp., filed November 28, 1989.

Before the **New York State Public Service Commission**, in *Re: NYT Co. - Rate Moratorium Extension - Fifth Stage Filing*, 28961 Fifth Stage, on behalf of User Parties NY Clearing House Association Committee of Corporate Telecommunication Users, filed October 16, 1989.

Before the **Delaware Public Service Commission**, in *Re: Diamond State Telephone Co. Rate Case*, 86-20, on behalf of DE PSC, filed June 16, 1989.

Before the **Arizona Corporation Committee**, in *Re: General Rate Case*, 86-20, on behalf of Arizona Corporation Committee, filed March 6, 1989.

1988

Before **New York State Public Service Commission**, in *Re: NYT Rate Moratorium Extension*, 28961, on behalf of Capital Cities/ ABC, Inc., AMEX Co., CBS, Inc., NBC, Inc., filed December 23, 1988.

1989

Before **Rhode Island Public Utilities Commission**, in *Re: New England Telephone*, 1475, on behalf of RI Bankers Association, filed August 11, 1987, cross-examination August 21, 1987.

Before the **New York State Public Service Commission**, in *Re: General Rate Case Subject to Competition*, 29469, on behalf of AMEX Co., Capital Cities/ ABNC, Inc., NBC, Inc., filed April 17, 1987, cross-examination May 20, 1987.

Before the **Minnesota Public Utilities Commission**, in *Re: Northwestern Bell*, P-421/ M-86-508, on behalf of MN Bus. Utilities Users Counsel, filed February 10, 1987, cross-examination March 5, 1987.

1986

Before the **Kansas Public Utilities Commission**, in *Re: Southwestern Bell*, 127, 140-U, on behalf of Boeing Military, et al., filed August 15, 1986.

1985

Before the **Washington Utilities and Transportation Commission**, in *Re: Cost of Service Issues bearing on the Regulation of Telecommunications Company*, on behalf of US Department of Energy, filed November 18, 1985 (Reply Comments).

1984

Before the **Maine Public Utilities Commission**, in *Re: New England Telephone*, 83-213, on behalf of Staff, ME PUC, filed February 7, 1984, cross-examination March 16, 1984.

Before the **Minnesota Public Service Commission**, in *Re: South Central Bell*, U-4415, on behalf of MS PSC, filed January 24, 1984, cross-examination February 1984.

1983

Before the **Kentucky Public Service Commission**, in *Re: South Central Bell*, 8847, on behalf of KY PSC, filed November 28, 1983, cross-examination December 1983.

Before the **Florida Public Service Commission**, in *Re: Southern Bell Rate Case*, 820294-TP, on behalf of Florida Department of General Services, FL Ad Hoc Telecommunications Users, filed March 21, 1983, cross-examination May 5, 1983.

1982

Before the **Maine Public Utilities Commission**, in *Re: New England Telephone*, 82-142, on behalf of Staff, ME PUC, filed November 15, 1982, cross-examination December 9, 1982.

Before the **Kentucky Public Service Commission**, in *Re: South Central Bell*, 8467, on behalf of the Commonwealth of Kentucky, cross-examination August 26, 1982.

Extraordinarily Sensitive Exhibit PDK-2

**COMCAST CALIFORNIA/MARYLAND/PENNSYLVANIA
VIRGINIA/WES VIRGINIA LLC**

Adjusted NOVEC "Incremental Cost" Analysis

TABS 1, 2, 2A, 2B, 2C, 2D, 2E

Public Version:

ES Materials are redacted

Adjusted NOVEC Costs Recoverable from Third Party Attachments and Comcast Specifically

	a	b	c = a-b	d = b-c
1. NOVEC Cost Categories	Annualized Cost Per Response to Comcast V-41, IX-15	Max Adjusted Annualized Cost per Tab 2	Total Commit Att Payments, Fees & Inkind Cost Offsets per Part II	Total Max NOVEC Cost Excludes N Solutions
Total Universe Communications Attached Poles				
1 Performing Periodic Communications Attachment Survey	\$47,616	\$3,937		
2 Accommodate Comm Att Transfers When Replacing Poles	\$241,897	\$175,758		
3 Performing Scheduled Tree Trimming & Tree Removal Work	\$275,736	\$101,955		
4 Performing Addtl Work Securing Comm Att During Svc Restoration	\$67,782	\$0		
5 Responding to Wires Down Reports	\$15,996	\$11,997		
6 Joint Use Agreement Negotiations & Litigation	\$48,400	\$0		
7 Joint Use Admin & Monitoring	\$116,500	\$90,119		
8 Extra 5 ft Height on All Joint Use Poles	\$269,879	\$74,607		
Total Maximum "Incremental Revenue Requirement"	\$1,083,806	\$458,374	\$474,417	-\$16,044
No Comm Attachments per NOVEC	41,006	41,006		41,006
Rate per Attachment	\$26.43	\$11.18		-\$0.39
Cum No of Comm Att Poles per NOVEC	35,422	35,422		35,422
Rate per Cumulative Pole	\$30.60	\$12.94		-\$0.45
Comcast Attached Poles Only (Excludes NOVEC Solutions)				
Pro-rated to Comcast based on % Att or Poles per Novec	\$397,355	\$168,053	Comcast Payments, Fees & Inkind Cost Offsets per Part II	Total Max NOVEC Cost Excl N Solutions
Total Maximum "Incremental Revenue Requirement" / Offsets	\$15,034	\$15,034	\$418,345	-\$250,291
Number Comcast Attachments per Resp to Comcast I-10 (CD)	\$26.43	\$11.18		15,034
Rate per Attachment				-\$16.65
Total Maximum "Incremental Revenue Requirement" / Offsets				
Number Comcast Poles per HMS p. 15	\$426,705	\$180,466	\$418,345	-\$237,878
Rate per Cum Pole Excluding Verizon and Nov Solutions	\$30.60	\$12.94		13,946
				-\$17.06

III. Comcast Incremental Revenue/Cost Offset Categories	Lump Sum / Contribution to	Value Dark Fibers Annualized	Make-ready Payments**	Self-incurred Expenses*	Total
Total Revenue/Cost Offsets Annualization Period***	\$2,500,000	\$2,075,319	\$418,553		
	12.5	12.5	8		
Total Comcast Revenue/Cost Offsets - Annualized	\$200,000	\$166,026	\$52,319		\$418,345
Estimated Other Non Owner Attachments based on % of Comcast	\$44,446		\$11,627		\$56,073
Total Revenue/Cost Offsets Annualized - All Attachments Incl Comcast					\$474,417

Notes:

* For purposes of this analysis, neither NOVEC costs or Comcast self incurred costs are included for this category, but for every dollar NOVEC estimates it spends on negotiations and litigation, third party attorney likely spends multiples of that amount.

** Comcast make ready payments included in this analysis are based on information obtained through discovery produced in the proceeding (including that obtained by Comcast's counsel at Gainesville location) and invoices produced by Comcast in response to NOVEC 38(e) and amounts reported by NOVEC in Response to Comcast 1-14. These numbers are conservatively low estimates, however based on a comparison of other available information showing substantial non-rent related payments to NOVEC as identified in a spreadsheet of Comcast payments to NOVEC from 2007 to 2013 (produced in discovery by Comcast CD-ROM to NOVEC on August 12th as a response to #38(f)) as compared to the NOVEC response to Staff showing the much smaller amounts allocated to Comcast rent used in the Booth margin analysis. See also Prefiled Testimony of Steve Hill.

To date, NOVEC has not responded to numerous discovery requests asking for information on make ready payments by other entities. In the absence of information from NOVEC, a projection based on available data on Comcast payments has been made based on the relative number of attachments.

*** Based on 12.5 contract period.

	Pro-rated to Comcast based on % Att or Poles per Novec	Pro-rated to Comcast based on % Att or Poles per Novec	Comcast Payments, Fees & In-kind Cost Offsets per Part II	
Comcast Attached Poles Only (Includes NOVEC Solutions)				
Total Maximum "Incremental Revenue Requirement" / Offsets	\$370,687	\$156,775	\$418,345	-\$261,570
Number Comcast Attachments per Resp to Comcast I-10 (CD)	15,034	15,034		15,034
Rate per Attachment	\$24.66	\$10.43		
Total Maximum "Incremental Revenue Requirement" / Offsets				
Number Comcast Poles per HMS, p. 15	13,946	13,946	\$418,345	-\$251,752
Rate per Cum Pole Incl Nov Solutions	\$28.24	\$11.95		13,946

	Adjustment A	Adjustment B	Adjustment C	Average
1 Performing Periodic Comm Attachment Survey per NOVEC	\$47,616.00	\$47,616.00		
Total No. Comm Att per NOVEC	41006	41006		
Benchmark Independent Estimate of Survey Cost per Comm A	\$0.65	\$0.65	see below	
Total Survey Cost directly attributable "but For" Comm Att	\$26,653.90	\$26,653.90	\$38,155.37	\$30,487.72
Annualization based on number of years between periodic su	5	10	10	
Adjusted Amount	\$5,330.78	\$2,665.39	\$3,815.54	\$3,937.24

Supporting Documentation/Rationale:
 * Florida PUC Obj & Resp. to Citizen's 1st RfPD, Nos. 1-4, FPIUC Case No. 070300-EI, 11-15-07, Ex. 4.1 (identifying \$.60 per cable att) Mile Hi Cable, 15 FCC Rcd. 11450 at n. 62 (finding an audit fee of \$.70 per pole to be reasonable)
 NOVEC Resp to Staff II-10, showing 15 yr interval between field audit surveys.
 10 year annualization period reflects midpoint of 5 years (NOVEC assumption) and 15 years actual.
 Independent cost figure used is the average of these two benchmark costs.

	Adjustment C
1 Performing Periodic Comm Attachment Survey per NOVEC	\$47,616.00
Estimated Total No. Comm Att adj to include Novec Soltns	\$38,155.37
See NOVEC Survey Cost per Adjusted Table 2, Tab 2A	\$0.87
NOVEC Survey Cost per Adjusted No Comm Att *	
Annualization based on 10 year periodic surveys	10
Adjusted Amount	\$3,815.54

Supporting Documentation/Rationale:
 * See Tab 3 Derivation of Estimate of Comm Att incl NOVEC Soltns & Verizon
 ** See Tab 1A Adj Table 2. Applies max allocation factor of 50% to comm attachers.

Pole Type	No of Poles	Transfer Cost		Pole Cut Cost		Second Visit Pole R Total Cost		Annualized
Angle Poles	187	\$0.00	\$16,621.96	\$91,506.56	\$108,128.52	\$54,064.26		\$54,064.26
Deadend Poles	354	\$0.00	\$31,466.18	\$173,046.76	\$204,512.94	\$102,256.47		\$102,256.47
Tangent Poles	618	\$119,774.93	\$51,376.97	\$0.00	\$171,151.90	\$85,575.95		\$85,575.95
Total	1,159	119,774.93	99,465.11	264,553.32	483,793.36	241,896.68		241,896.68
50%								
Adjustment Factor Applied to Second Visit Costs								
Angle Poles	187	\$0.00	\$16,631.96	\$45,753.28	\$62,375.24	\$31,187.62		\$31,187.62
Deadend Poles	354	\$0.00	\$31,466.18	\$86,523	\$117,989.56	\$58,994.78		\$58,994.78
Tangent Poles	618	\$119,774.93	\$51,376.97	\$0.00	\$171,151.90	\$85,575.95		\$85,575.95
Total	1,159	\$119,774.93	\$99,465.11	\$132,276.66	\$351,516.70	\$175,758.35		\$175,758.35

2 Accommodate Comm Att Transfers When Replacing Poles

Supporting Documentation/Rationale:

NOVEC's costs cannot be independently verified as accurate or representative as reasonable baseline revenue requirement. Adjustment factor reduces from 100% the number of second visits required by NOVEC Unreasonable to build into revenue requirement a cost based on the worst case scenario where comm attachers do no tmake transfer upon proper notice. Doing so creates undesirable incentive for NOVEC not to work with attachers to comply with best practices.

3 Performing Scheduled Tree Trimming & Tree Removal Work Annualized	
Tree Trimming per Adjusted Table 6, see Tab 2B	\$19,467
Tree Removal per Adjusted Table 7, see Tab 2C	\$82,488
See Explanatory Note Below.	
Adjusted Amount	\$101,955

Supporting Documentation/Rationale:

Per resp to Staff II-13, NOVEC's costs cannot be independently verified as accurate or representative as reasonable Supporting Documentation/Rationale (cont'd): baseline revenue requirement. Adjustments apply joint use right of way percentage to reflect percent of total distribution poles, vs wood only, and to adjust cost cause estimates by appropriate % of joint use right of way to derive more reasonable cost causative "but for" attribution of costs. Additionally, in Table 7, an adjustment is made to reduce the "multiples of cost" attributable to attachers for one of the tree removal components to reflect a reasonable increment to total system costs as being caused by attachers, as is logical and also consistent with NOVEC's assumptions for the other tree removal components.

4 Performing Addtl Work Securing Comm Att During Service Restorations	Total 2 yr	Annualized
Third Party Portion of 4 Storm Costs per Adjusted Table 8A, see Tab 2D	\$73,559.62	\$36,779.81
Third Party Portion of 4 Storm Costs per Adjusted Table 8b, see Tab 2E	\$36,948.68	\$18,474.34
Adjusted Amount:		\$55,254.15
Offset by:		
Third Party Portion FEMA Distributions to NOVEC during 2011-2012:	\$248,939.07	\$124,469.54
Adjusted Rev Requirement after FEMA Offset:		\$0.00

Supporting Documentation/Rationale:

Per resp to Staff II-15, NOVEC's costs cannot be independently verified. Adjustments apply joint use right of way percentage to reflect percent of total distribution poles, vs wood only so as to derive more reasonable cost causative "but for" attribution of costs. However, given FEMA distributions to NOVEC during this period, there would appear to be no just and reasonable basis for an incremental revenue requirement to pole attachers.

5 Number of Communications Wires Down to Investigate	2011		2012 Total		# Hrs Needed	Annualized
Number of wires down	117	56	173			
Cost to Investigate	21,462.48	10,530.24	31,992.72	2.00		\$15,996
Adjusted Cost to Investigate	16,096.86	7,897.68	23,994.54	1.50		\$11,997
Reasonable Efficiency Factor						25%

Supporting Documentation/Rationale:

NOVEC's costs cannot be independently verified. See NOVEC Resp to Staff II-17. Further, any classification as "but for" costs is generous. In light of pole owner's discretion over these costs and its incentive to overstate costs, a reasonable adjustment factor to encourage efficiency was made, reducing NOVEC assumed average time to respond to downed wire.

6 Joint Use Agreement Negotiations & Litigation	
See Explanatory Note Below.	
Adjusted Amount	\$0.00

Supporting Documentation/Rationale:

NOVEC's costs cannot be independently verified, and moreover, these costs are totally under the control of monopoly pole owner. Accordingly, any allocation of these types of costs to Comm Attachers creates undesirable incentive for owner to seek to extract excessive rates and impose other unreasonable terms and conditions, to extent owner is able to recover costs of an impasse or resulting litigation from attacher. Further entrenches asymmetric bargaining power of pole owner, and raises costs Attacher must incur.

7 Joint Use Admin & Monitoring	Hours	Unit Cost	Total Cost
Field personnel	2080	\$50.77	\$105,601.60
Supervisor	32	\$39.88	\$1,276.16
Customer Service Representative	35	\$34.87	\$1,220.45
Manager	150	\$56.14	\$8,421.00
Total			\$116,519.21
Reasonable Efficiency Factor			25%
Adjusted Amount			\$90,118.81

Supporting Documentation/Rationale:

No independent information to either verify NOVEC's claim of one full time field personnel fully dedicated to third party admin & monitoring, i.e. spends no time on matters relating to core electric service, moreover, in light of pole owner's discretion over these costs and its incentive to overstate costs, a reasonable efficiency adjustment is applied to full time employee costs to reflect % of time could be spent/shifted to core electric duties.

8 Extra 5 ft Height on All Joint Use Poles per NOVEC	\$269,882
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Comm Att Per Pole per Tab 3	1.38
Avg space (in inches) occupied by Attachers	16.59
Percentage of extra 5 ft occupied by Thd Party Attachers	28%
Percentage of extra 5 ft available for use or other rev opp	72%
Additional 5ft bare pole undepreciated cost	\$143,86
Proportionate Share to Thd Pty Attachers	\$39.77
Accumulated Depreciation distribution plant	31%
Additional 5ft bare pole depreciated cost	\$27.44
Weighted Cost of Debt	3.48%
Annual Depreciation Rate	3.00%
Aggregate Property Tax Rate	1.22%
Third Party Poles	25,627
Debt	\$35,467
Depreciation	\$30,575
Property Taxes	\$8,565
Adjusted Amount	\$74,607

Supporting Documentation/Rationale:

Taller poles being installed to serve core electric service, none of these costs are truly "but for" costs, and such "but for" costs are most efficiently recovered through pole-specific makeready charge, but at most, maximum NOVEC allocation based on average percent of space occupied by 3rd parties, i.e. space that could be reasonably be deemed unavailable or "lost" opportunity to NOVEC to use of receive revenues. Based on NOVEC's own data, this adjustment results in 28% of the purported costs of the extra 5 feet allocated to third parties. Another reasonable basis for allocation would be to assign 20% of the purported costs to any one attacher, since in theory, the additional 5 feet could accommodate 5 third party attachments. But to be more generous to NOVEC, the allocation of 28% based on occupancy data is used here.

Administration			
	Hours	Unit Cost	Total Cost
Supervisor	62	\$39.88	\$2,472.56
Customer Service Representative	240	\$34.87	\$8,368.80
Manager	280	\$56.14	\$15,719.20
Supervisor	31	\$51.19	\$1,586.89
Manager	102	\$74.40	\$7,588.80
Total			\$35,736.25
Sampling			
	Hours	Unit Cost	Total Cost
Batches 1-16	640	\$76.31	\$48,838.40
Batches 17-23	140	\$77.39	\$10,834.60
Batches 24-62	390	\$78.50	\$30,615.00
Total	1,170		\$90,288.00
Survey			
	Units	Unit Cost	Total Cost
Data Collection	62,156	\$3.89	\$241,830.25
Verizon Poles Index	6,724	\$0.50	\$3,362.00
Clearance Measurements	6,342	\$1.63	\$10,337.46
Remove Pole Tag and Install Pole Tag	54,386	\$3.07	\$166,965.02
Remove Non-NOVEC Signage	2,757	\$1.64	\$4,521.48
Total			\$427,016.21
NOVEC			
	NOVEC	Communications Companies	Annualized Third Party
Data Collection			\$24,183.02
Remove Pole Tag and Install Pole Tag	\$166,965.02	\$0.00	\$0.00
Clearance Measurements			\$1,033.75
Remove Non-NOVEC Signage	\$4,521.48	\$0.00	\$0.00
Verizon Pole Index			\$336.20
Sampling			\$9,028.80
Administration			\$3,573.60
Totals	\$362,263.63	\$190,776.83	\$38,155.37
Max J&R Allocation Percentage	50%	50%	

Data Sources and Methodology
NOVEC contractor invoices
Employee wage and benefits
Allocation of costs based upon work definition
Annual allocation based upon performing a survey every five years.

Trimming Mileage Rates	Rate
January 1, 2010 - December 31, 2010	\$3,246.00
January 1, 2011 - December 31, 2011	\$3,554.00
January 1, 2012 - June 30, 2012	\$3,474.00
July 1, 2012 - June 30, 2013	\$3,483.40
Total Right-of-Way Miles	1,931.0

Total Right-of-Way Miles Trimmed - 2011	464.2
Total Right-of-Way Miles Trimmed - 2012	477.0

Right-of-Way Miles by Type (2011)	2011 Miles	2011 Cost	System Miles
Double Sided Trimming @15%	69.6	\$247,481.01	289.7
Single Sided Trimming @65%	301.7	\$1,072,417.72	1,255.2
Open Field @10%	46.4	\$164,987.34	193.1
Trees Planted Under Line @10%	46.4	\$164,987.34	193.1
Total Right-of-Way Miles	464.2	\$1,649,873.42	1,931.0

Joint Use Right-of-Way Miles by Type (2011)	2011 Miles	2011 Cost	Attacher Cause Cost	System Miles
Double Sided Trimming (0% cause)	27.6	\$98,020.12	\$0.00	114.7
Single Sided Trimming (10% cause)	119.5	\$424,753.86	\$16,823.28	497.1
Open Field (0% cause)	18.4	\$65,346.75	\$0.00	76.5
Trees Planted Under Line (10% cause)	18.4	\$65,346.75	\$2,588.20	76.5
Adjoint Use Right-of-Way Miles	183.9	\$653,467.48	\$19,411.48	

Right-of-Way Miles by Type (2012)	2012 Miles	2012 Cost	System Miles
Double Sided Trimming @15%	71.6	\$248,900.99	289.7
Single Sided Trimming @65%	310.1	\$1,078,570.94	1,255.2
Open Field @10%	47.7	\$165,933.99	193.1
Trees Planted Under Line @10%	47.7	\$165,933.99	193.1
Total Right-of-Way Miles	477.0	\$1,659,339.90	1,931.0

Joint Use Right-of-Way Miles by Type (2012)	2012 Miles	2012 Cost	Attacher Cause Cost	Miles
Double Sided Trimming (0% cause)	28.3	\$98,582.53	\$0.00	114.7
Single Sided Trimming (10% cause)	122.8	\$427,190.97	\$16,919.81	497.1
Open Field (0% cause)	18.9	\$65,721.69	\$0.00	76.5
Trees Planted Under Line (10% cause)	18.9	\$65,721.69	\$2,603.05	76.5
Joint Use Right-of-Way Miles	188.9	\$657,216.88	\$19,522.85	764.8

Joint Use Right-of-Way Miles by Type	Miles	NOVEC Total Cost	Attacher Cause Total Cost	Annualized Attacher Caused Cost
Double Sided Trimming	55.9	\$196,602.65	\$0.00	\$0.00
Single Sided Trimming	242.3	\$851,944.83	\$33,743.09	\$16,871.54
Open Field	37.3	\$131,068.44	\$0.00	\$0.00
Trees Planted Under Line	37.3	\$131,068.44	\$5,191.24	\$2,595.62
Joint Use Right-of-Way Miles	372.8	\$1,310,684.35	\$38,934.33	\$19,467.17

Data Sources and Methodology

NOVEC tree removal expenditures from vegetation management contractors invoices
Yearly miles trimmed from NOVEC right-of-way and grounds maintenance
Trimming mileage rate from vegetation management contractor agreement
Deducted tree removal cost associated with clearing new right-of-ways
Percentage of rights-of-way with attachments is total number of distribution wood poles with attachments divided by the total number of distribution wood poles.

Time Frame of Analysis
Calendar Years 2011 and 2012

Assumptions

Right-of-way miles by type from NOVEC administrator, arborist contractor and vegetation management area foreman
Costs presented excludes NOVEC supervision and administration costs.
Costs presented excludes tree trimming work performed during emergency service restoration
Costs presented excludes tree trimming work performed by NOVEC personnel

	2011	2012
NOVEC Total Tree Removal Expenditures	\$1,376,512.01	\$1,609,821.65
Percent of time removing trees	90.00%	90.00%
Estimated Number of Trees Removed	2,400	2,700
Hourly Rate - 3 Man Tree Removal Crew	\$126.80	\$132.25
Average cost / tree removed	\$516.94	\$536.61
Average time (hrs.) to remove a tree/crew	4.08	4.06
Percentage of Right-of-Way with Attachments	52.27%	52.27%

Percent of Tree Removals	Tree Removals	Hourly Rate	Ave. Time for a Tree Removal	Multiples of Cost Attributed to Attachments	2011 Cost Attributed to Attachments
4.00%	37	\$126.80	4.08		\$7,739.16
8.00%	75	\$126.80	4.08	0.5	\$19,347.91
35.00%	327	\$126.80	4.08	0.2	\$33,858.84
30.00%	281	\$126.80	4.08	0.1	\$14,510.93
23.00%	215	\$126.80	4.08	0	\$0.00
					\$75,456.83

Percent of Tree Removals	Tree Removals	Hourly Rate	Ave. Time for a Tree Removal	Multiples of Cost Attributed to Attachments	2012 Cost Attributed to Attachments
4.00%	43	\$132.25	4.06		\$9,181.50
8.00%	86	\$132.25	4.06	0.5	\$22,953.75
35.00%	374	\$132.25	4.06	0.2	\$40,169.06
30.00%	321	\$132.25	4.06	0.1	\$17,215.31
23.00%	246	\$132.25	4.06	0	\$0.00
					\$89,519.62

Two Year Total \$164,976.45
Two Year Average \$82,488.23

Data Sources and Methodology

- NOVEC tree removal expenditures from vegetation management contractors Invoices
- Quantity of trees removed provided by vegetation management contractors
- Excluded tree trimming work for new right-of-ways
- Hourly crew rate from vegetation management contractor agreement
- Deducted tree removal cost associated with clearing new right-of-ways

Deducted 10% of tree removal costs for travel
Calculated an average time to perform a large tree removal using contractor invoices and estimate of the quantity of trees removed from vegetation management contractor
Multiples of costs attributed to attachments determined with vegetation management

Time Frame of Analysis
Calendar Years 2011 and 2012

Assumptions

Large tree is a tree 9 inches or greater in diameter and 50 feet or taller

A large tree removal event is defined as one large tree at a single location or a cluster of large trees at a single location that have all been designated for removal.

Costs presented excludes NOVEC supervision and administration costs.

Costs presented excludes tree removal work performed during emergency service restoration

Costs presented excludes tree removal work performed by NOVEC personnel

NOVEC Total for the Four Storms					
County	Jan-13	Hurricane Irene	Derecho	Hurricane Sandy	Total - 2yr
Prince Wm	\$54,186.47	\$13,457.27	\$38,089.80	\$40,198.50	\$145,932.04
Manassas Park				\$350.00	\$350.00
Loudoun	\$8,770.16	\$176.62	\$27,931.15	\$26,622.80	\$63,500.73
Leesburg					\$0.00
Clark					\$0.00
Fairfax	\$40,879.52	\$4,361.36	\$27,021.79	\$12,986.64	\$85,249.31
Fauquier	\$7,724.92	\$176.62	\$22,734.68	\$21,077.15	\$51,713.37
Stafford	\$3,183.63	\$7,208.56	\$17,849.70	\$2,398.21	\$30,580.10
Total	\$114,744.70	\$25,380.43	\$133,627.12	\$103,573.30	\$377,325.55

Allocation Factor Work Share 50.00%
 Allocation Factor Line Mileage (% wood poles on [redacted]) 52.27%
 38.99%

Third Party Portion for the Four Storms					
County	Jan-11	Hurricane Irene	Derecho	Hurricane Sandy	Total - 2yr
Prince Wm	\$10,563.65	\$2,623.49	\$7,425.61	\$7,836.70	\$28,449.45
Manassas Park	\$0.00	\$0.00	\$0.00	\$68.23	\$68.23
Loudoun	\$1,709.74	\$34.43	\$5,445.18	\$5,190.11	\$12,379.47
Leesburg	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Clark	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Fairfax	\$7,969.46	\$850.25	\$5,267.90	\$2,531.75	\$16,619.35
Fauquier	\$1,505.97	\$34.43	\$4,432.13	\$4,108.99	\$10,081.52
Stafford	\$620.65	\$1,405.31	\$3,479.80	\$455.83	\$5,961.59

Total Reported FEMA Obligations to NOVEC during 2011-12	\$1,276,938
Allocated Share to Third Party	\$248,939
Annualized	\$124,470

Data Sources and Methodology

NOVEC tree clearing expenditures from vegetation management contractors invoices for the four major service restoration
Vegetation management contractor provided the percentage for work allocation during the storm

Calculated an average time to perform a large tree removal using contractor invoices and estimate of the quantity of tree removals from vegetation management contractor

Time Frame of Analysis
Calendar Years 2011 and 2012

Assumptions

Excludes all tree clearing work performed by NOVEC personnel during these during restoration operations in this two year period.

Excludes NOVEC supervision and administration costs.

Date	POLE_NBR	Pole Type	Attachments	Work Cost	Data
1/26/11	434022003	A	2	\$293.04	Job Site Inspector - 2011
1/27/11	370142001	A	2	\$293.04	Job Site Inspector - 2012
3/21/11	355233005	A	1	\$293.04	Job Site Inspector - 2013
1/26/11	435011011	DE	3	\$293.04	Lead Line Tech - 2011
1/26/11	434232016	DE	2	\$293.04	Lead Line Tech - 2012
1/26/11	351071005	DE	1	\$293.04	Lead Line Tech - 2013
1/26/11	351092005	DE	1	\$293.04	Service Tech - 2011
1/26/11	352041019	DE	1	\$293.04	Service Tech - 2012
1/26/11	353243002	DE	1	\$293.04	Service Tech - 2013
1/26/11	434022004	DE	1	\$293.04	Pole Cut Cost - 4/1/11
1/26/11	329154006	T	2	\$266.40	Pole Cut Cost - 4/1/12
1/26/11	414162036	T	2	\$266.40	Pole Cut Cost - 4/1/13
1/26/11	435011007	T	2	\$266.40	Attach Transfer Cost 4/1/11
1/26/11	352134002	T	1	\$266.40	Attach Transfer Cost 4/1/12
1/26/11	374053006	T	1	\$266.40	Attach Transfer Cost 4/1/13
1/26/11	375121023	T	1	\$266.40	Contract Crew (6) - 1/1/10
1/26/11	434152028	T	1	\$266.40	Contract Crew (6) - 4/11
1/26/11	434182012	T	1	\$266.40	Contract Crew (6) - 4/12
1/29/11	374083018	T	3	\$266.40	Contract Crew (6) - 4/13
1/29/11	374084006	T	2	\$266.40	Small Bucket
				\$5,594.40	Small Service Truck
					Pickup Truck
8/27/11	456234142	T	1	\$266.40	Large Bucket
8/27/11	454123009	T	1	\$266.40	Time to do work "A"
8/27/11	456234079	T	1	\$266.40	Time to do work "DE"
8/27/11	475041009	T	1	\$266.40	Time to do work "T"
8/27/11	375252025	T	2	\$266.40	
8/27/11	433094029	T	1	\$266.40	
				\$1,598.40	
6/29/12	389144019	A	4	\$293.04	
6/29/12	310182023	A	3	\$293.04	
6/29/12	132123008	A	2	\$293.04	
6/29/12	310043052	A	2	\$293.04	

Extraordinarily Sensitive
 Exhibit PDK-2
 Tab 2E

6/29/12	313024002	A	2	\$293.04	
6/29/12	170034012	A	1	\$293.04	
6/29/12	389132029	A	1	\$293.04	
6/29/12	512144001	A	1	\$293.04	
6/25/12	353134007	DE	2	\$293.04	
6/29/12	410044015	DE	3	\$293.04	
6/29/12	512203012	DE	3	\$293.04	
6/29/12	132174007	DE	2	\$293.04	
6/29/12	390253001	DE	2	\$293.04	
6/29/12	455133010	DE	2	\$293.04	
6/29/12	512124006	DE	2	\$293.04	
6/29/12	531241027	DE	2	\$293.04	
6/29/12	208174010	DE	1	\$293.04	
6/29/12	311032009	DE	1	\$293.04	
6/29/12	313024004	DE	1	\$293.04	
6/29/12	370022004	DE	1	\$293.04	
6/29/12	389081006	DE	1	\$293.04	
6/29/12	389084018	DE	1	\$293.04	
6/29/12	512112012	DE	1	\$293.04	
7/1/12	310043047	DE	3	\$293.04	
7/1/12	311021007	DE	1	\$293.04	
9/8/12	375183020	DE	2	\$293.04	
9/8/12	414184006	DE	2	\$293.04	
6/29/12	170033001	T	3	\$266.40	
6/29/12	394184009	T	3	\$266.40	
6/29/12	373173030	T	2	\$266.40	
6/29/12	389134010	T	2	\$266.40	
6/29/12	391112006	T	2	\$266.40	
6/29/12	413242023	T	2	\$266.40	
6/29/12	512251027	T	2	\$266.40	
6/29/12	292212004	T	1	\$266.40	
6/29/12	352041020	T	1	\$266.40	
6/29/12	370031009	T	1	\$266.40	
6/29/12	370033010	T	1	\$266.40	
6/29/12	370033011	T	1	\$266.40	

6/29/12	372041016	T	1	\$266.40	
6/29/12	389081009	T	1	\$266.40	
6/29/12	455131004	T	1	\$266.40	
6/29/12	533022012	T	1	\$266.40	
6/29/12	533121007	T	1	\$266.40	
6/30/12	390081002	T	2	\$266.40	
6/30/12	415023018	T	2	\$266.40	
6/30/12	512192001	T	2	\$266.40	
6/30/12	369151012	T	0	\$266.40	
6/30/12	391112001	T	1	\$266.40	
7/2/12	390162035	T	1	\$266.40	
9/8/12	414232001	T	1	\$266.40	
				\$14,305.68	
10/31/12	389142022	T	4	\$266.40	
10/30/12	353211004	T	1	\$266.40	
10/30/12	371111008	T	2	\$266.40	
10/30/12	353063001	T	1	\$266.40	
10/30/12	353191005	T	1	\$266.40	
10/29/12	356214008	T	4	\$266.40	
10/29/12	413201002	T	4	\$266.40	
10/29/12	413244021	T	4	\$266.40	
10/29/12	208233011	T	2	\$266.40	
10/29/12	330132047	T	2	\$266.40	
10/29/12	394053006	T	1	\$266.40	
10/29/12	394053010	T	1	\$266.40	
10/29/12	394053012	T	1	\$266.40	
10/29/12	394053107	T	1	\$266.40	
10/29/12	433142001	T	2	\$266.40	
10/29/12	455084011	T	2	\$266.40	
10/29/12	170032001	T	1	\$266.40	
10/29/12	311253003	T	1	\$266.40	
10/29/12	311253006	T	1	\$266.40	
10/29/12	329101004	T	1	\$266.40	
10/29/12	330034016	T	1	\$266.40	

Extraordinarily Sensitive
Exhibit PDK-2
Tab 2E

10/29/12	330043010	T	1	\$266.40
10/29/12	353243019	T	1	\$266.40
10/29/12	452054010	T	1	\$266.40
10/29/12	474101004	T	1	\$266.40
11/1/12	349191005	DE	1	\$293.04
10/31/12	350071003	DE	1	\$293.04
10/30/12	332061001	DE	3	\$293.04
10/30/12	332061007	DE	3	\$293.04
10/29/12	330134047	DE	4	\$293.04
10/29/12	330132042	DE	3	\$293.04
10/29/12	331051013	DE	3	\$293.04
10/29/12	389144008	DE	3	\$293.04
10/29/12	310032016	DE	2	\$293.04
10/29/12	311253004	DE	2	\$293.04
10/29/12	394053007	DE	1	\$293.04
10/29/12	454031003	DE	2	\$293.04
10/29/12	455154015	DE	2	\$293.04
10/29/12	130114006	DE	1	\$293.04
10/29/12	330101001	DE	1	\$293.04
10/29/12	352234004	DE	1	\$293.04
10/29/12	370092013	DE	1	\$293.04
10/29/12	375243033	DE	1	\$293.04
10/30/12	332061005	A	3	\$293.04
10/29/12	312151018	A	2	\$293.04
10/29/12	414162003	A	3	\$293.04
10/29/12	310032018	A	2	\$293.04
10/29/12	331051015	A	2	\$293.04
10/29/12	355221022	A	2	\$293.04
10/29/12	375194014	A	2	\$293.04
10/29/12	394053008	A	1	\$293.04
10/29/12	394053009	A	1	\$293.04
10/29/12	227084002	A	1	\$293.04
10/29/12	330103008	A	1	\$293.04
10/29/12	355221023	A	1	\$293.04
				\$15,451.20

	Total	
Remove 13 NOVEC communications cable transfers	\$36,949.68	
Table 8 Two Year total	\$1,071.32	
Less 13 NOVEC communications cable transfers	\$38,020.00	
Corrected Two Total	\$1,071.32	\$36,948.68 Unadjusted NOVEC Figure

Data Sources and Methodology

NOVEC contractor invoices
 Contractor rate is weighted average of two contractors based upon number of crews each contractor has working on the NOVEC system.
 NOVEC work management system
 Unit costs are obtained from NOVEC contractor agreements
 Excludes NOVEC supervision and administration costs
 Excludes NOVEC overhead allocations
 Pole Type: "A" angle, "DE" dead-end, "T" tangent
 Time to do work: estimated work performed during adverse work conditions.
 Removed 13 NOVEC Communications cable transfers inadvertently included.
 During a storm, NOVEC transfers are secured all communications attachments
 Crew size is six contractor line workers
 Excludes NOVEC supervision and administration costs
 Excludes NOVEC overhead allocations

Time frame of Analysis

Calendar years 2011 and 2012

Assumptions

Transfer work performed on a time and material basis, pole cut work included in transfers
 No second visit required to complete pole removal work.
 Includes only pole replaced during the four major storms
 Pole type determined by electric assemblies

**COMCAST CALIFORNIA/MARYLAND/PENNSYLVANIA/
VIRGINIA/WEST VIRGINIA LLC**

Just and Reasonable Rates for NOVEC Using Formulaic Approach

CALCULATION OF MAXIMUM POLE ATTACHMENT RATES UNDER WIDELY USED J&R FORMULAIC APPROACH DATA FOR YR ENDING

2012

Northern Virginia Electric Cooperative

Net Investment Per Bare Pole	\$39,534,900
Investment in Pole Plant (Net of Major Appurtenances)	\$13,120,712
- Depreciation Reserve for Poles	\$0.00
- Accumulated Deferred Taxes	\$26,414,187
Net Investment in Pole Plant	\$0.00
- Investment in Minor Appurtenances	\$26,414,187
Investment in Bare Pole Plant	64,703
/ Number of Poles - Equivalent	\$408.24
Net Investment per Bare Pole	

Carrying Charges	
Maintenance	10,255,863
Maintenance Overhead Lines	
/ Net Investment Accounts 364, 365, and 369	\$151,598,554.76
= Maintenance Carrying Charge	6.77%

Administrative & General	
Administrative Expenses	\$18,713,985.86
Net Plant in Service	\$432,161,904.58
Administrative Carrying Charge	4.33%

Depreciation	
Annual Depreciation Rate Pole Plant	3.00%
Gross Investment Pole Plant	\$39,534,899.92
Net Investment in Pole Plant	\$26,414,187.49
Gross Net Adjustment	149.67%
Deprec Rate Applied to Net Pole Plant	4.49%

Taxes	
Tax Expense	\$0.00
Net Plant in Service	\$432,161,905
Tax Carrying Charge	0.00%

Return	5.40%
Total Carrying Charges	20.99%

Space Allocation Factor - Cable Formula

Space Occupied by Cable / Total Usable Space = Space Allocation Factor

1
13.5
7.41%

Maximum J&R Rate - Cable Formula

Investment Per Bare Pole *Carrying Charges *Space Allocation Factor = Maximum J&R Rate

\$408.24
20.99%
7.41%
\$6.35

Space Allocation Factor - Telecom Formula

Presumptive Range of No. Attaching Entities
Amount of Unusable Space
*Apporportionment Factor (2/3)
= Space To Be Allocated / Entities
= Feet of Unusable Space To Be Allocated + Usable Space
= Total Space To Be Allocated / Total Pole Space
= Space Allocation Factor

Based on FCC Presumptions	Based on NH PUC Agreement	Based on Revised NTELOS - All Comm Attached Poles	Based on Revised NTELOS - Comcast Attached Poles
5.0	2.70	2.50	2.65
24.00	24.00	24.00	24.00
0.67	0.67	0.67	0.67
16.00	16.00	16.00	16.00
5.00	2.70	2.50	2.65
3.20	5.93	6.40	6.04
1.00	1.00	1.00	1.00
4.20	6.93	7.40	7.04
37.50	37.50	39.00	39.00
11.20%	18.47%	18.97%	18.95%

Based on FCC Presumptions	Based on NH PUC Agreement	Based on Revised NTELOS - All Comm Attached Poles	Based on Revised NTELOS - Comcast Attached Poles
\$408.24	\$408.24	\$408.24	\$408.24
20.99%	20.99%	20.99%	20.99%
11.20%	18.47%	18.97%	18.95%
66.00%	44.00%	66.00%	66.00%
\$6.33	\$6.96	\$10.73	\$10.20

Maximum J&R Rate - Alternative Telecom Formula

Investment Per Bare Pole *Carrying Charges *Space Allocation Factor *J&R Cost Factor (Urban) = Maximum J&R Rate

\$408.24
20.99%
11.20%
66.00%
\$6.33

DATA ENTRY AND SOURCE

Gross Investment in Total Plant In Service - Electric

-Accumulated Prov for Deprac.--Total

-Accumulated Deferred Taxes

=Net Investment Total Plant In Service - Electric

\$665,813,564 NOVEC Resp Comcast II-4

\$233,651,660 NOVEC Resp Comcast II-4

\$0

\$432,161,905

Gross Investment Distribution Plant

-Accum Depreciation Distribution Plant

=Net Investment Distribution Plant

\$608,950,112 NOVEC Resp Comcast II-6

\$202,089,721 NOVEC Resp Comcast II-7

\$406,840,391

Gross Investment in 364 Net of Major Appurtenance

Minor Appurtenance Factor

Depreciation Reserve for 364 Net Major Appurtenan

\$39,534,900 NOVEC Resp Comcast I-11,II-5

1.00 NOVEC Resp Comcast I-6,I-11

13,120,712 Prorated based on % of Distr Plant

Depreciation Rate Account 364

3.00% NOVEC Resp Comcast I-6

Maintenance Overhead Lines Account 593

\$10,255,863 NOVEC Resp Comcast II-4

Gross Investment in 364

Gross Investment in 365

Gross Investment in 369

Depreciation Reserve for 364

Depreciation Reserve for 365

Depreciation Reserve for 369

\$52,419,611 NOVEC Resp Comcast I-11,II-4

\$91,690,467 NOVEC Resp Comcast II-4

\$82,791,988 NOVEC Resp Comcast II-4

\$17,396,848 Prorated based on % of Distr Plant

\$30,429,930 Prorated based on % of Distr Plant

\$27,476,732 Prorated based on % of Distr Plant

Administrative & General Expenses Accounts 920-93

\$18,713,986 NOVEC Resp Comcast II-4

Tax Accounts 408.1-411.4

\$0 NOVEC Resp Comcast II-4

Total LT Debt Interest

/Total LT Debt

=Cost of Debt

\$3,845,056 RUS Form 7, Part A, L 15

\$71,166,834 RUS Form 7, Part C, L 41

5.40%

Number of Poles

64,703 2013 Annual Tax Report

(NOVEC Resp Comcast II-3)

37.5 FCC /State Presumption

39 NOVEC Resp Comcast II-14

Avg Joint Use Pole Height

Proration of Accumulated Depreciation Based on Distrib Plant:

Depreciation Distribution Plant

Gross Pole Plant/Distribution Plant

Gross Inv in 364/ Distribution Plant

Gross Inv in 365/ Distribution Plant

Gross Inv in 369/ Distribution Plant

\$202,089,721 NOVEC Resp Comcast II-7

6.49%

8.61%

15.06%

13.60%

**COMCAST CALIFORNIA/MARYLAND/PENNSYLVANIA/
VIRGINIA/WEST VIRGINIA LLC**

**Impact Analysis of NOVEC's Proposed Pole Attachment Rate
vs Just and Reasonable Rate**

Impact Analysis

	Widely Used Formula	Highest Alt J&R	Source
Impact per Electric Customer:			
Third Pty Pole Attachments	41006	41006	HMS, p 21
NOVEC Proposed Rate	\$26.43	\$26.43	HMS, p 21, Resp V-41
Just & Reasonable Rate	\$6.35	\$10.73	PDK Table 2
Difference	\$20.08	\$15.70	Calc
Rev Impact	\$823,400.48	\$643,794.20	Calc
No Electric Residential Customers	138,876	138,876	RUS Form 7
Rev Impact per Electric Customer/yr	\$5.93	\$4.64	Calc
Rev Impact per Electric Customer/mo	\$0.49	\$0.39	Calc
Impact per Broadband Customer:			
NOVEC Proposed Increm Rate per Attachm	\$26.43	\$26.43	
J&R Rate	6.35	10.73	PDK Table 2
Difference in Rate	\$20.08	\$15.70	Calc
Households per Mile	15	15	Natl BB Rpt
Subscriber per Mile@	0.3	4.5	Natl BB Rpt
Poles per Mile	35	35	Natl BB Rpt
Subscribers per Pole	0.13	0.13	Calc
Ann.Rate Impact per BB Subscriber:	\$156.18	\$122.11	Calc
Mo. Rate Impact per BB Subscriber:	\$13.01	\$10.18	Calc

**COMCAST CALIFORNIA/MARYLAND/PENNSYLVANIA/
VIRGINIA/WEST VIRGINIA LLC**

NOVEC RESPONSES TO COMCAST DISCOVERY

**Response of Northern Virginia Electric Cooperative
to Comcast of CA/MD/PA/VA/WV, LLC Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: Comcast of CA/MD/PA/VA/WV, LLC

Discovery request set number: First

Response prepared by or under the direction of: Wilbur Rollins, NOVEC Senior Vice
President of Finance and Asset
Development

Comcast-I-3

Please state the number of poles that correspond to the manner in which pole investment is represented on Schedule 5 to your Annual Tax Reports for 2010, 2011, 2012 and (when available) 2013 (corresponding to year end data for 2009, 2010, 2011, and 2012).

Of the number of poles that are identified, how many are:

(a) Solely owned by NOVEC.

1. For all solely owned poles identified, indicate which poles are subject to a joint use agreement with another entity that owns poles to which NOVEC is attached and identify the number of such poles and the other pole owner.

2. Of the poles subject to a joint use agreement with another entity poles, state the number of poles to which Comcast is attached.

3. Provide copies of any and all agreements governing the pole sharing relationship between NOVEC and all such other pole owners.

(b) Partially owned by NOVEC.

1. For all partially owned poles identified, indicate NOVEC's fractional ownership interest as a percentage and the number of poles at each such percentage.

2. For all partially owned poles identified in (b)(1), indicate such other owner's fractional ownership interest as a percentage and the number of poles at each such percentage; and

3. Identify the number of poles identified in (b)(1) and (b)(2) on which Comcast has attachments according to each joint owner.

RESPONSE:

The number of poles was erroneous on the 2010 Tax Report. The total number of all overhead assets were reported in column (D) in error. For 2010, the total number of poles included in utility account 364, column (E) should have been reported as 54,268 poles. For 2011, 2012 and 2013 the number of poles was correctly reported as stated, 61,202, 65,732 and 64,703 respectively, all of which are solely owned by NOVEC.

a) Solely owned by NOVEC

1. The Company objects to this request to the extent it requests information that is confidential to third parties regarding the identity and number of poles owned by a specific third party.
2. The Company objects to this request to the extent it requests information that is confidential to third parties regarding the identity and number of poles owned by a specific third party. Without waiving this objection, the Company responds as follows. See response to Comcast-I-8 for the number of poles to which Comcast is attached.
3. The Company objects to this request to the extent it requests information that is confidential to third parties regarding agreements for pole sharing relationships.

b) Partially owned by NOVEC.

NOVEC does not partially own any poles.

**Response of Northern Virginia Electric Cooperative
to Comcast of CA/MD/PA/VA/WV, LLC Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: Comcast of CA/MD/PA/VA/WV, LLC

Discovery request set number: First

Response prepared by or under the direction of: Robert E. Bisson, PE, NOVEC Vice
President of Electric System Development

Comcast-I-14

Please identify, on an annual basis, for each of the last five years, the total dollar amount of make-ready charges and any and all pole attachment related fees, by type, paid by: (a) each third-party attaching entity; (b) NOVEC Solutions, Inc.; (c) Verizon; and (d) other joint owner or joint user to NOVEC.

RESPONSE:

The Company objects to this request as it seeks information that is not relevant in this proceeding and to the extent it requests information that is confidential to third parties regarding the identity of third parties and any rental rate, pole attachment fee, or make-ready charges to third parties. Without waiving this objection, the Company is providing information as it relates to Comcast attachments.

[BEGIN COMCAST CONFIDENTIAL]

Year	Make Ready Work	Pole Permit Application Fee
2008	\$ 0.00	\$ 430.00
2009	\$ 41,853.32	\$ 560.00
2010	\$ 7,608.19	\$ 1,500.00
2011	\$ 10,507.69	\$ 880.00
2012	\$ 0.00	\$ 2,490.00

[END COMCAST CONFIDENTIAL]

**Response of Northern Virginia Electric Cooperative
to Comcast of CA/MD/PA/VA/WV, LLC Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: Comcast of CA/MD/PA/VA/WV, LLC

Discovery request set number: Second

Response prepared by or under the direction of: Wilbur Rollins, NOVEC Senior Vice
President of Finance and Asset
Development

Comcast-II-3

Describe the manner in which depreciation reserve for poles is calculated.

RESPONSE:

See Response to Comcast-I-5.

**Response of Northern Virginia Electric Cooperative
to Comcast of CA/MD/PA/VA/WV, LLC Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: Comcast of CA/MD/PA/VA/WV, LLC

Discovery request set number: Second

Response prepared by or under the direction of: Wilbur Rollins, NOVEC Senior Vice
President of Finance and Asset
Development

Comcast-II-4

Please provide the account balances shown in NOVEC's most recently prepared annual financial for FERC accounts (or RUS equivalent) 364, 365, 369, 101, 108, 593, 408.1, 409.1, 410.1, 411.1, 411.4, 920-935.

RESPONSE:

FERC/RUS Acct	Description	Bal YE2012
364	Poles, Towers and Fixtures	52,419,611.03
365	Overhead Conductors, Devices	91,690,466.53
369	Services	82,791,987.60
101	Electric Plant in Service	665,813,564.13
108	Total Accum Prov for Depr of Elect Plant	(233,651,659.55)
593	Total Maint of OH Lines	10,255,863.46
408.1	Taxes-Property Tax	0.00 *
409.1	Income Taxes-Utility Operating Income	0.00
410.1	Income Taxes-Other Income	0.00
411.1	Provision for Deferred Income Taxes	0.00
411.4	Investment Tax Credits	0.00
920-935	Total Admin & General Exp	18,713,985.96

*Per RUS: NOTE: Property taxes applicable to the various utility functions shall be charged to the specific functional operations and administrative expense accounts either directly or by transfers from this account. Property taxes on distribution assets are recognized under operating expense 580.

**Response of Northern Virginia Electric Cooperative
to Comcast of CA/MD/PA/VA/WV, LLC Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: Comcast of CA/MD/PA/VA/WV, LLC

Discovery request set number: Second

Response prepared by or under the direction of: Wilbur Rollins, NOVEC Senior Vice
President of Finance and Asset
Development

Comcast-II-5

Please identify, as both dollar amounts and percentages of FERC Account (or RUS equivalent) 364, the amount of investment in cross arms and other appurtenances (e.g. other non-pole related items) recorded in FERC Account (or RUS equivalent) 364. Please identify and provide documents verifying the amount of investment in cross arms and other appurtenances recorded in FERC Account (or RUS equivalent) 364.

RESPONSE:

The Company objects to this request as vague and unclear as it appears to request "other non-pole related items" recorded in Utility account 364. Utility account 364 includes all pole related assets; as such there are no non-pole related items recorded in this account. To the extent that this request seeks information related to assets other than actual poles recorded in account 364, the Company responds as follows notwithstanding its objection.

As previously provided in response to Comcast-1-11, NOVEC's CPR lists the following balances in 364, by Retirement unit at YE2012, for non-pole assets.

364 Retirement units:	Bal YE2012	% of 364 investment
Anchor(inground)	5,561,049.25	10.609%
Anchor1	1,492.14	0.003%
Arrester: 16-36 KV	41,090.78	0.078%
Cluster Mount	249,670.16	0.476%
Crossarm FIFO	594,871.07	1.135%
Crossarm: 12 ft. Fifo	8,518.83	0.016%
Crossarm: 14' & over Fifo	95.23	0.000%
Crossarm: Under 10 ft.	3,507,472.78	6.691%
Foundation:Concrete	288.07	0.001%
Insulator: 7.2 - 34.5 KV, Pin	5,238.76	0.010%
Non-unitized	1,027,579.69	1.960%
OH Guy	1,880,951.71	3.588%
Platform: Transformer	6,392.64	0.012%

**Response of Northern Virginia Electric Cooperative
to Comcast of CA/MD/PA/VA/WV, LLC Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: Comcast of CA/MD/PA/VA/WV, LLC

Discovery request set number: Second

Response prepared by or under the direction of: Wilbur Rollins, NOVEC Senior Vice
President of Finance and Asset
Development

Comcast-II-10

Please identify all payments or reimbursements received from the Federal Emergency Management Agency ("FEMA") relating to utility pole plant damage caused by any natural disaster since January 1, 1990. How are reimbursements for pole replacement or repair reflected on NOVEC's books?

RESPONSE:

FEMA funds received since January 1, 1990 are not specifically identifiable to utility pole plant damage. Eligible costs for FEMA reimbursement under category F, Permanent Repair, are categorized by material, contractor expense, force account labor expense, rental equipment, owned equipment and administrative expense, by jurisdiction where the costs were incurred. The total eligible costs incurred for a storm event may or may not involve pole plant damage. Once Federal Funds have been obligated, NOVEC records a receivable for 75% of the eligible costs incurred. A credit for the total anticipated funds to be received is distributed to the expense or capital accounts where the costs were incurred according to their percentage of the total costs incurred.

**Response of Northern Virginia Electric Cooperative
to Comcast of CA/MD/PA/VA/WV, LLC Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: Comcast of CA/MD/PA/VA/WV, LLC

Discovery request set number: Fifth

Response prepared by or under the direction of: Robert E. Bisson, PE, NOVEC Vice
President of Electric System Development

Comcast-V-4

Produce all documents referring to, relating to, or regarding any communication, whether oral, written or otherwise, concerning annual pole rental charges or the performance of make-ready work, from January 1, 1998 to the present, on poles owned or controlled by NOVEC between NOVEC and any other person, including but not limited to, Comcast, other cable operators, telecommunications carriers, or any other entity attached to poles owned or controlled by NOVEC. Your response should include documents that identify all such make-ready work performed, including installed equipment, subcontracts, service requests, work orders, time sheets, material costs and site diagrams or maps.

RESPONSE:

NOVEC objects to this request as it is overly broad and unduly burdensome. In addition, the response is potentially voluminous.

Without waiving this objection, NOVEC responds as follows.

Available data and information will be made available to representatives from Comcast at NOVEC's Gainesville Technical Center in Gainesville, Virginia.

**Response of Northern Virginia Electric Cooperative
to Comcast of CA/MD/PA/VA/WV, LLC Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: Comcast of CA/MD/PA/VA/WV, LLC

Discovery request set number: Fifth

Response prepared by or under the direction of: Gregory L. Booth, PE, PowerServices, Inc.
Robert E. Bisson, PE, NOVEC Vice
President of Electric System Development

Comcast-V-27

With respect to the assertion at Page 23, Lines 11-23 of the Booth Testimony that "modern day electric cooperatives are faced with installing forty (40) and forty-five (45) foot, and sometimes even taller, poles to accommodate the multiple communication companies attaching to NOVEC poles" and that "poles that are class four (4) or three (3), which are much larger and stronger, to accommodate the larger telephone, broadband and cable conductors which impose significant additional stress on the pole,"

- (1) Does Mr. Booth assert that NOVEC has actually installed such taller poles?
- (2) Does Mr. Booth assert that NOVEC has actually installed class three and class four poles?
- (3) To the extent that the answer to (1) and/or (2) is yes, please identify the number and address of the specific poles that were installed by NOVEC which meet these criteria and produce any and all documents upon which Mr. Booth relies in support of such assertion.

RESPONSE:

NOVEC objects to subsection (3) of this request as it is unduly burdensome. In addition, the response is potentially voluminous.

Without waiving this objection, NOVEC states as follows.

- (1) Yes
- (2) Yes
- (3) Mr. Booth relies on his personal experience and his inspection of the NOVEC system on July 9, 2013 and on previous occasions in years prior to 2002 when providing engineering design services to NOVEC. Additionally, provided on the enclosed CD is information from the records of NOVEC which document the date when NOVEC standards eliminated the use of 35 foot poles for primary distribution attachments. Additional responsive data and information will be made available to representatives from Comcast at NOVEC's Gainesville Technical Center in Gainesville, Virginia.

**Response of Northern Virginia Electric Cooperative
to Comcast of CA/MD/PA/VA/WV, LLC Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: Comcast of CA/MD/PA/VA/WV, LLC

Discovery request set number: Fifth

Response prepared by or under the direction of: Robert E. Bisson, PE, NOVEC Vice
President of Electric System Development

Comcast-V-40

Please provide any documents referring to, relating to, or regarding the survey and related work conducted by Davey Resource Group referenced at Page 9, Lines 1-11, specifically including the contract and scope of work related to such survey.

RESPONSE:

NOVEC objects to this request to the extent it seeks information that is confidential to third parties.

Without waiving this objection, NOVEC responds as follows.

See documents provided on the enclosed CD. Certain information regarding pricing has been redacted as it is confidential to third parties.

CONTRACT ADDENDUM

THIS CONTRACT ADDENDUM made this October 27, 2010, by and between Northern Virginia Electric Co-op, (NOVEC), with its office in Gainesville, Virginia, and DAVEY RESOURCE GROUP, a division of The Davey Tree Expert Company.

Scope of Work

Based on conversations between Tommy Maloney (DRG) and Skip Hollcroft (NOVEC) and review of NOVEC's existing data, Davey Resource Group is able to perform the following:

1. Using existing GIS database of pedestals, DRG will physically go to each pedestal location.
2. DRG will determine and document whether pedestal is above ground or at grade.
3. If aboveground, DRG personnel will walk around the pedestal to inspect for burn holes or burn marks on the outside of the pedestal. At no time will any DRG personnel touch a pedestal.
4. DRG will document the condition of the pedestal.
5. If the aboveground pedestal has burn holes or burn marks, DRG personnel will immediately move outside a 10' radius of the pedestal location, call NOVEC dispatch to notify of the location, and standby/prevent the public from approaching the pedestal until NOVEC personnel arrive to relieve the DRG crew.
6. DRG will document the standby time in minutes.
7. DRG will provide a final MS Excel spreadsheet deliverable of the data as documented above.

Pricing

To perform the above services is as follows: ^{REDACTED} per pedestal (above or below grade) with above documentation and ^{REDACTED} per hour standby time rounded to the nearest minute and documented per pedestal.

Schedule

DRG crews are available to perform this work as early as the end of next week (November 5, 2010) and will complete the work before December 25, 2010.

DRG will schedule crews to begin work as soon as possible and Tommy Maloney will work with Skip Hollcroft early next week (week ending November 5) to complete contractual additions for this project.

IN WITNESS WHEREOF, the parties hereto have caused this CONTRACT ADDENDUM to be executed by their duly authorized officers as of the date first above written.

Northern Virginia Electric Co-op (NOVEC)

(OWNER)

BY [Signature]

TITLE VICE PRESIDENT

DATE 10/28/10

Davey Resource Group, A Division of

The Davey Tree Expert Company

(CONTRACTOR)

BY [Signature] Kenneth A. Joehlin

TITLE Vice President, Business Development

DATE 10/27/10

DAVEY 
RESOURCE GROUP

A Division of The Davey Tree Expert Company

Corporate Headquarters

1500 North Mantua Street

P.O. Box 5193

Kent, OH 44240-5193

330-673-5665

Toll Free 1-800-828-8312

Fax: 330-673-0860

June 11, 2010

Mason "Skip" Hollcroft
System Construction Manager
Northern Virginia Electric Co-op (NOVEC)
5399 Wellington Branch Dr.
Gainesville, VA 20155-1616

RE: Pole Asset Inventory Survey and Pole Numbering Project

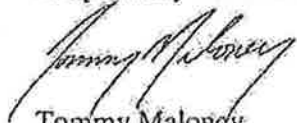
Dear Mr. Hollcroft:

It is a pleasure to submit the enclosed proposal for the Pole Asset Inventory Survey and Pole Numbering project for Northern Virginia Electric Co-op (NOVEC).

Davey Resource Group (DRG) offers the security of a well-established firm with a history of strong performance and client satisfaction. Our knowledge of the NOVEC service territory, along with our dedicated Project Management team will provide Northern Virginia with the resources required to achieve a successful inventory. We look forward to meeting with you and your staff to discuss how our experience will benefit NOVEC.

Thank you in advance for your consideration. If you have any questions, or would like to discuss in more detail, please contact me at (770) 377-1584 or tommy.maloney@davey.com.

Respectfully Submitted,



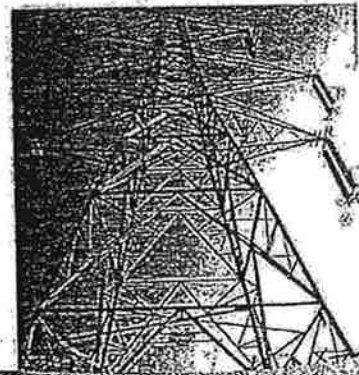
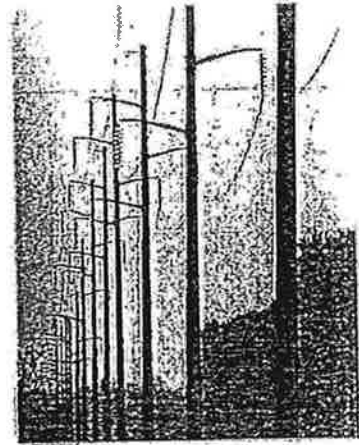
Tommy Maloney
Project Developer
Davey Resource Group

PROPOSAL

Pole Asset Inventory Survey and
Pole Numbering Project

Northern Virginia Electric
Cooperative (NOVEC)

June 11, 2010



NOVEC

DAVEY



Proposal

Pole Asset Inventory Survey and Pole Numbering Project

Presented to

Mason "Skip" Hollcroft
System Construction Manager
Northern Virginia Electric Cooperative (NOVEC)
5399 Wellington Branch Drive
Gainesville, VA 20155-1616
Phone: (703) 754-6768
E-mail: mhollc@novec.com



Presented by

Davey Resource Group
A Division of The Davey Tree Expert Company
1500 North Mantua Street
Kent, Ohio 44240

Primary Contact: Tommy Maloney
2035 Grasslands Parkway
Alpharetta, GA 30004
Phone: (770) 619-5545
E-mail: tommy.maloney@davey.com
www.daveyresourcegroup.com

June 11, 2010

Table of Contents

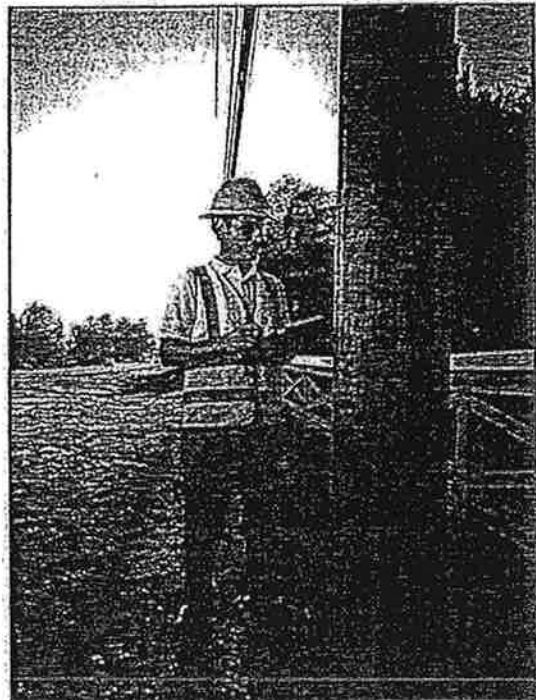
Project Overview	1
Systematic Approach	2
Data Attributes.....	4
Field Inspection and Pole Tagging Approach	6
Pole Tagging as Outlined in RFP	6
Quality Assurance/Quality Control	7
Sample Quality Assurance Report.....	9
Project Team.....	10
Production Reporting.....	11
Data Collection Equipment and Technology.....	12
Primary Contacts	13
Qualifications.....	13
Team Qualifications	14
DRG Experience.....	14
DRG References	15
Appendix A – Fee Schedule and NOVEC Bid Forms.....	16
Appendix B – Davey Certificate of Insurance.....	17
Appendix C – Davey Financial Information	18
Appendix D – Davey Safety Program	19

Project Overview

Davey Resource Group (DRG) is pleased to present this proposal to Northern Virginia Electric Cooperative (NOVEC) for their Pole Asset Inventory and Pole Tagging Project. NOVEC operates and maintains an electric distribution system serving 142,000 customers in six (6) Northern Virginia counties. The current NOVEC field inventory and pole tagging project will continue the further development of their GIS system. The information collected during this project will form the foundation of the geodatabase that will be used in the GIS system, engineering model, and outage management systems. This system will integrate with other NOVEC programs to improve efficiencies and help manage data flow throughout the organization. DRG understands NOVEC's project requirements and offers the time-tested field procedures, software tools, and quality assurance procedures necessary to complete this project on budget and on time.

This inventory will focus primarily on surveying the approximately 62,000 poles, equipment, and attachments located in the NOVEC service areas. The objective of this project is to accurately identify poles in the field with individual pole id tags, as well as to capture equipment, streetlights, and third party attachments to these poles. The project is scheduled to begin in 2010, with a completion date prior to December 2011.

Success of the inventory can be measured by the **quality** of the data collected in the field and by the **completion** of the project within the specified timeframes. Over the years, Davey Resource Group has developed a systematic plan and approach to achieve the goals that NOVEC has outlined. The quality and experience of DRG's staff will ensure a complete and effective data collection process. The operations staff responsible for the completion of this project has more than 100 years of combined experience and has successfully completed multiple projects of more than a million poles. Additionally, DRG has completed successful projects for Cooperatives throughout the United States, and has recently wrapped up local projects in Virginia. We are extremely familiar with the NOVEC territory and are committed to the achieving the high level of quality that Northern Virginia expects.



Systematic Approach

Davey Resource Group will take a systematic approach to completing the work that NOVEC has requested. Our extensive experience in completing many similar projects will ensure project goals will be completed in an effective and accurate process.

1. **Project Startup:** The first step of the process will begin by meeting with Northern Virginia system personnel before the project begins. This step will serve multiple purposes and ensure DRG's staff understands all goals and objectives. This meeting will ensure DRG has a clear understanding of:
 - a. Data collection specifications (Construction types and practices).
 - b. NOVEC procedures and guidelines.
 - c. NOVEC Attachers and Joint Pole Owners.
 - d. Data delivery specifications.

DRG will develop a data collection specification at this preplanning session that will help ensure consistency among DRG data collectors and will be used as a training tool, and reference throughout the project. A copy of this manual will be provided to NOVEC for their review.

2. **Data Collection:** Once NOVEC is comfortable that DRG has an accurate understanding of their specifications, our team will utilize an efficient data collection methodology that has proven successful on similar major projects:
 - a. **Basemaps** – NOVEC will supply basemap information in a Personal Geodatabase from their current ArcFM system. This may include any pole transformers, streetlights, recloser, or switch location information that is available. The electronic basemap information from NOVEC will be utilized as the basis of the audit. In addition, any available data on third party attachers will be used as a reference during data collection.
 - b. **Data Transfer** – DRG will load these files into our Pole Inventory software utilizing Panasonic Toughbook field computers.
 - c. **Data Collection** – Field staff will perform a pole-by-pole inventory utilizing the data collection specification. All information will be collected based on the data specifications provided by NOVEC.
 - d. **Joint Ride-Out** – DRG will contact the designated representatives of NOVEC's major third party attachers to determine if they wish to ride along during our data collection process.



3. **Compilation:** Data collectors will upload data on a nightly basis to DRG's ROWKeeper Web site. This Web site provides data storage, quality-centered procedures, project management, and preliminary reporting on NOVEC's system data. The ROWKeeper Web site has proven extremely useful in providing customers accurate projections of completion schedules and daily reporting on project status.
4. **Quality Assurance:** ROWKeeper ensures quality assurance procedures will be performed on data collected by field personnel. NOVEC will benefit from a multi-tiered approach to quality control that utilizes quality checks in three main areas:

- a. **Computerized Data Verification** – This step runs multiple data verifications to look for abnormalities in the data that could signal errors in the field. Data is checked on a regular basis using DRG's proprietary ROWKeeper software.
- b. **Field Quality Check** – At the beginning of the project, 10% of an individual's data collected will be checked in the field by a DRG supervisor. A person with a demonstrated record of collecting quality data will have no less than 3% of their data checked in the field. Quality control is often completed the day after data collection is finalized, ensuring projects can progress smoothly and accurately.
- c. **Quality Assurance Records** – QA records will be completed electronically so that quality checks become a permanent record of the data collected. This process ensures a detailed and documented approach to quality assurance.



5. **Data Delivery:** DRG will work closely with NOVEC's staff to provide the desired deliverable using NOVEC's current GIS application. We have completed numerous mapping projects using Telvent Miner & Miner's GIS application. DRG has used ESRI GIS products for over ten years and we can deliver the data directly to NOVEC in ArcFM GIS. DRG will deliver data to NOVEC in the three required formats:
 1. ArcMAP v9.2 sp6 (ESRI)
 2. ArcFM v9.2 sp3 (Telvent Miner & Miner)
 3. Access Database

Data Attributes

The following is a list of anticipated attributes DRG proposes to collect.

Data Dictionary		
Data Field	Collect/Verify	Choices
Pole Data Information		
NOVEC Pole Location Number	Verify	9 Digit Pole Identifier
Street Address	Verify	Geocoded Street Address
City/Town/County	Collect	Pole Location Information
Pole Type	Collect	Wood, Fiberglass, Concrete, Steel
Pole Height	Collect	30, 35, 40, 45, 50...
Pole Class	Collect	1,2,3,4,5,6
Birth Date	Collect	Year
NOVEC Primary Devices		
Transformer Size	Collect	Transformer Information
Recloser Size	Collect	Recloser Information
Recloser Phase	Collect	Phasing
Electronic Recloser	Collect	Yes, No
Regulator	Collect	Size, Phase
Disconnects	Collect	1,2,3,4
Gang Switch	Collect	Yes, No
Fuses	Collect	1,2,3,4
Capacitor	Collect	Size, Phase
OH Al Phase Conductors	Collect	Phase
OH Cu Conductors	Collect	Phase
Transfer Needed	Collect	Bare, Telco, Cable, NOVEC, Other
Streetlight Information		
Quantity	Collect	1,2,3,4
Wattage	Collect	Wattage Amount
Fixture Type	Collect	MV, HPS, LED
Style	Collect	NOVEC List
Pole Height	Collect	30, 35, 40, 45, 50...
Pole Class	Collect	1,2,3,4,5,6
Birth Date	Collect	Year

<i>Data Dictionary</i>		
Data Field	Collect/Verify	Choices
Foreign Communication Attachments		
Verizon Cables	Collect	1,2,3,4,5,6
Comcast Cables	Collect	1,2,3,4,5,6
Cox Cables	Collect	1,2,3,4,5,6
Other	Collect	1,2,3,4,5,6
NOVEC Cables	Collect	1,2,3,4,5,6
Unknown	Collect	1,2,3,4,5,6
Power Supply Comcast	Collect	1,2,3
Power Supply Cox	Collect	1,2,3

Field Inspection and Pole Tagging Approach

Davey Resource Group has partnered with Clearion Software to provide field data collection tools that work seamlessly with the ESRI[®] ArcGIS[™] framework. The Clearion Mobile application enables users to create and update GIS asset records in a mobile setting. Clearion Mobile supports two-way data synchronization with an ArcGIS[™] server, meaning that all changes in the field are uploaded to the main GIS database with the push of a button. The data synchronization will also update the mobile computer with any data changes made by other users in Alpharetta, Georgia. Specifically, the software will:

- Allow users to collect a field inventory of equipment poles, other selected poles (corner poles), and transformers while in the field. On a demand basis (often daily), the data can be synchronized with the server in Alpharetta.
- Allow users of the Clearion Mobile Edit software to synchronize data both from and to the Alpharetta software.
- Allow for GPS navigation and collection of new asset locations.
- Post process and differentially correct GPS data.
- Deliveries will be on Map Grid or Substations. This will be discussed with NOVEC.

We will be accessing the ArcFM geodatabase using ESRI replication procedures to facilitate data deliveries and updates on an ongoing basis. Deliveries will be continual as data is completed and quality assured in the field and then final quality assurance is performed in the office with final data being pushed back to NOVEC. DRG will use Clearion Software with our own customizations and programming to perform the field data verification / collection. DRG will configure our software to replicate data changes between the field Personal SQL geodatabases and your office Oracle SDE geodatabase.

Pole Tagging as Outlined in RFP

- All material required for pole map location numbers will be provided by NOVEC.
- Every NOVEC pole has a unique nine-digit map location number. All NOVEC map location numbers shall be installed as outlined in the RFP.
- NOVEC uses wood, concrete, fiberglass, and steel poles on its electric system. Each pole type has map location number specification.
- Attachment G is NOVEC's specifications for installing pole numbers for each specific type of pole. Each map location number must contain all nine digits, the NOVEC name tab, and must be in specified bracket. Blanks are not to be used in lieu of zeros. Only NOVEC-issued nails, bands, brackets, and digits shall be used. All old NOVEC map location numbers are to be removed from all poles with the exception of adhesive numbers on steel poles.
- Plastic map number digits are not to be discarded and are to be reused. Two banding tools to install aluminum bands on concrete and steel poles will be provided by NOVEC. Tools must be returned to NOVEC upon completion of contract. Extra care should be taken to verify correct aluminum bracket is installed on existing pole location numbers. All plastic map location number brackets shall be replaced with aluminum map location number brackets.

Quality Assurance/Quality Control

DRG takes pride in providing quality data to its clients. In order to demonstrate to NOVEC our commitment towards quality data collection, DRG will complete the following steps to ensure an accuracy level of at least 97%.

- **Data Collection Specification** – A clear understanding of the data and the methods for collection and categorization ensure higher quality data. DRG will develop a detailed specification with NOVEC before actual data collection begins to ensure that everyone (NOVEC and DRG personnel) understands the data to be collected and how it will be categorized.
- **Training** – Training of personnel is intended to assure everyone understands how the data is to be collected. Proper training of qualified individuals at the start will create quality data from the onset of the project.
- **Field Quality Check** – At the beginning of the project, 10% of an individual's information may be checked in the field. A person with a demonstrated record of collecting quality data will have at least 3% of their data checked in the field. Quality control is often completed the day after the data collection is completed, but it will always be completed by Tuesday of the week following data collection. Accurate and timely quality assurance checks are critical to the success of this project.
- **Locating Field Checks** – While our field checks are often random, we prefer a focused field check where auditors check areas where there are most apt to be mistakes. This may be where equipment is concentrated, where lines have difficult access, or where other unusual situations exist.
- **Documenting Field Quality Checks** – All errors found in the field are corrected and updated to the computers. Errors are also tallied in the computer so that error rates can be determined and documented. As this project progresses, we will have a field quality check each week for each data collector. These will be stored in a spreadsheet and delivered to NOVEC if requested.
- **Weekly Quality Reports** (spreadsheets) can be provided to NOVEC to document quality data collection. This spreadsheet has not yet been developed for the NOVEC inspection process, but, if requested, we can introduce during an on-site presentation a spreadsheet previously used for a recently completed project that included over 900,000 poles.
- **Field Supervisors** will conduct the audits of the Field Auditors. The quality assurance field manager will ensure that trends are quickly corrected and communication takes place between auditors and supervisors. QA field managers will also conduct audits of the Field Supervisors.
- **Quality Assurance** will be completed electronically where possible so that quality checks are a permanent record of the data collected. This means there will be additional fields in the ROWKeeper Web site for quality assurance.
- **Quality Assurance Information** will be tallied by week ending date and provided to the client at least monthly, preferably by e-mail. More detailed delivery procedures can be. Accuracy rates and classification of any errors will be included as appropriate.

- **Computerized Data Verification** is almost certainly the key to collecting successful data. The following computerized capabilities of our ROWKeeper software ensure accurate and complete data collection:
 - All attributes can be defined with drop down lists for data entry, or as free formatted text, if required.
 - Attributes can be defined as uneditable for NOVEC system information.
 - Intra-record data verification can be defined. For example, if a joint use company is entered, the quantity of attachments must be greater than zero.
- **Symbology** is a crucial tool for our auditors in the field.
 - Symbols can be defined for each layer to allow users to see each pole.
 - Symbols can be set for different conditions. For instance, different symbols are used when a pole is inspected.
 - The software has colors and shapes that can also be used to ensure the field personnel have information displayed appropriately.
 - Basemap information can also have sizes, shapes, and colors displayed for field use.
- **System Fields and Capabilities** help us manage our data collectors and our data on a real time basis.
 - Collection date, time, and data collector are automatically kept and serve as a basis for production reporting and data collector management by DRG personnel.
 - Capabilities are included for adding and deleting data within the system. A delete field is stored throughout the ROWKeeper system so that the deletion information will be delivered to NOVEC. This will serve as the exception report.
 - The software maintains all fields necessary to load information to a ROWKeeper Web site and download it to a field computer when required. These capabilities are included so that quality control can be completed from the Web site, with updated information going back to the Web as required.
- **Final Verification** is completed as each data set is completed and before it is delivered to NOVEC. This is an extensive process where we look for any abnormalities that may be in the data. Programs have been developed for this in the past, and we add to these programs as this project is implemented.

Sample Quality Assurance Report

This table is an example of a typical audit report that DRG will customize for this project and use as a tool to monitor the quality of data being collected. This Quality Assurance Report will be provided to NOVEC on a regular basis during the audit.

Critical Attributes	Number of failed attributes	Duplicated Poles / Missed Poles	Total Failed Attributes
P1 - Verified Pole Exists	0	0	0
P2 - Identified Transformer Data	1	0	1
P3 - Record & map unmapped poles	1	0	1
P4 - Identify Pole Tag ID	0	0	0
Total	2	0	2
Joint Use Attributes	Number of failed attributes	Duplicated Poles / Missed Poles	Total Failed Attributes
J1 - Missed Attachment	1	0	0
J2 - Incorrect Owner	0	0	0
Total	1	0	1
Quality Control/Quality Assurance	# of Poles QC'd	Total Critical Attribute Errors	Joint Use Attribute Errors
	128	2	1
Error Rate by Attribute Class	Error Rate	Accuracy Rate	Total Number of Attributes *
Critical Attributes	0.78%	99.7%	512
Joint-Use Attributes	0.78%	99.5%	256
Error Rate including Critical Attributes	Error Rate	Accuracy Rate	Total Number of Attributes *
Pole Data	0.00%	100.00%	512

*** Total number of attributes is derived by multiplying the number of poles quality controlled by the total number of fields collected. ***

For Example- Critical Attributes (4) multiplied by poles QC'd 128 = 512

Error Rate is derived by dividing Total Errors by Total Attributes

Critical Attributes (2) / Total Attributes (512) = .003

Project Team

The table below outlines the composition of DRG's project team for NOVEC's field inventory:

Project Position	GEC Project	Summary of Role
Project Developer	Tommy Maloney	Proposal preparation and contract management
Office Project Manager	Carla Waldron	Processes data and performs validations as key part of QA/QC
Operations Manager	Scott Terrell	Responsible for all aspects of project
Field Crew Supervisor	Name and resume will be submitted at Project Setup Meeting	Manages field crews, performs QA/QC in the field, and interacts with client

Tommy Maloney will serve as Project Developer for this project. His responsibilities will include ensuring overall customer satisfaction, and client communication for project design. Mr. Maloney has extensive field inventory experience and over twelve years of experience with DRG.

Carla Waldron will serve as Office Project Manager for this project. Carla's responsibility is configuring the data collection interface, performing data validations, ensuring integrity, and processing the data into applicable GIS format. Any questions are sent back to the field technicians for clarification. Carla has managed several projects including Yellowstone Valley, City of Thomasville, Inland Power and Light, Haywood EMC, Fairfield Electric, and many other projects where ESRI applications has been a deliverable. She has been with DRG for nine years and completed her Masters Degree in GIS at Georgia State University in 2005.

Scott Terrell is the Field Operations Manager for this project. Scott is responsible for ensuring the project stays on schedule and problems are addressed and corrected in a timely manner. He monitors projects on a regular basis and ensures operations are running smoothly. Scott has been with DRG for over ten years and has managed several of DRG's projects including Thomasville Utilities, Cooke County, Gulf Coast EC, Peoples EC, City of Leesburg, FL, and Coastal EC.

DRG Field Crew Supervisor – This key team member reports directly to the Field Operation Manager and is responsible for the day-to-day supervision of the field technicians. This includes handling the daily field data collection and managing all crew logistics.

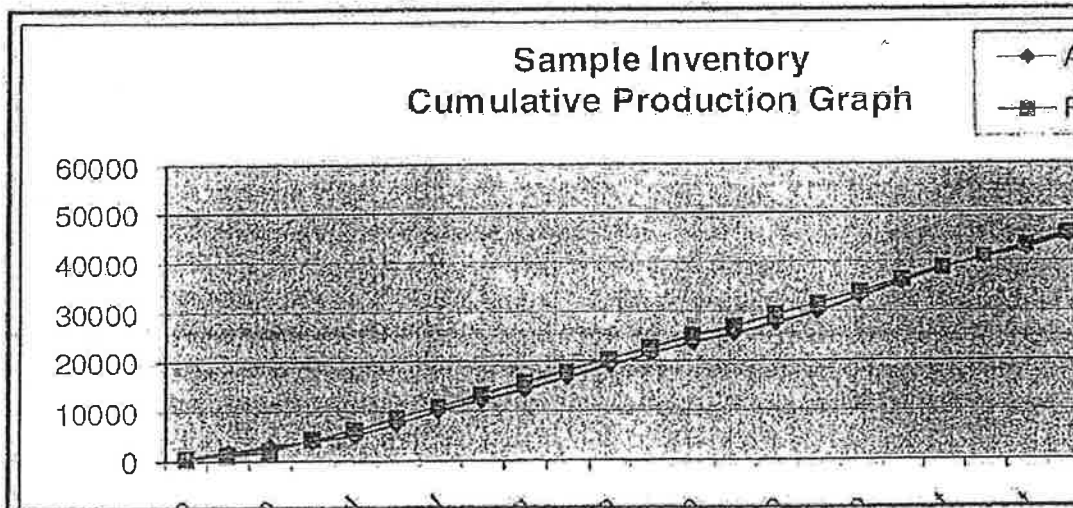
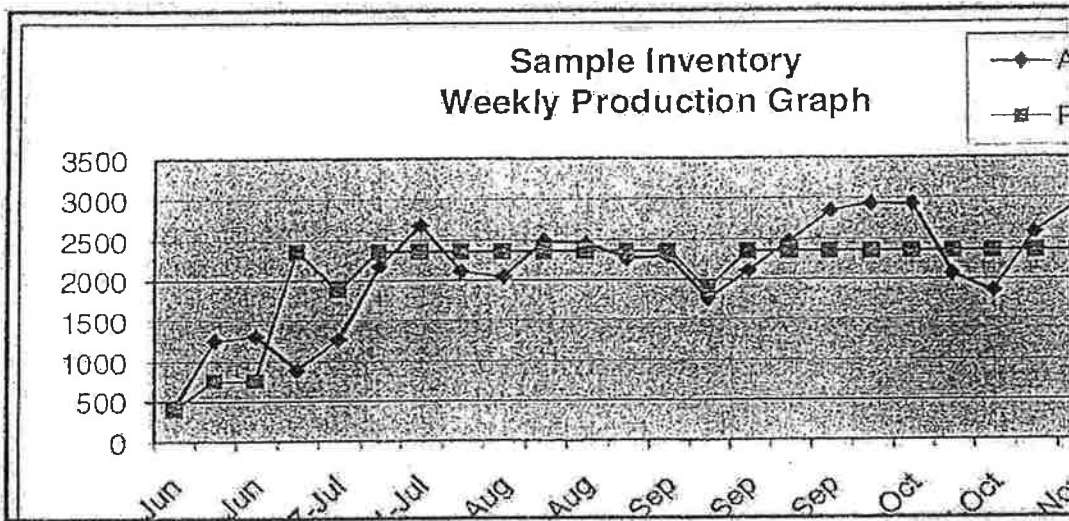
DRG Field Technicians – The field technicians are split into two positions: GPS Technicians and Mapping Technicians. They both report to the Field Crew Supervisor. The **GPS Technician** is in charge of obtaining all GPS locations and will be collecting additional asset information such as pole brand data, RUS assemblies, and attachment data on NOVEC's distribution system. The **Mapping Technician** performs the second pass (described in more detail later in this proposal).

Our GPS and Mapping Technicians are highly qualified and experienced in utility distribution data collection. Their responsible and courteous behavior ensures that DRG and NOVEC will always be represented in a professional manner. Resumes of qualified field staff assigned to the NOVEC project will be provided during the project setup meeting.

Production Reporting

For all unit-priced contracts, Davey Resource Group maintains weekly production reporting. This tool has proven valuable for ensuring work is completed within the time frame clients require. Combined with a documented quality assurance program, this has given DRG managers the capability to effectively manage projects.

Production reporting will consist of at least two graphs that monitor production. The first graph will be a Weekly Production Graph and the second will be a Cumulative Production Graph. There will be a Production Plan developed at the beginning of the project. As data is collected, there will be weekly updates to both of these graphs. The graphs will be delivered to the clients (either monthly or weekly as appropriate) to monitor production. Two graphs from a recent project are shown with both the original Production Plan and Actual Collection. For some projects, more detailed production reporting is required.

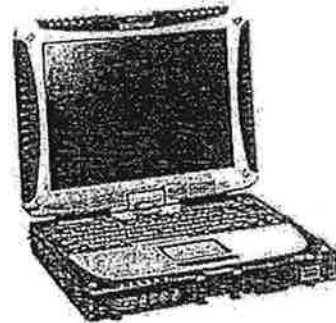


Data Collection Equipment and Technology

DRG's GPS and Mapping Technicians are equipped with pen-based PCs that are used in the field to gather, store, and process data. DRG uses Trimble Global Positioning Systems (GPS), laser rangefinders, and four-wheel drive vehicles for field inventory services. Equipment to be used on the NOVEC project is listed below:

Toughbook 19

- Intel® Core™ 2 Duo Processor SU9300; Intel® Centrino® 2 with vPro™ technology; Processor speed 1.2Ghz; 3MB L2 cache; 800 MHz FSB
- Microsoft® Windows® XP Tablet PC
- 10.4" 1024x768 XGA sunlight-viewable touchscreen or optional dual touch LC; with Panasonic CircuLumin™ technology (4 to 1000 nit)
- 4096MB SDRAM (DDR2-667MHz)
- 160GB HDD shock-mounted and quick-release
- Bluetooth® V2.0 + EDR (Class 1)
- Intel® Wireless WiFi Link 5100 802.11a/b/g/draft-n
- Password Security: Supervisor, User, Hard Disk Lock
- Lithium Ion battery pack (10.65V, 5700mAh)



Trimble Pro XH

- H-Star technology for subfoot (30 cm) post-processed accuracy
- Receiver, antenna, and battery in one compact unit
- Bluetooth wireless technology for convenient cable-free operation
- Rugged and weatherproof for all conditions
- User-replaceable battery that lasts all day
- Includes one extra battery charger, one extra battery, and a hard carrying case



Dolphin 9500

- Rugged and waterproof
- Microsoft Windows Mobile 2003 Second Edition software for Pocket PCs
- All-day battery
- One Secure digital slot
- Integrated Bluetooth
- Full alpha-numeric keyboard
- Bright-color TFT LCD touch screen
- Integrated 1D, 2D barcode reader, and digital imager



Primary Contacts

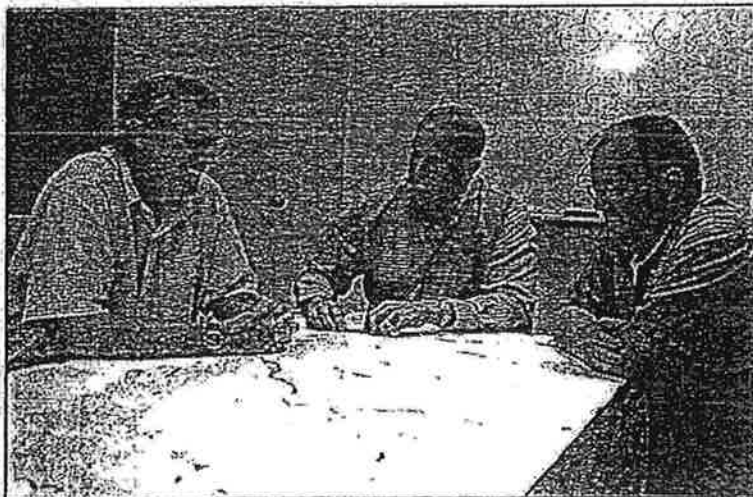
Primary contact: Tommy Maloney, (770) 619-5545 Office; (770) 377-1584 Cell

Qualifications

DRG has extensive knowledge and experience in the development of digital maps for electric utilities. Our experience includes all the aspects of field data collection, data conversion, and GIS development described in this proposal. Over the past ten years, DRG has used various ESRI integrated applications in the development of GIS mapping systems, including ArcFM application and CIS integration of field data. These factors ensure that NOVEC will obtain the best possible solution from DRG for a well-managed and successfully integrated project.

DRG is committed to the electric utility marketplace. We offer our dedicated and experienced staff to your important GIS field inventory project. The following facts summarize why DRG is qualified and committed to providing NOVEC this important GIS field inventory:

- DRG has 30 years experience providing field inventories for Electric utilities.
- DRG has over 100 experienced field technicians.
- DRG is a business partner of Miner and Miner.
- DRG has completed multiple projects with NOVEC's GIS application.
- DRG was named ESRI business partner of the year in 2001.
- DRG's production staff is trained on all integrated applications NOVEC is using.
- DRG verifies and guarantees full connectivity in the data we collect.
- DRG validates all meter numbers against the billing database for accuracy.
- DRG has performed to completion over 100 field Inventory projects over the last 30 years.



Team Qualifications

DRG Experience

Davey Resource Group (DRG) is the utility consulting division of The Davey Tree Expert Company. DRG had its beginnings providing our parent company with consulting services as early as 1909. We have been providing right-of-way management services and asset management services to the utility industry since 1991.

A major specialization in our division is providing expertise for asset management on the right-of-way. Our services in this field include pole inspection, geographic information system (GIS) database development, data collection, equipment inventories, and audits that include joint use, streetlight, underground equipment, and NESC safety compliance. DRG's projects have spanned from the annual inspection of 10,000 poles to a joint use inventory project of 1,500,000 poles over a three-year period. We have performed these services across the United States and Canada. The large range of scopes and geographical areas in which we have performed these services has provided Davey Resource Group with a detailed understanding of how to complete even the most detailed projects.



The Davey Resource Group team applies three core values to be successful on each project:

- **Safety** – the team ensures that all staff is trained and knowledgeable in electrical safety training and is provided the tools and personal protective equipment to complete a project in the safest manner possible.
- **Accuracy** – a detailed project manual is produced for each project and assures that both our customers and our staff have a clear understanding of the information that will be collected in the field. Our team employs a defined quality control program to ensure that all data collected in the field meets our high standards
- **Productivity** – a productive, efficient staff ensures project completion in the time frames outlined and that all data will be provided back to the client in an efficient and effective manner.

The experience of our staff brings a systematic approach to the management of each of our projects. This long track record of success has been implemented on similar projects and has a proven record of success and accuracy.

DRG References

Valley Electric Cooperative

Mr. Wayne Miller, V.P. of Engineering
Valley Electric Cooperative
P.O. Box 329
Huntingdon, PA 16652

(814)-643-2650

DRG is currently providing a complete field inventory and mapping system to this Pennsylvania Electric Cooperative. The data is being delivered in conjunction with NISC's ESRI software application. DRG is also removing and applying pole tags.

Dominion

Arlie Hahn
701 East Cary St
Richmond, VA 23219

(804) 7714-234

DRG is providing data collection and verification on approximately 200,000 Dominion and Verizon owned poles in the State of Virginia. DRG has captured joint use attachment information, along with pole ownership verification and GPS locations.

Union Power Cooperative

Mr. Todd Harrington, GIS Manager
Union Power Cooperative
1525 Rocky River Road North
Monroe, NC 28110

(704)-289-3145

DRG is currently providing completed a field inventory and mapping system to this 50,000 member North Carolina Cooperative. The data is being collected and delivered in the Futura GIS ESRI data model. This project also includes pole tagging.

Seattle City Light

Dave Albergine, Project Manger
Seattle City Light
Seattle, Washington

(206) 684-3704

Davey Resource Group (DRG) audited more than 120,000 poles in the Seattle Metropolitan area. Attributes verified and updated included GPS location, pole ownership information, joint use attachment data, equipment identification, pole condition assessment, and pole tagging.

The DRG team was comprised of 12 field auditors, two quality control technicians, a project supervisor, and a project manager. There were approximately 130 different attaching companies, three pole owners, and multiple equipment types to verify. Including the pole condition assessment, DRG updated more than 110 different attributes in Seattle City Light's (SCL's) database. Work began in March 2009 and was completed in 14 months—ahead of SCL's anticipated schedule. Information collected in the field was used to populate Seattle City Light's new Telvant Miner & Miner's ArcFM system that is an ArcFM data model populated in an Oracle 10g database.

Appendix A – Fee Schedule and NOVEC Bid Forms

Attachment D

NORTHERN VIRGINIA ELECTRIC COOPERATIVE

Fees and Costs Schedule

As full compensation for all services provided hereunder, including federal, state and local taxes of any nature that now or hereafter be imposed, NOVEC shall pay Contractor in accordance with the following unit rates identified be and defined in Attachment E:

Total invoices for 2010 shall not exceed ^{REDACTED}

<u>Description</u>	<u>Unit Price per Pole</u>
Data collection	<u>REDACTED</u>
Remove existing pole number and install new pole number	<u>REDACTED</u>
Non- NOVEC sign removal	<u>REDACTED</u>

NORTHERN VIRGINIA ELECTRIC COOPERATIVE
10323 LOMOND DRIVE
P.O. BOX 2710
MANASSAS, VA 22110
PHONE: (703) 335-0500
FAX: (703) 335-0546

U.S. DEPARTMENT OF AGRICULTURE

**CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER
RESPONSIBILITY MATTERS - PRIMARY COVERED TRANSACTIONS**

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 7 CFR Part 3017, Section 3017.510, Participants' responsibilities. The regulations were published as Part IV of the January 30, 1989, Federal Register (pages 4722-4733). Copies of the regulations may be obtained by contacting the Department of Agriculture agency offering the proposed covered transaction.

(BEFORE COMPLETING CERTIFICATION, READ INSTRUCTIONS ON REVERSE)

- (1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
 - (a) are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
 - (b) have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - (c) are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
 - (d) have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Davey Resource Group, A Division of	NOVEC Pole Asset Inventory
<u>The Davey Tree Expert Company</u>	<u>Survey and Pole Numbering Project</u>
Organization Name	PR/Award Number or Project Name

Kenneth A. Joehlin, Vice President, Business Development

Name and Title of Authorized Representative

Kenneth A. Joehlin
Signature

6/11/10

Date

INDEPENDENT CONTRACTOR AGREEMENT

This Agreement, is made this 11 day of June, 2010, by and between Northern Virginia Electric Cooperative, hereinafter referred to as "NOVEC", and Davey Resource Group, hereinafter referred to as "*Independent Contractor*", said Agreement A Division of the Davey Tree Expert Co. supersedes all previous agreements and proposals, oral or written, and all other communications between the parties relating to the subject matter of the Agreement.

In consideration of the mutual promises, covenants and representations herein contained, the parties hereto agree as follows:

INDEPENDENT CONTRACTOR and NOVEC agree that by entering into this Agreement an independent contractor employment relationship, as recognized under Virginia law, is created. *INDEPENDENT CONTRACTOR* shall be treated in all respects of this employment relationship as such.

1. **Statement of Purpose.** The purpose of this Agreement is to purchase and engage the contracting services of *INDEPENDENT CONTRACTOR*.

2. **Statement of Work.** *INDEPENDENT CONTRACTOR* agrees to provide pole inventory asset survey and pole numbering services to NOVEC as defined in Attachment E. *INDEPENDENT CONTRACTOR* agrees to perform statement of work and controls the means of performing the services.

INDEPENDENT CONTRACTOR will complete statement of work according to the standards and deadlines defined in Attachment E and is responsible for the satisfactory completion of work or services that he or she performs or agrees to perform and is or could be held liable for a failure to complete the work or services. *INDEPENDENT CONTRACTOR* is to notify NOVEC immediately of any delay or failure to complete services according to Attachment E.

3. **Compensation.** The services of *INDEPENDENT CONTRACTOR* are to be provided in accordance with the attached "Fees and Cost Schedule", Attachment D, and all charges for completion of services for NOVEC are to be itemized according by task. Billing for services may take occur monthly or weekly. NOVEC shall not compensate *INDEPENDENT CONTRACTOR* for time spent preparing estimates for level of effort of assigned tasks, billing statements, or other administrative activities unrelated to the completion of the services. The amount of pay so specified herein represents the total compensation to be paid to *INDEPENDENT CONTRACTOR* under the terms of the Agreement and no other sums are payable by NOVEC under the terms of this agreement or outside this agreement. NOVEC acknowledges that any invoices not the subject of dispute and not paid within thirty (30) days of the invoice date will be subject to a service charge. Any invoice or portion thereof that is the subject of dispute shall be exempt from the provisions of this section.

4. Hold Harmless and Indemnity

(a) *INDEPENDENT CONTRACTOR* understands and agrees that it shall immediately indemnify and hold harmless NOVEC, NOVEC's officers, directors, partners, employees and agents from and against and in respect to any and all claims, actions, suits, proceedings, demands, assessments, judgments, expenses, costs, losses and damages and fees (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) hereinafter referred to as "Liabilities" to the extent that such Liabilities were caused by the negligent acts, errors or omissions of *INDEPENDENT CONTRACTOR* or its officers, directors, partners, employees, agents, contractors or subcontractors arising out of, in connection with, or as a result of the performance and furnishings of Services, any work assignment or other services performed by *INDEPENDENT CONTRACTOR*, its agents, contractors, subcontractors, officers, directors, partners and employees for or on behalf of NOVEC.

(b) NOVEC agrees that it will give prompt written notice to *INDEPENDENT CONTRACTOR* of any Liabilities asserted against NOVEC for which NOVEC believes *INDEPENDENT CONTRACTOR* is responsible for indemnification, in whole or in part. Upon receipt of such written notice, *INDEPENDENT CONTRACTOR* shall have the right, but not the duty, to provide counsel to defend such Liabilities or to collaborate with counsel for NOVEC in such defense.

(c) *INDEPENDENT CONTRACTOR* hereby expressly waives the defense of contributory negligence on NOVEC's part as to NOVEC's claims for indemnification. In the event, however, that *INDEPENDENT CONTRACTOR* believes in good faith that any Liabilities for which NOVEC claims indemnification were caused in whole or in part by the negligent acts, errors or omissions of NOVEC or its officers, directors, partners, employees, agents, contractors or subcontractors, *INDEPENDENT CONTRACTOR* shall within ten (10) days of receipt of a claim for indemnification give written notice to NOVEC of *INDEPENDENT CONTRACTOR*'s belief. *INDEPENDENT CONTRACTOR*'s written notice shall specify the percentage or amount of potential Liabilities for which it believes that NOVEC may be responsible, and the percentage or amount of potential Liabilities for which it believes itself may be responsible. The parties shall then endeavor to reach written agreement as to their own comparative negligence and a corresponding allocation of the amount of the Liabilities, with *INDEPENDENT CONTRACTOR* indemnifying NOVEC as provided for in paragraph (a) to the extent of *INDEPENDENT CONTRACTOR*'s negligence as agreed upon by the parties.

(d) If *INDEPENDENT CONTRACTOR* and NOVEC are unable to reach agreement on the respective degrees of comparative negligence and a corresponding allocation of the Liabilities within ten (10) days after *INDEPENDENT CONTRACTOR* has responded to NOVEC's claim for indemnification, either or both may file a demand for arbitration with the American Arbitration Association ("AAA") within sixty (60) days

thereafter. Such arbitration shall be final and binding and shall be resolved timely and exclusively pursuant to Model Employment Arbitration Rules of the AAA. The subject of arbitration will be a determination of the parties' comparative negligence and responsibility for potential Liabilities, including the extent of *INDEPENDENT CONTRACTOR*'s duty, if any, to indemnify NOVEC for the Liabilities. The arbitration shall be conducted by a single arbitrator selected from the AAA-provided panel. If NOVEC and *INDEPENDENT CONTRACTOR* do not agree on the arbitrator within forty-five (45) days or receipt of the AAA's initial submission of a proposed panel, NOVEC and *INDEPENDENT CONTRACTOR* irrevocably authorized the AAA's administrator to designate the single arbitrator. The arbitration opinion and/or award shall be final and binding on both parties and shall be enforceable by any court. The parties shall share equally all costs of arbitration except as otherwise determined by the arbitrator; provided that if the arbitrator determines that NOVEC was not comparatively negligent and that it shall be completely indemnified by *INDEPENDENT CONTRACTOR*, *INDEPENDENT CONTRACTOR* expressly consents to entry by the arbitrator of an order holding it liable for NOVEC's reasonable attorney's fees.

(e) *INDEPENDENT CONTRACTOR* and NOVEC expressly authorize the arbitrator to apply the doctrine of comparative negligence and apportionment of liability notwithstanding the law of Virginia to the contrary. *INDEPENDENT CONTRACTOR* and NOVEC consent to the jurisdiction and venue of the Circuit Court of Prince William County, Virginia, with respect to affirmation and enforcement of any award made in arbitration, as well as compelling arbitration, and agree that arbitration constitutes their exclusive remedy.

(f) *INDEPENDENT CONTRACTOR* agrees that it maintains Insurance ("Insurance") for purposes of insuring against loss as a result of Liabilities caused in whole or in part by *INDEPENDENT CONTRACTOR*'s negligence; such insurance coverage is acknowledged to comply with the requirements as designated on attached Schedule A (minimum limits of liability insurance coverage for contractors). *INDEPENDENT CONTRACTOR* further agrees to, if requested by NOVEC in writing, seek additional insurance coverage, or to cooperate with NOVEC should NOVEC desire *INDEPENDENT CONTRACTOR* to obtain additional insurance coverage. *INDEPENDENT CONTRACTOR* understands and agrees and further warrants and represents to NOVEC that, notwithstanding any other provision to the contrary herein contained, *INDEPENDENT CONTRACTOR*'s Liability for any and all losses, whether to NOVEC or to third parties, resulting from any Liabilities caused in whole or in part by *INDEPENDENT CONTRACTOR*'s negligence shall not be limited to the amount of any insurance proceeds payable to or on behalf of *INDEPENDENT CONTRACTOR* under such Insurance, and *INDEPENDENT CONTRACTOR* agrees to immediately indemnify and hold NOVEC harmless for any and all such Liability in excess of such insurance proceeds. *INDEPENDENT CONTRACTOR* shall furnish written proof of such insurance at least annually to NOVEC with NOVEC as additional named insured.

5. Force Majeure. A party will not be deemed to be in default, or be liable for any delay or failure to perform, which is the result of a cause beyond the reasonable control, and is not due to the fault or negligence, of the party claiming excuse for such delay or failure; provided that the party claiming excuse for such cause promptly notifies the other party of the event causing such delay or failure. If such a delay occurs, the time for performance by the party whose performance is affected by such delay will be extended by the period necessary to enable performance after the cause of the delay has ceased.

6. Confidentiality. *INDEPENDENT CONTRACTOR* agrees not to provide or otherwise make available any material, statements, or any other information of NOVEC provided by or obtained from NOVEC in connection with this agreement or the performance hereof in any form, to any person, other than to employees of NOVEC requiring such information, without prior written consent from NOVEC.

7. Amendments to this Agreement. The parties agree that this Agreement constitutes the entire Agreement between the parties and may be changed only by written amendment hereto signed by both parties. This Agreement supersedes any prior oral or written agreements between the parties.

8. Notices. All notices under this Agreement shall be deemed duly given upon delivery, if delivered by hand (against receipt) or three (3) days after posting by the United States Post Office, if sent by registered or certified mail, return receipt requested, to the party at the address set forth below:

Independent Contractor:
(name & business address)

Davey Resource Group, A Division of
The Davey Tree Expert Company
1500 North Mantua Street
Kent, OH 44240

NOVEC:

Northern Virginia Electric Cooperative
10323 Lomond Drive
Manassas, Virginia 22110

9. Term. The term of this Agreement will commence upon execution of this Agreement by both parties. This agreement can be terminated by giving thirty (30) days prior written notice to *INDEPENDENT CONTRACTOR* delivered pursuant to paragraph 8 above. In the event of such termination, all monies due to *INDEPENDENT CONTRACTOR* as specified in this Agreement, shall be paid in full as of the termination date, prorated to said termination date. Upon termination, this Agreement shall thereafter be of no force and effect, but the terms and provisions hereof shall otherwise survive such termination.

10. Project Coordinator. NOVEC may designate a person from its organization to coordinate activities and act as liaison between NOVEC and *INDEPENDENT CONTRACTOR*.

11. **Ownership of Work.** All reports, designs, charts, plans, software programs, programming code, specifications, schedules and estimates prepared or in the process of being prepared by *INDEPENDENT CONTRACTOR* in performance of the Statement of Work in this agreement, are the property of NOVEC and as such will be available to NOVEC personnel for inspection and copying, during the progress of the work described herein. Any such documents remaining in the hands of *INDEPENDENT CONTRACTOR* upon completion or termination of the project will be returned to NOVEC. If any materials prepared are lost or damaged before final delivery to NOVEC, *INDEPENDENT CONTRACTOR* will replace the same at his or her own expense.

12. **Patent and Copyright Indemnification.** Notwithstanding anything to the contrary herein, *INDEPENDENT CONTRACTOR* will defend at its own expense any action brought against NOVEC to the extent that it is based on a claim that programs or materials used or produced within the scope of this Agreement infringe a copyright in the United States or a United States patent, and subject to the limitation of liability stated herein, *INDEPENDENT CONTRACTOR* will pay any costs, damages, and attorney fees finally awarded against NOVEC in such action which are attributable to such claim, provided that NOVEC notifies *INDEPENDENT CONTRACTOR* promptly in writing of the claim and *INDEPENDENT CONTRACTOR* may fully participate in the defense and/or agrees to any settlement of such claim. *INDEPENDENT CONTRACTOR* shall not be liable for any costs or expenses incurred without *INDEPENDENT CONTRACTOR*'s written authorization. The foregoing states the entire liability of *INDEPENDENT CONTRACTOR* with respect to infringement of any copyrights or patents by the programs or materials described herein or any parts thereof.

13. **Governing Law.** This Agreement and any terms and conditions therein shall be governed and interpreted according to the laws of the Commonwealth of Virginia.

14. **Severability.** If any term of this Agreement is invalid or unenforceable under any statute, regulation, ordinance, or other rule of law, such terms shall be deemed reformed or deleted, but only to the extent necessary to comply with such statute, regulation, ordinance or rule, and the remaining provisions shall remain in full force and effect.

15. **No Implied Waiver.** The failure of either party at any time to require performance by the other party of any provision of this Agreement shall in no way effect the right to require such performance at any time thereafter, nor shall the waiver of either party of a breach of any provision of this Agreement constitute a waiver of any succeeding breach of the same or any other provisions.

16. This Agreement may not be assigned by *INDEPENDENT CONTRACTOR* to any other party without the express written permission of NOVEC.

17. This Agreement is contingent upon the approval of NOVEC.

18. Compliance with Laws, Statutes and Regulations. *INDEPENDENT CONTRACTOR* will comply with all applicable statutes, ordinances, rules, and regulations pertaining to the performance of the services hereunder. *INDEPENDENT CONTRACTOR* acknowledges that it is familiar with the Rural Electrification Act of 1936, as amended, the so-called "Kick-Back" Statute (48 Stat. 948), and regulations issued pursuant thereto, and 18 U.S.C. §§287,1001, as amended. *INDEPENDENT CONTRACTOR* understands that the obligations of the parties hereunder are subject to the applicable regulations and orders of Governmental agencies having jurisdiction in the premises.

19. Equal Opportunity Provisions.

a. *Equal Opportunity Clause.* If the value of any contract or purchase order is \$10,000 or if the aggregate total value of all contracts and purchase orders exceeds \$10,000 in any twelve (12) month period, *INDEPENDENT CONTRACTOR* shall be bound by the terms and provisions of Executive Order 11246 as amended, and 11375, and shall file compliance reports as required by Section 203 of Executive Order 11246 as amended, and otherwise comply with the requirements of such orders and with all rules and regulations promulgated thereunder. The affirmative action clause set forth in Section 202 of the Executive Order 11246 as amended is included herein by reference.

b. *Certificate of Non-segregated Facilities.* *INDEPENDENT CONTRACTOR* certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location under his control where segregated facilities are maintained. *INDEPENDENT CONTRACTOR* agrees that breach of his certification is a violation of the Equal Opportunity Clause of this contract. As used in this certification, the term "FACILITIES" includes any waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation and housing facilities provided for employees. *INDEPENDENT CONTRACTOR* agrees to provide a certificate of non-segregated facilities as required by 41 CFR, Chapter 60-1.8.

c. *Standard Form 100 (EEO-1) and Affirmative Action Compliance Program.* *INDEPENDENT CONTRACTOR* agrees further and certifies that, if the value of any contract or purchase order is \$50,000 or more and *INDEPENDENT CONTRACTOR* has fifty (50) or more employees, *INDEPENDENT CONTRACTOR*:

1. Files a complete and accurate report on Standard Form 100 (EEO-1) with the Joint Reporting Committee, Post Office Box 2236, Norfolk, Virginia 23501, within thirty (30) days of the date of contract award, unless such report has been filed within the twelve (12) month period preceding the date

of the contract award and otherwise complies with and files such other compliance reports as may be required under Executive Order 11246 as amended and the rules and regulations thereunder.

2. Develops and maintains a written affirmative action compliance program for each of its establishments as required by Executive Order 11246 as amended and implemented by Title 41, CFR Section 60-1.40, 60-2 as amended.

d. *38 USC 2012, Veterans Readjustment Act of 1974. INDEPENDENT CONTRACTOR* agrees and certifies that, if the value of any contract or purchase order is \$10,000 or more, *INDEPENDENT CONTRACTOR* prepares and maintains a written affirmative action program to employ and advance in employment qualified Vietnam Era veterans and certain qualified disabled veterans.

e. *Section 503, Rehabilitation Act of 1973. INDEPENDENT CONTRACTOR* agrees and certifies that, if the value of any contract or purchase order is \$2,500 or more, *INDEPENDENT CONTRACTOR* prepares and maintains a written affirmative action program to employ and advance in employment qualified handicapped persons.

f. *Minority Business Enterprise Utilization.* If the value of any contract or purchase order is \$5,000 or more, *INDEPENDENT CONTRACTOR* agrees to the following provisions:

1. It is the government's policy that minority business enterprise has the maximum practicable opportunity to participate in the performance of subcontracts received from prime contractors through the lowest tier subcontracts.
2. *INDEPENDENT CONTRACTOR* agrees to use his best efforts to seek out and use to the fullest extent, qualified minority businesses in the award of this contract. As used in this contract, the term "MINORITY BUSINESS ENTERPRISE" means a business at least 51% of which is owned by minority group members. Minority group members are defined as Blacks, Hispanics, Asians, Native Americans, Alaskan Natives, and females regardless of race or ethnicity. Contractors may rely on written representations by subcontractors regarding their status as minority business enterprises in lieu of independent investigation.

20. Independent Contractor Relationship. Contractor shall act as and be deemed to be an independent contractor for all purposes of this Contract and shall not act as nor be deemed to be an agent or employee of Owner. This Contract is not intended to be one of hiring under the provisions of any workers' compensation or other laws and shall not be so construed.

21. Each party shall comply with all local, state, and Federal government laws, regulations and rules pertaining to its performance of this Agreement.

22. A party cannot bind or otherwise obligate the other party in any manner whatsoever, unless specifically authorized in writing by the other party.

23. Integration Clause. This contract shall constitute the whole, complete and exclusive agreement between the parties. There are no promises, terms, conditions or obligations other than those contained herein, and this contract shall supersede all previous communications, representations, or agreements, written or verbal, between the parties hereto.

IN WITNESS WHEREOF, NOVEC and INDEPENDENT CONTRACTOR have caused this Agreement to be executed by their duly authorized representatives.

NORTHERN VIRGINIA ELECTRIC COOPERATIVE

By: [Signature] (Seal)

7/19/10
Date

Title: PRES/CEE

COMMONWEALTH OF VIRGINIA
IN THE COUNTY/CITY OF PRINCE WILLIAM; to wit:

I, GEORGE E. COUTTS, a Notary Public in and for the jurisdiction aforesaid, do hereby certify that STAN FURBERG, whose title is PRES/CEE, of Northern Virginia Electric Cooperative, whose name is signed to the foregoing Agreement bearing date of July 19, 2010, has acknowledged the same before me in my jurisdiction aforesaid.

GIVEN under my hand this 19 day of July, 2010.

Notary Public

[Signature: George E. Coutts]

My Commission Expires: MAY 31, 2013

GEORGE E. COUTTS
NOTARY ID # 160346
NOTARY PUBLIC
COMMONWEALTH OF VIRGINIA
MY COMMISSION EXPIRES MAY 31, 2013

Davey Resource Group, A Division of The Davey Tree Expert Company
(INDEPENDENT CONTRACTOR)

By: [Signature] (Seal) 6/11/10
Joseph R. Paul Date
Title: Treasurer

State of Ohio
~~COMMONWEALTH OF OHIO~~
IN THE COUNTY/EXX OF Portage; to wit:

I, Barb Mast, a Notary Public in and for the jurisdiction aforesaid, do hereby certify that Joseph R. Paul, whose title is Treasurer, of INDEPENDENT CONTRACTOR, whose name is signed to the foregoing Agreement bearing date of June 11, 2010 has acknowledged the same before me in my jurisdiction aforesaid.

GIVEN under my hand this 11th day of June, 2010.

Notary Public [Signature]

My Commission Expires: [Signature]




Barbara E. Mast
Notary Public, State of Ohio
My Commission Expires Aug. 10, 2011

Contract Addendum #1

During final contract negotiations, Davey Resource Group requests minor changes to Section 4, paragraph c (Waiver of Contributory Negligence).

Appendix B – Davey Certificate of Insurance

 CERTIFICATE OF LIABILITY INSURANCE		DATE (MM/DD/YYYY) 09/27/2009
PRODUCER: MARSH USA INC. 218-937-1750 200 PUBLIC SQUARE SUITE 1000 CLEVELAND, OH 44114-1824	THIS CERTIFICATION IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.	
08670 -RESID-GAW-09-10 RESOU	INSURERS AFFORDING COVERAGE	NAIC #
INSURED: THE DAVEY TREE EXPERT COMPANY 1500 N. MANTUA STREET KENT, OH 44240	INSURER A: Old Republic Insurance Co INSURER B: INSURER C: INSURER D: INSURER E:	24147

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR ACCT LTR INSD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YYYY)	POLICY EXPIRATION DATE (MM/DD/YYYY)	LIMITS
A	GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR GENERAL AGGREGATE LIMIT APPLIES PER POLICY <input checked="" type="checkbox"/>	MWZY 58429	09/01/2009	09/01/2010	EACH OCCURRENCE \$ 2,000,000 DAMAGE TO RENTED PREMISES (Occurrence) \$ 2,000,000 ADED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 2,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMMODITY AGG \$ 2,000,000
A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS CARAGE LIABILITY <input type="checkbox"/> ANY AUTO EXCESS UMBRELLA LIABILITY <input type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> DEDUCTIBLE <input type="checkbox"/> RETENTION \$	MWTE 20763	09/01/2009	09/01/2010	COMBINED SINGLE LIMIT (Per accident) \$ 2,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ AUTO ONLY - EA ACCIDENT \$ OTHER THAN EA ACC AUTO ONLY \$ EACH OCCURRENCE \$ AGGREGATE \$ \$ \$
A	WORKERS COMPENSATION AND EMPLOYERS LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE Y/N OFFICER/MEMBER EXCLUDED? N Mandatory in MI if yes. Describe any SPECIAL PROVISIONS below OTHER	MWC 116188 00 (ACS)	09/01/2009	09/01/2010	<input checked="" type="checkbox"/> INC STATUS <input type="checkbox"/> OTHER <input checked="" type="checkbox"/> POLICY LIMITS <input type="checkbox"/> PER EL EACH ACCIDENT \$ 5,000,000 EL DISEASE - EA EMPLOYEE \$ 5,000,000 EL DISEASE - POLICY LIMIT \$ 5,000,000

DESCRIPTION OF OPERATIONS, LOCATIONS, VEHICLES, EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS

CANCELLATION CLAUSE REPLACED IN ITS ENTIRETY BY THE FOLLOWING: IN THE EVENT OF (1) CANCELLATION FOR OTHER THAN NONPAYMENT OF PREMIUM; OR (2) MATERIAL CHANGE THAT RESTRICTS OR REDUCES THE INSURANCE AFFORDED BY ANY POLICY DESCRIBED ABOVE, THE INSURER AFFORDING COVERAGE WILL MAIL NOTICE 30 DAYS BEFORE THE DATE OF CANCELLATION OR MATERIAL CHANGE TO THE PARTY NAMED BELOW.

CERTIFICATE HOLDER CLE-002435621-06 THE DAVEY TREE EXPERT COMPANY EVIDENCE OF INSURANCE ONLY	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES. AUTHORIZED REPRESENTATIVE of Marsh USA Inc. Luann M. Glavic <i>Luann M. Glavic</i>
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Appendix C – Davey Financial Information

THE DAVEY TREE EXPERT COMPANY

Summary Financial Data

(in thousands, except per share data)

	Year Ended December 31,				
	2009	2008	2007	2006	2005
Operating Statement Data:					
Revenues	\$ 562,111	\$ 595,797	\$ 506,738	\$ 467,534	\$ 431,611
Costs and expenses:					
Operating	360,623	382,143	324,415	305,106	283,596
Selling	89,266	95,327	82,449	74,513	69,944
General and administrative	47,077	45,607	38,476	34,126	29,815
Depreciation	36,780	34,374	28,085	26,991	24,147
Amortization of intangible assets	1,677	1,482	1,148	1,291	1,416
Gain on sale of assets, net	(623)	(902)	(515)	(309)	(521)
Income from operations:	27,811	37,856	32,080	25,816	23,214
Interest expense	(2,360)	(3,417)	(3,422)	(2,768)	(2,196)
Interest income	25	220	404	176	260
Other expense	(1,880)	(2,920)	(542)	(1,301)	(625)
Income before income taxes	23,576	31,739	28,520	21,923	20,453
Income taxes	9,159	12,718	10,441	7,905	7,152
Net income	\$ 14,377	\$ 19,021	\$ 18,079	\$ 14,017	\$ 13,311
Earnings per share—diluted	\$.92	\$ 1.14	\$ 1.07	\$.89	\$.75
Shares used for computing per share amounts—diluted	15,656	16,751	16,914	17,460	17,766
Other Financial Data:					
Depreciation and amortization	\$ 37,957	\$ 35,856	\$ 29,233	\$ 28,282	\$ 25,563
Capital expenditures	21,836	37,033	37,587	32,435	31,985
Cash flow provided by (used in):					
Operating activities	53,538	55,282	52,341	30,372	32,237
Investing activities	(21,457)	(51,356)	(33,801)	(34,419)	(31,682)
Financing activities	(33,049)	(2,382)	(13,822)	(5,297)	1,616
Cash dividends declared per share	\$.1700	\$.1700	\$.1625	\$.1525	\$.1425
As of December 31,					
	2009	2008	2007	2006	2005
Balance Sheet Data:					
Total assets	\$ 265,072	\$ 291,002	\$ 231,649	\$ 207,980	\$ 194,129
Long-term debt	45,843	60,187	32,099	31,951	29,055
Other long-term liabilities	41,494	45,523	33,728	29,283	28,108
Shareholders' equity	97,223	94,783	94,382	82,076	78,553
Common shares, net outstanding	14,572	14,518	14,531	15,021	15,601
ESOP valuation per share	\$ 16.60	\$ 16.40	\$ 13.80	\$ 12.95	\$ 11.25

ANNUAL MEETING

The Annual Meeting of Shareholders of The Davey Tree Expert Company will be held on Tuesday, May 18, 2010, at 8:00 p.m. at The Davey Institute in North Opa.

ACCESS TO COMPANY REPORTS

All periodic reports filed with the Securities and Exchange Commission (SEC) can be viewed through our Internet website by the click to the SEC's website (<http://www.sec.gov>). Also, copies of our Annual Report on Form 10-K are available, without charge, upon written request.

VISIT OUR WEBSITE

To learn more about The Davey Tree Expert Company online, including Davey services, visit us at <http://www.davey.com>.

Appendix D – Davey Safety Program

THE ROAD  TO ZERO

Davey Tree is firmly committed to maintaining a safe and healthful working environment. To achieve this goal, Davey Tree has implemented a comprehensive Safety and Loss Prevention Program. It is designed to prevent workplace accidents, injuries, and illnesses. This Program is an Industry Best Safety program called "The Road to Zero."

The Company's goal is attaining Zero accidents through consistent reduction of accident frequency per 10,000 labor hours. Davey's Safety and Loss Prevention Program is a commitment to ensuring that all Davey employees understand the key role that they play in achieving these objectives. The primary purpose of the program is to ensure the safety and health of Davey workers, provide a safe and healthful work environment, and protect property from damage.

To ensure that these objectives are met, it is the responsibility of all management personnel to take the following steps:

- Vigorously promote safety as an integral activity of Davey Tree;
- Enforce Company policies and making certain that all employees are trained in accordance with this program;
- Conducting inspections to recognize, identify and evaluate workplace hazards on a continuing basis;
- Assist in abating workplace hazards;
- Make certain that any identified workplace hazards are abated in a timely and efficient manner;
- Timely reporting and proactive investigation of accidents and claims;
- Active participation in the appropriate resolution of claims and Return to Work Program for injured workers;
- Take all necessary corrective measures toward prevention of accident reoccurrence.

To ensure that each of these safety guidelines are identified and followed, Davey has created a Department dedicated to these specific functions. The Davey Safety Department is charged with assisting operations management in creating, implementing and sustaining the Davey Safety Culture. The Manager of Safety and Loss Prevention is responsible for the overall implementation and maintenance of The Davey Tree Safety Program. There are four principle sections with the Safety Department and all sections report to the Manager, Safety and Loss Prevention. A complete summary of Davey's Safety Program Manual can be provided upon request.



Hollcroft, M. Skip

From: Maloney, Tommy [Tommy.Maloney@davey.com]
Date: Friday, June 18, 2010 7:26 PM
To: Hollcroft, M. Skip
Subject: DRG Contract Addendum

Skip after discussions with our legal staff in regards to the contract addendum #1 we will sign the contract as is.

There are no further concerns or questions on our behalf. So disregard the statement in the proposal.

If you have questions please call me at 770-377-1584. I would like to clarify with you once you get back in the office.

Tommy Maloney
Senior Project Developer
Davey Resource Group
800-924-5233 ext 115
770-377-1584 cell
tommy.maloney@davey.com
www.davey.com/drg

This e-mail message, including any attachments, is for the sole use of the intended recipient(s) and may contain confidential and privileged information. Any unauthorized review, copy, use, disclosure, or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply e-mail and destroy all copies of the original message.

**Response of Northern Virginia Electric Cooperative
to Comcast of CA/MD/PA/VA/WV, LLC Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: Comcast of CA/MD/PA/VA/WV, LLC

Discovery request set number: Fifth

Response prepared by or under the direction of: Robert E. Bisson, PE, NOVEC Vice
President of Electric System Development

Comcast-V-43

For any of the activities identified in Table 11 to the Bisson Testimony, identify any activities for which entities with attachments on NOVEC poles are required under existing pole agreements to reimburse NOVEC, self-incur costs, or provide in-kind services.

RESPONSE:

NOVEC objects to this request as overly broad and vague.

Without waiving this objection, NOVEC responds as follows.

The sources of revenue include: (1) reimbursements for transfers, as described in the Bisson Testimony. The amounts of revenue are variable from year to year, depending upon whether the attachers elect to perform transfers of their cabling, or elect to pay NOVEC to perform the work in one site visit, or two. (2) In theory, reimbursements for the attachers' respective shares of the recently-completed pole survey; however, to date, no such reimbursements have been received.

**Response of Northern Virginia Electric Cooperative
to Comcast of CA/MD/PA/VA/WV, LLC Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: Comcast of CA/MD/PA/VA/WV, LLC

Discovery request set number: Fifth

Response prepared by or under the direction of: Gregory L. Booth, PE, PowerServices, Inc.
Robert E. Bisson, PE, NOVEC Vice
President of Electric System Development

Comcast-V-48

With respect to the assertion at Page 18, Lines 16-17 of the Booth Testimony that "the remediation of all the violations will exceed \$4,200,000 and could easily approach \$8,000,000," including the calculation at Page 14, Line 3 that \$4,200,000 is "3500 poles at \$1,200 poles," please provide the basis for such assertion and provide any and all documents in support of such assertion.

RESPONSE:

See attached data sheets provided by NOVEC (Robert Bisson, PE) for the weighted cost to install a new 40 foot pole, remove a 35 foot pole, and transfer utility facilities for a single phase and three phase tangent pole structure.

Weighted cost of two Contractors	Description	Action	CUs
\$ -	Engineering OH Facilities - 1 Hour Increments	I	NOVEC Design
\$ 836.70	Pole, 40-4	I	WPO404
\$ -	Pole delivery - 30 minute increments	I	POLE DELIVERY
\$ 46.75	Travel Time/Set up on site - 30 minute increments	I	MOBILE
\$ 23.37	Pick up materials - 30 minute increments	I	MATERIALS
\$ 117.77	Grounding assembly - ground rod type	I	M2-11B
\$ 52.74	Rod, Armor 1/0 ACSR 6/1 Single	T	ARI010
\$ 91.84	12.5/7.2KV Primary Single Phase	I	A1-1
\$ 250.88	Pole, 35-5 (Removal)	R	WPO355
\$ 40.65	12.5/7.2KV Primary Single Phase	R	A1-1
\$ 691.47	All Aluminum Stranded Conductors, 4 ACSR to 1/0 ACSR	T	CT0002
\$ 2,152.18			

Provided by RB 7/25/2013

Installation of 40 ft pole

Single Phase line + neutral

Assuming tangent pole with no guying required.

Removal of 35 ft Class 5 pole

Single Phase line + neutral

Conductor Transfers

Assuming 250 foot point-span on either side

Assuming 1/0 ACSR with 1/0 neutral

CU	Action	Description	Weighted cost of two Contractors
NOVEC Design WPO404	I	Engineering OH Facilities - 1 Hour increments Pole, 40-4	\$ 836.70
POLE DELIVERY MOBILE	I	Pole delivery - 30 minute increments	\$ -
MATERIALS M2-11B	I	Travel Time/Set up on site - 30 minute increments	\$ 46.75
AR1010	I	Pick up materials - 30 minute increments	\$ 23.37
	I	Grounding assembly - ground rod type	\$ 117.77
	T	Rod, Armor 1/0 ACSR 6/1 Single	\$ 210.95
	I	12.5/7.2KV 3-Phase Crossarm Construction Single Primary	\$ 257.84
WPO355 C1	R R	Pole, 35-5 (Removal) 12.5/7.2KV Primary Single Phase	\$ 250.88 \$ 105.07
CT0008	T	All Aluminum Stranded Conductors, 4 ACSR to 1/0 ACSR	\$ 2,765.88
			\$ 4,615.21

Provided by RB 7/25/2013

Installation of 40 ft pole
Three - Phase line + neutral
Assuming tangent pole with no guying required.

Removal of 35 ft Class 5 pole
Three Phase line + neutral
Assuming tangent pole with no guying required.

Conductor Transfers
Assuming 250 foot point span on either side
Assuming 1/0/ACSR with 1/0 neutral

**Response of Northern Virginia Electric Cooperative
to Comcast of CA/MD/PA/VA/WV, LLC Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: Comcast of CA/MD/PA/VA/WV, LLC

Discovery request set number: Sixth

Response prepared by or under the direction of: Patrick A. Toulme, Assistant Vice President
& Corporate Counsel

Comcast-VI-10

Produce all documents referring to, relating to, or regarding NOVEC's "vegetation management program," as referenced on Page 16, Line 14 of the Bisson Testimony.

RESPONSE:

NOVEC objects to this request as it is overly broad. By asking for "all" documents relating to NOVEC's vegetation management program, Comcast's request is not reasonably calculated to lead to the discovery of admissible information. Without waiving this objection, NOVEC states as follows.

Attached are documents detailing the NOVEC vegetation management program and scope of work being performed by vegetation management contractors

INDEPENDENT CONTRACTOR AGREEMENT

This Agreement, made July 1, 2012, by and between Northern Virginia Electric Cooperative, hereinafter referred to as "NOVEC", and *LEWIS TREE SERVICE, INC.*, hereinafter referred to as "*LEWIS TREE*", said agreement superseding all proposals, oral or written, and all other communications between the parties relating to the subject matter of the Agreement.

In consideration of the mutual promises, covenants and representations herein contained, the parties hereto agree as follows:

LEWIS TREE and NOVEC agree that by entering into this Agreement an independent contractor employment relationship as recognized under Virginia law, is created. *LEWIS TREE* shall be treated in all respects of this employment relationship as such.

1. **Statement of Purpose.** The purpose of this Agreement is to purchase and engage the contracting services of *LEWIS TREE*.

2. **Statement of Work.** *LEWIS TREE* agrees to provide materials and services for tree trimming for right-of-way and easement clearing in support of NOVEC Work Plan Projects. Work is to be performed as defined in Attachment E.

At NOVEC's sole discretion, unless otherwise agreed, said performance of NOVEC assignments shall be performed between the hours of 7:00 a.m. and 5:00 p.m., Monday through Friday weekly, excluding NOVEC holidays.

3. **Compensation.** The services of *LEWIS TREE* are to be provided in accordance with the attached bid proposal submitted by *LEWIS TREE*, Attachment D and all charges spent in the completion of NOVEC requests will be itemized by task. As an independent contractor, *LEWIS TREE* may not charge NOVEC for vacation time, holidays, sick leave, or other time not spent in performance of the services called for herein. Billing for services will take place on or about the first (1st) and fifteenth (15th) days of each month. NOVEC shall not compensate *LEWIS TREE* for time spent preparing estimates for level of effort of assigned tasks, billing statements, or other administrative activities unrelated to the completion of the task. The amount of pay so specified herein represents the total compensation to be paid to *LEWIS TREE* under the terms of the Agreement and no other sums are payable by NOVEC under the terms of this agreement. NOVEC acknowledges that any invoices not the subject of dispute not paid within thirty (30) days of the invoice date will be subject to a service charge. Any invoice or portion thereof that is the subject of dispute shall be exempt from the provisions of this section.

4. **Hold Harmless and Indemnity.**

(a) *LEWIS TREE* understands and agrees that it shall immediately indemnify and hold harmless NOVEC, NOVEC's officers, directors, partners, employees and agents from and against and in respect to any and all claims, actions, suits, proceedings, demands, assessments, judgments, expenses, costs, losses and damages and fees

(including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) hereinafter referred to as "Liabilities" to the extent that such Liabilities were caused by the negligent acts, errors or omissions of *LEWIS TREE* or its officers, directors, partners, employees, agents, contractors or subcontractors arising out of, in connection with, or as a result of the performance and furnishings of Services, any work assignment or other services performed by *LEWIS TREE*, its agents, contractors, subcontractors, officers, directors, partners and employees for or on behalf of NOVEC.

(b) NOVEC agrees that it will give prompt written notice to *LEWIS TREE* of any Liabilities asserted against NOVEC for which NOVEC believes *LEWIS TREE* is responsible for indemnification, in whole or in part. Upon receipt of such written notice, *LEWIS TREE* shall have the right, but not the duty, to provide counsel to defend such Liabilities or to collaborate with counsel for NOVEC in such defense.

(c) *LEWIS TREE* hereby expressly waives the defense of contributory negligence on NOVEC's part as to NOVEC's claims for indemnification. In the event, however, that *LEWIS TREE* believes in good faith that any Liabilities for which NOVEC claims indemnification were caused in whole or in part by the negligent acts, errors or omissions of NOVEC or its officers, directors, partners, employees, agents, contractors or subcontractors, *LEWIS TREE* shall within ten (10) days of receipt of a claim for indemnification give written notice to NOVEC of *LEWIS TREE*'s belief. *LEWIS TREE*'s written notice shall specify the percentage or amount of potential Liabilities for which it believes that NOVEC may be responsible, and the percentage or amount of potential Liabilities for which it believes itself may be responsible. The parties shall then endeavor to reach written agreement as to their own comparative negligence and a corresponding allocation of the amount of the Liabilities, with *LEWIS TREE* indemnifying NOVEC as provided for in paragraph (a) to the extent of *LEWIS TREE*'s negligence as agreed upon by the parties.

(d) If *LEWIS TREE* and NOVEC are unable to reach agreement on the respective degrees of comparative negligence and a corresponding allocation of the Liabilities within ten (10) days after *LEWIS TREE* has responded to NOVEC's claim for indemnification, either or both may file a demand for arbitration with the American Arbitration Association ("AAA") within sixty (60) days thereafter. Such arbitration shall be final and binding and shall be resolved timely and exclusively pursuant to Model Employment Arbitration Rules of the AAA. The subject of arbitration will be a determination of the parties' comparative negligence and responsibility for potential Liabilities, including the extent of *LEWIS TREE*'s duty, if any, to indemnify NOVEC for the Liabilities. The arbitration shall be conducted by a single arbitrator selected from the AAA-provided panel. If NOVEC and *LEWIS TREE* do not agree on the arbitrator within forty-five (45) days or receipt of the AAA's initial submission of a proposed panel, NOVEC and *LEWIS TREE* irrevocably authorized the AAA's administrator to designate the single arbitrator. The arbitration opinion and/or award shall be final and binding on both parties and shall be enforceable by any court. The parties shall share equally all costs of arbitration except as otherwise determined by the arbitrator; provided that if the

arbitrator determines that NOVEC was not comparatively negligent and that it shall be completely indemnified by *LEWIS TREE*, *LEWIS TREE* expressly consents to entry by the arbitrator of an order holding it liable for NOVEC's reasonable attorney's fees.

(e) *LEWIS TREE* and NOVEC expressly authorize the arbitrator to apply the doctrine of comparative negligence and apportionment of liability notwithstanding the law of Virginia to the contrary. *LEWIS TREE* and NOVEC consent to the jurisdiction and venue of the Circuit Court of Prince William County, Virginia, with respect to affirmation and enforcement of any award made in arbitration, as well as compelling arbitration, and agree that arbitration constitutes their exclusive remedy.

(f) *LEWIS TREE* agrees that it maintains Insurance ("Insurance") for purposes of insuring against loss as a result of Liabilities caused in whole or in part by *LEWIS TREE*'s negligence; such insurance coverage is acknowledged to comply with the requirements as designated on attached Schedule A (minimum limits of liability insurance coverage for contractors). *LEWIS TREE* further agrees to, if requested by NOVEC in writing, seek additional insurance coverage, or to cooperate with NOVEC should NOVEC desire *LEWIS TREE* to obtain additional insurance coverage. *LEWIS TREE* understands and agrees and further warrants and represents to NOVEC that, notwithstanding any other provision to the contrary herein contained, *LEWIS TREE*'s Liability for any and all losses, whether to NOVEC or to third parties, resulting from any Liabilities caused in whole or in part by *LEWIS TREE*'s negligence shall not be limited to the amount of any insurance proceeds payable to or on behalf of *LEWIS TREE* under such Insurance, and *LEWIS TREE* agrees to immediately indemnify and hold NOVEC harmless for any and all such Liability in excess of such insurance proceeds. *LEWIS TREE* shall furnish written proof of such insurance at least annually to NOVEC with NOVEC as additional named insured.

5. **FORCE MAJEURE.** A party will not be deemed to be in default, or be liable for any delay or failure to perform, which is the result of a cause beyond the reasonable control, and is not due to the fault or negligence, of the party claiming excuse for such delay or failure; provided that the party claiming excuse for such cause promptly notifies the other party of the event causing such delay or failure. If such a delay occurs, the time for performance by the party whose performance is affected by such delay will be extended by the period necessary to enable performance after the cause of the delay has ceased.

6. **CONFIDENTIALITY.** *LEWIS TREE* agrees not to provide or otherwise make available any material, statements, or any other information of NOVEC provided by or obtained from NOVEC in connection with this agreement or the performance hereof in any form, to any person, other than to employees of NOVEC requiring such information, without prior written consent from NOVEC.

7. **Amendments to this Agreement.** The parties agree that this Agreement constitutes the entire Agreement between the parties and may be changed only by written amendment hereto signed by both parties. This Agreement supersedes any prior oral or written agreements between the parties.

8. **Notices.** All notices under this Agreement shall be deemed duly given upon delivery, if delivered by hand (against receipt) or three (3) days after posting by the United States Post Office, if sent by registered or certified mail, return receipt requested, to the party at the address set forth below:

Contractor:

Lewis Tree Service, Inc.
Attn: Jillian Stapleton
300 Lucius Gordon Drive
West Henrietta, NY 14586

NOVEC:

Northern Virginia Electric Cooperative
Attn: Jim Moxley
10323 Lomond Drive
P.O. Box 2710
Manassas, VA 20108-0874

9. **Resource Usage.** NOVEC agrees to furnish the necessary material, equipment, and space to *LEWIS TREE* to enable *LEWIS TREE* to complete the Statement of Work defined within the time period of this Agreement. Upon request of *LEWIS TREE*, NOVEC may at its sole discretion provide administrative and operational support to *LEWIS TREE*.

10. **Changes in Staff.** "John Trammell" represents a key *LEWIS TREE* staff member in the execution of this Agreement. Notification of any substitutions made to key *LEWIS TREE* contacts must be submitted in writing to NOVEC.

11. **Modification of Source.** NOVEC agrees that *LEWIS TREE* is relieved of all responsibility in the event that modifications made by NOVEC, or NOVEC's representatives, to work assignments completed by *LEWIS TREE* adversely affect the finished product delivered by *LEWIS TREE* hereunder.

12. **Term.** The term of this Agreement will commence upon execution of this Agreement by both parties and continue until December 31, 2015, unless sooner terminated by NOVEC or *LEWIS TREE* at their option, by giving thirty (30) days prior written notice to the other party, delivered pursuant to paragraph 8 above. In the event of such termination, all monies due to *LEWIS TREE* as specified in this Agreement, shall be paid in full as of the termination date, prorated to said termination date. Upon termination, this Agreement shall thereafter be of no force and effect, but the terms and provisions hereof shall otherwise survive such termination.

13. **Project Coordinator.** NOVEC may designate a person from its organization to coordinate activities and act as liaison between NOVEC and *LEWIS TREE*.

14. **Ownership of Work.** All reports, designs, charts, plans, specifications, schedules and estimates prepared or in the process of being prepared by *LEWIS TREE* in performance of the Statement of Work in this agreement, are the property of NOVEC and as such will be available to NOVEC personnel for inspection and copying, during the progress of the work described herein. Any such documents remaining in the hands of *LEWIS TREE* upon

completion or termination of the project will be returned to NOVEC. If any materials prepared are lost or damaged before final delivery to NOVEC, *LEWIS TREE* will replace the same at their own expense.

15. **Patent and Copyright Indemnification.** Notwithstanding anything to the contrary herein, *LEWIS TREE* will defend at its own expense any action brought against NOVEC to the extent that it is based on a claim that programs or materials used or produced within the scope of this Agreement infringe a copyright in the United States or a United States patent, and subject to the limitation of liability stated herein, *LEWIS TREE* will pay any costs, damages, and attorney fees finally awarded against NOVEC in such action which are attributable to such claim, provided that NOVEC notifies *LEWIS TREE* promptly in writing of the claim and *LEWIS TREE* may fully participate in the defense and/or agrees to any settlement of such claim. *LEWIS TREE* shall not be liable for any costs or expenses incurred without *LEWIS TREE*'s written authorization. The foregoing states the entire liability of *LEWIS TREE* with respect to infringement of any copyrights or patents by the programs or materials described herein or any parts thereof.

16. **Governing Law.** This Agreement and any terms and conditions therein shall be governed and interpreted according to the laws of the Commonwealth of Virginia.

17. **Severability.** If any term of this Agreement is invalid or unenforceable under any statute, regulation, ordinance, or other rule of law, such terms shall be deemed reformed or deleted, but only to the extent necessary to comply with such statute, regulation, ordinance or rule, and the remaining provisions shall remain in full force and effect.

18. **No Implied Waiver.** The failure of either party at any time to require performance by the other party of any provision of this Agreement shall in no way effect the right to require such performance at any time thereafter, nor shall the waiver of either party of a breach of any provision of this Agreement constitute a waiver of any succeeding breach of the same or any other provisions.

19. This Agreement may not be assigned by *LEWIS TREE* to any other party without the express written permission of NOVEC.

20. This Agreement is contingent upon the approval of NOVEC.

21.1. **Compliance with Laws, Statutes and Regulations.** *LEWIS TREE* will comply with all applicable statutes, ordinances, rules, and regulations pertaining to the performance of the services hereunder. *LEWIS TREE* acknowledges that it is familiar with the Rural Electrification Act of 1936, as amended, the so-called "Kick-Back" Statute (48 Stat. 948), and regulations issued pursuant thereto, and 18 U.S.C. §§287,1001, as amended. *LEWIS TREE* understands that the obligations of the parties hereunder are subject to the applicable regulations and orders of Governmental agencies having jurisdiction in the premises.

21.2 **Equal Opportunity Provisions.**

(a) *Equal Opportunity Clause.* If the value of any contract or purchase order is \$10,000 or if the aggregate total value of all contracts and purchase orders exceeds \$10,000 in any twelve (12) month period, *LEWIS TREE* shall be bound by the terms and provisions of Executive Order 11246 as amended, and 11375, and shall file compliance reports as required by Section 203 of Executive Order 11246 as amended, and otherwise comply with the requirements of such orders and with all rules and regulations promulgated thereunder. The affirmative action clause set forth in Section 202 of the Executive Order 11246 as amended is included herein by reference.

(b) *Certificate of Non-segregated Facilities.* *LEWIS TREE* certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location under his control where segregated facilities are maintained. *LEWIS TREE* agrees that breach of his certification is a violation of the Equal Opportunity Clause of this contract. As used in this certification, the term "FACILITIES" includes any waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation and housing facilities provided for employees. *LEWIS TREE* agrees to provide a certificate of non-segregated facilities as required by 41 CFR, Chapter 60-1.8.

(c) *Standard Form 100 (EEO-1) and Affirmative Action Compliance Program.* *LEWIS TREE* agrees further and certifies that, if the value of any contract or purchase order is \$50,000 or more and *LEWIS TREE* has fifty (50) or more employees, *LEWIS TREE*:

1. Files a complete and accurate report on Standard Form 100 (EEO-1) with the Joint Reporting Committee, Post Office Box 2236, Norfolk, Virginia 23501, within thirty (30) days of the date of contract award, unless such report has been filed within the twelve (12) month period preceding the date of the contract award and otherwise complies with and files such other compliance reports as may be required under Executive Order 11246 as amended and the rules and regulations thereunder.

2. Develops and maintains a written affirmative action compliance program for each of its establishments as required by Executive Order 11246 as amended and implemented by Title 41, CFR Section 60-1.40, 60-2 as amended.

(d) *38 USC 2012, Veterans Readjustment Act of 1974.* *LEWIS TREE* agrees and certifies that, if the value of any contract or purchase order is \$10,000 or more, *LEWIS TREE* prepares and maintains a written affirmative action program to employ and advance in employment qualified Vietnam Era veterans and certain qualified disabled veterans.

(e) *Section 503, Rehabilitation Act of 1973.* *LEWIS TREE* agrees and certifies that, if the value of any contract or purchase order is \$2,500 or more, *LEWIS TREE* prepares and maintains a written affirmative action program to employ and advance in employment qualified handicapped persons.

(f) *Minority Business Enterprise Utilization.* If the value of any contract or purchase order is \$5,000 or more, *LEWIS TREE* agrees to the following provisions:

1. It is the government's policy that minority business enterprise has the maximum practicable opportunity to participate in the performance of subcontracts received from prime contractors through the lowest tier subcontracts.

2. *LEWIS TREE* agrees to use his best efforts to seek out and use to the fullest extent, qualified minority businesses in the award of this contract. As used in this contract, the term "MINORITY BUSINESS ENTERPRISE" means a business at least 51% of which is owned by minority group members. Minority group members are defined as Blacks, Hispanics, Asians, Native Americans, Alaskan Natives, and females regardless of race or ethnicity. Contractors may rely on written representations by subcontractors regarding their status as minority business enterprises in lieu of independent investigation.

21.3. Independent Contractor Relationship. Contractor shall act as and be deemed to be an independent contractor for all purposes of this Contract and shall not act as nor be deemed to be an agent or employee of Owner. This Contract is not intended to be one of hiring under the provisions of any workers' compensation or other laws and shall not be so construed.

21.4. Each party shall comply with all local, state, and Federal government laws, regulations and rules pertaining to its performance of this Agreement.

21.5. A party cannot bind or otherwise obligate the other party in any manner whatsoever, unless specifically authorized in writing by the other party.

22. Integration Clause. This contract shall constitute the whole, complete and exclusive agreement between the parties. There are no promises, terms, conditions or obligations other than those contained herein, and this contract shall supersede all previous communications, representations, or agreements, written or verbal, between the parties hereto.

IN WITNESS WHEREOF, NOVEC and LEWIS TREE have caused this Agreement to be executed by their duly authorized representatives.

NORTHERN VIRGINIA ELECTRIC COOPERATIVE

By: _____ Date _____

Title: _____

STATE OF VIRGINIA AT LARGE
IN THE COUNTY/CITY OF _____; to wit:

I, _____, a Notary Public in and for the jurisdiction aforesaid, do hereby certify that _____, whose title is _____, of Northern Virginia Electric Cooperative, whose name is signed to the foregoing Agreement bearing date of _____, 200____, has acknowledged the same before me in my jurisdiction aforesaid.

GIVEN under my hand this _____ day of _____, 200____.

Notary Public

My Commission Expires: _____

My Commission ID#: _____

LEWIS TREE

By: _____ Date _____

Title: _____

STATE OF VIRGINIA AT LARGE
IN THE COUNTY/CITY OF _____; to wit:

I, _____, a Notary Public in and for the jurisdiction aforesaid, do hereby certify that _____, whose title is _____, of LEWIS TREE, whose name is signed to the foregoing Agreement bearing date of _____, 200____, has acknowledged the same before me in my jurisdiction aforesaid.

GIVEN under my hand this _____ day of _____, 200____.

Notary Public

My Commission Expires: _____

Commission ID # _____

NORTHERN VIRGINIA ELECTRIC COOPERATIVE

ATTACHMENT A

**MINIMUM LIMITS OF LIABILITY INSURANCE
COVERAGE FOR CONTRACTORS**

**A. Workers' Compensation
State Statutory**

Employer's Liability:

Bodily Injury by Accident	\$100,000 each accident
Bodily Injury by Disease	\$500,000 policy limit
Bodily Injury by Employee	\$100,000 each employee

Federal and Maritime: As applicable, CONTRACTOR shall provide statutory coverage under Federal Compensation Acts such as, but not limited to, the Defense Base Act and the Federal Employee's Liability Act (FELA).

Whenever the work involves activity on or about navigable waters, the Workers' Compensation policy shall contain a United States Longshoreman's and Harbor Workers Act Liability (Jones Act) endorsement with the following limits, and an outer Continental Shelf Lands Act endorsement.

Bodily Injury by Accident	\$100,000 each accident
Bodily Injury by Disease	\$500,000 policy limit
Bodily Injury by Employee	\$100,000 each employee

B. Contractor's General Liability Insurance shall provide the following minimum limits and conditions:

General Aggregate	\$5,000,000
Products-Completed Operations Aggregate	\$5,000,000
Personal and Advertising Injury	\$5,000,000
Fire Damage (any one fire)	\$ 500,000
Medical Expenses (any one person)	\$ 5,000

Property Damage liability insurance will include explosion, collapse, and underground coverage and provide broad form property damage coverage.

Coverage is to be written on an occurrence form.

C. Automobile Liability shall provide for the following for owned, non-owned, rented, or hired vehicles:

Combined Single Limit (bodily injury and property damage)	\$5,000,000
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ATTACHMENT A cont.

- D. Provide Excess Liability or Umbrella insurance providing protection for at least the hazards insured under the primary General, Automotive and Employees Liability policies with the following limits:

General Aggregate	\$5,000,000
Each Occurrence	\$5,000,000

Additional coverage CONTRACTOR shall provide are as follows:

Where CONTRACTOR'S operations involve the use of owned or non-owned aircraft or watercraft, provide coverage for bodily injury and property damage arising out of ownership, maintenance, use, or entrustment as follows:

General Aggregate	\$5,000,000
Each Occurrence (Bodily Injury and Property Damage)	\$5,000,000

OWNER'S and CONTRACTOR'S Prospective liability (Owner as named insured with ENGINEER as additional named insured)	\$5,000,000
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Errors and Omissions (When required by NOVEC)	\$5,000,000
---	-------------

Pollution Liability (When required by NOVEC)	\$5,000,000
--	-------------

- E. A "Certificate of Liability Insurance" shall be on file at NOVEC at all times the contractor is performing work or is under a contractual agreement. The "Policy Period" (effective date and expiration date) shall cover all periods when the contractor is performing work or is under a contractual agreement with NOVEC. Policy monetary limits shall meet or exceed those contained in Attachment "A" to the standard NOVEC contract.
- F. Contracts with professional service companies shall require an "Errors and Omissions" (E & O) endorsement with NOVEC specifically listed as the "Additional Named Insured." Such endorsement shall have a monetary limit of not less than \$5,000,000.

**Northern Virginia Electric Cooperative to be named as Additional Named Insured. This must be contained in the Description of Operations/Locations/Vehicles/Special Items block.

***Coverage afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to Northern Virginia Electric Cooperative.

NORTHERN VIRGINIA ELECTRIC COOPERATIVE
10323 LOMOND DRIVE
P.O. BOX 2710
MANASSAS, VA 20108-0875
PHONE: (703) 335-0500
FAX: (703) 335-0546

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Organization Name (Please Type or Print)

Name and Title of Authorized Representative (Please Type or Print)

Signature

Date

ATTACHMENT C

NORTHERN VIRGINIA ELECTRIC COOPERATIVE
10323 LOMOND DRIVE
P.O. BOX 2710
MANASSAS, VA 20108-0875
PHONE: (703) 335-0500
FAX: (703) 335-0546

U.S. DEPARTMENT OF AGRICULTURE

CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER
RESPONSIBILITY MATTERS - PRIMARY COVERED TRANSACTIONS

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 7 CFR Part 3017, Section 3017.510, Participants' responsibilities. The regulations were published as Part IV of the January 30, 1989, Federal Register (pages 4722-4733). Copies of the regulations may be obtained by contacting the Department of Agriculture agency offering the proposed covered transaction.

(BEFORE COMPLETING CERTIFICATION, READ INSTRUCTIONS ON REVERSE)

- (1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
 - (a) are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
 - (b) have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - (c) are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
 - (d) have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- (2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Organization Name PR/Award Number or Project Name

Name and Title of Authorized Representative

Signature

Date

INSTRUCTIONS FOR CERTIFICATION

1. By signing and submitting this form, the prospective primary participant is providing the certification set out on the reverse side in accordance with these instructions.
2. The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out on this form. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such person from participation in this transaction.
3. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.
4. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if at any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
5. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is being submitted for assistance in obtaining a copy of those regulations.
6. The prospective primary participant agrees by submitting this form that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.
7. The prospective primary participant further agrees by submitting this form that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion Lower Tier covered Transactions," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
8. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.
9. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
10. Except for transactions authorized under paragraph 6 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

FEEES AND COSTS SCHEDULE

A large rectangular area of the page is completely redacted with black ink, obscuring all text and data that would otherwise be present in the 'FEEES AND COSTS SCHEDULE' table.

[REDACTED]

All licensed equipment must be late model no older than 5 years old at any time while working on this contract.

* All bucket trucks are to have hydraulic power for saw and pruning accessories as well as two (2) full sets of climbing gear and 1 hydraulic chain saw pole saw.

Hourly billing rates for labor only from July 1, 2012 through December 31, 2015 will adjust as follows:

- From July 1, 2013 through June 30, 2014, hourly rates will be adjusted according to the CPI-U published through December 2012.
- From July 1, 2014 through June 30, 2015, hourly rates will be adjusted according to the CPI-U published through December 2013.
- From July 1, 2015 through December 31, 2015 hourly rates will be adjusted according to the CPI-U published through December 2014.

Contractor employee compensation must be adjusted yearly by CPI as new rates take effect.

Any individual annual CPI adjustment will not exceed 4 percent.

(c) Fuel cost adjustments

[REDACTED]

[REDACTED]

[REDACTED]



(d) Miscellaneous Costs Included in Hourly Rates

The cost of hand tools, axes, hand pruners, pruning saws, ropes, climbing gear, rakes, hoes, signs, etc., are to be included in with other equipment.

All equipment charges are to be calculated by the number of hours on the job, including allowed travel time.

All labor and equipment rates are to include direct costs, overhead (taxes, insurance, administrative costs, etc.) and profit.

(e) Working Hours

The normal work week is 40 hours, Monday through Friday, 8 hours per day. If the Contractor wishes, NOVEC will allow a four (4) day work week of 10 hours per day for the full calendar year if the NOVEC Representative feels that the crews are remaining productive. NOVEC will pay only according to the number of hours actually worked. Work time begins when the crew and equipment are staged to leave the designated assembly point and ends upon their return to the assembly point, minus the contractor lunch period. The designated assembly point must be approved by the NOVEC Representative to make sure it minimizes wasted crew travel time. When authorized by NOVEC, Fridays and Saturdays can be used by Contractor to make up for work time lost earlier in the week. However, in doing so, the minimum makeup time worked must be six (6) hours. Contractor shall not work on NOVEC's designated holidays unless authorized to do so. The NOVEC Representative will determine when weather is suitable for work based on safety and production considerations.

(f) Reporting Time and Holidays

No holidays or reporting time will be paid by NOVEC. Any such fringe benefits must be covered through the Contractor's labor and overhead rates. If crews show up during inclement weather and choose not to work, they will not be compensated by NOVEC.

(g) Overtime Rates

1. Time and one-half (1-1/2) labor rates apply under the following conditions:

Over 40 hours worked per week for NOVEC.

When these conditions apply, the standard hourly rate shall be adjusted by a multiplier of 1.50.

2. Double time (2) labor rates apply under the following conditions:

Sundays and Holidays only.

When these conditions apply, the standard hourly rate shall be adjusted by a multiplier of 2.00.

3. No overtime rates shall apply to equipment.

(h) Meals

It is the responsibility of the Contractor to provide meals and beverages for its crews in times of storm damage or when necessary due to long periods of overtime. These costs must be covered through the Contractor's labor and overhead rates. During extreme storm events, NOVEC may choose to provide meals and lodging for crews to maximize productivity.

(i) Materials

Additional materials authorized for purchase by NOVEC will be billed at the rate of cost plus 10 percent.

(j)

[REDACTED]

[REDACTED]

[REDACTED]

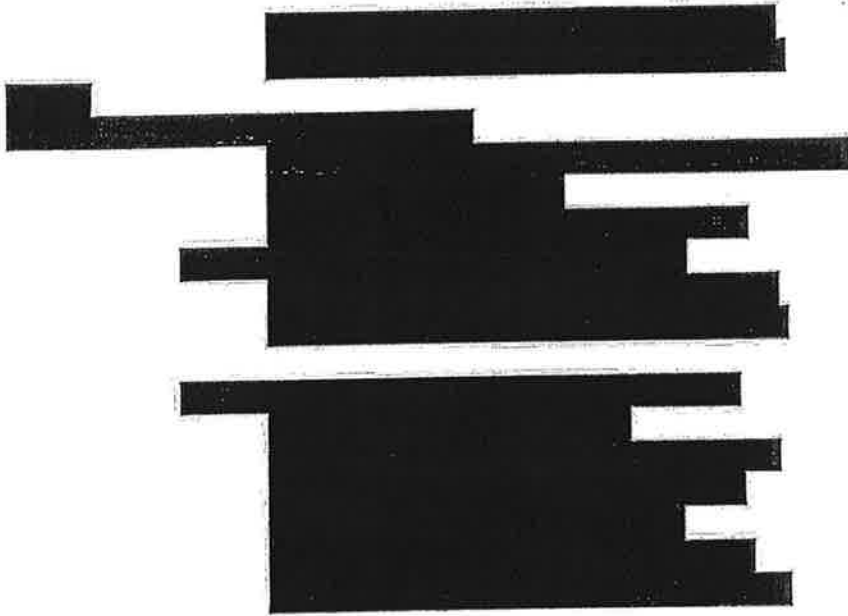
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SCOPE OF SERVICES AND SPECIFICATIONS HOURLY TREE CONTRACT

I. SCOPE OF SERVICES

A. NOVEC's Requests

Contractor agrees to comply at all times with all reasonable requests and directions of NOVEC's Representative; provided, that such requests and directions shall not be deemed to amend the Scope of Services to be performed by Contractor.

B. Scope

This specification covers the requirements for right-of-way clearing, tree removal, tree trimming and herbicide applications and similar work associated with transmission and distribution right-of-way tree and brush control work within the area served by NOVEC.

C. Purpose

The purpose of the NOVEC Utility Right-of-Way Tree and Brush Maintenance Program (hereinafter called the "Project") is to improve the reliability and safety of overhead utility lines and the access and appearance of NOVEC right-of-ways. This can be accomplished by utilizing a combination of mechanical and chemical tree and brush control methods to limit the new growth of undesirable tree species within or along overhead right-of-ways. Planned trimming techniques must also be utilized to help redirect growing limbs away from NOVEC lines.

D. Contractor Requirements

The Contractor shall furnish all supervision, labor, tools, equipment, transportation, and material necessary for the completion of the Project as outlined in Section III below. *All herbicides used on this Project will be purchased and supplied by NOVEC.* Necessary state and federal highway use permits for all system work will be obtained by NOVEC's district engineering or right-of-way personnel prior to commencement of any work. All Contractor lead foreman shall possess a cellular phone while on the job either on their person or in their designated vehicle to provide direct access to NOVEC right-of-way and operations personnel. These phones shall be on the NEXTEL system to provide direct radio communication. NOVEC will furnish these phones with contractor paying monthly service charges of approximately \$69.00 per month per phone.

The Contractor acknowledges the responsibility of NOVEC to maintain the best possible public relations while furnishing its members with good, adequate, and continuous electric service. The Contractor needs to inform consumers of its intent to perform right-of-way maintenance and tree trimming without jeopardizing good public relations with the landowners of property over which said right-of-ways pass.

E. Supervision

All contractor crews working within the NOVEC system shall be under the direct supervision of one field contact person designated by the contractor. The NOVEC representative shall be able to contact this one person to deal with any contractor questions or complaints.

F. Maps

NOVEC will furnish the Contractor a map book for the purpose of performing all tree trimming and brush control along the distribution and transmission lines in its service area. This map data will also be available in electronic format if required by the contractor. NOVEC will advise the Contractor of any known special provision of easements or known consumer problems affecting tree and brush control. The contractor must attempt to notify these affected property owners before commencement of any work on their property.

G. Pesticide Licensing and Reporting Requirements

The Contractor shall have, and furnish proof of a current pesticide applicators registration and Virginia Pesticide Business License. Each crew shall be under the direct supervision of a certified commercial pesticide applicator as set forth by the Virginia Department of Agriculture and Consumer Services. The Contractor shall be responsible for the accurate recording and submitting of all pesticide usage forms required by the various pesticide regulatory agencies and for meeting all applicable rules and regulations.

H. Personnel Qualifications

All personnel involved in the various aspects of the Project must be qualified to do the work they are assigned. The Contractor shall employ, in connection with the work on the Project, capable, experienced, and reliable skilled workmen as may be required for the various classes of work to be performed. The Contractor must supply NOVEC with written evidence of training for such personnel upon request. NOVEC reserves the right to skill test contractor employees on tasks normally associated with their position. Contractor personnel without written evidence of training will not be allowed to work on the NOVEC system. NOVEC reserves the right to require the removal of any employee of the Contractor from the Project that, in the judgment of NOVEC, is necessary to be removed in order

to protect NOVEC's interests. Hourly crew composition shall be determined by NOVEC based on need and work available throughout the contract.

I. Line Operations

All NOVEC transmission and distribution electric lines shall continue in normal operation during this work. The Contractor shall provide and use all protective equipment necessary for the protection of the general public and his employees, and to guard against interfering with the normal operations of said line. Lines deemed too dangerous to work "hot" by the NOVEC Representative may be deenergized if feasible for specific tree removals or trimming.

J. Notice to Property Owners

1. Verbal notification of the property owner for routine line clearance is sufficient. If the property owner is not home, a notification card may be left on the door. Notification cards shall not be placed in any U.S. mailboxes. Notification cards shall only be used where the owner is likely to be present on site on a regular basis. Any line clearance work done without owner notification must have the specific approval of NOVEC's Representative. Contractor must maintain a written log of all customer contacts and complaints/ resolutions and their associated dates and make available to NOVEC upon request. This log is to be turned over to NOVEC at the end of each year if so requested.
2. All attempts shall be made to verbally contact any customer before bringing equipment onto private property or blocking driveways. NOVEC can supply a contact phone number for any consumer on the system via our computer database.
3. Contractor shall contact all property owners having a claim or complaint from work being performed under these standards within one working day of the complaint. Contractor shall notify NOVEC immediately of any complaints or claims. Contractor shall keep NOVEC informed on the progress of all complaints or claims on a weekly basis. The contractor is responsible for resolving complaints of damage to private property in a timely manner. NOVEC must have a contact number for the contractor's liability insurance provider to resolve claims if not handled in a timely manner. The NOVEC representative will deal with customer complaints relating to excessive tree trimming.
4. The Contractor shall instruct and require its personnel to conduct themselves in a professional manner as to preserve and improve NOVEC's relations with member/consumers and the general public.

K. Reporting

Prior to commencing work, the Contractor Supervisor must notify the designated NOVEC Representative. Should the Contractor crew close down the operation for a period and then return, the NOVEC Representative shall be notified again. The Contractor shall not remove all work crews from areas covered by this Contract for any period without two (2) weeks prior notice in writing to NOVEC, unless directed to do so by NOVEC in times of emergency.

L. Quality Control

At NOVEC's option, completed work may be inspected at any time by NOVEC's Representative and the Contractor's Representative. This quality control check is intended to satisfy NOVEC of the proper performance of work according to the scope of this specification, and is not intended to substitute for careful supervision by the Contractor's own personnel

M. Schedule

Work shall be outlined and dispersed to the lead contract representative as it is received from various NOVEC departments. Work will be prioritized by the NOVEC Representative based on need. The contractor representative shall then dispense jobs to his crews to facilitate job completion in a timely and efficient manor.

The exact location and schedule of work covered under the hourly portion of this Project will be made known to the Contractor as it becomes available.

When, in the opinion of NOVEC, the work under this Contract is improperly or inadequately performed or falls behind schedule, NOVEC may, after giving Contractor written notice and a reasonable time to correct the deficiencies, direct the Contractor to place on the Project such additional men and equipment as may be reasonably necessary to correct said deficiencies without extra cost to NOVEC. If the contractor fails to take the necessary steps to correct deficiencies, future work or hourly crews may be removed from their contract and offered to other contractors. Added cost shall be paid out of proceeds from forfeiture of a performance bond.

N. Work Type

Contractor crews will be asked to perform all types of tree trimming and removal work associated with utility line clearance.

II. SPECIFICATIONS FOR RIGHT-OF-MAINTANANCE TREE TRIMMING AND REMOVALS

A. Brush

Brush shall be defined as any herbaceous material less than 6 inches DBH (no matter if it has been trimmed or not in the past) which blocks full vehicle access anywhere within the RW area.

B. Trees

A tree shall be defined as any conifer or hardwood with a DBH greater than 6 inches. A canopy tree is any tree that generally grows taller than 30 feet at maturity. (Pine, oak, poplar, maple, sycamore, hickory, gum, etc.) An ornamental tree is any tree that generally grows no taller than 30 feet at maturity. (Crab apple, purple plum, fruit trees, dogwood, etc.)

C. Proper Trimming

All tree trimming shall adhere as best possible to ANSI A300 pruning standards as related to utility line clearance operations. Stubs shall be minimized while not trimming too far outside the easement area of the RW. Re-topped trees will have as many crow's feet removed as possible. All trimming shall be done with chain saws, hydraulic chain pole saws, pruners or hand saws. No circular saws shall be used on the NOVEC system for tree trimming.

D. Clearance Requirements for Transmission and Primary Right-of-Ways

All Primary RW is assumed to be 30 feet wide. i.e 15 feet RW on each side of the pole center line.

All transmission RW is assumed to be a minimum of 40 feet wide. i.e. 20 feet RW on each side of the pole line. RW widths vary by line section and easements are recorded accordingly from 40 to 100 feet and shall be maintained at recorded width.

1. Brush Removal

All brush shall be removed from within the full RW width. Exception: Cedar brush along a fence row or individual ornamental brush within yard areas can remain but must be trimmed as described in trimming trees under line section below. Mountain laurel and dogwood brush >2 inches DBH can remain within RW areas as long as RW is still fully accessible and trimming is done as noted in the trimming trees under line section below.

2. Side Trimming

On primary lines up to and including 1 set of 3 phase conductors, all canopy trees along the edge of the RW shall be trimmed vertically from the earth to at least 15 feet above the outermost conductor to 15 feet from the pole center line. The size of limbs removed has no bearing on this requirement.

On multiple 3 phase conductor sections and transmission lines, trimming shall extend vertically from the earth to the sky, with no limbs encroaching into the full RW area.

When trimmed, only trees located within the RW edge may have less than 15 feet vertical clearance from pole center line at the main trunk only.

3. Trimming trees under lines

Trees previously "topped" shall be trimmed to 6 feet below the neutral across the full RW width. The size of limbs removed has no bearing on this requirement.

"Untopped" trees within the RW <6 inches in diameter at 6 feet below the neutral are to be trimmed to 6 feet below the neutral across the full RW width. The size of limbs removed has no bearing on this requirement.

"Untopped" trees within the RW >6 inches in diameter at 6 feet below the neutral with at least 5 feet vertical clearance from conductors shall be trimmed as specified in the side trimming section above. The size of limbs removed has no bearing on this requirement.

"Untopped" trees within the RW >6 inches diameter at 6 feet below the neutral who's main trunks are not at least 5 feet from conductors are to be trimmed as specified in the side trimming section above. However, they shall be reported to and targeted for cost plus removal by the NOVEC representative.

Trees located under transmission conductors shall be trimmed to a minimum of 20 feet below the lowest transmission conductor, across the full width of the RW. The size of limbs removed has no bearing on this requirement.

4. Dead Limbs

Dead limbs over 2 inches in diameter above any conductors shall be removed if they may break off and fall on the conductor.

E. Pole to Pole Secondary Right-of-Ways

Pole to pole secondary right-of-way shall be assumed to be 10 feet wide, 5 feet from each side of pole centerline

All trees along the right-of-way shall be trimmed back vertically 5 feet from the conductors from the earth to 5 feet above conductors. Trees under the line shall be

trimmed to 5 feet below the conductor, the full width of the RW. The size of limbs removed has no bearing on this requirement.

When trimmed, only trees with main trunks closer than 5 feet to conductors will have less than 5 feet vertical clearance from conductors at the main trunk only.

All brush shall be removed from within the 10 foot wide right-of-way area.

F. Service Wires

Limbs shall be trimmed back to achieve 1 foot clearance in all directions from all service conductors where possible.

G. Debris Disposal

Wood is defined as woody material greater than 6 inches DBH.

All resulting wood is to be left off the edge of the RW in sections not less than 4 feet long. Wood shall not be left within the RW area where it blocks RW access. No wood is to be removed from the site unless specifically approved by the NOVEC representative. Wood is the property of the individual landowner. Do not leave wood in yards where grass areas will be damaged.

All limbs and branches not classified as wood must be chipped and removed, brush hogged on site or otherwise disposed of as to clear the RW area and satisfy the landowner as to site cleanliness. Any windrowed material must be outside the RW edge. Any existing fallen trees or woody debris shall be moved to outside the edge of the RW during clearing operations to allow full RW access.

H. Stump Treatments

The stump of any tree or brush removed by chainsaw shall be treated with an approved herbicide quickly after removal to prevent re-growth if the cut stump is 4 inches or larger in diameter where cut.

I. Stumps

Stumps shall be cut to 12 inches in height or less in woods areas outside the RW and less than 2 inches in height within RW areas or yards so vehicles can drive over them.

J. Danger Trees

Dead or damaged trees within **40 feet** of pole center line on primary lines or within falling distance of transmission lines which pose an eminent threat of falling naturally directly into conductors, attachments, poles or guy wires before the next trimming cycle shall be made safe. This means they shall be cut short enough so in falling, they won't contact these facilities. When in wooded areas outside the RW, stubs can be left standing. In yards, or within the RW, the entire tree shall be cut down, debris disposed of as described in the debris disposal section above.

K. Poles and Guys

All brush shall be removed from within 5 feet of all poles and guy wires. Limbs on trees located near poles or guy wires shall be trimmed back to achieve 5 feet clearance in all directions vertically from the earth to the top of pole. Trees with trunks located less than 5 feet from poles and guy wires shall be removed at the discretion of the NOVEC representative on a cost plus basis.

L. New Construction

All new primary overhead RW shall be completely cleared from the earth to the sky for 15 feet on each side of the proposed pole centerline. No trees, brush or debris shall be left in this space. All stumps shall be cut to 2 inches in height or less.

All new secondary overhead RW shall be completely cleared from earth to height of 40 feet for 7.5 feet on each side of the proposed pole centerline. No trees, brush or debris shall be left in this space. All stumps shall be cut to 2 inches in height or less.

INDEPENDENT CONTRACTOR AGREEMENT

This Agreement, made July 1, 2012, by and between Northern Virginia Electric Cooperative, hereinafter referred to as "NOVEC", and *LEWIS TREE SERVICE, INC.*, hereinafter referred to as "*LEWIS TREE*", said agreement superseding all proposals, oral or written, and all other communications between the parties relating to the subject matter of the Agreement.

In consideration of the mutual promises, covenants and representations herein contained, the parties hereto agree as follows:

LEWIS TREE and NOVEC agree that by entering into this Agreement an independent contractor employment relationship as recognized under Virginia law, is created. *LEWIS TREE* shall be treated in all respects of this employment relationship as such.

1. **Statement of Purpose.** The purpose of this Agreement is to purchase and engage the contracting services of *LEWIS TREE*.

2. **Statement of Work.** *LEWIS TREE* agrees to provide tree trimming and herbicide application services for all NOVEC aerial rights-of-way on a unit (mileage) basis, as is defined in Attachments E thru F.

At NOVEC's sole discretion, unless otherwise agreed, said performance of NOVEC assignments shall be performed between the hours of 7:00 a.m. and 5:00 p.m., Monday through Friday weekly, excluding NOVEC holidays.

3. **Compensation.** The services of *LEWIS TREE* are to be provided in accordance with the attached bid proposal submitted by *LEWIS TREE*, Attachment D and all charges spent in the completion of NOVEC requests will be itemized by task. As an independent contractor, *LEWIS TREE* may not charge NOVEC for vacation time, holidays, sick leave, or other time not spent in performance of the services called for herein. Billing for services will take place on or about the first (1st) and fifteenth (15th) days of each month. NOVEC shall not compensate *LEWIS TREE* for time spent preparing estimates for level of effort of assigned tasks, billing statements, or other administrative activities unrelated to the completion of the task. The amount of pay so specified herein represents the total compensation to be paid to *LEWIS TREE* under the terms of the Agreement and no other sums are payable by NOVEC under the terms of this agreement. NOVEC acknowledges that any invoices not the subject of dispute not paid within thirty (30) days of the invoice date will be subject to a service charge. Any invoice or portion thereof that is the subject of dispute shall be exempt from the provisions of this section.

4. **Hold Harmless and Indemnity.**

(a) *LEWIS TREE* understands and agrees that it shall immediately indemnify, defend and hold harmless NOVEC, NOVEC's officers, directors, partners, employees and agents from and against and in respect to any and all claims, actions, suits, proceedings, demands, assessments, judgments, expenses, costs, losses and damages and fees (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) hereinafter referred to as "Liabilities" to the extent that such Liabilities were caused by the negligent acts, errors or omissions of *LEWIS TREE* or its officers, directors, partners, employees, agents, contractors or subcontractors arising out of, in connection with, or as a result of the performance and furnishings of Services, any work assignment or other services performed by *LEWIS TREE*, its agents, contractors, subcontractors, officers, directors, partners and employees for or on behalf of NOVEC except to the extent caused by the negligence, gross negligence or willful misconduct of the Indemnitees.

(b) *LEWIS TREE* agrees that it maintains Insurance ("Insurance") for purposes of insuring against loss as a result of Liabilities caused in whole or in part by *LEWIS TREE*'s negligence; such insurance coverage is acknowledged to comply with the requirements as designated on attached Schedule A (minimum limits of liability insurance coverage for contractors). *LEWIS TREE* further agrees to, if requested by NOVEC in writing, seek additional insurance coverage, or to cooperate with NOVEC should NOVEC desire *LEWIS TREE* to obtain additional insurance coverage. *LEWIS TREE* understands and agrees and further warrants and represents to NOVEC that, notwithstanding any other provision to the contrary herein contained, *LEWIS TREE*'s Liability for any and all losses, whether to NOVEC or to third parties, resulting from any Liabilities caused in whole or in part by *LEWIS TREE*'s negligence shall not be limited to the amount of any insurance proceeds payable to or on behalf of *LEWIS TREE* under such Insurance, and *LEWIS TREE* agrees to immediately indemnify and hold NOVEC harmless for any and all such Liability in excess of such insurance proceeds. *LEWIS TREE* shall furnish written proof of such insurance at least annually to NOVEC with NOVEC as additional insured.

5. **FORCE MAJEURE.** A party will not be deemed to be in default, or be liable for any delay or failure to perform, which is the result of a cause beyond the reasonable control, and is not due to the fault or negligence, of the party claiming excuse for such delay or failure; provided that the party claiming excuse for such cause promptly notifies the other party of the event causing such delay or failure. If such a delay occurs, the time for performance by the party whose performance is affected by such delay will be extended by the period necessary to enable performance after the cause of the delay has ceased.

6. **CONFIDENTIALITY.** *LEWIS TREE* agrees not to provide or otherwise make available any material, statements, or any other information of NOVEC provided by or obtained from NOVEC in connection with this agreement or the performance hereof in any form, to any person, other than to employees of NOVEC requiring such information, without prior written consent from NOVEC.

7. **Amendments to this Agreement.** The parties agree that this Agreement constitutes the entire Agreement between the parties and may be changed only by written amendment hereto signed by both parties. This Agreement supersedes any prior oral or written agreements between the parties.

8. **Notices.** All notices under this Agreement shall be deemed duly given upon delivery, if delivered by hand (against receipt) or three (3) days after posting by the United States Post Office, if sent by registered or certified mail, return receipt requested, to the party at the address set forth below:

Contractor:
Lewis Tree Service, Inc.
Attn: Jillian Stapleton
300 Lucius Gordon Drive
West Henrietta, NY 14586

NOVEC:
Northern Virginia Electric Cooperative
Attn: James C. Moxley
10323 Lomond Drive
P.O. Box 2710
Manassas, VA 20108-0874

9. **Resource Usage.** NOVEC agrees to furnish the necessary material, equipment, and space to *LEWIS TREE* to enable *LEWIS TREE* to complete the Statement of Work defined within the time period of this Agreement. Upon request of *LEWIS TREE* NOVEC may at its sole discretion provide administrative and operational support to *LEWIS TREE*.

10. **Changes in Staff.** "Tom McDonnell" represents a key *LEWIS TREE* staff member in the execution of this Agreement. Notification of any substitutions made to key (Contractor) contacts must be submitted in writing to NOVEC.

11. **Modification of Source.** NOVEC agrees that *LEWIS TREE* is relieved of all responsibility in the event that modifications made by NOVEC, or NOVEC's representatives, to work assignments completed by *LEWIS TREE* adversely affect the finished product delivered by *LEWIS TREE* hereunder.

12. **Term.** The term of this Agreement will commence upon execution of this Agreement by both parties and continue until December 31, 2015, unless sooner terminated by NOVEC or *LEWIS TREE* at their option, by giving thirty (30) days prior written notice to *LEWIS TREE* delivered pursuant to paragraph 8 above. In the event of such termination, all monies due to *LEWIS TREE* as specified in this Agreement, shall be paid in full as of the termination date, prorated to said termination date. Upon termination, this Agreement shall thereafter be of no force and effect, but the terms and provisions hereof shall otherwise survive such termination.

13. **Project Coordinator.** NOVEC may designate a person from its organization to coordinate activities and act as liaison between NOVEC and *LEWIS TREE*.

14. **Ownership of Work.** All reports, designs, charts, plans, specifications, schedules and estimates prepared or in the process of being prepared by *LEWIS TREE* in

performance of the Statement of Work in this agreement, are the property of NOVEC and as such will be available to NOVEC personnel for inspection and copying, during the progress of the work described herein. Any such documents remaining in the hands of *LEWIS TREE* upon completion or termination of the project will be returned to NOVEC. If any materials prepared are lost or damaged before final delivery to NOVEC, *LEWIS TREE* will replace the same at their own expense.

15. **Patent and Copyright Indemnification.** Notwithstanding anything to the contrary herein, *LEWIS TREE* will defend at its own expense any action brought against NOVEC to the extent that it is based on a claim that programs or materials used or produced within the scope of this Agreement infringe a copyright in the United States or a United States patent, and subject to the limitation of liability stated herein, *LEWIS TREE* will pay any costs, damages, and attorney fees finally awarded against NOVEC in such action which are attributable to such claim, provided that NOVEC notifies *LEWIS TREE* promptly in writing of the claim and *LEWIS TREE* may fully participate in the defense and/or agrees to any settlement of such claim. *LEWIS TREE* shall not be liable for any costs or expenses incurred without *LEWIS TREE*'s written authorization. The foregoing states the entire liability of *LEWIS TREE* with respect to infringement of any copyrights or patents by the programs or materials described herein or any parts thereof.

16. **Governing Law.** This Agreement and any terms and conditions therein shall be governed and interpreted according to the laws of the Commonwealth of Virginia.

17. **Severability.** If any term of this Agreement is invalid or unenforceable under any statute, regulation, ordinance, or other rule of law, such terms shall be deemed reformed or deleted, but only to the extent necessary to comply with such statute, regulation, ordinance or rule, and the remaining provisions shall remain in full force and effect.

18. **No Implied Waiver.** The failure of either party at any time to require performance by the other party of any provision of this Agreement shall in no way effect the right to require such performance at any time thereafter, nor shall the waiver of either party of a breach of any provision of this Agreement constitute a waiver of any succeeding breach of the same or any other provisions.

19. This Agreement may not be assigned by *LEWIS TREE* to any other party without the express written permission of NOVEC.

20. This Agreement is contingent upon the approval of NOVEC.

21.1. **Compliance with Laws, Statutes and Regulations.** *LEWIS TREE* will comply with all applicable statutes, ordinances, rules, and regulations pertaining to the performance of the services hereunder. *LEWIS TREE* acknowledges that it is familiar with the Rural Electrification Act of 1936, as amended, the so-called "Kick-Back" Statute (48 Stat. 948), and regulations issued pursuant thereto, and 18 U.S.C. §§287,1001, as amended. *LEWIS TREE* understands that the obligations of the parties hereunder are subject to the applicable regulations and orders of Governmental agencies having jurisdiction in the premises.

21.2 Equal Opportunity Provisions.

(a) *Equal Opportunity Clause.* If the value of any contract or purchase order is \$10,000 or if the aggregate total value of all contracts and purchase orders exceeds \$10,000 in any twelve (12) month period, *LEWIS TREE* shall be bound by the terms and provisions of Executive Order 11246 as amended, and 11375, and shall file compliance reports as required by Section 203 of Executive Order 11246 as amended, and otherwise comply with the requirements of such orders and with all rules and regulations promulgated thereunder. The affirmative action clause set forth in Section 202 of the Executive Order 11246 as amended is included herein by reference.

(b) *Certificate of Non-segregated Facilities.* *LEWIS TREE* certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location under his control where segregated facilities are maintained. *LEWIS TREE* agrees that breach of his certification is a violation of the Equal Opportunity Clause of this contract. As used in this certification, the term "FACILITIES" includes any waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation and housing facilities provided for employees. *LEWIS TREE* agrees to provide a certificate of non-segregated facilities as required by 41 CFR, Chapter 60-1.8.

(c) *Standard Form 100 (EEO-1) and Affirmative Action Compliance Program.* *LEWIS TREE* agrees further and certifies that, if the value of any contract or purchase order is \$50,000 or more and *LEWIS TREE* has fifty (50) or more employees, *LEWIS TREE*:

1. Files a complete and accurate report on Standard Form 100 (EEO-1) with the Joint Reporting Committee, Post Office Box 2236, Norfolk, Virginia 23501, within thirty (30) days of the date of contract award, unless such report has been filed within the twelve (12) month period preceding the date of the contract award and otherwise complies with and files such other compliance reports as may be required under Executive Order 11246 as amended and the rules and regulations thereunder.

2. Develops and maintains a written affirmative action compliance program for each of its establishments as required by Executive Order 11246 as amended and implemented by Title 41, CFR Section 60-1.40, 60-2 as amended.

(d) *38 USC 2012, Veterans Readjustment Act of 1974.* *LEWIS TREE* agrees and certifies that, if the value of any contract or purchase order is \$10,000 or more, *LEWIS TREE* prepares and maintains a written affirmative action program to employ and advance in employment qualified Vietnam Era veterans and certain qualified disabled veterans.

(e) *Section 503, Rehabilitation Act of 1973.* *LEWIS TREE* agrees and certifies that, if the value of any contract or purchase order is \$2,500 or more, *LEWIS TREE* prepares

and maintains a written affirmative action program to employ and advance in employment qualified handicapped persons.

(f) *Minority Business Enterprise Utilization.* If the value of any contract or purchase order is \$5,000 or more, *LEWIS TREE* agrees to the following provisions:

1. It is the government's policy that minority business enterprise has the maximum practicable opportunity to participate in the performance of subcontracts received from prime contractors through the lowest tier subcontracts.

2. *LEWIS TREE* agrees to use his best efforts to seek out and use to the fullest extent, qualified minority businesses in the award of this contract. As used in this contract, the term "MINORITY BUSINESS ENTERPRISE" means a business at least 51% of which is owned by minority group members. Minority group members are defined as Blacks, Hispanics, Asians, Native Americans, Alaskan Natives, and females regardless of race or ethnicity. Contractors may rely on written representations by subcontractors regarding their status as minority business enterprises in lieu of independent investigation.

21.3. Independent Contractor Relationship. Contractor shall act as and be deemed to be an independent contractor for all purposes of this Contract and shall not act as nor be deemed to be an agent or employee of Owner. This Contract is not intended to be one of hiring under the provisions of any workers' compensation or other laws and shall not be so construed.

21.4. Each party shall comply with all local, state, and Federal government laws, regulations and rules pertaining to its performance of this Agreement.

21.5. A party cannot bind or otherwise obligate the other party in any manner whatsoever, unless specifically authorized in writing by the other party.

22. Integration Clause. This contract shall constitute the whole, complete and exclusive agreement between the parties. There are no promises, terms, conditions or obligations other than those contained herein, and this contract shall supersede all previous communications, representations, or agreements, written or verbal, between the parties hereto. IN WITNESS WHEREOF, NOVEC and *LEWIS TREE* have caused this Agreement to be executed by their duly authorized representatives.

NORTHERN VIRGINIA ELECTRIC COOPERATIVE

By: _____

_____ Date

Title: _____

STATE OF VIRGINIA AT LARGE

IN THE COUNTY/CITY OF _____; to wit:

I, _____, a Notary Public in and for the jurisdiction aforesaid, do hereby certify that _____, whose title is _____, of Northern Virginia Electric Cooperative, whose name is signed to the foregoing Agreement bearing date of _____, 200 __, has acknowledged the same before me in my jurisdiction aforesaid.

GIVEN under my hand this _____ day of _____, 200 __.

Notary Public

My Commission Expires: _____

My Commission ID #: _____

LEWIS TREE

By: _____

Date

Title: _____

STATE OF NEW YORK
IN THE COUNTY/CITY OF _____; to wit:

I, _____, a Notary Public in and for the jurisdiction aforesaid, do hereby certify that _____, whose title is _____, of LEWIS TREE, whose name is signed to the foregoing Agreement bearing date of _____, 200 __, has acknowledged the same before me in my jurisdiction aforesaid.

GIVEN under my hand this _____ day of _____, 200 __.

Notary Public

My Commission Expires: _____

My Commission ID #: _____

NORTHERN VIRGINIA ELECTRIC COOPERATIVE

ATTACHMENT A

**MINIMUM LIMITS OF LIABILITY INSURANCE
COVERAGE FOR CONTRACTORS**

**A. Workers' Compensation
State Statutory**

Employer's Liability:

Bodily Injury by Accident	\$100,000 each accident
Bodily Injury by Disease	\$500,000 policy limit
Bodily Injury by Employee	\$100,000 each employee

Federal and Maritime: As applicable, CONTRACTOR shall provide statutory coverage under Federal Compensation Acts such as, but not limited to, the Defense Base Act and the Federal Employee's Liability Act (FELA).

Whenever the work involves activity on or about navigable waters, the Workers' Compensation policy shall contain a United States Longshoreman's and Harbor Workers Act Liability (Jones Act) endorsement with the following limits, and an outer Continental Shelf Lands Act endorsement.

Bodily Injury by Accident	\$100,000 each accident
Bodily Injury by Disease	\$500,000 policy limit
Bodily Injury by Employee	\$100,000 each employee

B. Contractor's General Liability Insurance shall provide the following minimum limits and conditions:

General Aggregate	\$5,000,000
Products-Completed Operations Aggregate	\$5,000,000
Personal and Advertising Injury	\$5,000,000
Fire Damage (any one fire)	\$ 500,000
Medical Expenses (any one person)	\$ 5,000

Property Damage liability insurance will include explosion, collapse, and underground coverage and provide broad form property damage coverage.

Coverage is to be written on an occurrence form.

C. Automobile Liability shall provide the following for owned, non-owned, rented, or hired vehicles:

Combined Single Limit (bodily injury and property damage)	\$5,000,000
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ATTACHMENT A cont.

- D. Provide Excess Liability or Umbrella insurance providing protection for at least the hazards insured under the primary General, Automotive and Employees Liability policies with the following limits:

General Aggregate	\$5,000,000
Each Occurrence	\$5,000,000

Additional coverage CONTRACTOR shall provide are as follows:

Where CONTRACTOR'S operations involve the use of owned or non-owned aircraft or watercraft, provide coverage for bodily injury and property damage arising out of ownership, maintenance, use, or entrustment as follows:

General Aggregate	\$5,000,000
Each Occurrence (Bodily Injury and Property Damage)	\$5,000,000
OWNER'S and CONTRACTOR'S Prospective liability (Owner as named insured with ENGINEER as additional named insured)	\$5,000,000
Errors and Omissions (When required by NOVEC)	\$5,000,000
Pollution Liability (When required by NOVEC)	\$5,000,000

- E. A "Certificate of Liability Insurance" shall be on file at NOVEC at all times the contractor is performing work or is under a contractual agreement. The "Policy Period" (effective date and expiration date) shall cover all periods when the contractor is performing work or is under a contractual agreement with NOVEC. Policy monetary limits shall meet or exceed those contained in Attachment "A" to the standard NOVEC contract.
- F. Contracts with professional service companies shall require an "Errors and Omissions" (E & O) endorsement with NOVEC specifically listed as the "Additional Named Insured." Such endorsement shall have a monetary limit of not less than \$5,000,000.

**Northern Virginia Electric Cooperative to be named as Additional Insured. This must be contained in the Description of Operations/Locations/Vehicles/Special Items block.

***Coverage afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to Northern Virginia Electric Cooperative.

NORTHERN VIRGINIA ELECTRIC COOPERATIVE
10323 LOMOND DRIVE
P.O. BOX 2710
MANASSAS, VA 20108-0875
PHONE: (703) 335-0500
FAX: (703) 335-0546

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Organization Name (Please Type or Print)

Name and Title of Authorized Representative (Please Type or Print)

Signature

Date

ATTACHMENT C

NORTHERN VIRGINIA ELECTRIC COOPERATIVE
10323 LOMOND DRIVE
P.O. BOX 2710
MANASSAS, VA 20108-0875
PHONE: (703) 335-0500
FAX: (703) 335-0546

U.S. DEPARTMENT OF AGRICULTURE

CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER
RESPONSIBILITY MATTERS - PRIMARY COVERED TRANSACTIONS

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 7 CFR Part 3017, Section 3017.510, Participants' responsibilities. The regulations were published as Part IV of the January 30, 1989, Federal Register (pages 4722-4733). Copies of the regulations may be obtained by contacting the Department of Agriculture agency offering the proposed covered transaction.

(BEFORE COMPLETING CERTIFICATION, READ INSTRUCTIONS ON REVERSE)

- (1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
- (a) are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
 - (b) have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - (c) are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
 - (d) have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- (2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Organization Name PR/Award Number or Project Name

Name and Title of Authorized Representative

Signature Date

INSTRUCTIONS FOR CERTIFICATION

1. By signing and submitting this form, the prospective primary participant is providing the certification set out on the reverse side in accordance with these instructions.
2. The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out on this form. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such person from participation in this transaction.
3. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.
4. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if at any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
5. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is being submitted for assistance in obtaining a copy of those regulations.
6. The prospective primary participant agrees by submitting this form that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.
7. The prospective primary participant further agrees by submitting this form that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion Lower Tier covered Transactions," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
8. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.
9. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
10. Except for transactions authorized under paragraph 6 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

FEEES AND COSTS SCHEDULE

Section 1 -- Unit Price Mechanical Tree Maintenance: Unit Price Per Mile Rate.

The total for invoices paid under Section 1 shall not exceed [REDACTED] plus fuel adjustments during the term of this contract. Any alterations will require an addendum to this contract. The contractor must keep in force a performance bond payable to NOVEC in the amount of [REDACTED] during the term of this contract. The cost of this bond will be paid by NOVEC. This bond will be forfeited for non-performance if the contractor does not consistently provide the contracted crews when required, forcing NOVEC to contract crews from other sources to complete workload.

- a. As full compensation for all services provided hereunder, including federal, state, and local taxes of any nature that now and hereafter be imposed, NOVEC shall pay Contractor the following rates *as the unit price per mile* to provide all labor and equipment necessary to trim and clear distribution and transmission right-of-way in accordance with the Monthly Schedule of Miles and Specifications within this Contract. Substation trimming to be performed in accordance with the 2012-2015 Tree Trimming Mileage Schedule found as attachment F.

[REDACTED]

[REDACTED]

All mileages are approximate; actual paid mileage is determined by scaling from line maps when trimming is completed.

The number of billable miles per month will be scaled from GIS stored maps on the Clearion system as matched to marked field maps and reported on the Monthly Mileage Clearance Report.

- b. Dead or danger trees are trees along the established rights-of-way that may fall before the next trimming cycle and interrupt electric service. When, in the opinion of NOVEC the number of dead or danger trees along certain rights-of-way become excessive due to abnormal conditions such as gypsy moth decimation, acid rain, stress or similar Acts of God, hourly crews will be dispatched to aid in their removal. This number would have to exceed 20 dead trees per span.

c. Working Hours

The normal work week is 40 hours, Monday through Friday, 8 hours per day. If the Contractor wishes, NOVEC will allow a four (4) day work week of 10 hours per day for the full calendar year if authorized by the NOVEC Representative. When authorized by NOVEC, Fridays and Saturdays can be used by Contractor to make up for work time lost earlier in the week. Contractor shall not work on NOVEC's designated holidays unless authorized to do so.

d. Reporting Time and Holidays

No holidays or reporting time will be paid by NOVEC. Any such fringe benefits must be covered through the Contractor's labor and overhead rates.

e. Overtime Rates

No overtime rates shall apply to this Mileage-based contract.

f. Equipment

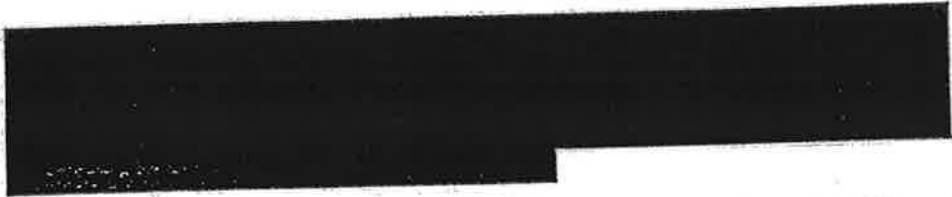
The contractor shall utilize equipment on this work commensurate with the type of work being done to maximize crew efficiency based on line access. **All licensed equipment must be late model no older than 5 years old at any time while working on this contract. It is suggested that due to the height of NOVEC poles and line that the contractor use only 70 foot tall or greater lifts on the system to allow for adequate, efficient reach.**

g. Personnel

As weather and access limits equipment in certain areas throughout the contract period, it is suggested that the contractor maintain a minimum 4 man climbing crew on this project to guarantee that all line is trimmed with climbing completed as the project progresses.

h. Fuel cost adjustments





SCOPE OF SERVICES AND SPECIFICATIONS FOR UNIT TREE CONTRACT

I. SCOPE OF SERVICES

A. NOVEC's Requests

Contractor agrees to comply at all times with all reasonable requests and directions of NOVEC's Representative; provided, that such requests and directions shall not be deemed to amend the Scope of Services to be performed by Contractor.

B. Scope

This specification covers the requirements for right-of-way clearing, tree removal, tree trimming and herbicide applications and similar work associated with transmission and distribution right-of-way tree and brush control work within the area served by NOVEC.

C. Purpose

The purpose of the NOVEC Utility Right-of-Way Tree and Brush Maintenance Program (hereinafter called the "Project") is to improve the reliability and safety of overhead utility lines and the access and appearance of NOVEC right-of-ways. This can be accomplished by utilizing a combination of mechanical and chemical tree and brush control methods to limit the new growth of undesirable tree species within or along overhead right-of-ways. Planned trimming techniques must also be utilized to help redirect growing limbs away from NOVEC lines.

D. Contractor Requirements

The Contractor shall furnish all supervision, labor, tools, equipment, transportation, and material necessary for the completion of the Project as outlined below. *All herbicides used on this Project will be purchased and supplied by NOVEC.* Necessary state and federal highway use permits for all system work will be obtained by NOVEC's distribution engineering or right-of-way personnel prior to commencement of any work. All Contractor lead foremen shall possess a cellular phone while on the job either on their person or in their designated vehicle to provide direct access to NOVEC right-of-way and operations personnel. These phones shall be on the NEXTEL system to provide direct radio communication. NOVEC will furnish these phones with contractor paying monthly service charges of approximately \$69.00 per month per phone.

The Contractor shall perform work in areas designated by maps in accordance with the terms, conditions, and standards set forth in these standards. The Contractor acknowledges the responsibility of NOVEC to maintain the best possible public relations while furnishing its members with reliable electric service. The Contractor needs to inform consumers of its intent to perform right-of-way maintenance and tree trimming without jeopardizing good public relations with the landowners of property over which said right-of-ways pass.

E. Supervision

All contractor crews working within the NOVEC system shall be under the direct supervision of one field contact person designated by the contractor. The NOVEC representative shall be able to contact this one person to deal with any contractor questions or complaints.

F. Maps

NOVEC will furnish the Contractor a map set for the purpose of performing all tree trimming and brush control along the distribution and transmission lines in its service area. This map data will also be available in electronic format if required by the contractor. NOVEC will advise the Contractor of any known special provision of easements or known consumer problems affecting tree and brush control. The contractor must attempt to notify these affected property owners before commencement of any work on their property.

G. Pesticide Licensing and Reporting Requirements

The Contractor shall have, and furnish proof of, a current pesticide applicators registration and Virginia Pesticide Business License. Each crew shall be under the direct supervision of a certified commercial pesticide applicator as set forth by the Virginia Department of Agriculture and Consumer Services. The Contractor shall be responsible for the accurate recording and submitting of all pesticide usage forms required by the various pesticide regulatory agencies and for meeting all applicable rules and regulations.

H. Personnel Qualifications

All personnel involved in the various aspects of the Project must be qualified to do the work they are assigned. The Contractor shall employ, in connection with the work on the Project, capable, experienced, and reliable foremen and such skilled workmen as may be required for the various classes of work to be performed. The Contractor must supply NOVEC with written evidence of training for such personnel upon request. NOVEC reserves the right to skill test contractor employees on tasks normally associated with their position. Contractor personnel without written evidence of training will not be allowed to work on the NOVEC system. NOVEC reserves the right to require the removal of any

employee of the Contractor from the Project that, in the judgment of NOVEC, is necessary to be removed in order to protect NOVEC's interests.

I. Line Operations

All NOVEC transmission and distribution electric lines shall continue in normal operation during this work. The Contractor shall provide and use all protective equipment necessary for the protection of the general public and his employees, and to guard against interfering with the normal operations of said line. Lines deemed too dangerous to work "hot" by the NOVEC Representative may be deenergized if feasible for specific tree removals or trimming.

J. Notice to Property Owners

1. *NOVEC will electronically notify all consumers for unit trimming prior to the commencement of work, however, some locations may require special on site contact by the contractor.*
2. Contractor must maintain a written log of all customer contacts and complaints/ resolutions and their associated dates and make available to NOVEC upon request. This log is to be turned over to NOVEC at the end of each year if requested.
3. The contract crew shall attempt to verbally contact any customer before bringing equipment onto private property or blocking driveways. Property owners must be contacted if the contractor expects to leave equipment or debris on a property for an extended period of time. NOVEC can supply a contact phone number for any consumer on the system via our computer database.
4. Contractor shall contact all property owners having a claim or complaint from work being performed under these standards within one working day of the complaint. Contractor shall notify NOVEC immediately of any complaints or claims. Contractor shall keep NOVEC informed on the progress of all complaints or claims on a weekly basis. The contractor is responsible for resolving complaints of damage to private property in a timely manner. NOVEC must have a contact number for the contractor's liability insurance provider to resolve claims if not handled in a timely manner.
5. The Contractor shall instruct and require its personnel to conduct themselves in a professional manner as to preserve and improve NOVEC's relations with member/consumers and the general public.

J. Reporting

Prior to commencing work, the Contractor Supervisor must notify the designated NOVEC Representative. Should the Contractor crew close down the operation for a period and then return, the NOVEC Representative shall be notified again. The Contractor shall not remove all work crews from areas covered by this Contract for any period without two (2) weeks prior notice in writing to NOVEC, unless directed to do so by NOVEC in times of emergency.

The Contractor agrees to keep NOVEC informed as to the number of crews working on the Project, the type of work being done, the specific area being worked, and monthly progress on Unit work which shall be recorded on maps and reviewed by NOVEC. Any changes or additional right-of-way found in the field are to be marked on the maps to facilitate mapping updates. Man hour data associated with the work completed must also be available to NOVEC for budgeting and planning purposes.

K. Quality Control and Invoicing

At NOVEC's option, completed work may be inspected at any time by NOVEC's Representative and the Contractor's Representative. This quality control check is intended to satisfy NOVEC of the proper performance of work according to the scope of this specification, and is not intended to substitute for careful supervision by the Contractor's own personnel. NOVEC and the Contractor shall establish one day a month (day mutually agreed upon) to field inspect mileage work before NOVEC authorizes the Contractor to submit an invoice. Mileage to be billed must be scaled and invoiced within 2 weeks of the end of the previous month.

Only completed connected line work will be allowed to be invoiced during the month. "Skips" are defined as missed individual trees or mis-trimmed trees without proper clearance, not whole spans of line. In no instance shall a skip remain for a time period exceeding thirty (30) days. No line will be approved for monthly invoicing unless all skips from the previous month have been completed. Contractor is paid only for scaled primary/transmission line completed during each billing period. All secondary and service lines feeding from such lines must be trimmed according to specifications for line to be considered complete. All trimming must be completed from the substation outward, completing all feeder lines and taps as encountered. Connecting line sections shall not be skipped for more than 1 month due to weather or access issues. No additional line work will be billed until all previous line has been trimmed to completion.

L. Schedule

The schedule for the priority of performing unit price per mile tree maintenance work is outlined in Attachment F. Contractor agrees to work the substations as scheduled. The listed mileages are approximate; all line work must be completed in scheduled substations in the order listed. Contractor agrees to meet the

monthly mileage schedule and Contractor will be required to complete trimming and brush work progressively with a limited number of skips. When, in the opinion of the owner, the work is ahead of schedule, the Contractor may not clear more than fifty (50) miles ahead of projected schedule unless NOVEC agrees otherwise. Schedule and sequence of substations maintenance must be adhered to as closely as possible.

Any alterations in these schedules shall be in writing from the NOVEC Representative and shall be mutually agreed upon between NOVEC and the Contractor. NOVEC reserves the right to change the monthly mileage schedule prior to July 1 of each year.

When, in the opinion of NOVEC, the work under this Contract is improperly or inadequately performed or falls behind schedule, NOVEC may, after giving Contractor written notice and a reasonable time to correct the deficiencies, direct the Contractor to place on the Project such additional men and equipment and to work such overtime hours as may be reasonably necessary to correct said deficiencies without extra cost to NOVEC. **If the contractor fails to take the necessary steps to correct deficiencies, future substation work may be removed from their contract and offered to other contractors. Added cost shall be paid out of proceeds from forfeiture of the performance bond.**

II. SPECIFICATIONS FOR RIGHT-OF-MAINTANANCE TREE TRIMMING AND REMOVALS

A. Brush

Brush shall be defined as any herbaceous material less than 6 inches DBH (no matter if it has been trimmed or not in the past) which blocks full vehicle access anywhere within the RW area.

B. Trees

A tree shall be defined as any conifer or hardwood with a DBH greater than 6 inches. A canopy tree is any tree that generally grows taller than 30 feet at maturity. (Pine, oak, poplar, maple, sycamore, hickory, gum, etc.) An ornamental tree is any tree that generally grows no taller than 30 feet at maturity. (Crab apple, purple plum, fruit trees, dogwood, etc.)

C. Proper Trimming

All tree trimming shall adhere as best possible to ANSI A300 pruning standards as related to utility line clearance operations. Stubs shall be minimized while not trimming too far outside the easement area of the RW. Re-topped trees will have as many crow's feet removed as possible. All trimming shall be done with chain saws, hydraulic chain pole saws, pruners or hand saws. No circular saws shall be used on the NOVEC system for tree trimming.

D. Clearance Requirements For Transmission and Primary Right-of-Ways

All Primary RW is assumed to be 30 feet wide, i.e. 15 feet RW on each side of the pole center line.

All transmission RW is assumed to be a minimum of 40 feet wide. i.e. 20 feet RW on each side of the pole line. RW widths vary by line section and easements are recorded accordingly from 40 to 100 feet and shall be maintained at recorded width.

1. Brush Removal

All brush shall be removed from within the full RW width. Exception: Cedar brush along a fence row or individual ornamental brush within yard areas can remain but must be trimmed as described in trimming trees under line section below. Mountain laurel and dogwood brush >2 inches DBH can remain within RW areas as long as RW is still fully accessible and trimming is done as noted in the trimming trees under line section below.

2. Side Trimming

On primary lines up to and including 1 set of 3 phase conductors, all canopy trees along the edge of the RW shall be trimmed vertically from the earth to at least 15 feet above the outermost conductor to 15 feet from the pole center line. The size of limbs removed has no bearing on this requirement.

On multiple 3 phase conductor sections and transmission lines, trimming shall extend vertically from the earth to the sky, with no limbs encroaching into the full

RW area.

When trimmed, only trees located within the RW edge may have less than 15 feet vertical clearance from pole center line at the main trunk only.

3. Trimming trees under lines

Trees previously "topped" shall be trimmed to 6 feet below the neutral across the full RW width. The size of limbs removed has no bearing on this requirement.

"Untopped" trees within the RW <6 inches in diameter at 6 feet below the neutral are to be trimmed to 6 feet below the neutral across the full RW width. The size of limbs removed has no bearing on this requirement.

"Untopped" trees within the RW >6 inches in diameter at 6 feet below the neutral with at least 5 feet vertical clearance from conductors shall be trimmed as specified in the side trimming section above. The size of limbs removed has no bearing on this requirement.

"Untopped" trees within the RW >6 inches diameter at 6 feet below the neutral who's main trunks are not at least 5 feet from conductors are to be trimmed as specified in the side trimming section above. However, they shall be reported to and targeted for cost plus removal by the NOVEC representative.

Trees located under transmission conductors shall be trimmed to a minimum of 20 feet below the lowest transmission conductor, across the full width of the RW. The size of limbs removed has no bearing on this requirement.

4. Dead Limbs

Dead limbs over 2 inches in diameter above any conductors shall be removed if they may break off and fall on the conductor.

E. Pole to Pole Secondary Right-of-Ways

Pole to pole secondary right-of-way shall be assumed to be 10 feet wide, 5 feet from each side of pole centerline

All trees along the right-of-way shall be trimmed back vertically 5 feet from the conductors from the earth to 5 feet above conductors. Trees under the line shall be trimmed to 5 feet below the conductor, the full width of the RW. The size of limbs removed has no bearing on this requirement.

When trimmed, only RW trees with main trunks closer than 5 feet to conductors will have less than 5 feet vertical clearance from conductors at the main trunk only.

All brush shall be removed from within the 10 foot wide right-of-way area.

F. Service Wires

Limbs shall be trimmed back to achieve 1 foot clearance in all directions from all service conductors where possible.

G. Debris Disposal

Wood is defined as woody material greater than 6 inches DBH.

All resulting wood is to be left off the edge of the RW in sections not less than 4 feet long. Wood shall not be left within the RW area where it blocks RW access. No wood is to be removed from the site unless specifically approved by the NOVEC representative. Wood is the property of the individual landowner. Do not leave wood in yards where grass areas will be damaged.

All limbs and branches not classified as wood must be chipped and removed, brush hogged on site or otherwise disposed of as to clear the RW area and satisfy the landowner as to site cleanliness. Any windrowed material must be outside the RW edge. Any existing fallen trees or woody debris shall be moved to outside the edge of the RW during clearing operations to allow full RW access.

H. Stump Treatments

The stump of any tree or brush removed by chainsaw shall be treated with an approved herbicide quickly after removal to prevent re-growth if the cut stump is 4 inches or larger in diameter where cut.

I. Stumps

Stumps shall be cut to 12 inches in height or less in woods areas outside the RW and less than 2 inches in height within RW areas or yards so vehicles can drive over them.

J. Danger Trees

Dead or damaged trees within 40 feet of pole center line on primary lines or within falling distance of transmission lines which pose an eminent threat of falling naturally directly into conductors, attachments, poles or guy wires before the next trimming cycle shall be made safe. This means they shall be cut short enough so in

falling, they won't contact these facilities. When in wooded areas outside the RW, stubs can be left standing. In yards, or within the RW, the entire tree shall be cut down, debris disposed of as described in the debris disposal section above.

K. Poles and Guys

All brush shall be removed from within 5 feet of all poles and guy wires. Limbs on trees located near poles or guy wires shall be trimmed back to achieve 5 feet clearance in all directions vertically from the earth to the top of pole. Trees with trunks located less than 5 feet from poles and guy wires shall be removed at the discretion of the NOVEC representative on a cost plus basis.

L. New Construction

All new primary overhead RW shall be completely cleared from the earth to the sky for 15 feet on each side of the proposed pole centerline. No trees, brush or debris shall be left in this space. All stumps shall be cut to 2 inches in height or less.

All new secondary overhead RW shall be completely cleared from earth to height of 40 feet for 7.5 feet on each side of the proposed pole centerline. No trees, brush or debris shall be left in this space. All stumps shall be cut to 2 inches in height or less.

**Response of Northern Virginia Electric Cooperative
to Comcast of CA/MD/PA/VA/WV, LLC Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: Comcast of CA/MD/PA/VA/WV, LLC

Discovery request set number: Sixth

Response prepared by or under the direction of: Patrick A. Toulme, Assistant Vice President
& Corporate Counsel

Comcast-VI-20

With respect to the following statement from the NOVEC website at
[http://www.novec.com/About NOVEC/technology.cfm](http://www.novec.com/About_NOVEC/technology.cfm):

To increase the value of our internal fiber network, NOVEC has been leasing its excess fiber capacity since 2000. In 2008, NOVEC Solutions, a wholly owned subsidiary of NOVEC, began leasing our fiber network to offer optical services to large business and government customers in Northern Virginia and the District of Columbia. In one partnership, NS utilizes NOVEC's leased fiber to cross connect its optical service network with hundreds of other carriers across the country at Equinix, an internet carrier-class data center in Ashburn, VA. Nearly 80 percent of the world's internet traffic passes through this hub.

- (1) Quantify the increase in value of your internal fiber network since NOVEC began leasing its excess fiber capacity and produce any documentary evidence in support thereof;
- (2) Identify all agreements governing NOVEC's lease of its fiber network to "large business and government customers," and specifically identify each customer by name and location, the lease payments and expenses associated with any such lease, including maintenance, overhead and administrative expenses, and produce any documentary evidence in support thereof;
- (3) Identify the location of all poles used to lease NOVEC's fiber network to "large business and government customers," and state whether Comcast is attached to any such poles and, if so, identify the location of any such poles to which Comcast is attached;
- (4) Identify by name the "partnership" pursuant to which "NS utilizes NOVEC's leased fiber to cross connect its optical service network with

hundreds of other carriers across the country at Equinix, an internet carrier-class data center in Ashburn, VA," including the identification of any and all general partner(s) and limited partner(s) in such partnership, and the owner of the "optical service network;"

- (5) Identify all revenues in connection with the partnership identified above and indicate what percentage of such revenues are attributed to NOVEC or NS, and identify any fees, lease payments, or other monies that are paid to NOVEC or NS by such partnership or on account of such cross-connect services or optical network services, and produce any documentary evidence in support thereof.

RESPONSE:

NOVEC objects to this request as it is not reasonably calculated to lead to the discovery of admissible evidence.

**Response of Northern Virginia Electric Cooperative
to Comcast of CA/MD/PA/VA/WV, LLC Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: Comcast of CA/MD/PA/VA/WV, LLC

Discovery request set number: Sixth

Response prepared by or under the direction of: Patrick A. Toulme, Assistant Vice President
& Corporate Counsel

Comcast-VI-21

With respect to the following statement from the NOVEC website at
http://www.novec.com/About_NOVEC/technology.cfm:

NOVEC seized an opportunity to partner with Milestone Communications to market the property surrounding our substations and poles to companies needing cell towers, co-locating cell antennas on existing structures wherever possible. With the demand for cellular service continuing to grow, NOVEC's customer-owners benefit by sharing the revenue stream received from cellular companies leasing the facilities. Staying up-to-date on this and other technology is an important priority to NOVEC.

1. Identify the date and manner by which NOVEC partnered with Milestone Communications, describe the agreement governing such partnership between NOVEC and Milestone, and produce any documentary evidence in support thereof;
2. Itemize all income, expenses and profits associated with NOVEC's partnership with Milestone Communications and produce any documentary evidence in support thereof;
3. Quantify the value of the "property surrounding our substations and poles," identify all "revenue streams," lease payments and expenses associated with the lease of such property, including maintenance, overhead and administrative expenses, and produce any documentary evidence in support thereof;
4. Identify, by type of location including any and all distribution poles, all cell towers and co-located cell antennas leased pursuant to the partnership between NOVEC and Milestone Communications. Identify what services are used to connect such cell towers and co-located cell antennas, and state whether such services are provided by NOVEC Solutions. If so, identify the expenses associated with such services, including maintenance, overhead and administrative expenses, and produce any documentary evidence in support thereof.

RESPONSE:

NOVEC objects to this request as it is not reasonably calculated to lead to the discovery of admissible evidence.

**Response of Northern Virginia Electric Cooperative
to Comcast of CA/MD/PA/VA/WV, LLC Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: Comcast of CA/MD/PA/VA/WV, LLC

Discovery request set number: Sixth

Response prepared by or under the direction of: Howard M. Spinner, NOVEC Manager of
Regulatory Affairs.

Comcast-VI-25

Produce all documents referring to, relating to, or regarding cost methodologies, or concepts or portions of cost methodologies, that NOVEC witnesses relied upon to determine the pole attachment rental rate set forth in the NOVEC Direct Testimony.

RESPONSE:

The incremental cost based revenue requirement was allocated to each attaching entity based on 'poles attached' by that entity as a proportion of total 'poles attached.' The methodology is that an attaching entity should pay for the incremental costs it imposes on the NOVEC system.

**Response of Northern Virginia Electric Cooperative
to Comcast of CA/MD/PA/VA/WV, LLC Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: Comcast of CA/MD/PA/VA/WV, LLC

Discovery request set number: Sixth

Response prepared by or under the direction of: Robert E. Bisson, PE, NOVEC Vice
President of Electric System Development

Comcast-VI-47

Has NOVEC sought and/or received direct reimbursement for transfers or tree trimming? State each and every fact on which you rely to support your response and produce any documentary evidence in support thereof.

RESPONSE:

No.

**Response of Northern Virginia Electric Cooperative
to Comcast of CA/MD/PA/VA/WV, LLC Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: Comcast of CA/MD/PA/VA/WV, LLC

Discovery request set number: Sixth

Response prepared by or under the direction of: Robert E. Bisson, PE, NOVEC Vice
President of Electric System Development

Comcast-VI-54

To the extent not previously provided, produce all invoices and quantify any payments NOVEC has received in connection with pole change outs performed in anticipation of any third party provider/attachers future attachment needs, since 1998.

RESPONSE:

No such documents exist.

**Response of Northern Virginia Electric Cooperative
to Comcast of CA/MD/PA/VA/WV, LLC Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: Comcast of CA/MD/PA/VA/WV, LLC

Discovery request set number: Seventh

Response prepared by or under the direction of: Howard M. Spinner, NOVEC Manager of
Regulatory Affairs.

Comcast-VII-4

Provide a detailed derivation of the proposed "charge for future unauthorized attachments equal to \$340.00 per attachment" as referenced in the Spinner Testimony at Page 7, Line 8, including the identification of the underlying data inputs and/or methodologies used to derive the figure and any and all assumptions relied on by Mr. Spinner.

RESPONSE:

Please see Mr. Spinner's pre-filed testimony, Exhibit HMS_3 for the derivation of the proposed charge for historical unauthorized attachments. The proposed charge for future unauthorized attachments equal to \$340.00 per attachment is obtained by multiplying the \$170.00 charge as derived in Exhibit HMS_3 by 2.

**Response of Northern Virginia Electric Cooperative
to Comcast of CA/MD/PA/VA/WV, LLC Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: Comcast of CA/MD/PA/VA/WV, LLC

Discovery request set number: Eighth

Response prepared by or under the direction of: Howard M. Spinner, NOVEC Manager of
Regulatory Affairs.

Comcast-VIII-3

Identify any payments made by Comcast to NOVEC since January 1, 2000 that were not payments intended to compensate NOVEC for annual rent for pole attachments on NOVEC's poles. Produce any and all documents that refer or relate to any such payments, including but not limited to documents reflecting the categorization and use by NOVEC of such payments.

RESPONSE:

NOVEC objects to this request as it seeks documents and data that are in Comcast's possession.

**Response of Northern Virginia Electric Cooperative
to Comcast of CA/MD/PA/VA/WV, LLC Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: Comcast of CA/MD/PA/VA/WV, LLC

Discovery request set number: Eighth

Response prepared by or under the direction of: Howard M. Spinner, NOVEC Manager of
Regulatory Affairs.

Comcast-VIII-4

With respect to any payments identified in response to Comcast-NOVEC 8-3, identify and describe any work performed by NOVEC in exchange for or using such payments. Produce any and all documents that refer or relate to any such work performed.

RESPONSE:

NOVEC objects to this request as it seeks documents and data that are in Comcast's possession. NOVEC also objects to this request as it is vague.

**Response of Northern Virginia Electric Cooperative
to Comcast of CA/MD/PA/VA/WV, LLC Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: Comcast of CA/MD/PA/VA/WV, LLC

Discovery request set number: Ninth

Response prepared by or under the direction of: Robert E. Bisson, PE, NOVEC Vice
President of Electric System Development

Comcast-IX-6

With respect to the "Reconciliation and Administration" cost component referenced in Table 2 on Page 11 of the Bisson Testimony, provide a detailed description of all tasks associated with such cost component, and explain why such cost component is not apportioned to NOVEC and only is apportioned to communications companies. Produce any and all documents reflecting the hours reported and tasks completed for each category of personnel listed in the "Administration" section of Table 2 to your Confidential Response to Comcast-V-41.

RESPONSE:

There are no documents reflecting hours and task completed for each category of personnel listed. Work performed was to reconcile pole survey information with communication companies that filed applications to attach permits. Nothing was apportioned to NOVEC because no work was performed to reconcile pole survey information with electric facilities.

**Response of Northern Virginia Electric Cooperative
to Comcast of CA/MD/PA/VA/WV, LLC Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: Comcast of CA/MD/PA/VA/WV, LLC

Discovery request set number: Ninth

Response prepared by or under the direction of: Howard M. Spinner, NOVEC Manager of
Regulatory Affairs.

Comcast-IX-16

In light of the determinations sought by NOVEC in this proceeding, if such determinations were made by the Commission, does NOVEC propose, other than through the proposed annual rental rate, to seek direct reimbursements from Comcast or: (a) make-ready work (including but not limited to pole replacements); (b) periodic surveys; (c) facilities transfers; (d) tree trimming and tree removal; (e) service restoration; (f) responding to wires down; (g) joint use agreement negotiations; and (h) joint use agreement administration and monitoring?

RESPONSE:

Should the Commission make determinations that approve NOVEC's request in this proceeding, as set forth on pages 6-8 of the pre-filed testimony of Howard M. Spinner, NOVEC responds as follows:

- a) Yes.
- b) No.
- c) No.
- d) No.
- e) No.
- f) No.
- g) No.
- h) No.

**Response of Northern Virginia Electric Cooperative
to Comcast of CA/MD/PA/VA/WV, LLC Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: Comcast of CA/MD/PA/VA/WV, LLC

Discovery request set number: Eleventh

Response prepared by or under the direction of: Howard M. Spinner, NOVEC Manager of
Regulatory Affairs.

Comcast-XI-5

Produce all NOVEC work requests for which the work request type ("WR TYPE") is "MKRED," "MREDY," and/or any other abbreviation for the term make-ready used by NOVEC, including but not limited to those for which the Work Request Name "WR NAME" includes Comcast, Adelphia, Jones, Cable, Prestige, Cox, Shentel, Verizon, Bell Atlantic, C&P Telephone (or any predecessor to any of the foregoing entities).

RESPONSE:

NOVEC objects to this request as unduly burdensome.

Notwithstanding this objection, NOVEC responds as follows.

See documents provided for inspection at NOVEC Gainesville Technical Center in response to Comcast's Fifth Set of Interrogatories and Requests for the Production of Documents.

**Response of Northern Virginia Electric Cooperative
to Comcast of CA/MD/PA/VA/WV, LLC Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: Comcast of CA/MD/PA/VA/WV, LLC

Discovery request set number: Eleventh

Response prepared by or under the direction of: Howard M. Spinner, NOVEC Manager of
Regulatory Affairs.

Comcast-XI-6

To the extent that the work requests in response to Comcast-NOVEC 11-5 are included in an electronic database, please run and produce a report showing all work requests that meet the criteria contained in Comcast-NOVEC 11-5.

RESPONSE:

NOVEC objects to this request to the extent that it seeks to impose duties and obligations on NOVEC greater than those imposed by Rule 5 VAC 5-20-260, because, in order to reply to this Request, NOVEC would be required to create original work product.

Notwithstanding this objection, NOVEC responds as follows.

NOVEC does not possess any such report in the form requested.

**Response of Northern Virginia Electric Cooperative
to Comcast of CA/MD/PA/VA/WV, LLC Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: Comcast of CA/MD/PA/VA/WV, LLC

Discovery request set number: Eleventh

Response prepared by or under the direction of: Howard M. Spinner, NOVEC Manager of
Regulatory Affairs.

Comcast-XI-7

Produce all NOVEC work requests for which the Work Request name includes Comcast, Adelphia, Jones, Cable, Prestige, Cox, Shentel, Verizon, Bell Atlantic, C&P Telephone (or any predecessor to any of the foregoing entities).

RESPONSE:

NOVEC objects to this request as unduly burdensome.

Notwithstanding this objection, NOVEC responds as follows.

See documents provided for inspection at NOVEC's Gainesville Technical Center in response to Comcast's Fifth Set of Interrogatories and Requests for the Production of Documents.

Response of Northern Virginia Electric Cooperative
to Comcast of CA/MD/PA/VA/WV, LLC Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055

Discovery request submitted by: Comcast of CA/MD/PA/VA/WV, LLC

Discovery request set number: Eleventh

Response prepared by or under the direction of: Howard M. Spinner, NOVEC Manager of
Regulatory Affairs.

Comcast-XI-8

To the extent that the work requests in response to Comcast-NOVEC 11-7 are included in an electronic database, please run and produce a report showing all work requests that meet the criteria contained in Comcast-NOVEC 11-7.

RESPONSE:

NOVEC objects to this request to the extent that it seeks to impose duties and obligations on NOVEC greater than those imposed by Rule 5 VAC 5-20-260, because, in order to reply to this Request, NOVEC would be required to create original work product.

Notwithstanding this objection, NOVEC responds as follows.

NOVEC does not possess any such report in the form requested.

**COMCAST CALIFORNIA/MARYLAND/PENNSYLVANIA/
VIRGINIA/WEST VIRGINIA LLC**

NOVEC RESPONSES TO STAFF DISCOVERY

**Response of Northern Virginia Electric Cooperative
to Staff of the State Corporation Commission's Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: SCC Staff

Discovery request set number: Second

Response prepared by or under the direction of: Howard M. Spinner, NOVEC Manager of
Regulatory Affairs.

Staff-II-10

Reference page 9 of NOVEC witness Bisson's prefiled direct testimony describing the two year field survey of distribution poles conducted from September 2010 through October 2012. Prior to this survey, did NOVEC perform any field surveys of distribution poles? Please list all distribution pole survey work performed by NOVEC and the date(s) the work was performed from 1998 through 2009.

RESPONSE:

In 2001 OSP performed poles survey work for NOVEC. In 1998, NOVEC conducted a field audit of approximately 5600 poles.

**Response of Northern Virginia Electric Cooperative
to Staff of the State Corporation Commission's Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: SCC Staff

Discovery request set number: Second

Response prepared by or under the direction of: Robert E. Bisson, PE, NOVEC Vice
President of Electric System Development

Staff-II-11

Reference page 10, lines 19 through 22, of NOVEC witness Bisson's prefiled direct testimony. Please supply all data, calculations and electronic spreadsheets used to support the computation of the 43% apportionment of the survey project costs to communications pole attachments.

RESPONSE:

Attachment Staff-II-11 shows all cost components and the allocation of costs between the communications companies and NOVEC. Based upon this allocation of costs as indicated in the spreadsheet, the calculated percentage of cost apportioned to the communications companies is 43% of the total costs.

Attachment Staff-II-11

Administration				
	Hours	Unit Cost	Total Cost	
Supervisor	62	\$39.88	\$2,472.56	
Customer Service Representative	240	\$34.87	\$8,368.80	
Manager	280	\$56.14	\$15,719.20	
Supervisor	31	\$51.19	\$1,586.89	
Manager	102	\$74.40	\$7,588.80	
Total			\$35,736.25	
Sampling				
	Hours	Unit Cost	Total Cost	Poles Sampled
Batches 1-16	640	\$76.31	\$48,838.40	1,600
Batches 17-23	140	\$77.39	\$10,834.60	350
Batches 24-62	390	\$78.50	\$30,615.00	975
Total	1,170		\$90,288.00	2,925
Survey				
	Units	Unit Cost	Total Cost	
Data Collection	62,156	\$3.89	\$241,830.25	
Verizon Poles Index	6,724	\$0.50	\$3,362.00	
Clearance Measurements	6,342	\$1.63	\$10,337.46	
Remove Pole Tag and Install Pole Tag	54,386	\$3.07	\$166,965.02	
Remove Non-NOVEC Signage	2,757	\$1.64	\$4,521.48	
Total			\$427,016.21	

	NOVEC	Communications Companies	Total	Annualized Third Party
Data Collection	\$104,470.67	\$137,359.58	\$241,830.25	\$27,471.92
Pole tagging	\$166,965.02	\$0.00	\$166,965.02	\$0.00
Clearance Measurements	\$0.00	\$10,337.46	\$10,337.46	\$2,067.49
Signage Removal	\$4,521.48	\$0.00	\$4,521.48	\$0.00
Verizon Pole Index	\$0.00	\$3,362.00	\$3,362.00	\$672.40
Sampling	\$39,004.09	\$51,283.16	\$90,287.25	\$10,256.63
Reconciliation & Admin.	\$0.00	\$35,736.55	\$35,736.55	\$7,147.31
Totals	\$314,961.26	\$238,078.75	\$553,040.01	\$47,615.75

Data Sources and Methodology

NOVEC contractor invoices

Employee wage and benefits

Allocation of costs based upon work definition

Annual allocation based upon performing a survey every five years.

**Response of Northern Virginia Electric Cooperative
to Staff of the State Corporation Commission's Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: SCC Staff

Discovery request set number: Second

Response prepared by or under the direction of: Howard M. Spinner, NOVEC Manager of Regulatory Affairs.

Staff-II-12

Please provide the following for calendar years 2000 through 2010: (a) total distribution poles replaced by year; (b) total number of distribution poles replaced that had communications attachments by year; and (c) breakdown the number in response to (b) to reflect the number of angle poles, dead-end poles, and tangent poles by year.

RESPONSE:

In general NOVEC has only developed detailed data used to support its incremental cost pole attachment approach for 2011 and 2012. NOVEC's approach was initiated by a question from a member of the Virginia General Assembly during prior legislative activity on the pole attachment issue. The legislator asked NOVEC to quantify the incremental costs associated with accommodating pole attachments. The question was posed in 2010. NOVEC began the costly and time consuming process of collecting the data and information necessary to support its incremental cost approach. NOVEC's judgment was to begin this data collection process in 2011 and maintain it through 2012. At the time, NOVEC knew that certain pole attachment agreements would terminate in 2012. Given the uncertainties associated with contract negotiation, legislative and regulatory changes, NOVEC decided that two years' data collection would maximize value for its members.

**Response of Northern Virginia Electric Cooperative
to Staff of the State Corporation Commission's Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: SCC Staff

Discovery request set number: Second

Response prepared by or under the direction of: Robert E. Bisson, PE, NOVEC Vice
President of Electric System Development

Staff-II-15

Reference page 23, lines 13 through 21, of NOVEC witness Bisson's prefiled direct testimony. For calendar years 2000 through 2010, provide a list of comparable outage events as those listed for 2011 and 2012 (i.e. Hurricanes Irene and Sandy, the *Derecho*, and major snowstorms). For each of those events show the number of poles that required communications attachments to be secured or transferred.

RESPONSE:

NOVEC does not have information, by comparable event, showing the number of poles that required communications attachments to be secured or transferred prior to year 2011. In year 2011, NOVEC instituted the practice of tracking locations where poles were replaced as part of restoration during major weather events. NOVEC personnel reviewed information received from repair crews and reviewed repair information recorded on outage tickets to identify poles replaced during the restoration. The list of replaced poles was cross referenced with pole survey information to identify poles replaced with communications attachments.

**Response of Northern Virginia Electric Cooperative
to Staff of the State Corporation Commission's Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: SCC Staff

Discovery request set number: Second

Response prepared by or under the direction of: Howard M. Spinner, NOVEC Manager of
Regulatory Affairs.

Staff-II-16

Reference Table 8 on page 24 of NOVEC witness Bisson's prefiled direct testimony. Update this table to show calendar years 2000 through 2010.

RESPONSE:

In general NOVEC has only developed detailed data used to support its incremental cost pole attachment approach for 2011 and 2012. NOVEC's approach was initiated by a question from a member of the Virginia General Assembly during prior legislative activity on the pole attachment issue. The legislator asked NOVEC to quantify the incremental costs associated with accommodating pole attachments. The question was posed in 2010. NOVEC began the costly and time consuming process of collecting the data and information necessary to support its incremental cost approach. NOVEC's judgment was to begin this data collection process in 2011 and maintain it through 2012. At the time, NOVEC knew that certain pole attachment agreements would terminate in 2012. Given the uncertainties associated with contract negotiation, legislative and regulatory changes, NOVEC decided that two years' data collection would maximize value for its members.

**Response of Northern Virginia Electric Cooperative
to Staff of the State Corporation Commission's Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: SCC Staff

Discovery request set number: Second

Response prepared by or under the direction of: Robert E. Bisson, PE, NOVEC Vice
President of Electric System Development

Staff-II-17

Reference page 26, lines 5 through 9, of NOVEC witness Bisson's prefiled direct testimony. Please provide documentation that supports the claim that a downed communications line investigation takes an average of two hours. Provide a detailed description of what is entailed in this investigation including average travel time and what the technician does on site for a downed communications line. Provide a cost justification for the \$186 average cost per investigation as indicated in Table 9.

RESPONSE:

NOVEC does not capture the actual time spent by employees who responds to each wire down trouble call. The amount of time can vary depending upon several factors: including travel time to the location, traffic congestion, walking into a right-of way, weather conditions, securing or coiling of communications wire which may include temporarily fastening to a pole. Additionally, if no service technician is working at the time a call is received, the operation center could call a standby crew, from home to visit the site and investigate. An estimate was developed that assumed that one service technician, at straight time pay, and one vehicle on average would take two hours to respond to a wire down call that is determined to involve a communications wire.

**Response of Northern Virginia Electric Cooperative
to Staff of the State Corporation Commission's Discovery Request**
~~Virginia State Corporation Commission~~
Case No. PUE-2013-00055

Discovery request submitted by: SCC Staff

Discovery request set number: Second

Response prepared by or under the direction of: Howard M. Spinner, NOVEC Manager of
Regulatory Affairs.

Staff-II-18

Reference Table 9 on page 26 of NOVEC witness Bisson's prefiled direct testimony. Update this table to show calendar years 2000 through 2010.

RESPONSE:

In general NOVEC has only developed detailed data used to support its incremental cost pole attachment approach for 2011 and 2012. NOVEC's approach was initiated by a question from a member of the Virginia General Assembly during prior legislative activity on the pole attachment issue. The legislator asked NOVEC to quantify the incremental costs associated with accommodating pole attachments. The question was posed in 2010. NOVEC began the costly and time consuming process of collecting the data and information necessary to support its incremental cost approach. NOVEC's judgment was to begin this data collection process in 2011 and maintain it through 2012. At the time, NOVEC knew that certain pole attachment agreements would terminate in 2012. Given the uncertainties associated with contract negotiation, legislative and regulatory changes, NOVEC decided that two years' data collection would maximize value for its members.

**Response of Northern Virginia Electric Cooperative
to Staff of the State Corporation Commission's Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: SCC Staff

Discovery request set number: Second

Response prepared by or under the direction of: Robert E. Bisson, PE, NOVEC Vice
President of Electric System Development

Staff-II-19

Reference page 27, lines 5 through 9, of NOVEC witness Bisson's prefiled direct testimony.
Please provide detailed cost support for the \$48,400 annualized cost for negotiating agreements.

RESPONSE:

Attachment Staff-II-19 shows all cost components for the annualized cost for negotiating agreements. The estimates are based upon legal, consulting and NOVEC staff work anticipated to negotiate an agreement and to undertake a proceeding before the SCC.

Attachment Staff-II-19

Joint Use Agreement Administration			
	Hours	Unit Cost	Total Cost
Field personnel	2080	\$50.77	\$105,601.60
Supervisor	32	\$39.88	\$1,276.16
Customer Service Representative	35	\$34.87	\$1,220.45
Manager	150	\$56.14	\$8,421.00
Total			\$116,519.21

Data Sources and Methodology

NOVEC contractor invoices
Employee wage and benefits

Assumptions

Administration work hours estimated by department managers

Joint Use Agreement Negotiation and Litigation		
	Annual Cost	Total Cost
Consulting & Legal	\$31,250	\$312,500
Analyst	\$3,575	\$35,750
Supervisor	\$3,825	\$38,250
Manager	\$9,750	\$97,500
Total	\$48,400	\$484,000

Data Source and Methodology

Employee wages and benefits
Consulting and Legal agreements

Assumptions

Ten year agreement terms
Four communications companies
Estimates assume future proceedings before the SCC

(33) Reference page 28, lines 4-11 of NOVEC witness Bisson's prefiled direct testimony. How many 5' taller poles were installed by NOVEC in each of the last two years that were deemed necessary to accommodate joint use? How many of these poles have not yet been utilized by joint users?

(34) Referring to page 28, lines 11-12 of NOVEC witness Bisson's testimony, provide the class of poles referenced.

(35) Provide the total amount of make ready work paid for by each of the joint users in the last two years. Provide details of the work performed and the amount paid.

(36) Reference page 30, lines 7-8 of NOVEC witness Booth's prefiled direct testimony. Does NOVEC have a detailed list of remediation work that is necessary? If so, please provide that list and the cost calculations associated with the \$8,000,000 referred to by Mr. Booth.

Respectfully submitted,

THE STAFF OF THE STATE
CORPORATION COMMISSION

By 
Counsel

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State Corporation Commission
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Richmond, Virginia 23218
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Telefax: (804) 371-9240

Dated: August 16, 2013

**Response of Northern Virginia Electric Cooperative
to Staff of the State Corporation Commission's Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: SCC Staff

Discovery request set number: Third

Response prepared by or under the direction of: Gregory L. Booth, PE, PowerServices, Inc.

Staff-III-36

Reference page 30, lines 7-8 of NOVEC witness Booth's prefiled direct testimony. Does NOVEC have a detailed list of remediation work that is necessary? If so, please provide that list and the cost calculations associated with the \$8,000,000 referred to by Mr. Booth.

RESPONSE:

Robert Bisson, P.E., in his prefiled direct testimony page 12, Table 4 identified 3,412 poles to which Comcast was attached with violations.

NOVEC provided the unit cost of replacing a 35-foot pole with a 40-foot pole. This pricing was a weighted cost of contractor unit labor costs plus NOVEC material costs. This cost was a simple three-phase replacement with no extra equipment, such as transformers, services, or secondaries. Additionally, the cost for a single-phase replacement of a 35-foot pole with a 40-foot pole was provided. The cost for a three-phase replacement was \$4,615.21 per pole and the cost for a single-phase replacement was \$2,152.18.

If all the poles were three-phase, and using the 3,412 pole violations times \$4,615.21 per pole the total would be \$15,747,096.52. If all the violation poles were single-phase, the cost would be 3,412 poles times \$2,152.18 per pole, or \$7,343,238.16. Mr. Booth was observing a violation ratio of approximately fifty percent of the poles on which Comcast was attached. Mr. Booth's testimony is a conservatively low estimate of \$8,000,000.

**Response of Northern Virginia Electric Cooperative
to Comcast of CA/MD/PA/VA/WV, LLC Discovery Request
Virginia State Corporation Commission
Case No. PUE-2013-00055**

Discovery request submitted by: Comcast of CA/MD/PA/VA/WV, LLC

Discovery request set number: Fifth

Response prepared by or under the direction of: Robert E. Bisson, PE, NOVEC Vice
President of Electric System Development

Comcast-V-41

With respect to Table 11 to the Bisson Testimony, please provide any and all underlying support for each of the annualized cost figures identified in the table, including but not limited to:

- (1) a detailed derivation of each of the identified annualized cost figures, including the identification of the underlying data sources and/or methodologies used to derive those figures;
- (2) the time frame of the analysis; and
- (3) and any and all assumptions or cost allocations made by NOVEC in arriving at these figures, and the basis of those assumptions and/or allocations.

RESPONSE:

NOVEC objects to this request as overly broad, unduly burdensome and vague.

Without waiving this objection, NOVEC responds as follows.

See the CONFIDENTIAL spreadsheet provided on the enclosed CD.

Extraordinarily Sensitive Exhibit PDK-8

**COMCAST CALIFORNIA/MARYLAND/PENNSYLVANIA/
VIRGINIA/WEST VIRGINIA LLC**

Comcast Response to NOVEC #47

**COMCAST CALIFORNIA/MARYLAND/PENNSYLVANIA/
VIRGINIA/WEST VIRGINIA LLC**

**Detailed Listing of States Adopting the FCC Formulaic Approach
or Close Variation of Formula**

Table 1 -- States Certified by the FCC to Regulate Pole Attachments for Investor-Owned Utilities

State	Pertinent Statute(s)	Key Rule(s) and/or Order(s)
Alaska	Alaska Stat. §§ 42.05.311, 42.05.321	Alaska Admin. Code, Title 3 § 52.900 – 940; <i>Consideration of Rules Governing Joint Use of Utility Facilities and Amending Joint-Use Regulations Adopted Under 3 ACC 52.900 – 3 AAC 52.940</i> , Order Adopting Regulations, 2002 Alas. PUC LEXIS 689 (2002)
Arkansas	Ark. Code §§ 23-4-1001 through 23-4-1006	<i>Rulemaking Proceeding to Establish Pole Attachment Rules in Accordance with Act 740 of 2007</i> , Docket No. 08-073-R, Order No. 5 (July 30, 2008)
California	Cal. Pub. Util. Code § 767.5	<i>Order Instituting Rulemaking on the Commission's Own Motion into Competition for Local Exchange Service</i> , Decision 98-10-058, 1998 Cal. PUC LEXIS 879 (1998)
Connecticut	Conn. Gen. Stat. §§ 16-1, 16-19, 16-332	<i>Application of Southern New England Telephone Co. to Amend its Rates and Rate Structure</i> , Docket No. 92-09-19, Decision, 1993 Conn. PUC LEXIS 5 (1993)
Delaware	Del. Code Ann. Title 26 §§ 201, 209	Code Del. Regs. §§ 26-1000-1004
District of Columbia	D.C. Code Ann. § 34-1253.03	D.C. Mun. Regs. Title 15-1600 through 1699
Idaho	Idaho Code § 61-538	<i>Washington Water Power Co. v. Benewah Cable Co.</i> , Case No. U-1008-206, Order No. 19229, 1984 Ida. PUC LEXIS 100 (1984)
Illinois	220 Ill. Comp. Stat. 5/7-102, 5/9-101	83 Ill. Admin. Code § 315.10 through 315.70
Kentucky	Ky. Rev. Stat. Ann. § 278.040 and 278.280(2)	<i>Adoption of a Standard Methodology for Establishing Rates for CATV Pole Attachments</i> , Case. No. 251, Order, 49 P.U.R. 4 th 127 (1982); 807 Ky. Admin. Regs. 5:006 (Sec. 21)
Louisiana	La. Const. Art. 4, § 21(b); La.	<i>Agreements for the Joint Utilization of</i>

	R.S. 45:1163	<i>Poles and Facilities by Two or More Utilities</i> ; Order No. U-14325, 1980 La. PUC LEXIS 93 (1980); <i>Dealing with Agreements for Joint Utilization of Poles and Facilities by Two of More Entities</i> , Docket No. U-22833, General Order, 1999 La. PUC LEXIS 13 (1999)
Maine	35-A Me. Rev. Stat. § 711	Code Me. Regs. 65-407-880
Massachusetts	Ma. Gen. Laws ch. 166, § 25(a)	Mass. Regs. Code Title 220 § 45.00 – 45.11; <i>Cablevision of Boston v. Boston Edison Co.</i> , DPU/DTE 97-82 (1998); <i>Order Establishing Complaint and Enforcement Procedures to Ensure that Telecommunications Carriers and Cable System Operators Have Non-Discriminatory Access to Utility Poles, Ducts, Conduits and Rights-of-Way</i> , DTE 98-36-A, Order Promulgating Final Regulations, 2000 Mass. PUC LEXIS 21 (2000)
Michigan	Mich. Comp. Laws Stat. § 460.6g (regulating electric poles); Mich. Comp. Laws Stat. § 484.2361 (regulating telecom poles)	<i>Application of Consumers Power Co.</i> , Case Nos. U-10741, U-10816, U-108211, Opinion and Order, 1997 Mich. PUC LEXIS 26 (1997)
New Hampshire	N.H. RSA 374:34-a	N.H. Code of Admin. Rules Ch. PUC 1300
New Jersey	N.J. Stat. Ann. §§ 48:5A-20, 48:5A-21	N.J. Admin. Code Title 14:18 – 2.9; <i>West Jersey Tel. Co.</i> , Docket Nos. CO85121263 et al., 77 PUR 4 th 89 (1986)
New York	N.Y. Pub. Serv. Law § 119-a	<i>Certain Pole Attachment Issues Which Arose in Case No. 94-C-0095</i> , Opinion No. 97-10, 1997 NY PUC LEXIS 364 (1997)
Ohio	Ohio Rev. Code Ann. §§ 4905.02, 4905.71	<i>Columbus and Southern Ohio Electric Co.</i> , Case Nos. 81-1058-EL-AIR, 82-654-EL-ATA, 50 PUR 4 th 37 (1982)
Oregon	Or. Rev. Stat. § 757.270 – 290, 759.650 - 675	Or. Admin. Rule 860-028-0110 to 860-028-240; <i>Rulemaking to Amend Oregon Admin. Rules Relating to Safety and Attachment Standards</i> , 2001 Ore. PUC LEXIS 483 (2001)
Utah	Utah Code Ann. § 54-4-13	Utah Admin. Code R. § 746-345
Vermont	Vt. Stat. Ann. Title 30 §§ 225, 226	Vt. Public Service Board Rules 3.700 – 3.710
Washington	Wash. Rev. Code §§ 80.54.010 – 80.54.070	

Table 2 -- States That Regulate Pole Attachments for Cooperatively-Owned Utilities

State	Pertinent Statute(s)	Key Rule(s) and/or Order(s)
Alaska	Alaska Stat. §§ 42.05.311, 42.05.321; Alaska Stat. § 42.05.990(5) (coops are included within the definition of a public utility, which are subject to regulation)	Alaska Admin. Code, Title 3 § 52.900 – 940; <i>Consideration of Rules Governing Joint Use of Utility Facilities and Amending Joint-Use Regulations Adopted Under 3 ACC 52.900 – 3 AAC 52.940</i> , Order Adopting Regulations, 2002 Alas. PUC LEXIS 689 (2002).
Arkansas	Ark. Code Ann. §§ 23-4-1001 through 23-4-1006; Ark. Code Ann. § 23-4-100(2)(A) (includes electric cooperatives in the definition of “public utilities,” which are subject to regulation)	<i>Rulemaking Proceeding to Establish Pole Attachment Rules in Accordance with Act 740 of 2007</i> , Docket No. 08-073-R, Order No. 5 (July 30, 2008)
Delaware	Del. Code Ann. Title 26 §§ 201, 209; Del. Code Ann. Title 26 § 102(2) (public utility defined to include coops); Del. Code Title 26 § 202(g) (exempts from regulation any coop that has voted to be exempt from regulation by the PSC)	Code Del. Regs. §§ 26-1000-1004
Indiana	Ind. Code § 8-1-2-5; In. Code § 8-1-2-1(a) (defines “public utility” to include coops, which are therefore subject to regulation)	<i>Complaint by United Tel. Co. of Indiana, Inc. d/b/a Sprint against Kankakee Valley Rural Electric Membership Corp.</i> , Cause No. 42755, 2006 Ind. PUC LEXIS 88 (2006)
Kentucky	Ky. Rev. Stat. Ann. § 278.040 and 278.280(2); Ky. Rev. Stat. Ann. § 279.210	<i>Adoption of a Standard Methodology for Establishing Rates for CATV Pole Attachments</i> , Case No. 251, Order, 49 P.U.R. 4 th 127 (1982); 807 Ky. Admin. Regs. 5:006 (Sec. 21); <i>Ballard Rural Telephone Cooperative Corporation, Inc. v. Jackson Purchase Energy Corp.</i> , Case No. 2004-00036 (2007)
Louisiana	La. Const. Art. 4, § 21(b); La. R.S. 45:1163 (La. PSC has authority regulate coop pole rents)	<i>Agreements for the Joint Utilization of Poles and Facilities by Two or More Utilities</i> ; Order No. U-14325, 1980 La.

	when coop membership has voted to be regulated)	PUC LEXIS 93 (1980); <i>Dealing with Agreements for Joint Utilization of Poles and Facilities by Two of More Entities</i> , Docket No. U-22833, General Order, 1999 La. PUC LEXIS 13 (1999)
Michigan	Mich. Comp. Laws Stat. § 460.6g (regulating electric poles); Mich. Comp. Laws Stat. § 484.2361 (regulating telecom poles); Mich. Comp. Laws Stat. § 460.6(1) (giving Mich. PSC jurisdiction over cooperatives)	<i>Commission's Own Motion to Examine Setting Just and Reasonable Rates for Attachments to Utility Poles, Ducts and Conduits Pursuant to MCL 460.6g</i> , Docket No. U-10831, Opinion and Order (1997); <i>Application of Consumers Power Co.</i> , Case Nos. U-10741, U-10816, U-108211, 1997 Mich. PUC LEXIS 26 (1997)
New Hampshire	N.H. RSA 374:34-a; N.H. RSA 362:2 (defining public utility to include cooperatives)	N.H. Code of Admin. Rules Ch. PUC 1300
North Carolina	N.C. Gen. Stat. § 62-350(a). (requiring coops to provide pole access to communications service providers on just, reasonable and nondiscriminatory rates terms and conditions)	
Oregon	Or. Rev. Stat. § 757.270 – 290, 759.650 – 675; Or. Rev. Stat. § 757.276 (Or. PUC has authority to regulate pole attachment of “consumer-owned utilities”); Or. Rev. Stat. § 757.270(2) (a “consumer-owned utility” includes coops)	Or. Admin. Rule 860-028-0110 to 860-028-240; <i>Rulemaking to Amend Oregon Admin. Rules Relating to Safety and Attachment Standards</i> , 2001 Ore. PUC LEXIS 483 (2001)
Texas	V.T.C.A., Utilities Code § 252.002, § 252.005 (rates, terms, and conditions for attachments by a cable operator on an electric cooperative's poles must be just and reasonable, negotiated in good faith)	
Utah	Utah Code Ann. § 54-4-13; Utah Code Ann. § 54-2-1(16) (defining public utilities to include coops)	Utah Admin. Code R. § 746-345
Vermont	Vt. Stat. Ann. Title 30 §§ 225, 226; Vt. Stat. Ann. Title 30 § 201 (gives Vt. PSB jurisdiction over coops)	Vt. Public Service Board Rules 3.700 – 3.710
Virginia	Va. Code Ann. § 56-466.1	

Washington	Wash. Rev. Code §§ 80.54.101 – 80.54.070; Wash. Rev. Code §§ 23.86.400 and 35.21.455 (coops are “locally regulated utilities” under Washington law)	
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Table 3 -- States That Regulate Pole Attachments for Municipal Utilities

State	Pertinent Statute(s)	Key Rule(s) and/or Order(s)
Alaska	Alaska Stat. §§ 42.05.311, 42.05.321; Alaska Stat. § 42.05.990(5) (munis are included within the definition of a public utility, which are subject to regulation)	Alaska Admin. Code, Title 3 § 52.900 – 940; <i>Consideration of Rules Governing Joint Use of Utility Facilities and Amending Joint-Use Regulations Adopted Under 3 ACC 52.900 – 3 AAC 52.940</i> , Order Adopting Regulations, 2002 Alas. PUC LEXIS 689 (2002).
California	Cal. Pub. Util. Code § 9510	FCC Cable Formula, 224(d). Pole attachment rate disputes brought to court.
Colorado	Co. Rev. Stat. § 38-5.5-108(1) (munis may not charge a pole rent higher than the FCC formula rate)	
Delaware	Del. Code Ann. Title 26 §§ 201, 209; Del. Code Ann. Title 26 § 102(2) (public utility defined to include munis)	Code Del. Regs. §§ 26-1000-1004
Indiana	In. Code § 8-1-2-5 (Indiana URC has authority to prescribe “reasonable conditions and compensations” for poles); In. Code § 8-1.5-3-8 (muni pole rates must be nondiscriminatory and reasonable)	
Louisiana	La. R.S. § 45:1164 (muni pole rates are regulated by La. PSC if electors of the municipality have agreed to be regulated)	<i>Agreements for the Joint Utilization of Poles and Facilities by Two or More Utilities</i> ; Order No. U-14325, 1980 La. PUC LEXIS 93 (1980); <i>Dealing with Agreements for Joint Utilization of Poles and Facilities by Two of More Entities</i> , Docket No. U-22833, General Order,

		1999 La. PUC LEXIS 13 (1999)
Massachusetts	Ma. Gen. Laws ch. 166, § 25(a) (the term "utility" includes munis in the statute)	Mass. Regs. Code Title 220 § 45.00 – 45.11; <i>Cablevision of Boston v. Boston Edison Co.</i> , DPU/DTE 97-82 (1998); <i>Order Establishing Complaint and Enforcement Procedures to Ensure that Telecommunications Carriers and Cable System Operators Have Non- Discriminatory Access to Utility Poles, Ducts, Conduits and Rights-of-Way</i> , DTE 98-36-A, Order Promulgating Final Regulations, 2000 Mass. PUC LEXIS 21 (2000)
Missouri	V.A.M.S. § 67.5104 (pole attachment fees, terms and conditions must be nondiscriminatory, just and reasonable, and in no event more than the FCC rate)	
New York	N.Y. Pub. Serv. Law § 119-a	<i>Proceeding on Motion of the Commission to Regulate Pole Attachment Rates for Municipal-Owned Poles</i> , Case 06-E-1427, Order on Municipal Pole Attachment Rates, 1997 NY PUC LEXIS 152 (2007)
North Carolina	N.C. Gen. Stat. § 62-350(a) (requiring munis to provide pole access to communications service providers on just, reasonable and nondiscriminatory rates terms and conditions)	
Oregon	Or. Rev. Stat. § 757.270 – 290, 759.650 – 675; Or. Rev. Stat. § 757.276 (giving Or. PUC authority to regulate pole attachment of "consumer-owned utilities"); Or. Rev. Stat. § 757.270(2) (a "consumer-owned utility" includes munis)	Or. Admin. Rule 860-028-0110 to 860- 028-240; <i>Rulemaking to Amend Oregon Admin. Rules Relating to Safety and Attachment Standards</i> , 2001 Ore. PUC LEXIS 483 (2001)
Texas	Tex. Util. Code § 54.204 (prohibiting munis from charging pole rents above FCC formula rate)	
Vermont	Vt. Stat. Ann. Title 30 §§ 225, 226; Vt. Stat. Ann. Title 30 § 201 (gives Vt. PSB jurisdiction over munis)	Vt. Public Service Board Rules 3.700 – 3.710

Washington	Wash. Rev. Code §§ 80.54.101 – 80.54.070; Wash. Rev. Code §§ 23.86.400 and 35.21.455 (munis are “locally regulated utilities” under Washington law)	
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STATE OF NORTH CAROLINA
COUNTY OF RUTHERFORD

IN THE GENERAL COURT OF JUSTICE
SUPERIOR COURT DIVISION
13 CVS 231

RUTHERFORD ELECTRIC
MEMBERSHIP CORPORATION,

Plaintiff,

vs.

TIME WARNER ENTERTAINMENT-
ADVANCE/NEWHOUSE
PARTNERSHIP, D/B/A TIME WARNER
CABLE,

Defendant.

**EXPERT REPORT OF
PATRICIA D. KRAVTIN**

July10, 2013

Table of Contents

I. Qualifications	1
II. Assignment and Summary of Opinion.....	2
III. FCC Pole Rate Formula Methodology.....	11
IV. Application Of FCC Rate Formula Methodology To Rutherford	19
V. Calculations of Rutherford’s Maximum Just and Reasonable Pole Attachment Rental Rates Under FCC Cable and Telecom Formula Methodology	27
VI. Calculation Of Damages (Overpayments By TWEAN)	30
VII. Impact Of Just And Reasonable Rates On Rutherford And Its Customers	32
VIII. Conclusion.....	35

List of Tables

1: Summary of Maximum Just and Reasonable Pole Attachment Rates for Rutherford under FCC Cable and Telecom Formula Methodology.....	5
2: Amounts Owed TWEAN for Overpayments based on Maximum Just and Reasonable Pole Attachment Rates Under FCC Cable and Telecom Formula Methodology.....	7
3: Maximum Just and Reasonable Pole Attachment Rental Rates for Rutherford Under FCC Cable Formula Methodology	28
4: Maximum Just and Reasonable Pole Attachment Rental Rates for Rutherford Under FCC Current Telecom Formula Methodology.....	28
5: Maximum Just and Reasonable Pole Attachment Rental Rates for Rutherford Under FCC Old Telecom Formula Methodology.....	28
6: Maximum Just and Reasonable Pole Attachment Rental Rates for Rutherford Under FCC Current Telecom Formula Methodology at Varying Number Attaching Entities.....	29
7: Maximum Just and Reasonable Pole Attachment Rental Rates for Rutherford Under FCC Old Telecom Formula Methodology at Varying Number of Attaching Entities.....	29
8: Calculation of Damages Based on Overpayments by TWEAN In Relation to Just and Reasonable Amounts Owed 2010-2013.....	32

Attachments

- 1: Detailed Resume
- 2: List of Data and Information Considered in Forming Opinion
- 3: Illustrative Calculation of Just and Reasonable Pole Attachment Rates for Rutherford Using FCC Formula Methodology for 2012 (Using data for year ending 12/31/11)

I. QUALIFICATIONS

1. My name is Patricia D. Kravtin. My business address is 57 Phillips Avenue, Swampscott, Massachusetts. I am an economist in private practice specializing in the analysis of telecommunications regulation and markets.

2. I have testified or served as an expert in proceedings before over thirty state regulatory commissions. I have also provided expert testimony and reports in proceedings before the Federal Communications Commission (“FCC”), the Federal Energy Regulatory Commission (“FERC”), and before international agencies including the Canadian Radio-television and Telecommunications Commission, the Ontario Energy Board, and the Guam Public Utilities Commission. In addition, I have testified as an expert witness in state and federal courts, and also before a number of state legislative committees. A detailed resume summarizing my educational background and previous experience, including a listing of the proceedings I have testified in and the reports I have authored, is provided in Attachment 1 to this report.

3. Over the course of my career, I have been actively involved in a number of state and federal regulatory commission proceedings involving cost methodologies and the allocation of costs of incumbent local exchange carriers (“ILECs”) and electric utilities. One local network component, essential for the provision of competitive communications services, with which I am also very familiar, is access to poles, ducts, conduits, and rights-of-way. I have testified extensively on matters pertaining to these essential facilities before state and federal regulatory agencies and before state and federal courts, including those in Florida, New York, California, Washington, and Tennessee, as well as the North Carolina Business Court in *Time Warner Entertainment – Advance/Newhouse Partnership vs. Town of Landis, North Carolina, 10 CVS 1172*. I have submitted reports in pole proceedings before the FCC, including both rounds of its most recent pole rulemaking proceeding, *In the Matter of Implementation of Section 224 of the Act; A National Broadband Plan for our Future, Opinion and Further Notice of Proposed Rulemaking*, WC Docket No. 07-245, GN Docket No. 09-51, rel. May 20, 2010 (FCC 2010 FNRPM) and *In the Matter of Implementation of Section 224 of the Act; Amendment of the Commission’s Rules and Policies Governing Pole Attachments*, WC Docket No. 07-245, RM 11293, RM 11303, re. Nov. 20, 2007 (FCC 2007 NPRM Proceeding). In 2006, I submitted testimony and was subject to live cross-examination before the FCC’s Chief Administrative Law Judge, on issues pertaining to utility compensation for pole attachments in *In the Matter of Florida Cable Telecommunications Association, Inc., et. al. v. Gulf Power Company*, Initial Decision, FCC 07D-01, 22 FCC Rcd 1997 (2007) (“FCTA”).

4. I have served as an expert or advisor on pole attachment matters in proceedings involving investor-owned utilities, non-profit consumer-owned utilities, and municipally-owned utilities, and before the following state regulatory commissions: the Kentucky Public Service Commission, the Arkansas Public Service Commission, the Public Utilities Commission of Ohio, the Public Utilities Commission of Texas, the Georgia Public Service Commission, the South Carolina Public Service Commission, the Public Service Commission of the District of Columbia, the New Jersey Board of Public Utilities, the New York Public Service Commission, the Virginia State Corporation Commission, and the New Hampshire Public Service Commission. I have also been actively involved in related issues pertaining to broadband deployment. I have authored a number of reports dealing with this subject and participated as a grant reviewer for the Broadband Technology Opportunities Program (“BTOP”) administered by National Telecommunications and Information Administration (“NTIA”).

5. I am being compensated for the time I spend on this matter at my standard rate of \$395 per hour. I will also be reimbursed for any travel and miscellaneous out-of-pocket expenses incurred in connection with this litigation. My compensation is not contingent on the outcome of this litigation or my analysis.

II. ASSIGNMENT AND SUMMARY OF OPINION

6. I was asked by counsel for Time Warner Entertainment – Advance/Newhouse Partnership (“TWEAN”) to address matters raised in this litigation relating to the pole attachment rental rates that the Rutherford Electric Membership Corporation (“Rutherford” or “REMC”) charges TWEAN. In particular, my report provides calculations of maximum just and reasonable pole attachment rental rates applicable to TWEAN under N.C.G.S. §62.350. Pursuant to N.C.G.S §62.350,¹ the rate calculations I have performed rely heavily on the rules and regulations applicable to pole attachments under §224 of the Communications Act of 1934, in a manner fully consistent with the well-established methodology used by the FCC and the overwhelming majority of states self-certified to regulate pole attachments, and the underlying economic principle of cost causation upon which the regulation of pole attachments under §224 fundamentally relies.

7. Under existing FCC rules, a different rate formula could apply to pole attachments depending on their classification as either a “cable” or “telecommunications” (“telecom”) attachment pursuant to

¹ See N.C.G.S. §62.350 (“the Business Court shall ... (ii) resolve any dispute identified in the pleadings consistent with the public interest and necessity so as to derive just and reasonable rates, terms, and conditions, taking into consideration and applying such other factors or evidence that may be presented by a party, including without limitation the rules and regulations applicable to attachments by each type of communications service provider under section 224 of the Communications Act of 1934, as amended.”)

§224(d) and (e) of the Communications Act, respectively. The FCC has determined that cable operators providing cable internet and voice over internet protocol (“VoIP”) telephone services over attachments are subject to the “cable” rate, while only the attachments used in the provision of common carrier telecommunications services – where the carrier transmits information among points specified by the user without any change in the form or content of the information – are subject to the “telecom” rate.² While my report determines different maximum just and reasonable rates based on the two respective formula methodologies, it is my opinion that the most economically appropriate pole attachment rate for all manner of communications attachments is the rate determined by the cable rate formula. My opinion is based on the strong public interest benefit associated with the application of uniform prices for new or advanced internet or other broadband services set consistent with the economic principle of cost causation underlying §224, and widely accepted criteria for effective economic regulation of essential facilities such as utility poles. The fundamental economic principle of cost causation holds that the entity causally responsible – i.e., the entity but for whose existence or action a cost would not have been incurred, in this case, the pole attacher – is attributed those costs reasonably attributable to the attachment, and conversely, is not attributed costs that are directly attributable to the costs of providing the utility’s core electric service (for which the attacher is not causally responsible).

8. My opinion is also consistent with FCC’s recommendations in its March 2010 National Broadband Plan (“NBP”), and reaffirmed in its most recent pole rulemaking decision on April 7, 2011, to adopt a new, revised telecom formula, designed to produce rates as close to the cable rate as possible.³ As the FCC recommended, broadband deployment is best served by a pole attachment rate “set as low and as close to uniform [in the vicinity of the current cable rate] as possible” – including in areas where poles are “owned by co-operatives, municipalities, and non-utilities” for which exemptions were written into Section 224.”⁴ The FCC found this to be especially the case for rural areas such as those served by Rutherford where the “impact of these rates can be particularly acute.”⁵ As explained in this report, there

² See *Gulf Power Co. v. FCC*, 208 F. 3d 1263(11th Cir.2000); *National Cable Telecommunications Assn. v. Gulf Power, FCC and US Petitioners v. Gulf Power Co. et al on Writs of Certiorari to the US Court of Appeals for the Eleventh Circuit*, 534 U.S. 327 (2002).

³ See *Implementation of Section 224 of the Act, Report and Order and Order on Reconsideration*, 26 FCC Rcd 5240 (2011) (“April 7, 2011 Order”).

⁴ See FCC, *Connecting America: The National Broadband Plan*, <http://www.broadband.gov/plan/#read-the-plan>, rel. March 16, 2010, at 110 (“To support the goal of broadband deployment, rates for pole attachments should be as low and as close to uniform as possible. The rate formula for cable providers articulated in Section 224(d) has been in place for 31 years and is ‘just and reasonable’ and fully compensatory for utilities. Through a rulemaking, the FCC should revisit its application of the telecommunications carrier rate formula to yield rates as close as possible to the cable rate.”).

⁵ See *Id.* (“The impact of these rates can be particularly acute in rural areas, where there often are more poles per mile than households.... If the lower rates were applied, and if the cost differential in excess of \$8 per month were passed on to consumers, the typical monthly price of broadband for some rural consumers could fall materially.

are no meaningful structural or functional differences in the underlying distribution facilities owned and operated by cooperatively or municipally-owned electric distribution providers and investor owned utilities (“IOUs”) subject to Section 224 regulation. The only difference has been that, over the past decade or so, exempt from the pricing constraints mandated in Section 224, cooperatives such as Rutherford have in many cases been free to raise rates to higher and higher levels vis-à-vis those set for IOUs under economic regulation under either federal or state jurisdiction, and have sometimes done so.

9. Since the FCC’s revised telecom formula is intended to produce rates roughly equivalent to the cable rate, there is no real purpose served by adopting it at the state level, where there is no legal requirement to do so,⁶ as is the case here for electric membership corporations in North Carolina. Indeed, application of the telecom formula introduces into the rate calculation a number of unnecessary complexities and areas of potential dispute among the parties as compared with the more straightforward cable rate methodology.⁷ For these and other sound reasons, the vast number of other states that have exercised jurisdiction over poles have not adopted a bifurcated rate setting approach (i.e., apply the same uniform rate to attachments classified separately as “cable” or “telecom” pursuant to federal statute), and in almost all instances where a specific rate formula was adopted, that rate formula was the FCC 224(d) cable rate or a slightly modified version. Application of the historic (old) telecom §224(e) rate formula is a distant “third best” alternative for a number of reasons. The old telecom rate formula consistently produces a higher rate than the already much more than compensatory cable rate, and therefore, as found by the FCC as well as states that regulate pole attachments, is less economically efficient and conducive to promoting competition and the deployment of new and advanced broadband services and applications now widely acknowledged as key to an area’s economic, health, and well-being.

10. Notwithstanding my ultimate recommendation that the maximum permissible just and reasonable rate Rutherford be permitted to charge TWEAN pursuant to N.C.G.S. §62.350 be based on the §224(d) FCC cable formula methodology, I have calculated three sets of just and reasonable rates based on the cable rate, the current telecom rate, and the old telecom rate formula methodologies. The calculations use

That could have the added effect of generating an increase – possibly a significant increase – in rural broadband adoption.”). See also *id.* at 130-131, Footnote 32 (“The exclusion of co-operatives from Section 224 regulation may impede broadband deployment in rural areas”); and *In the Matter of Implementation of Section 224 of the Act, A National Broadband Plan for our Future*, WC Dkt. No. 07-245, GN Dkt. No. 09-51, *Opinion and Further Notice of Proposed Rulemaking (FNPRM)*, rel. May 20, 2010, ¶¶ 6-7.

⁶ As part of the 1996 amendments to the Communications Act, the FCC was directed to implement two separate formulas when Congress extended access to utility poles at just and reasonable rates beyond cable operators to include telecommunications service providers.

⁷ In particular, the telecom rate methodology additionally requires data on the number of attaching entities, the amount of unusable space on poles, and the classification of “cable” versus “telecom” attachments.

the same basic data provided by Rutherford,⁸ along with data from other sources, including the RUS Form 7 filed annually by cooperatives such as Rutherford. Resulting rates are presented in Table 1 below.

Table 1 Summary of Maximum Just and Reasonable Pole Attachment Rates Under FCC Cable and Telecom Formula Methodology \$ per pole/year			
Data for Yr Ending	Cable Formula Rate	Telecom Formula Rate @3AE	Old Telecom Rate @3AE
2009	\$2.68	\$2.52	\$5.73
2010	\$2.56	\$2.41	\$5.48
2011	\$2.57	\$2.42	\$5.50
2012	\$2.64	\$2.49	\$5.65
Source: Kravtin Workpapers.			

11. As discussed in this report, the so-called “Telecom Plus” model referred to by Rutherford is not an appropriate benchmark for determining just and reasonable pole attachment rates. Unlike the FCC rate formulas, the “Telecom Plus” model, to my knowledge, has never been adopted or sanctioned by any government agency. It was created by and for unregulated monopoly pole owners, i.e., utilities not subject to the constraints of either effective economic regulation or effective competition, under the auspices of their national association, the National Rural Electric Cooperative Association (“NRECA”). In my opinion, the formula, which is an adaptation of the FCC telecom rate methodology, was designed to maximize monopoly rents for its member organizations, rather than to set just and reasonable rates. Indeed the “Telecom Plus” rates previously calculated by Rutherford exceed the just and reasonable rates I have calculated based on the widely adopted §224 methodology by as much as 781% to 1100%.⁹

⁸ Pole-owning electric membership corporations such as Rutherford typically are not required to file publicly detailed FERC-account based data as required of investor owned utilities. However, Rutherford has produced some data in discovery in this proceeding, including work order account ledgers, which I have used in my calculations, along with the reported data in the RUS Form 7.

⁹ These percentage rate differences are based on a comparison of Rutherford rate calculations identified as “telecom plus” showing rates as high as \$23.27 and \$32.17 for 2012 and 2009, respectively (see REMC_E_006844, and REMC_E_002918) with the corresponding just and reasonable rates calculated using the cable rate formula of \$2.64 and \$2.68 (see Table 1).

12. My report also addresses the issue of damages associated with this litigation. As an electric membership corporation in North Carolina, Rutherford is not permitted to charge third-party rental rates for communications attachments any higher than the just and reasonable rates determined in accordance with applicable law. For the reasons set forth in this report, it is my opinion that any theoretical damages due Rutherford relating to any potential underpayments by TWEAN, or due TWEAN relating to any potential overpayments to Rutherford, cannot themselves be calculated based on rates any higher than the maximum permissible rates that a correct application of the FCC rate formula methodology would produce – subject only to the application of an economically appropriate interest rate on underpaid or overpaid amounts consistent with FCC rules. In particular, they should not be based on the excessively high monopoly level rates unilaterally imposed by Rutherford or calculated by Rutherford based on non-sanctioned formulas, which are designed to maximize pole revenues rather than set just and reasonable rates consistent with the public interest.

13. The amounts paid by TWEAN to Rutherford for communications attachments during the period at issue in this litigation were based on a rate per attachment of \$14.50, subject to “true-up” and “credit for any amounts overpaid” once a rate agreement between the parties was reached.¹⁰ The \$14.50 rate *exceeded* the maximum permissible FCC formula rate as correctly determined under the cable rate, current telecom rate, or even the old telecom rate formula. Accordingly, the damages calculated in this report represent amounts that Rutherford owes TWEAN, and that are determined by taking the difference between the maximum just and reasonable amounts that should have been due to Rutherford from TWEAN annually for rate years 2010-2013 and the amounts TWEAN paid based on the \$14.50 rate unilaterally set by Rutherford in 2009, subject to an economically appropriate interest charge applied per annum. The amount of damages due TWEAN estimated in this manner are identified in Table 2:

¹⁰ See Rutherford Complaint, Exhibits 5 and 8, containing correspondence between Nestor Martin and Thomas Haire, dated February 16, 2010, and between Gardner Gillespie and Colon Saunders, dated August 23, 2010, respectively.

Table 2 Cumulative Amounts Owed TWEAN for Overpayments Based on Maximum Just and Reasonable Pole Attachment Rates Under FCC Cable and Telecom Formula For Rate Years 2010-2013						
Under Cable Rate	Under Current Telecom Rate			Under Old Telecom Rate		
	At 3 Att. Entities	At 2.5 Att. Entities	At 2.0 Att. Entities	At 3 Att. Entities	At 2.5 Att. Entities	At 2.0 Att. Entities
Range of J&R Rates						
\$2.56 - \$2.68	\$2.41- \$2.52	\$2.82- \$2.94	\$3.43- \$3.58	\$5.48- \$5.73	\$6.40- \$6.69	\$7.79- \$8.14
Cumulative Owed						
\$374,575	\$379,395	\$366,289	\$346,700	\$280,524	\$250,835	\$206,138
Source: Kravtin Workpapers.						

14. The approach I have taken in determining the maximum just and reasonable rates summarized in Table 1 above adheres closely to the following key criteria underlying effective pole rate regulation:

- Consistency with applicable law;
- Recognition of essential facility characteristics of third party pole attachments;
- Well established economic principle of cost causation;
- Widely accepted public interest considerations;
- Objective, straightforward application of the well-established and widely accepted FCC Cable §224(d) and FCC Telecom §224(e) rate formula methodology;
- Use of economically appropriate and reasonable data inputs;
- Reliance where possible on data that are publically available, readily verifiable and/or based on established and regularly maintained utility accounting reporting system data;
- Administratively easy and efficient to implement and update on an annual basis; and
- Designed to minimize disputes among parties.

15. In my opinion, rates set any higher than the maximum just and reasonable rates I have calculated based on the widely accepted FCC §224 (d) and (e) rate formula methodologies¹¹ would fail to serve the ultimate purposes of effective pole rate regulation embodied in N.C.G.S. §62.350. That the just and reasonable rates produced by an economically appropriate application of the FCC rate formula methodologies (and calculated using reasonable data inputs) are lower than the rate levels previously “negotiated” between Rutherford and other third party attachers, or as compared with rates between other monopoly pole-owning utilities and the cable company, so-called “market” rates set by other monopoly pole owners, or in accordance with non-vetted industry formulas, is not a valid economic or public policy consideration. Such rates are not valid benchmark rates, as they have not been set in a free market environment or between parties with anything close to equal bargaining power.

16. Nor is it valid from an economic and public policy perspective to argue, as Rutherford has,¹² that the nondiscrimination language in N.C.G.S. §62.350 somehow precludes Rutherford from charging a just and reasonable rate to a third party attacher to the extent Rutherford has been able to unilaterally impose higher monopoly level rates on the majority of third-party attachers in the period following the passage of N.C.G.S. §62.350. Such an argument constitutes an effective end run around the just and reasonable standard set forth in N.C.G.S. §62.350, and is totally inconsistent with established public policy in this area. From an economics and public policy perspective, the concepts of a just and reasonable and nondiscriminatory rate are inextricably tied. I would certainly agree with the notion that a nondiscriminatory rate means that all else being equal, all similarly situated attachers should pay at a uniform rate. However, effective pole regulation dictates that such a uniform rate be set at a just and reasonable level, and not one that is excessively and impermissibly high. The obvious appropriate solution from an economics and regulatory standpoint, and one that is consistent with the language of the applicable law and established FCC and state pole rate regulation, is that rates for *all* third party attachers be lowered to just and reasonable levels. To the extent the Court has any concerns about the impact on Rutherford and its members of reducing the high unilaterally imposed pole attachment rates to just and reasonable levels for all third party attachers (although in my opinion, for the reasons set forth in this

¹¹ In running my calculations, I used the most reliable data available. In addition, as noted earlier, the telecom formula rate varies (inversely) with the number of attaching entities used in the calculation. Table 1 presents the rate based on an average number of attaching entities of 3, which is the FCC presumption for areas classified as rural. The FCC methodology allows for the use of a lower number (the minimum being two for the relevant population of joint use poles since by definition joint use poles are poles on which there is at least one third party attachment), where found supportable based on actual data or a statistically reliable sample. I have also calculated illustrative telecom rates based on assumptions of 2.5 and 2.0 average attaching entities, and as follows from the formula, the resulting rates are correspondingly higher, as identified in Tables 2, 6 and 7 in this report.

¹² See Rutherford Complaint at 12-14.

report, such concerns would be entirely unwarranted), the Court could opt to implement a phased-in reduction in rates, analogous to the FCC's phase-in of the telecom rate pursuant to the 1996 Telecom Act.

17. Further, as found by the FCC and the courts on various occasions, rates calculated using the §224(d) cable formula are subsidy-free, and much more than fully compensatory to the pole owner – especially in consideration of the fact that attachers are typically occupying at most one foot of otherwise surplus space on the utility's existing network of poles that would go unused, and that the utility is able to impose make-ready charges, over and above the rental rate, to recover any actual out-of-pocket costs incurred by the utility in order to accommodate the third party attachment (such as for pole change-out or rearrangement). It is well established that a third party cable attachment occupies a small fraction of the space used by the utility itself in the provision of its core electric service, and has correspondingly small weight and clearance (both horizontal and vertical) requirements vis-à-vis the electric service. Accordingly, to allow Rutherford to charge a third party attachment rate that recovers far in excess of the third party's own proportional share of the cost of the entire pole would produce the perverse result of the pole owner being left with a cost responsibility for the pole far less than even its own proportional share (i.e., relative to its own use requirements of the pole). In effect, a pole attachment rate based on such a scheme would be discriminatory in favor of the pole owner (and/or any of its affiliates which could potentially include its own competing broadband service).

18. While my ultimate recommendation is that the maximum just and reasonable rates that Rutherford be permitted to charge TWEAN for all manner of communications attachments be based on the §224(d) cable rate formula methodology, the §224(e) telecom rate may also satisfy the just and reasonable standard in the case of attachments properly classified as "telecom." However, as found by the FCC and the many state commissions who apply the §224(d) cable rate to telecom attachments as well, the historic (old) §224(e) rate formula consistently produces a higher rate than the cable rate, and accordingly, is less economically efficient and conducive to promoting competition and deployment of new and advanced services than the §224(d) cable rate. The current §224(e) rate formula adopted by the FCC in its April 2011 Order provides a much better "second best" formula for setting just and reasonable rates, since by design, the new telecom formula is intended to produce rates roughly equivalent to the §224(d) cable rate. However, for that very reason, there is no real purpose served by adopting the §224(e) telecom rate at the state level where there is no legal requirement to do so, as is the case here for electric membership corporations in North Carolina. As mentioned earlier and as further described in this report, the telecom formula introduces added complexities into the rate calculation for no real public interest benefit.

19. In reaching my opinions, I have relied on my education, training, research, and experience in economic analysis, and my prior experience in the areas of telecommunications and utility regulation as outlined above and further detailed in Attachment 1 to this report. I have considered various data and information in forming my opinions, including materials provided by Rutherford in response to discovery and in the 30(b)(6) deposition questioning of Rutherford witnesses, along with data from other available sources, including the RUS Form 7 filed by Rutherford annually and the various orders of the Federal Communications Commission. A listing of the data and information I considered in forming my opinions is provided in Attachment 2 to this Report.

20. However, because much of the data needed to calculate just and reasonable rates was just very recently provided by Rutherford and in very disjointed fashion, it has not been possible to verify the accuracy and reliability of all the figures used to run the formula in the time frame I have had to prepare this expert report. Moreover, there still remain a number of outstanding pieces of data required to run the formula for all the years at issue in this litigation, and that Rutherford has not yet provided. It is my understanding that additional information could be forthcoming from Rutherford. In those instances where there are missing pieces of data, my calculations rely on data I derived by trending up or down from data points provided by Rutherford by applying the compounded annual growth rate (“CAGR”) for the years for which data is available, a commonly used extrapolation technique. Accordingly, it may be necessary or appropriate for me to revise my calculations to the extent Rutherford is forthcoming with the data that TWEAN has requested – and that Rutherford has apparently refused to provide despite repeated requests over a number of years.¹³

¹³ See 30(b)(6) Deposition of Colon Saunders at 49 (“Q: During the negotiations that TWEAN had with Rutherford regarding pole attachment rates, do you recall that TWEAN sought financial information from Rutherford a number of times? A. Yes. Q: And you recall that for years Rutherford refused to provide it? A. We never provided it. Q: Okay. And can you tell me why? A. The—did not think it was Time Warner’s or any –any of the attachers responsibility to determine our rates.”).

III. FCC POLE RATE FORMULA METHODOLOGY

21. The foundation underlying the economic regulation of pole rates pursuant to Section 224 of the Communications Act is the fact that pole-owning utilities, by virtue of historical incumbency, own and control existing pole plant to which cable operators and other third-parties have no practical alternative but to attach. Where a utility has absolute control over essential bottleneck facilities, in the absence of effective pole regulation, pole-owning utilities are in a position to limit access to these essential bottleneck facilities and/or to extract excessive monopoly rents.¹⁴ In addition, this control of the essential bottleneck pole facility effectively affords the utility a key gatekeeper role with respect to the roll-out and availability of new or advanced internet and broadband services in its service area, an increasingly significant public policy concern in recent years.

22. Preventing a pole-owning utility from charging excessive rates to the detriment of competition and the consuming public, is precisely what pole rate regulation nationally pursuant to Section 224 was designed to address, and the same public policy rationale applies here in North Carolina for electric membership corporations such as Rutherford pursuant to N.C.G.S. §62.350. In this context, the FCC formula methodology (and any other effective system of pole rate regulation at the state or local level) is designed to limit the rents that utilities are permitted to charge third-party attachers to levels more in line with what a competitive market (if one existed, which it does not) would produce, while at the same time ensuring the rates utilities are permitted to charge attachers are fully compensatory.

23. Pursuant to the directives set forth in Section 224, the FCC pole rate methodology, applicable to both cable and telecom rate attachments, calculates a maximum annual pole attachment rent by taking the sum of the actual capital costs and operating expenses of the utility attributable to the entire pole, expressed on an annual basis, and apportioning those costs to the attacher based on an allocation of space on the pole. The FCC methodology, by design, produces a rate that recovers the “fully allocated” cost of pole attachment and is at the high end of the range of maximum just and reasonable rates permitted under Section 224. Fully allocated costs are those that would exist for the utility even in the absence of the attachment. By way of comparison, the low end of the range of just and reasonable rates permitted under Section 224 is a rate based on the “incremental” or additional costs of pole attachments, i.e., a more limited (but still compensatory) set of costs that “but for” the attachment would not exist for the utility.

¹⁴ See *NCTA v. Gulf Power*, 534 U.S. 327, 330 (2002) (“Since the inception of cable television, cable companies have sought the means to run a wire into the home of each subscriber. They have found it convenient, and often essential, to lease space for their cables on telephone and electric utility poles. Utilities, in turn, have found it convenient to charge monopoly rents.”).

24. Operationally, the FCC formula for both cable and telecom attachments consists of the following three major components: (1) the net investment per bare pole, (2) a carrying charge factor (CCF), and (3) a space allocation factor (i.e., the percent of pole capacity attributable to the attacher). Expressed as an equation, the FCC formula methodology is as follows:

FCC Pole Rate Formula (for both cable and telecom) = Net Bare Pole Cost x Carrying Charge Factor x Space Allocation Factor

Under FCC rules, the cable and telecom formulas are calculated in exactly the same manner as to the first two components of the rate formula, i.e., the net bare pole cost and the carrying charge factor, differing only with respect to the third component, i.e., the space allocation factor.¹⁵

25. The net bare pole cost is calculated in the following straightforward, four-step process: First, the utility's *gross* investment in pole cost is determined based on amounts reported in the utility's books of account under Account 364 pursuant to the FERC uniform system of accounts.¹⁶ Second, this gross investment amount is converted to a *net* investment figure by subtracting accumulated depreciation for pole plant and any accumulated deferred taxes applicable to poles. Third, the net investment in *bare* pole plant is determined by making a further reduction (presumed to be 15% in the case of electric utilities) to remove amounts for "appurtenance" whose investment is included in the pole account and not generally tracked separately, but which communications attachers do not use. These include costs relating to both major appurtenances, such as cross-arms, which possibly can be separately identified in the detailed subaccounts of Account 364 (as appears to be true in the case of Rutherford), as well as to relatively minor appurtenances, such as clamps and pins, which generally are not tracked separately from pole investment. The fourth and final step is to divide the net investment in bare pole plant figure by the total number of poles the utility has in service to derive a *per-unit* pole cost figure. It is this unitized net

¹⁵ The same is true of the so-called "Telecom Plus" formula referenced by Rutherford. As noted earlier, the Telecom Plus formula, in my opinion, does not produce a just and reasonable rate, but rather an excessive monopoly level price. Formulaically, it does so by manipulating the third component of the FCC rate formula, i.e., the space allocation factor, by revising it to allocate an overwhelmingly disproportionate share of space on the pole to a third party attacher relative to the attacher's actual occupancy of the pole vis-à-vis the pole owner, and in relation to the costs reasonably attributable to the attacher's very limited occupancy, resulting in a rate that is much more than compensatory.

¹⁶ While only investor owned utilities are required to follow FERC uniform system of accounts, it is not uncommon for other electric utilities such as municipally-owned or electric membership corporations, such as Rutherford, to do so also. In this case, Rutherford has supplied a set of "Work Order Plant Ledger Reports" which appear to conform to the FERC reporting system, consistent with RUS accounting requirements that follow the FERC.

investment figure that the formula multiplies by the other two components of the formula (i.e., the carrying charge factor and the space allocation factor) to derive a maximum per pole rental rate.

26. The carrying charge factor (CCF) component is used to convert the net bare pole cost into an annual rental amount that recovers the cost of owning and maintaining utility poles from a fully allocated cost perspective. The carrying charge factor is comprised of the sum of utility expense factors related to poles including maintenance, depreciation, administrative, taxes, and overall rate of return, each expressed as a percentage of expense to net plant in service. The appropriate net plant in service figure used to calculate the various elements of the CCF will depend on the level of aggregation with which the relevant expense data used in the numerator of the calculation is tracked in the FERC reporting system or utility books of account.

27. The important principle to follow using the FCC methodology is one of consistency between the level of aggregation of the expense data and the level of aggregation of the net plant investment figure. The FCC methodology uses the lowest, i.e., most detailed, level of accounting for which reliable, reported data is available. Once calculated, the five expense elements are simply summed together prior to being multiplied against the net cost per bare pole component of the formula. For example, if the carrying charge calculations yield 5% for each of the five elements, the overall carrying charge factor would be 25%.

28. As mentioned above, the one place where the FCC cable and telecom formulas differ is in the calculation of the space allocation factor. In particular, the two formulas differ in the manner in which the telecom formula allocates the costs associated with the *unusable* space on the pole. The FCC cable formula, like the telecom formula, allocates the costs of the *entire* pole (i.e. costs associated with *both* usable and unusable space). It does so, however, in a more straightforward manner commonly found in other commercial leasing applications, namely in proportion to occupancy of the facility. As applied to poles, the FCC methodology allocates the cost of the entire pole to an attacher in proportion to an attacher's direct use or occupancy of total usable space on the pole. Expressed as an equation, the FCC cable formula is as follows:

$$\text{FCC Cable Rate Formula} = \text{Net Bare Pole Cost} \times \text{Carrying Charge Factor} \times \text{[Space Occupied by Attacher / Usable Space on Pole]}$$

Using the FCC’s presumptions of an average 37.5-foot joint-use pole (a blend of 35 and 40 feet poles), 1 foot of space per communications attachment, and the availability of 13.5 feet of usable space on the pole, the appropriate space allocator factor for the cable rate formula is 1/13.5 or 7.41%.¹⁷

29. Whereas the FCC cable formula assigns costs relating to the entire pole -- including both usable and unusable space -- on the basis of a proportionate-use allocator, the FCC telecom formula assigns the cost of usable space on the pole based on the proportionate share of usable space occupied by the attacher (the exact same as the cable formula) but assigns costs relating to the unusable space on the pole using a per-capita allocator. Specifically, as statutorily prescribed in §224(e), the FCC telecom formula takes 2/3 of the unusable space on the pole (in appropriate recognition of the control and privileges that the pole owner has with regard to the entire pole, including unusable space, vis-à-vis mere attachers) and divides that equally by the number of attaching entities on the relevant population of joint use poles. Expressed as an equation, the historic FCC telecom formula is as follows:

FCC Old Telecom Rate Formula = Net Bare Pole Cost x Carrying Charge Factor x
 [Usable Space Percentage + Unusable Space Percentage] where:

Usable Space Percentage =
 (Space occupied by attacher / Usable Space) x (Usable Space/Pole Height); and

Unusable Space Percentage = 2/3 x (Unusable Space / Pole Height) x (1/Number of Attachers)

30. Using the same FCC presumptions presented above for the cable formula (i.e., a 37.5 foot joint-use pole, 1 foot of space per communications attachment, and 13.5 feet of usable space on the pole), the usable space percentage of the telecom space allocation factor equals (1/13.5) x (13.5/37.5) or 2.67%. Given these same presumptions, there are 24 feet of unusable space to apportion, since unusable space under FCC rules is defined as the space on the pole other than the usable space (37.5-13.5 = 24), consisting of the 6 feet of the pole that is below ground and the 18 feet of the pole above grade required to clear possible interference and obstacles and on which attachments cannot be made. Further assuming the FCC presumptive number of 3 attaching entities in rural areas¹⁸ as is appropriate for Rutherford) the

¹⁷ See *In the Matter of Amendment of Rules and Policies Governing Pole Attachments*, Report and Order, 15 FCC Rcd 6453 ¶ 16 (Apr. 3, 2000) (“*FCC Fee Order*”) (Based on National Electrical Safety Code guidelines and data received during rulemaking proceedings, and “[t]o avoid a pole by pole rate calculation, the Commission adopted rebuttable presumptions of (1) an average 37.5 foot pole height; (2) 13.5 feet of usable space; and (3) one foot as the amount of space a cable television attachment occupies.”).

¹⁸ See *FCC Consolidated Partial Order on Reconsideration*, CS Docket 97-98, 97-151, FCC 01-170 (May 25, 2001) ¶67 (“*FCC Recon Order*”) (“[W]e provide utilities the option of using our presumptive averages [3 for rural and 5

unusable space percentage equals $(2/3) \times (24/37.5) \times (1/3)$ or 14.22%. Adding the usable and unusable space percentages together (2.67% + 14.22%) produces a total space allocation factor for the telecom formula of 16.89%. Based on a 40-foot joint use pole only, the corresponding space allocation factor for the telecom formula is 15.83%.¹⁹

31. As mentioned above, the FCC adopted a revised telecom rate formula on April 7, 2011. That new formula did not adjust the statutorily defined space allocation factor. Rather, to implement its goal of setting the telecom rate “as close to uniform [in the vicinity of the current cable rate] as possible,” the FCC established a new just and reasonable telecom rate, by “adopt[ing] a particular definition of cost” “[f]rom within the range of possible interpretations of the term ‘cost’ for purposes of section 224(e).”²⁰ Specifically, the FCC adopted a definition of cost for areas classified as rural or non-urbanized areas such as Rutherford as “44 percent of the fully allocated costs,” and a definition of cost for urbanized areas as “66 percent of the fully allocated costs used for purposes of the pre-existing telecom rate,” where fully allocated cost is defined as net bare pole cost times carrying charge factor – exactly the same as the first two components of the rate formula for both cable and telecom formulas).²¹ Under this definition of cost and using FCC presumptions (which remain unchanged under the new rules), the percentage of fully allocated costs allocated under the revised telecom rate approximately equals that allocated under cable, i.e., 7.41%.²² Under the revised FCC rules, this definition of cost would be used to calculate the telecom rate, unless it produced a rate that fell below the FCC’s lower bound rate, in which case, the lower bound formula as described above would apply.²³ The revised formula is as follows:

for urban]... or developing averages for two areas: (1) urbanized (50,000 or higher population), and (2) non-urbanized (less than 50,000 population.”).

¹⁹ By contrast, based upon rate calculations performed by Rutherford provided in discovery, the corresponding space allocation factor for the “Telecom Plus” formula is in the unreasonably high range of 30% to 40% for an entity occupying only one foot of space.

²⁰ *April 7, 2011 Order* ¶¶ 134, 146.

²¹ *Id.* ¶ 149.

²² For urban areas: $.66 \times 11.2\%$ (based on the presumption of 5 attaching entities) = 7.39%; for rural areas: $.44 \times 16.89\%$ (based on the presumption of 3 attaching entities) = 7.43%.

²³ Based on calculations performed by FCC staff in the FNRPM, which I have also corroborated in my own rate calculations, the lower bound rate (calculated by including only operating cost elements of the carrying charge factor) is unlikely to be higher than the new just and reasonable telecom rate defined by the FCC.

Current FCC Telecom Rate Formula (applies unless lower bound calculation is higher):

Net Bare Pole Cost x Carrying Charge Factor x Cost Factor x

[Usable Space Percentage + Unusable Space Percentage] where:

Usable Space Percentage =

(Space occupied by attacher / Usable Space) x (Usable Space/Pole Height); and

Unusable Space Percentage = $\frac{2}{3}$ x (Unusable / Pole Height) x (1/No. Attachers); and

Cost Factor for Urbanized Area = .66; and for Non-urbanized area = .44

32. The overarching concept underlying the FCC formula methodology is that it can be applied in a straightforward manner, using publicly available information as reported in the FERC uniform reporting system where available, such that it can be updated annually with a minimum of private, administrative effort, and little if any regulatory involvement. As with any formulaic approach, however, the accuracy and integrity of the formula depends on the accuracy and integrity of the underlying data inputs. For this reason, it is very important that the data used in the formula be subject to careful scrutiny and held to a high standard as to their reliability, accuracy, consistency, and ability to be verified and replicated.

33. While the telecom formula has been found to produce a just and reasonable rate for telecom attachments (and this is especially the case with the newly revised formula), the cable formula offers a number of distinct and significant advantages over the telecom formula. These advantages derive from the cable formula's reliance on a cost allocation methodology that allocate direct as well as indirect costs in proportion to the attacher's relative use or occupancy on the pole. First, by assigning pole costs to attachers in accordance with their actual use of the pole, the FCC cable formula adheres more closely to cost allocation principles well established in the economics and regulatory literature. In the FCC cable formula, the cost of the pole is recoverable from the cost causer, i.e., the entity causally responsible for the costs. By contrast, the FCC telecom formula, by relying on the number of attaching entities (multiplied by a factor of two-thirds), introduces an artificial construct into the pricing formula. The telecom formula's use of a per capita allocator has no direct connection to the consumption of space on the pole or to any actual increase in cost burden placed on the utility or its ratepayers, and as noted above, in its historic formulation, has been found to produce higher rates less economically efficient and conducive to promoting competition and broadband deployment.

34. In the context of familiar commercial or residential leasing applications, this would be analogous to charging a tenant occupying only one floor of a ten-story office or apartment building the same amount (i.e., 50%) of the common costs such as elevators, lobby space, and parking lot, as a tenant occupying all of the other nine floors of space, as opposed to a more reasonable (smaller) proportionate share (i.e., 10%) such as would be assigned under the cable formula. The cost allocation approach embodied in the cable rate formula (i.e., the allocation of costs based on proportionate use or direct occupancy of space) follows cost causation principles in a manner directly analogous to the common and widely-accepted practice in the leasing of property and other facilities throughout the private and public sectors of the economy, such as the apartment house/office building example above.²⁴ Similarly, a telephone company occupying two feet of space could make two attachments on the pole, but under the telecom formula, it would be counted as a single entity and assigned the same portion of common costs as an entity occupying just one foot of space providing room for only one attachment.

35. Second, by relying strictly on the relative amount of usable space occupied by an attachment to allocate the cost of the pole to an attacher and other publicly, or readily verifiable information, the cable formula is more straightforward to implement than the telecom formula and provides for a more consistent and predictable application of the pole attachment formula across service areas. Because the number of attaching entities varies from pole to pole and service area to service area, the need to track the number of attaching entities in the telecom formula adds a level of complexity and arbitrariness to the formula. In addition, any such information is in the complete control of the utility and adds an issue likely to be of contention.

36. Third, the FCC cable rate, by more closely tracking the lower rate that a competitive market if one existed would produce²⁵ (as compared with the old FCC telecom rate), can provide important benefits to consumers – including both utility customer/members and cable subscribers alike. Most notably, the cable rate encourages the more efficient use of resources (i.e., the occupancy of surplus space on the

²⁴ This concept was recognized by Congress in the 1978 pole legislation. *See* 123 Cong. Rec. 5080 (1977) (Statement of Rep. Wirth) (“The renter of one of the ten units pays the cost of that unit plus one-tenth of the cost of all common areas. He does not pay one-half the cost of the common areas just because only one other person occupies the other nine units, but rather he pays his one-tenth share of all the costs attributable to the building.”)

²⁵ In a truly competitive market, there would be multiple pole owners with their own infrastructure, each vying for buyers to rent space on their poles. Under these circumstances, prices would tend to be bid down to levels approximating marginal cost, which is essentially the cost of make-ready, i.e., the costs of rearranging and adding space on an owner’s poles. In the absence of competitive market conditions, the FCC method of charging cable companies for pole attachments (i.e., make-ready fees designed to cover the marginal or out of pocket costs of the pole attachment and a rental fee based on a cost-causative (relative use) allocation of the utility’s ongoing costs, plus a return) most closely approximates a competitive market rate.

utility's existing network of poles that would otherwise go unused) as well as best creates a market environment that encourages infrastructure investment and the provision of a greater array of new and advanced services, and at lower rates, than would occur if the pole attachment rate was set at higher monopoly rate levels.

37. Utilities commonly assert that the cable rate is a "subsidized" rate and/or recovers less than the "full" cost to the utility. Such assertions are totally unfounded. It is a central tenet of economics that rates that recover the marginal costs (also referred to as incremental costs) of production are economically efficient and subsidy-free.²⁶ For a subsidy to occur, the utility must have unrecovered costs that *but for* the attacher would otherwise not exist. This is simply *not* the case with the cable rate where rental rates, especially in combination with make-ready charges (i.e. charges by utility designed to recover any actual out of pocket costs incurred by the utility in connection making space on a pole to accommodate a third-party attachment), *much more* than cover the incremental cost of attachment. From an economics standpoint, where rates cover the incremental cost of attachment, neither the utility nor any of the other parties sharing the pole will bear a higher cost as a result of the attachment (than they would absent the attachment).²⁷ Under these conditions, *there can be no valid claim of subsidy* or specific unrecoverable cost burden borne by the utility, its ratepayers, or any other attacher as a result of the attachment, provided the rental rate exceeds the marginal cost of attachment as is indisputably the case with the existing cable formula rate. The economist's notion of cross-subsidy avoidance is consistent with the legal principle in takings law for just compensation.²⁸

38. The cable formula was implemented by the FCC and state regulators over thirty years ago to promote the development of what was at that time a relatively new industry. This point is often made by pole owning utilities to suggest the formula is no longer applicable. To the contrary, given the increased opportunities for utilities to compete with third-party attachers and the increased economic and social benefits associated with the deployment of new or advanced internet and broadband services for which pole attachments are widely recognized as a vital input, the need for effective pole regulation and specifically the benefits of adopting of a uniform, administratively simple, predictable, and economically

²⁶ See, e.g., Paul A. Samuelson, *Economics*, Tenth Edition, McGraw-Hill Book Company, 1976 at 462-3.

²⁷ See, e.g., Bridger M. Mitchell, "COSTS AND CROSS-SUBSIDIES IN TELECOMMUNICATIONS," *The Changing Nature of Telecommunications/Information Infrastructure*, National Academy Press, Washington, DC, 1995. ("A group of customers is being subsidized if their price is so low that the service supplier and its other customers would be better off if the service were discontinued. This circumstance occurs only when the increase in revenues to the [telephone] company from offering the service is less than the increased costs of providing it.")

²⁸ "This takings principle is a specific application of the general principle of the law of remedies: an aggrieved party should be put in as good a position as he was in before the wrong, but not better." *Ala. Power*, 311 F.3d at 1369.

efficient cost-based formula methodology for setting pole attachment rates – such as the FCC cable formula – is of even greater importance in recent years than it was decades ago.

39. In my opinion, this is one of the key reasons behind the widespread adoption of the FCC cable formula (or a close variation of that formula) among states that have self-certified to regulate pole attachments.²⁹ The widespread acceptance of the FCC cable rate formula methodology for determining just and reasonable rates for pole attachments is reflected in the large number of states that rely on that formula. The FCC cable formula is applied directly by the FCC in 30 states and in most of the 21 states (including the District of Columbia) that have certified to self-regulate pole attachment rates.³⁰ Indeed, the majority of those self-certified states use a formula that tracks the FCC cable formula for both cable and telecom attachments.

IV. APPLICATION OF FCC RATE FORMULA METHODOLOGY TO RUTHERFORD

40. As described above, in the absence of effective pole regulation, monopoly pole owning utilities, because of their historical ownership and control over the existing pole network in any given area, would be in a position to limit access to these essential bottleneck facilities, extract excessive monopoly rents, and/or serve as gatekeeper controlling the availability of new advanced broadband services and applications in its service area. Indeed, it is a scenario that is currently playing out here in North Carolina, as evidenced by this litigation between cable operators such as TWEAN and utility pole owners such as Rutherford.

41. As a threshold matter, the same structural economic conditions underlying the need for effective economic regulation of pole attachments apply as much to electric membership corporations such as Rutherford as they do to investor owned utilities subject to Section 224 regulation. From an operational perspective, electric cooperatives use the same type of plant, technology, and production techniques to provide electricity service to subscribers and in the same basic manner as IOUs. Moreover, they have inherently the same opportunity and incentive to leverage their monopoly ownership and control over the existing distribution network of poles – to which third party entities have found it essential to attach – to extract excessive rates. If anything, electric cooperatives have a lower cost structure than IOUs owing to, for example, their tax-exempt status and their ability to access low interest borrowing, such that if a free

²⁹ Section 224(c) permits states to assert their own regulatory authority over the rates, terms and conditions of pole attachments, overriding the federal preemption and regulatory jurisdiction of the FCC, by certifying with the FCC that they have “issued and made effective rules and regulations implementing the States’ regulatory authority over pole attachments.”

³⁰ For a listing of certified states, see *FCC States that Have Certified That They Regulate Pole Attachments*, WC Docket No. 10-101 (rel. May 19, 2010).

market for pole attachments existed (which it does not), one would expect to see rates for pole attachments charged by cooperatives set at lower levels than those charged by IOUs. Over the past decade or so, this has not been the case, as cooperatives exempt from the pricing constraints mandated in Section 224 have been free to raise rates to higher and higher levels vis-à-vis those set for IOUs under economic regulation under either federal or state jurisdiction.

42. That cooperatives such as Rutherford have historically been excluded from the definition of utility in the Pole Attachment Act subject to FCC pole regulation, is an issue of jurisdiction and does not in any meaningful way refute the applicability of the fundamental economic conditions of demand and supply facing cable and other third-party attachers needing access to poles owned by electric cooperatives. Any notion that the market dynamics would be different in the case of a non-profit consumer-owned entity such as Rutherford is belied by the monopoly level rate increases recently put forth by Rutherford and other electric cooperatives around the country.

43. Where competitive market conditions do not exist (as is the case with pole attachments), and in the absence of effective regulatory involvement, there are no external pressures or self-imposed discipline on the utility to constrain the prices it charges for these bottleneck facilities to levels remotely approximating marginal costs – the true economic costs to the utility of third party attachment on surplus space that would otherwise go unused on its poles. Under these conditions, it makes no sense to talk in terms of a “free market” rate. Instead, rates are being set in a grossly unbalanced negotiating environment where the pole owner, regardless of its size, or organizational charter, has an inordinate amount of leverage over third-party attachers and can impose excessive monopoly level rates. The monopoly pole owner always has the upper hand by its ability to threaten, and in the absence of effective regulation, to carry out its threat, to remove the third-party attachments from its pole.

44. Rutherford’s actions to date are fully consistent with this expected monopoly behavior. These actions include unilaterally imposed “take it or leave it” annual rate increases, which have substantially raised TWEAN’s pole attachment rate from \$5.25 per Rutherford’s prior pole attachment agreement with TWEAN effective through at least 2004 to as much as \$19.65 for 2013, and Rutherford’s notice of the unilateral termination of the prior agreement with TWEAN, and its demand for immediate removal of TWEAN attachments if disputed pole rental amounts were not paid in full.³¹ It should be noted that the \$14.50 attachment rate being paid by TWEAN since 2009 (subject to true-up and credit for amounts

³¹ See Defendant Time Warner Entertainment-Advance/Newhouse Partnership’s Answer, Affirmative Defenses And Counterclaim To Plaintiff Rutherford Electric Membership Corporation’s Complaint, at 4,8,10-12, 20; see also Complaint Ex 2, and 6.

overpaid) is well in excess of a just and reasonable cost-based rate calculated using any of the FCC formula methodologies, including the old telecom rate formula since rejected by the FCC as producing too high a rate vis-à-vis the cable rate.³² Yet, Rutherford appears unsatisfied with anything less than being able to extract an excessive monopoly level rate from third party attachers, despite the passage of N.C.G.S. §62.350, and despite offers from TWEAN to pay pole attachment rates at reasonable cost based rates based on widely accepted FCC methodologies.³³

45. Indeed, in what would appear on its face to be a total end run around the just and reasonable language of the applicable law, Rutherford argues in its Complaint that the law's requirement that just and reasonable rates be applied in a nondiscriminatory manner prevents it from charging TWEAN a just and reasonable cost based rate (such as based on the FCC's rate formula), given Rutherford has been successful in unilaterally imposing a higher rate on other third party entities. From an economic and public policy perspective, such an argument has absolutely no merit, and is totally inconsistent with established public policy in this area. From an economics and public policy perspective, the concepts of a just and reasonable, and nondiscriminatory rate are inextricably tied. I would certainly agree with the notion that a nondiscriminatory rate means that all else being equal, all similarly situated attachers should pay at a uniform rate. However, effective pole regulation dictates that such a uniform rate be set at a just and reasonable level, and not one that is excessively and impermissibly high.

46. The obvious and appropriate solution to this situation from an economics and regulatory standpoint, and one that is consistent with the language of the applicable law and established FCC and state pole rate regulation, is that rates for *all* third party attachers be lowered to just and reasonable levels. As discussed below, to the extent the Court has any concerns about the impact on Rutherford and its members of reducing the high unilaterally imposed pole attachment rates to just and reasonable levels for all third party attachers (although as explained below, such concerns would be entirely unwarranted), the Court could opt to implement a phased-in reduction in rates, analogous to the FCC's phase-in of the telecom rate pursuant to the 1996 Telecom Act.

47. Further, as found by the FCC and the courts on various occasions, rates calculated using the §224(d) cable formula are subsidy-free, and much more than fully compensatory to the pole owner – especially in consideration of the fact that attachers are typically occupying at most one foot of otherwise

³² For example, the currently paid rate of \$14.50 rate exceeds the just and reasonable rate calculated using the FCC cable formula (see Table 1) by as much as 441% and exceeds even the old Telecom formula by as much as 153%. TWEAN has paid the rate of \$14.40 since 2009 “subject to true-up.”

³³ See Rutherford Complaint, Exhibit 10 (Letter dated December 20, 2012 from Gardner Gillespie to Joseph Eason).

surplus space on the utility's existing network of poles that would go unused, and that the utility is able to impose make-ready charges, over and above the rental rate, to recover any actual out-of-pocket costs incurred by the utility in order to accommodate the third party attachment (such as for pole change-out or rearrangement). It is well established that a third party cable attachment occupies a small fraction of the space used by the utility itself in the provision of its core electric service, and has correspondingly small weight and clearance (both horizontal and vertical) requirements vis-à-vis the electric service.

Accordingly, to allow Rutherford to charge a third party attachment rate that recovers far in excess of the third party's own proportional share of the cost of the entire pole would produce the perverse result of the pole owner being left with a cost responsibility for the pole far less than its own proportional share (i.e., relative to its own use requirements of the pole). In effect, a pole attachment rate based on such a scheme would be discriminatory in favor of the pole owner (and/or any of its affiliates which could potentially include its own competing broadband service).

48. By specifically subjecting electric membership cooperatives to state regulation of pole attachments pursuant to N.C.G.S. §62.350, the North Carolina legislature correctly recognized that the compelling reasons that gave rise to the need for effective regulation of pole attachments are not dependent on the organizational charter of the pole-owning utility; as explained earlier, the same structural economic conditions apply to electric cooperatives such as Rutherford as they do to IOUs that have been subject to the FCC's pole attachment rules for the past several decades. To this very point, the present exclusion of electric cooperatives from the FCC pole attachment rules governing other electric utilities was identified as a "key gap" in its National Broadband Plan Policy Framework.³⁴ In its final report to Congress, the FCC expressly concluded "[t]he exclusion of co-operatives from Section 224 regulation may impede broadband deployment in rural areas" and proposed that "Congress consider amending Section 224 of the Act to establish a harmonized access policy for all poles, ducts, conduits and rights-of-way" that would apply to currently excluded pole owners including cooperatives such as Rutherford.³⁵

³⁴ See Press Release, Federal Communications Commission, *Options for A National Broadband Plan: Task Force Provides Framework for Final Phase in Development of Plan* (December 16, 2009) ("The American Recovery and Reinvestment Act of 2009 directed the FCC to submit a National Broadband Plan to Congress... that addresses broadband deployment, adoption, affordability, and the use of broadband to advance solutions to national priorities, including health care, education, energy, public safety, job creation, investment, and others.") At its December 16, 2009 Open Meeting, the FCC presented a "National Broadband Policy Framework" that identified as an option under consideration: "amend section 224 to establish a consistent national framework for all poles, ducts, and conduit."

³⁵ The FCC sent its final report to Congress on March 16, 2010. Press Release, Federal Communications Commission, *FCC Sends National Broadband Plan to Congress: Plan Details Actions for Connecting Consumers, Economy with 21st Century Networks* (March 16, 2010), <http://www.fcc.gov/>. The Final Report expands on the recommendation to amend Section 224 to apply to cooperatives. See Report at 130-131, inclusive of footnote 32

49. As a practical matter, the FCC formula methodology is readily applicable to electric membership corporations such as Rutherford, with only a few straightforward adjustments pertaining to the data inputs required as described further below. The FCC rate methodology relies on the investment and expense data utilities maintain in, or derive from, accounting books and records. For investor-owned electric utilities, the FCC relies on uniform accounting data as publically reported in the FERC Form 1 reporting system.³⁶ Although electric cooperatives are not required to file Form 1 reports with FERC, the various pieces of data necessary to run the FCC rate formula methodology for electric cooperatives are readily available, albeit in summary fashion, from the Rural Utilities Services (“RUS”) Financial and Statistical Report. Moreover, based on information provided in response to discovery requests, and as described in deposition testimony,³⁷ as a borrower of RUS funds, Rutherford is required to keep detailed accounting records in accordance with the RUS system of accounts, which follows the FERC system of accounts.³⁸ Accordingly, only a few relatively minor adjustments to the formula inputs are needed in applying the FCC methodology to Rutherford.

(“RECOMMENDATION 6.5: Congress should consider amending Section 224 of the Act to establish a harmonized access policy for all poles, ducts, conduits and rights-of-way.

Even if the FCC implemented all of the recommendations related to its Section 224 authority, additional steps would be needed to establish a comprehensive national broadband infrastructure policy. As previously discussed, without statutory change, the convoluted rate structure for cable and telecommunications providers will persist. Moreover, due to exemptions written into Section 224, a reformed FCC regime would apply to only 49 million of the nation’s 134 million poles. In particular, the statute does not apply in states that adopt their own system of regulation and exempts poles owned by co-operatives, municipalities and non-utilities.³² The nation needs a coherent and uniform policy for broadband access to privately owned physical infrastructure. Congress should consider amending or replacing Section 224 with a harmonized and simple policy that establishes minimum standards throughout the nation—although states should remain free to enforce standards that are not inconsistent with federal law.”); see also Footnote 32 (“Nineteen states and the District of Columbia (representing approximately 45% of the U.S. population) have exercised this type of “reverse preemption” and have certified that they directly regulate utility-owned infrastructure in their regions. *See Corrected List of States That Have Certified That They Regulate Pole Attachments*, WC Docket No. 07-245, Public Notice, 23 FCC Rcd 4878 (WCB 2008). Section 224(a)(1) expressly excludes poles owned by cooperatives from regulation, an exemption that dates back to 1978. According to the National Rural Electric Cooperative Association, electric co-operatives own approximately 42 million poles. Letter from David Predmore, National Rural Electric Cooperative Association, to Marlene H. Dortch, Secretary, FCC, GN Docket Nos. 09-47, 09-51, 09-137, WC Docket No. 09-245 (Feb. 26, 2010). *The exclusion of co-operatives from Section 224 regulation may impede broadband deployment in rural areas*. For instance, one small broadband cable company claims that it ceased offering service in two rural communities in Arkansas because of an increase in pole attachment rates by unregulated electric cooperatives that owned the poles in those communities. Letter from Bennett W. Hooks, Jr., Buford Media Group, LLC, to Bernadette McGuire-Rivera, Assoc. Adm’r, Office of Telecom. & Info. Admin., Dep’t of Comm. (Apr. 13, 2009) at n.2, 3, *available at* <http://www.ntia.doc.gov/broadbandgrants/comments/79C5.pdf>.”) (emphasis added).

³⁶ For telephone utilities, the FCC relies on uniform system of accounting information as reported in the FCC’s ARMIS database.

³⁷ See 30(b)(6) Deposition Testimony of Jane Hall at 22-28 (at 22: “Q: And does Rutherford follow RUS accounting standards? A. Yes, sir. Q: And does it use the RUS accounts as set forth in the Code of Federal Regulations? A. Yes, Sir.”); (at 28: “Q: So, in other words, Rutherford will follow the guidance of the CFR in deciding what items of investment and expenses are captured in the RUS accounts? A. That is correct.”)

³⁸ See 7 CFR Part 17.67.

50. The first adjustment pertains to the application of an appurtenance factor to the net investment in *bare* pole figure used in the calculation of the net bare pole cost component of the formula. The FCC methodology applies a presumptive reduction of 15% to the net investment figure associated with Account 364 pertaining to Poles, Tower, and Fixtures to account for appurtenances directly attributable to the core electric service and which attachers do not use. However, as with all FCC presumptions, the rules allow the substitution of actual utility data where it is available and can be supported. In the case of Rutherford, the Work Order Plant Ledger reports provided in response to discovery requests contained detailed information that separately identified major appurtenances such as cross arms. Accordingly, in lieu of using the standard 15% reduction factor, my calculations rely on the actual investment amounts reported for poles in the Work Order Plant Ledger reports provided by Rutherford, exclusive of major appurtenances separately identified on those reports, subject to an adjustment for minor appurtenances not separately tracked, of 5%.

51. The second adjustment pertains to taxes. Taxes come into play in the formula in both the calculation of net investment figures used in the formula, which are calculated net of any accumulated deferred taxes, and in the calculation of the tax element of the carrying charge factor. In the case of net investment, because electric cooperatives are not subject to income taxes as would be an IOU, they have no reportable accumulated deferred taxes. Therefore, in applying the FCC methodology to electric cooperatives, the calculation of net investment for pole plant, as is the case for aggregate plant accounts used in the calculation of the various carrying charge elements, is calculated by deducting accumulated depreciation alone from gross plant investment. In the case of the tax element of the carrying charge factor, because electric cooperatives are not subject to income taxes, only a subset of the tax accounts included under the FCC methodology in the tax component of the carrying charge factor are potentially applicable to electric cooperatives. In the case of Rutherford, there do not appear to be any applicable taxes to include.

52. The third adjustment pertains to the rate of return input. Under the FCC methodology, this element of the carrying charge factor allows the utility to recover a normal or fair (economic) return on capital from third-party attachers over and above actual cost recovery. For an IOU, the capital cost element of the CCF component of the rate formula is the most current authorized rate of return set by a state regulatory commission or, in the absence of one, an FCC default rate of return based on the weighed cost of debt and equity determined in the last FCC return proceeding. Because electric cooperatives are not subject to rate of return regulation, have no allowed rate of return, and face a different set of capital costs than IOUs, it is necessary and economically appropriate to substitute an effective “rate of return” in

lieu of either an allowed rate of return set by a regulatory commission or the FCC default in order to calculate a maximum pole rate applicable to electric cooperatives. As acknowledged by Jane Hall in her 30(b)(6) deposition, Rutherford does not need to access capital equity markets. Its sole source of capital funding is through debt and borrowed funds primarily obtained from the RUS at interest rates in the range of 3.5 to 4.0 percent.³⁹ Since Rutherford faces no actual equity risk, an economically appropriate approach would be to use a “rate of return” that reflects its cost of debt, as measured by its booked interest expenses. Such debt costs reflect the true opportunity cost of money as it would represent the actual financing costs that an electric membership corporation such as Rutherford incurs in the construction of the fixed assets underlying the net investment carried on its books. For this reason, in my opinion, the cost of debt is the most reasonable proxy for the rate of return component of the rate formula, and accordingly, and consistent with the actual equity risk facing an electric cooperative, I have calculated a “rate of return” based on recorded interest expenses reported in the RUS Form 7, effectively using the cooperative’s actual cost of long term debt as a proxy for the cost of equity,⁴⁰ that falls within the 5% to 6% range, right in line with the cost of debt Rutherford identified in its 30(b)(6) deposition testimony.⁴¹

53. The fourth adjustment pertains to the Administrative and General element of the carrying charge factor. The FCC methodology calculates this element by taking a broad set of expense account figures per FERC Form 1 (Accounts 920-931, 935)⁴² and dividing them by net plant in service for total electric plant. In calculating this element of the CCF, my calculations use the total net plant in service figure for Rutherford as reported on the RUS Form as the denominator. Because this denominator may be at a more

³⁹ See 30(b)(6) Deposition of Jane Hall at 21.

⁴⁰ The methodology I have employed is supported by the findings of the Indiana Utility Regulatory Commission (IURC) in a pole complaint proceeding involving a cooperative (Kankakee Valley Rural Membership Corporation) in which it specifically addressed the appropriate rate of return applicable to a cooperative:

We find, however, that there is some risk for owners of a co-op losing a portion of their equity deposited in the co-op and, therefore, a cost of equity should be determined. Among the measures that could be used include the cost of debt, the rate of inflation, risk-free rate or a yield on long term securities such as government or corporate bonds. KVREMC, by using the cost of debt to determine the cost of capital, assumes the cost of debt is equal to the cost of capital. Based on the evidence of record, and as proposed by KVREMC, we find the cost of debt (4.93%) to be the closest approximation to the cost of equity. *See* Indiana Utility Regulatory Commission, Cause No. 42755, at 18.

My use of the cost of debt as the appropriate proxy for the rate of return applicable to electric coops is also consistent with the approach taken by Staff of the Virginia State Corporation Commission in a case involving NTELOS Telephone Inc. See Testimony of Rosemary M. Henderson at 6, in PUE-2011-00033, recognizing the use of the cost of debt will “permit coverage for all the costs, without subsidy from the cooperative members.”

⁴¹ See 30(b)(6) Deposition of Jane Hall at 21.

⁴² These expenses include those booked to Accounts 920 (administrative and general salaries, including officer salaries), 921 (office supplies and expenses, including telephone and court-related expenses), 923 (outside services employed, including attorney fees and audit expenses), 924 (Property Insurance), 925 (Injuries and Damages), 926 (employee pensions and benefits, including health insurance related expenses), and 930 (miscellaneous general expenses, including general advertising, bank service fees, and association dues).

aggregate level than the net plant in service for electric plant, in conformance with the principle of matching levels of aggregation between expenses (used in the numerator of the CCF element) and the net investment (used in the denominator of the CCF element) inherent in the FCC methodology, and to be most generous to Rutherford in the inclusion of common overhead type expenses, I have included in the calculation of this carrying charge element three other additional expense categories reported on the RUS Form 7, over and above those included in the line item specifically labeled “Administrative and General Expense.” The three additional expense accounts included in my rate formula calculations are Customer Accounts Expense, Customer Service and Informational Expense, and Sales Expense.

54. As with the accounts included in the FCC methodology for the Administrative and General element of the CCF, there are likely many costs contained within the included accounts (even before the addition of the three additional expense accounts) that are not related to pole attachment, and that the utility should not be allowed to recover from attachers based on fundamental economic principles of cost causation. Some non-cost causative expenses are nevertheless included in the FCC formula in recognition of the desirability of minimizing the costs of regulation, i.e., so that the FCC does not have to monitor whether the proper costs are “backed out” of a particular FERC or ARMIS account (in the case of a telephone company). The fact that the FCC formula methodology builds in substantive areas of over-recovery of costs in this CCF also counters arguments by utilities that the formula may omit some incidental costs elsewhere.

V. CALCULATIONS OF RUTHERFORD'S MAXIMUM JUST AND REASONABLE POLE ATTACHMENT RENTAL RATES UNDER FCC CABLE AND TELECOM FORMULA METHODOLOGY

55. For purposes of this assignment, I have calculated three sets of rates – one using the FCC cable formula, one using the current Telecom Formula (adopted by the FCC in April 2011), and another using the old FCC telecom formula, for each of the years 2010-2013 (using data for years ending 2009-2012). For the reasons discussed above however, in my opinion, the maximum just and reasonable pole rental rate for Rutherford pursuant to N.C.G.S §62-350 for all communications attachments should be based on the cable rate formula which employs a more economically appropriate proportionate-use cost allocation method. To reiterate, both the FCC cable and telecom formulas are identical with respect to the first two components of the formula, differing only with respect to the third, i.e., space allocation factor. Under either formula, once the appropriate pieces of input data are properly identified, the calculation of the maximum just and reasonable rate using the FCC methodology is a straightforward multiplication of the three major formula components: net bare pole cost times carrying charge factor times space allocation factor. Attachment 3 to this Report provides an illustrative set of the rate calculations I have performed for rate year 2010 (using data for year ending 2009).⁴³

56. Summary tables containing the three major formula components along with the resulting maximum just and reasonable rental rates they produce are presented in Tables 3 - 5 on the following page, as calculated using the FCC cable formula, the current telecom Formula, and the old FCC telecom formula, respectively. As noted earlier, the space factor component of the telecom factor varies inversely with the number of attaching entities. In the absence of actual data on the number of attaching entities or a statistically reliable sampling of poles for the relevant population of joint use poles, the FCC methodology presumes an average number of attaching entities of 3 for areas classified as rural such as Rutherford. For illustrative purposes, the telecom formula was also calculated assuming an average number of attaching entities of 2 (the minimum number of entities for the relevant population of joint use poles, since by definition joint use poles are poles on which there is at least one third party attachment) as well as an intermediate value of 2.5. A comparison of the results obtained from these various scenarios are presented in Tables 6 and 7, for the current and old telecom rate formulas, respectively.

⁴³ Calculations for all rate years 2010-2013 are available in Kravtin Workpapers in their native Excel files.

Table 3 Maximum Just and Reasonable Pole Attachment Rental Rates for Rutherford Under FCC Cable Formula Methodology				
Data Year Ending	2009	2010	2011	2012
Net Inv Per Bare Pole	\$178.73	\$179.40	\$182.43	\$186.29
x Carrying Charges	20.2%	19.29%	19.05%	19.16%
x Space Factor	7.41%	7.41%	7.41%	7.41%
= Rental Rate	\$2.68	\$2.56	\$2.57	\$2.64

Table 4 Maximum Just and Reasonable Pole Attachment Rental Rates for Rutherford Under FCC Current Telecom Formula Methodology at 3 Att. Entities				
Data Year Ending	2009	2010	2011	2012
Net Inv Per Bare Pole	\$178.73	\$179.40	\$182.43	\$186.29
x Carrying Charges	20.2%	19.29%	19.05%	19.16%
x Space Factor	15.83%	15.83%	15.83%	15.83%
x Cost Factor	44%	44%	44%	44%
= Rental Rate	\$2.52	\$2.41	\$2.42	\$2.49

Table 5 Maximum Just and Reasonable Pole Attachment Rental Rates for Rutherford Under FCC Old Telecom Formula Methodology at 3 Att. Entities				
Data Year Ending	2009	2010	2011	2012
Net Inv Per Bare Pole	\$178.73	\$179.40	\$182.43	\$186.29
x Carrying Charges	20.2%	19.29%	19.05%	19.16%
x Space Factor	15.83%	15.83%	15.83%	15.83%
= Rental Rate	\$5.73	\$5.48	\$5.50	\$5.65

Table 6 Maximum Just and Reasonable Pole Attachment Rental Rates for Rutherford Under FCC Current Telecom Formula Methodology At Varying Number of Attaching Entities				
Data Year Ending	2009	2010	2011	2012
Average Number of Attaching Entities:				
3.0	\$2.52	\$2.41	\$2.42	\$2.49
2.5	\$2.94	\$2.82	\$2.83	\$2.91
2.0	\$3.58	\$3.43	\$3.44	\$3.53

Table 7 Maximum Just and Reasonable Pole Attachment Rental Rates for Rutherford Under FCC Old Telecom Formula Methodology At Varying Number of Attaching Entities				
Data Year Ending	2009	2010	2011	2012
Average Number of Attaching Entities:				
3.0	\$5.73	\$5.48	\$5.50	\$5.65
2.5	\$6.69	\$6.40	\$6.43	\$6.60
2.0	\$8.14	\$7.79	\$7.82	\$8.03

57. In my opinion, rates set higher than the maximum just and reasonable rates identified in Table 3 – 7 above, are inconsistent with the just and reasonable standard set forth in N.C.G.S. 62.350 and Section 224 of the Communications Act to which it refers. This is especially the case with the rates presented in Tables 5 and 7 which are calculated using the old telecom formula, which, as of April 2011, the FCC no longer relies on for the very reason that it has produced rates that are too high vis-à-vis the cable rate – a rate repeatedly found by the FCC and the courts to be much more than fully compensatory to pole owners.

VI. CALCULATION OF DAMAGES (OVERPAYMENTS BY TWEAN)

58. As an electric membership corporation in North Carolina, Rutherford is not permitted to charge third-party rental rates for communications attachments that are any higher than the just and reasonable rates determined in accordance with applicable law. It is my opinion that any theoretical damages due Rutherford relating to any potential underpayments, or due TWEAN relating to any potential overpayments, cannot themselves be calculated based on rates any higher than the maximum permissible rates that a correct application of the FCC formula methodology would produce, subject to the application of an economically appropriate interest rate on underpaid or overpaid amounts consistent with FCC rules. To the extent damages are awarded, they should be based upon the true differences between amounts paid and amounts owed based on permissible just and reasonable rates. They should not be calculated based on artificial amounts calculated based on the excessively high rates unilaterally imposed by Rutherford or calculated by Rutherford based on non-sanctioned formulas such as the so-called “telecom plus” formula⁴⁴ designed to maximize pole revenues rather than set just and reasonable rates consistent with the public interest. To do so would be entirely at odds with the underlying foundation and purpose of effective pole regulation.

59. The generic formula for determining theoretical damages allows for the possibility of either overpayments or underpayments by TWEAN relative to the maximum permissible just and reasonable rate, and accumulating those amounts over the period at issue (i.e., 2010-2013), at a reasonable, economically appropriate interest rate. It is also my understanding that the amounts paid by TWEAN to Rutherford for communications attachments during this period were based on a per attachment rate of \$14.50 (subject to true-up and credit for amounts overpaid).⁴⁵ This rate *exceeded* the maximum permissible just and reasonable rate as determined under any of the FCC rate formula methodologies including the cable, the current telecom, or even the old telecom formula calculated at the minimum average number of attaching entities, for all four years. (See Tables 3-7). Accordingly, the damages calculated in this report represent amounts due TWEAN as determined by the difference between amounts TWEAN should have paid Rutherford annually for the rate years 2010-2013 (based on the maximum permissible rates) and the higher amounts TWEAN actually paid subject to true-up (based on the \$14.50 rate unilaterally imposed by Rutherford in 2010), subject to an economically appropriate interest charge.

⁴⁴ See 30(b)(6) Deposition of Thomas Haire at 108-109.

⁴⁵ See Exhibit 8 to Rutherford Complaint, Letter dated August 23, 2010 from Gardner Gillespie to Colon Saunders.

60. While the FCC provides for the application of interest charges to disputed pole rental amounts such as those at issue in this litigation, the FCC has specifically found those interest charges should be limited to the rates established and published by IRS charges for underpayments and overpayments.⁴⁶ By contrast, in its Complaint, Rutherford makes reference to rendered invoices to TWEAN for alleged unpaid balances, that include interest on those balances accruing at 1½% per month (18% per annum) which it characterizes as “late fees.”⁴⁷ As a threshold matter, the unpaid amounts by TWEAN are not reasonably considered “late;” as set forth in numerous pieces of correspondence between TWEAN counsel and Rutherford, they are amounts disputed by TWEAN pursuant to applicable law.

61. Secondly, an interest rate of 18% far exceeds the applicable interest rates for under or overpayments established by the IRS, which fall between 3% and 4% for this period.⁴⁸ Finally, because the damages at issue in this case are amounts owed TWEAN, application of the lower IRS interest rate actually works to the benefit of Rutherford. Of course, the principle is the same regardless of which party to the transaction the interest charge is applied; namely, that any such interest charges applied to disputed amounts should not be set at unreasonably high or punitive levels, but rather to reasonably reflect an objective measure of the time value or opportunity of money.

62. I have performed calculations of the damages in the manner described above, and the results of my analysis are presented in Table 8 on the following page. I have performed three sets of calculations corresponding to the different FCC rate formula methodologies identified in this report, i.e., the cable rate, the current telecom rate, and the old telecom rate, and in the case of the telecom rate formula, for varying number of attaching entities.

⁴⁶ See *In the Matter of Mile Hi Cable Partners, L.P.; Mountain States Video, Inc., d/b/a TCI of Colorado, Inc.; United Cable Television of Colorado, Inc., d/b/a TCI of Colorado, Inc.; TCI Cablevision of Colorado, Inc.; Heritage Cablevision of Tennessee, Inc.; and TCI Cablevision of Florida, Inc., Complainant v. Public Service Company of Colorado*, Respondent. File No. PA 98-003, Order released June 30, 2000, ¶14 (“We believe that a reasonable penalty for unauthorized attachments will not exceed an amount approximately equal to the annual pole attachment fee for the number of years since the most recent inventory or five years, whichever is less, plus interest at a rate set for that period by the Internal Revenue Service (“IRS”) for individual underpayments pursuant to Section 6621 of the Internal Revenue Code.”).

⁴⁷ See Exhibit 6 to Rutherford Complaint, Letter dated March 10, 2010, from Colon Saunders to Nester Martin.

⁴⁸ <http://www.irs.gov/pub/irs-drop/rr-13-06.pdf>.

Table 8			
Calculation of Damages Based on Overpayments by TWEAN In Relation to Just and Reasonable Amounts Owed 2010-2013			
Based on difference between rate paid by TWEAN and:	Cumulative Overpayments by TWEAN	Cumulative Interest Owed at IRS Under/Overpayment Rate	Total Cumulative Amounts Owed TWEAN
FCC Cable Rate	\$344,127	\$30,448	\$374,575
FCC Telecom @ 3.0 AE	\$348,550	\$30,844	\$379,395
FCC Telecom @ 2.5 AE	\$336,510	\$29,779	\$366,289
FCC Telecom @ 2.0 AE	\$318,523	\$28,177	\$346,700
Old FCC Telecom @ 3.0 AE	\$257,741	\$22,783	\$280,524
Old FCC Telecom @ 2.5 AE	\$230,469	\$20,366	\$250,835
Old FCC Telecom @ 2.0 AE	\$189,416	\$16,722	\$206,138
Source: Kravtin Workpapers.			

VII. IMPACT OF JUST AND REASONABLE RATES ON RUTHERFORD AND ITS CUSTOMERS

63. Rutherford and its customers/ members stand to benefit directly from the shared use of utility poles by third party attachers. The contribution received by Rutherford for the use of otherwise available surplus capacity, or to its capital program, through the process of make-ready (including pole replacement) at the attacher's expense, translate into reduced utility expenditures needed to be recovered through electricity rates. In addition, as discussed further below, as consumers of communications services, Rutherford's customers are also the beneficiaries of lower rates and expanded and/or advanced service offerings in the convergent communications marketplace and the growing number of markets dependent on advanced broadband services. The sharing of the utility's pole network – an asset that has historically been paid for and maintained primarily using electricity customer dollars as is appropriate from a cost causative perspective – allows for more effective utilization of the asset, and hence a means of effectively enhancing the return on patronage dollars.

64. On the other hand, the negative economic impact of high pole attachment rates in the broadband services market is magnified by the little to any offsetting societal value gained in the electric distribution market, where very different economic conditions exist. These conditions include:

- The true marginal costs of pole attachments (i.e., the costs that truly, but for the existence of third party attachers, would not otherwise exist for the utility in providing its core electric distribution service) are extremely small when one looks at costs that are not already recovered in the set of make-ready or direct reimbursable fees the utilities charge attachers.⁴⁹ This means, even if there were no third party attachers, the electric distribution company's actual pole attachment related costs would not go down much at all.⁵⁰
- The impact of pole attachment revenues on a per electric subscriber or per kilowatt hour basis is very small (in contrast to the relatively large impact per broadband subscriber). For example, for 2013, Rutherford's total projected annual pole attachment revenues of approximately \$1-million constituted less than 1% of Rutherford's \$124-million in annual revenues from sales of electric energy.⁵¹
- The demand for electric distribution service is not price sensitive; it is what economists refer to as inelastic demand, meaning even if the impact of pole attachment revenues per electric subscriber was significant (which it is not) and even if it could be shown that electric rates charged by Rutherford would actually go down in response to changes in pole attachment rates (which is unlikely), it would not cause that subscriber to increase his or her demand for electricity. By contrast, the demand for broadband is sensitive to changes in price such that lower rates would, all else being equal, increase the demand for service, which in turn would help lower costs per subscriber and promote broadband deployment. Thus, as potential subscribers of broadband and associated advanced services, Rutherford's customers stand to benefit as much or more from a lower

⁴⁹ Along with the FCC and others, I have previously measured these recurring marginal costs to be in the range of \$1.00 to \$1.50 annually per attachment for electric utilities.

⁵⁰ Actually, for the reasons delineated above, the electric company and its customers would be much worse off without third party attachers. Under the FCC methodology, as demonstrated by economics, and as found by the courts, third party attachers pay much more than the marginal costs, thereby providing a significant contribution to the electric company's overhead costs, especially taking make-ready charges into account. Moreover, through make-ready charges, third party attachers pay the total out-of-pocket costs to install taller and stronger poles when required to accommodate their attachments. These poles remain fully owned by the utility, which benefits additionally by the revenues it can earn by renting out space to other attachers or by savings to its own capital upgrade programs.

⁵¹ See REMC_E_005639, RUS Form 7.

pole attachment rate such as the cable rate that encourages a lower price for such broadband services than from a higher rate that will stifle broadband competition, deployment and adoption.

- There is no evidence from utilities of which I am aware that demonstrates the process by which electric customers would receive an actual benefit if pole rentals from cable companies increase. That holds equally true for electric membership cooperative like Rutherford that retain a substantial amount of its earnings. For example, for year ending December 31, 2012, the RUS Form 7 shows Rutherford to have retained earnings in the form of patronage capital of approximately \$100-million, as further evidenced in a 40% ratio of Margins & Equities as Percent of Assets.⁵²

65. For all the aforementioned reasons, the pole owners and their customers have much to gain, and little if any to lose, from a pole attachment rate set equal to the cable rate. This finding is corroborated by the fact that the National Association of State Utility Consumer Advocates (“NASUCA”), a public interest group representing the interest of all consumers, including cable, telephone and utility ratepayers, has consistently supported the cable rate, including its most recent recommendation to the FCC to adopt a unified cable rate as the best way to balance interests of the various consumer constituencies.⁵³ Similarly, the vast majority of utility commissions in states certified to regulate pole attachment rates, expressly charged, pursuant to Section 224(c)(2)⁵⁴ to take into the account the impact on utility customers, have applied a uniform pole attachment rate based on the cable rate, or close variations of it.

66. Notwithstanding the many reasons suggesting little if any negative impact on Rutherford or its customers of lowering the pole attachment rate from the unilaterally imposed rate of \$19.65 to a just and reasonable rate level (indeed as pointed out, the facts strongly indicate a net positive impact), to the extent the Court found a basis for some concern at the magnitude of the rate reduction associated with the implementation of a just and reasonable rate for third party attachments in terms of the potential impact on Rutherford and its customers, the Court could mitigate any potential impact by allowing for a phase-in

⁵² See 30(b)(6) Deposition of Jane Hall at 31-36.

⁵³ Reply Comments of The National Association of State Utility Consumer Advocates in FCC Docket 07-245, filed Apr. 22, 2008, at 1-2, 5 (“This rate was upheld against challenges that it was confiscatory. Thus this is the rate that should be used for all pole attachments, regardless of the exact service provided over the attachment, and regardless of the identity of the attacher.... Equally importantly, the Commission must not increase the rate paid by broadband service providers because this would be contrary to ‘the nation’s commitment to achieving universal broadband deployment and adoption.’”).

⁵⁴ 47 U.S.C. § 224(c)(2) (“Each State which regulates the rates, terms, and conditions for pole attachments shall certify to the Commission that ... it does consider the interests of the subscribers of the services offered via such attachments, as well as the interests of the consumers of the utility services.”).

of the lower rate, analogous to the 5-year phase-in policy adopted by the FCC in connection with the implementation of telecom rate formula pursuant to the 1996 Telecommunications Act.⁵⁵

VIII. CONCLUSION

67. For the reasons set forth in this report, rates set any higher than the just and reasonable rates I have calculated in accordance with the widely accepted FCC rate formula methodology, would fail to serve the public interest purposes of effective pole rate regulation. These public interest considerations include the protection of cable operators and other third-party attachers against monopoly abuses of pole-owning utilities with regard to the attachment of their wires to existing utility pole networks, an essential input to the provision of new and advanced broadband services. In this important context, lower pole attachment rates that promote competition and the deployment of broadband deployment services – now widely acknowledged to be key to an area’s economic development and to the economic, health and overall wellbeing of its residents and businesses – provide a strong public interest benefit.

68. From an operational perspective, electric cooperatives use the same type of plant, technology, and production techniques to provide electricity service to subscribers and in the same basic manner as their investor-owned utility counterparts. Moreover, they have inherently the same opportunity and incentive to leverage their monopoly ownership and control over the existing distribution network of poles as do IOUs subject to the FCC pole regulation. Indeed, if anything, electric cooperatives have a lower cost structure than IOUs owing to their lower capital costs (i.e., their tax-exempt status and their ability to access low interest borrowing), such that if a free market for pole attachments existed (which it does not), one would expect to see rates for pole attachments charged by cooperatives set at lower levels than those charged by IOUs.

69. That cooperatives such as Rutherford have historically been excluded from the definition of utility in the Pole Attachment Act subject to FCC pole regulation, is an issue of jurisdiction and does not in any meaningful way refute the applicability of the fundamental economic conditions of demand and supply facing cable and other third-party attachers needing access to poles owned by electric cooperatives – a point well demonstrated by the monopoly level rate increases unilaterally imposed by Rutherford and many other electric cooperatives around the country in recent years. To this very point, the present

⁵⁵ See Section 1.1409, subsection (f) of the FCC’s Rules (47 C.F.R. Part 1), as amended: (“Any increase in the rates for pole attachments that result from the adoption of such regulations shall be phased in over a period of five years beginning on the effective date of such regulations in equal annual increments.”).

exclusion of electric cooperatives from the FCC pole attachment rules governing other electric utilities was identified as a “key gap” in its National Broadband Plan Policy Framework, and the very fact that the North Carolina legislature subjected electric membership cooperatives to state regulation of pole attachments pursuant to §62.350.

70. In my opinion, and one shared by the FCC in its recent pole proceeding, while the old §224(e) rate historically has been considered to satisfy a just and reasonable standard for attachments classified as telecom pursuant to federal statute, that rate is less economically efficient and conducive to the key public policy goals of promoting competition and the deployment of new or advanced internet or other broadband services than the §224(d) rate. Accordingly, and for the reasons explained in this report, in my opinion, the maximum just and reasonable rate that Rutherford should be permitted to charge third party attachers should be based on the §224(d) cable rate formula methodology for all manner of communications attachments.

71. That the maximum just and reasonable rates produced by a proper application of §224(d) and (e) calculated using economically appropriate data inputs are lower than the rate levels previously “negotiated” between other pole-owning cooperatives or other utilities and the cable company, and/or so-called “market benchmark” rates set by other monopoly pole owners, is not a valid economic or public policy concern. The latter rates do not reflect “free market” rates at all. Rather, they reflect prices set in a grossly unbalanced market environment where the pole owner, regardless of its size or organizational structure, has an inordinate amount of leverage over third-party attachers, and where, if unchecked by effective pole regulation, it can impose excessive monopoly-level rates. Absent price constraints imposed by regulation, the pole-owning utility has the upper hand in any “negotiation” or rate-setting process between the pole owner and the attacher.

72. For these reasons, rates set during such a process (including the \$14.50 rate unilaterally imposed by Rutherford that TWEAN has been paying since 2010 subject to true-up and credit for amounts overpaid) do not represent appropriate benchmarks for comparison of just and reasonable pole attachment rates. Nor are rates that build in subjective increases and yearly escalation factors into the contract rate *over and above* the calculated formula rates, such as those unilaterally proposed by Rutherford for moving forward, appropriate benchmarks. Especially given the facts that the Section 224 formulas were designed to produce *maximum* just and reasonable rates, are already much more than fully compensatory to the utility, and the utility additionally recovers make ready charges that apply over and above the annual rental rate.

73. A much better benchmark rate to consider are the rates charged by IOUs operating in the state of North Carolina that are subject to federal Section 224 pole regulation, given the homogeneity of pole plant, i.e., in more layman's terms, "a pole is a pole." Other than a change in the corporate ownership of these poles, these poles are the same poles, and subject to the same fundamental conditions of supply. There is no valid economic basis for the magnitude of disparity between the IOU and cooperative pole attachment rate other than the absence of effective pole regulation in the case of the latter. For the reasons noted above, the average rate charged by IOUs in the state should be at the upper bound of a just and reasonable pole attachment rate for an electric membership corporation.

74. Excessive rates such as typically sought by monopoly pole owning utilities, and Rutherford appears to be following the same playbook, do not serve the public interest of society generally or of their particular members. To the contrary, excessively high rates (vis-à-vis the competitive level) do not serve the public good. The public interest is best served by lower rates that best promote efficient use of resources at the overall least cost to the economy, effective competition, and the widespread deployment of new, advanced broadband services at a more affordable cost. This is particularly the case in rural or less densely developed areas where underlying economic conditions for deployments tend to be more unfavorable, but the benefits to the consuming public as great or greater.

75. In conclusion, for the reasons set forth in this report, pole attachment rates that are excessively high relative to just and reasonable rates consistent with well established and widely adopted FCC pole rate methodology fail to meet the just and reasonable standard mandated pursuant to N.C.G.S. §62.350. Further, in my opinion, rates set at levels calculated under a proper application of the FCC cable rate formula, such as presented in my report, would be the most economically efficient and best for promoting competition, and broadband service deployment and innovation. To allow an electric cooperative to charge excessively high rates relative to widely accepted §224 rate benchmarks serves the very limited private financial interest of the cooperative, but not the public interest, as it will deprive citizens of the state of North Carolina served by Rutherford of important economic development benefits that broadband is now commonly acknowledged to provide.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on: July 10, 2013

Patricia D. Kravtin

Kravtin Attachment 1

Patricia D. Kravtin

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Summary

Consulting economist with specialization in telecommunications, cable, and energy markets. Extensive knowledge of complex economic, policy and technical issues facing incumbents, new entrants, regulators, investors, and consumers in rapidly changing telecommunications, cable, and energy markets.

Experience

CONSULTING ECONOMIST

2000–Present Independent Consulting Swampscott, MA

- Providing expert witness services and full range of economic, policy, and technical advisory services in the telecommunications, cable, and energy fields.

SENIOR VICE PRESIDENT/SENIOR ECONOMIST

1982–2000 Economics and Technology, Inc. Boston, MA

- Active participant in regulatory proceedings in over thirty state jurisdictions, before the Federal Communications Commission, Federal Energy Regulatory Commission, and other international regulatory authorities on telecommunications, cable, and energy matters.
- Provided expert witness and technical advisory services in connection with litigation and arbitration proceedings before state and federal regulatory agencies, and before U.S. district court, on behalf of diverse set of public and private sector clients (see Record of Prior Testimony).
- Extensive cable television regulation expertise in connection with implementation of the Cable Act of 1992 and the Telecommunications Act of 1996 by the Federal Communications Commission and local franchising authorities.
- Led analysis of wide range of issues related to: rates and rate policies; cost methodologies and allocations; productivity; cost benchmarking; business case studies for entry into cable, telephony, and broadband markets; development of competition; electric industry restructuring; incentive or performance based regulation; universal service; access charges; deployment of advanced services and broadband technologies; and access to pole attachments and other rights-of-way.
- Served as advisor to state regulatory agencies, assisting in negotiations with utilities, non-partial review of record evidence, deliberations and drafting of final decisions.
- Author of numerous industry reports and papers on topics including

market structure and competition, alternative forms of regulation, patterns of investment, telecommunications modernization, and broadband deployment (see listing of Reports and Studies).

- Invited speaker before various national organizations, state legislative committees and participant in industry symposiums.
- Grant Reviewer for Broadband Technology Opportunities Program (BTOP) administered by National Telecommunications and Information Administration (NTIA), Fall 2009.

RESEARCH/POLICY ANALYST

1978–1980 Various Federal Agencies Washington, DC

- Prepared economic impact analyses related to allocation of frequency spectrum (Federal Communications Commission).
- Performed financial and statistical analysis of the effect of securities regulations on the acquisition of high-technology firms (Securities and Exchange Commission).
- Prepared analyses and recommendations on national economic policy issues including capital recovery (U.S. Dept. of Commerce).

Education

1980–1982 Massachusetts Institute of Technology Boston, MA

- Graduate Study in the Ph.D. program in Economics (Abd). General Examinations passed in fields of Government Regulation of Industry, Industrial Organization, and Urban and Regional Economics.
- National Science Foundation Fellow.

1976–1980 George Washington University Washington, DC

- B.A. with Distinction in Economics. Awarded Phi Beta Kappa, Omicron Delta Epsilon (for high scholastic achievement in Economics). Recipient of four-year honor scholarship.

Prof. Affiliation

American Economic Association

Reports and Studies (authored and co-authored)

Report on the Financial Viability of the Proposed Greenfield Overbuild in the City of Lincoln, California, prepared for Starstream Communications, August 12, 2003.

“Assessing SBC/Pacific’s Progress in Eliminating Barriers to Entry, The Local Market in California is Not Yet ‘Fully and Irreversibly Open,” prepared for the California Association of Competitive Telecommunications Companies (CALTEL), August 2000.

“Final Report on the Qualifications of Wide Open West-Texas, LLC for a Cable Television Franchise in the City of Dallas,” prepared for the City of Dallas, July 31, 2000.

“Final Report on the Qualifications of Western Integrated Networks of Texas Operating L.P. For a Cable Television Franchise in the City of Dallas,” prepared for the City of Dallas, July 31, 2000.

“Price Cap Plan for USWC: Establishing Appropriate Price and Service Quality Incentives in Utah” prepared for The Division of Public Utilities, March, 2000.

“Building a Broadband America: The Competitive Keys to the Future of the Internet,” prepared for The Competitive Broadband Coalition, May 1999.

“Broken Promises: A Review of Bell Atlantic-Pennsylvania’s Performance under Chapter 30,” prepared for AT&T and MCI Telecommunications, June 1998.

“Analysis of Opportunities for Cross Subsidies between GTA and GTA Cellular,” prepared for Guam Cellular and Paging, submitted to the Guam Public Utilities Commission, July 11, 1997.

“Reply to Incumbent LEC Claims to Special Revenue Recovery Mechanisms,” submitted in the Matter of Access Charge Reform in CC Docket 96-262, February 14, 1997.

“Assessing Incumbent LEC Claims to Special Revenue Recovery Mechanisms: Revenue opportunities, market assessments, and further empirical analysis of the ‘Gap’ between embedded and forward-looking costs,” FCC CC Docket 96-262, January 29, 1997.

“Analysis of Incumbent LEC Embedded Investment: An Empirical Perspective on the ‘Gap’ between Historical Costs and Forward-looking TSLRIC,” Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, FCC CC 96-98, May 30, 1996.

“Reply to X-Factor Proposals for the FCC Long-Term LEC Price Cap Plan,” prepared for the Ad Hoc Telecommunications User Committee, submitted in FCC CC Docket 94-1, March 1, 1996.

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“The Economic Viability of Stentor’s ‘Beacon Initiative,’ exploring the extent of its financial dependency upon revenues from services in the Utility Segment,” prepared for Unitel, evidence before the Canadian Radio-television and Telecommunications Commission, March 1995.

“Fostering a Competitive Local Exchange Market in New Jersey: Blueprint for Development of a Fair Playing Field,” prepared for the New Jersey Cable Television Association, January 1995.

“The Enduring Local Bottleneck: Monopoly Power and the Local Exchange Carriers,” Feb. 1994.

“A Note on Facilitating Local Exchange Competition,” prepared for E.P.G., Nov. 1991.

“Testing for Effective Competition in the Local Exchange,” prepared for the E.P.G., October 1991.

“A Public Good/Private Good Framework for Identifying Pots Objectives for the Public Switched Network” prepared for the National Regulatory Research Institute, October 1991.

“Report on the Status of Telecommunications Regulation, Legislation, and modernization in the states of Arkansas, Kansas, Missouri, Nebraska, Oklahoma and Texas,” prepared for the Mid-America Cable-TV Association, December 13, 1990.

“The U S Telecommunications Infrastructure and Economic Development,” presented at the 18th Annual Telecommunications Policy Research Conference, Airlie, Virginia, October 1990.

“An Analysis of Outside Plant Provisioning and Utilization Practices of US West Communications in the State of Washington,” prepared for the Washington Utilities and Transportation Commission, March 1990.

“Sustainability of Competition in Light of New Technologies,” presented at the Twentieth Annual Williamsburg Conference of the Institute of Public Utilities, Williamsburg, VA, December 1988.

“Telecommunications Modernization: Who Pays?,” prepared for the National Regulatory Research Institute, September 1988.

“Industry Structure and Competition in Telecommunications Markets: An Empirical Analysis,” presented at the Seventh International Conference of the International Telecommunications Society at MIT, July 1988.

“Market Structure and Competition in the Michigan Telecommunications Industry,” prepared for the Michigan Divestiture Research Fund Board, April 1988.

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2008

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2004

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2003

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2002

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1999

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1996

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1995

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1994

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1993

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1992

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1991

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1990

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1989

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1988

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1987

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1986-1982

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Before the **Washington Utilities and Transportation Commission**, in *Re: Cost of Service Issues bearing on the Regulation of Telecommunications Company*, on behalf of US Department of Energy, filed November 18, 1985 (Reply Comments).

Before the **Maine Public Utilities Commission**, in *Re: New England Telephone*, 83-213, on behalf of Staff, ME PUC, filed February 7, 1984, cross-examination March 16, 1984.

Before the **Minnesota Public Service Commission**, in *Re: South Central Bell*, U-4415, on behalf of MS PSC, filed January 24, 1984, cross-examination February 1984.

Before the **Kentucky Public Service Commission**, in *Re: South Central Bell*, 8847, on behalf of KY PSC, filed November 28, 1983, cross-examination December 1983.

Before the **Florida Public Service Commission**, in *Re: Southern Bell Rate Case*, 820294-TP, on behalf of Florida Department of General Services, FL Ad Hoc Telecommunications Users, filed March 21, 1983, cross-examination May 5, 1983.

Before the **Maine Public Utilities Commission**, in *Re: New England Telephone*, 82-142, on behalf of Staff, ME PUC, filed November 15, 1982, cross-examination December 9, 1982.

Before the **Kentucky Public Service Commission**, in *Re: South Central Bell*, 8467, on behalf of the Commonwealth of Kentucky, cross-examination August 26, 1982.

**LIST OF DATA AND INFORMATION CONSIDERED
IN FORMING OPINION**

Rutherford's Objections and Responses to TWEAN's First Set of Interrogatories and Requests for Documents.

All Bates Numbered Documents provided by Rutherford as of the date of this Report.

30(b)(6) Deposition Transcripts and Exhibits for the following witnesses for the Plaintiff: Saunders, Hall, and Haire.

Rutherford RUS Form 7 filings.

Federal Communications Commission Orders, Rules, and Reports as cited in footnotes.

Section 224 of the Communications Act.

North Carolina Session Law 2009-278, Senate Bill 357, §62.350.

IRS Rev. Rule 2013-6.

Economic literature as cited in footnotes.

**CALCULATION OF MAXIMUM POLE
ATTACHMENT RATES FOR 2012
DATA FOR YR ENDING
RUTHERFORD**

12/31/2011 Kravtin
Attachment 3

Net Investment Per Bare Pole

Gross Distribution Plant	\$262,309,872
Distrib Plant Accum Depreciation	\$88,082,334
Distrib Accum Deprec/Distrib Plant %	33.579%
Gross Investment in Pole Plant	\$36,178,943
- Prorated Accum Depreciation—Poles	\$12,148,707
- Accumulated Deferred Taxes	n/a
Net Investment in Pole Plant	\$24,030,236
Appurtenances Factor (Minor)	.05
Investment in Bare Pole Plant	\$22,828,724
/ Number of Poles	25,136
Net Investment per Pole	\$182.43

Carrying Charges

Maintenance

Maintenance Expenses (Acct 593)	\$3,310,723
Gross Inv Accts 364,365,369	\$142,622,699
Pro-rated Depreciation Reserve	\$47,891,984
/ Net Investment in 364,365,369	\$94,730,715
= Maintenance Carrying Charge	3.49%

General and Administrative

G&A Exp. (Incl Cust & Sales)	\$8,931,855
Total Gross Plant Inv.	\$338,208,457
- Depreciation Reserve—Total	\$117,651,662
- Accumulated Deferred Taxes—Total	n/a
/Net Plant in Service	\$220,556,795
=Administrative Carrying Charge	4.05%

Taxes

Normalized Tax Expense	
Total Plant	
- Depreciation Reserve	
- Accumulated Deferred Taxes	
/Net Plant in Service	
=Tax Carrying Charge	n/a

Depreciation

Annual Depreciation Rate for Poles	4.0%
Gross Investment in Pole Plant	\$36,178,943
/Net Investment in Pole Plant	\$24,030,236
=Gross Net Adjustment	1.5056
Deprec Rate for Net Pole Plant	6.02%

Return

Total LT Debt Interest	\$6,802,156	
/LT Debt	\$124,161,400	
=Cost of Debt	5.48%	
=Return Carrying Charge	5.48%	
Total Carrying Charges		19.045%

Space Allocation Factor - Cable

Space Occupied by Cable	1	
/ Total Usable Space	13.5	
= Space Allocation Factor	7.41%	

MAXIMUM RATE - CABLE

Investment Per Bare Pole	\$182.43	
*Carrying Charge Factor	19.045%	
*Charge Factor	7.41%	
= MAXIMUM CABLE RATE		\$2.57

MAXIMUM RATE – CURRENT TELECOM @ 3AE

Investment Per Bare Pole	\$182.43	
*Carrying Charge Factor	19.045%	
*Space Allocation Factor	15.83%	
*Cost Factor (Rural)	.44	
=MAXIMUM TELECOM RATE		\$2.42

MAXIMUM RATE – OLD TELECOM @ 3AE

Investment Per Bare Pole	\$182.43	
* Carrying Charge Factor	19.045%	
* Space Allocation Factor	15.83%	
=MAXIMUM OLD TELECOM RATE		\$5.50

Derivation of Space Allocated to Telecom Sec. 224(e) @3AE

Amount of Unusable Space	24.00	
*Statutory Apportionment Factor (2/3)	0.67	
=Space To Be Allocated	16.00	
/ Entities (Rural)	3.00	
= Feet of Unusable Space To Be Allocated	5.33	
+ Usable Space	1.00	
= Total Space To Be Allocated	6.33	
/ Total Pole Space	40.00	
= Telecom Rate Space Allocation Factor	15.83%	

Illustrative Rate Scenarios:**MAXIMUM RATE – CURRENT TELECOM 2.5 AE**

Investment Per Bare Pole		\$182.43
*Carrying Charge Factor		19.045%
*Space Allocation Factor		18.50%
*Cost Factor (Rural)	.44	
=MAXIMUM TELECOM RATE		\$2.83

MAXIMUM RATE – OLD TELECOM @ 2.5 AE

Investment Per Bare Pole		\$182.43
* Carrying Charge Factor		19.045%
* Space Allocation Factor		18.50%
=MAXIMUM OLD TELECOM RATE		\$6.43

Derivation of Space Allocated to Telecom Sec. 224(e) @2.5 AE

Amount of Unusable Space		24.00
*Statutory Apportionment Factor (2/3)		0.67
=Space To Be Allocated		16.00
/ Entities (Rural)		2.50
= Feet of Unusable Space To Be Allocated		6.40
+ Usable Space		1.00
= Total Space To Be Allocated		7.40
/ Total Pole Space		40.00
= Telecom Rate Space Allocation Factor		18.50%

MAXIMUM RATE – CURRENT TELECOM @ 2.0 AE

Investment Per Bare Pole		\$182.43
*Carrying Charge Factor		19.045%
*Space Allocation Factor		22.50%
*Cost Factor (Rural)	.44	
=MAXIMUM TELECOM RATE		\$3.44

MAXIMUM RATE – OLD TELECOM @ 2.0 AE

Investment Per Bare Pole		\$182.43
* Carrying Charge Factor		19.045%
* Space Allocation Factor		22.50%
=MAXIMUM OLD TELECOM RATE		\$7.82

Derivation of Space Allocated to Telecom Sec. 224(e) @2.0 AE

Amount of Unusable Space		24.00
*Statutory Apportionment Factor (2/3)		0.67
=Space To Be Allocated		16.00
/ Entities (Rural)		2.00
= Feet of Unusable Space To Be Allocated		8.00
+ Usable Space		1.00
= Total Space To Be Allocated		9.00
/ Total Pole Space		40.00

DATA SOURCES

(All Calculations provided in Workpapers)

Avg Jt Pole Height Cable Formula	FCC	
Avg Jt Pole Height Telec. Formula	Answer Ex17	
Usable Space	FCC	
Unusable Space	FCC	
Appurtenances Factor (Minor)	Answer Ex 17	
Number of Attaching Entities	FCC	
= Telecom Rate Space Allocation Factor		22.50%
Gross Distribution Plant	RUS Form 7	
Distribution Plant Acc. Depreciation	REMC E006844	
Distribution Plant Accum Deprec. %	Calculation	
Gross Investment in Pole Plant	REMC Work Order Plant Ledger	
Pro-rated Acc Depreciation—Poles	Calculation based on Distrib%	
Accumulated Deferred Taxes	n/a	
Net Investment in Pole Plant	Calculation	
Investment in Bare Pole Plant	Calculation	
Number of Poles	REMC Work Order Plant Ledger	
Net Bare Cost of Bare Pole	Calculation	
Maintenance Expenses (Acct 593)	REMC E006844	
Gross Inv Accts 364,365,369	REMC Work Order Plant Ledger	
Pro-rated Depreciation Reserve	Calculation based on Distrib%	
Net Investment in 364,365,369	Calculation	
Maintenance Carrying Charge	Calculation	
G&A Exp. (Incl Cust & Sales)	RUS Form 7	
Total Gross Plant Inv.	RUS Form 7	
Depreciation Reserve—Total	RUS Form 7	
Accumulated Deferred Taxes—Total	n/a	
Net Plant in Service	Calculation	
Administrative Carrying Charge	Calculation	
Annual Depreciation Rate for Poles	Hall Deposition at 70	
Total Long Term Debt Interest	RUS Form 7	
Long Term Debt	RUS Form 7	
Cost of Debt	Calculation	