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PUBLIC SERVICE
COMMISSION

1 COMMONWEALTH OF KENTUCKY

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3 BEFORE THE PUBLIC SERVICE COMMISSION

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5 In the Matter of:

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7 AN INQUIRY INTO THE DEVELOPMENT)
8 OF DEAVERAGED RATES FOR) ADM. CASE NO. 382
9 UNBUNDLED NETWORK ELEMENTS)

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17 REBUTTAL TESTIMONY
18 OF
19 CESAR CABALLERO

20
21 ***** REDACTED VERSION *****

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24
25 ON BEHALF OF KENTUCKY ALLTEL, INC.
26
27

REBUTTAL TESTIMONY OF CESAR CABALLERO

1
2

3 **Q. Please state your name and business address.**

4 A. My name is Cesar Caballero. I am the Director of Telecom Policy for ALLTEL
5 Communications. My business address is One Allied Drive, Little Rock, Arkansas 72202.

6

7 **Q. Are you the same Cesar Caballero that submitted direct testimony in this case on**
8 **behalf of Kentucky ALLTEL, Inc. (“Kentucky ALLTEL”)?**

9 A. Yes.

10

11 **Q. What is the purpose of your rebuttal testimony?**

12 A. I will demonstrate how certain aspects of the direct testimony proffered by August H.
13 Ankum, John Balke and Sidney L. Morrison on behalf of Nuvox Communications, Inc.
14 (“Nuvox”) are inappropriate or incorrect.

15

16 **Q. Please summarize your rebuttal testimony.**

17 A. In its direct testimony, Nuvox identified concerns with respect to Kentucky ALLTEL's
18 model and questioned the model's compliance with TELRIC standards. Nuvox's
19 assertions concern (i) Kentucky ALLTEL's alleged failure to remove load coils, (ii)
20 inclusion of “heavy” gauge cables, (iii) the so-called arbitrary methodology used to
21 convert copper cable into fiber, (iv) use of single-sized DLCs across wire center
22 locations, and (v) failure to properly identify costs associated with DS1 service. Despite
23 Nuvox's contentions, Kentucky ALLTEL's model assumptions are reasonable and
24 comply with TELRIC methodology. Importantly, for most of the concerns identified,

1 Nuvox did not make adjustments to the Kentucky ALLTEL model. Additionally, Nuvox
2 did not introduce its own model "correcting" any of the alleged deficiencies but rather
3 proposed only eight adjustments to Kentucky ALLTEL's model inputs. Despite its
4 contentions that Kentucky ALLTEL's model is not TELRIC compliant, Nuvox made only
5 a few (albeit dramatic) adjustments to the model to yield what Nuvox claimed to be
6 TRILIC-compliant rates. Mr. Blessing is addressing these adjustments in his rebuttal
7 testimony on behalf of Kentucky ALLTEL.

8
9 **Q. Do you agree with Nuvox's assertion with respect to the New York Public Service**
10 **Commission ("NYPSC") review of the ALLTEL Model?**

11
12 A. No. While Kentucky ALLTEL acknowledges that the NYPSC initially identified
13 concerns in the ALLTEL model and required the filing of a corrected study, Nuvox failed
14 to mention that ALLTEL filed a new study with the NYPSC that corrected all of the
15 concerns identified by the NYPSC. Most significantly, all of these corrections have been
16 incorporated into the model used by Kentucky ALLTEL to calculate UNE rates for
17 Kentucky ALLTEL in this proceeding.

18
19 **Q. Do you agree with Nuvox's assertion that the Nebraska Public Service Commission**
20 **("NEPSC") rejected the ALLTEL model?**

21
22 A. No, Nuvox's assertion is false. The NEPSC never rejected the ALLTEL model. An
23 economist hired by the NEPSC concluded that it would take a considerable amount of
24 time to analyze the ALLTEL model considering that the NEPSC was already familiar
25 with other models and, therefore, recommended using an average of the HAI, Synthesis
26 and BCPM models. The NEPSC decided to use the proposed averaging methodology

1 because it had used the same concept to determine UNE prices for Qwest. The NEPSC's
2 decision was not based on any perceived problems with the ALLTEL model.

3
4 **Q. Do you agree with Nuvox's assertion that Kentucky ALLTEL has overbuilt the**
5 **network containing significant fiber capacity (page 43, line 13)?**

6
7 A. No. Kentucky ALLTEL's study utilizes existing network design to determine where to
8 construct the forward-looking network and, unlike most TELRIC studies, does not
9 propose significantly expanded capacity. As the study recognizes that the same customer
10 locations must still be served in the future, it does not overbuild the network. Consistent
11 with the recognition that fiber is the network of the future, the study replaces feeder
12 copper cables with fiber on the major routes, such that every digital loop carrier ("DLC")
13 will be fiber fed. The fiber size for the forward-looking feeder is determined based, in
14 part, on the size of the exchange (which is an indication of anticipated demand) using
15 fiber sizes determined based on standard engineering criteria. The fiber sizes included in
16 the study are reasonable considering the increased demand for advanced
17 services/bandwidth. Using average 72 and 48 fiber sizes, Kentucky ALLTEL's assumption
18 provides a reasonable amount of forward-looking fiber investment. For example, in some
19 exchanges 48 fibers are too large, and in other exchanges such as those in Lexington, 96
20 or more fibers would be justified even though the Kentucky ALLTEL model used only
21 72 fibers. Additionally, total investment is not overstated because there is not much
22 difference in material costs between the various fiber sizes, and installation costs are the
23 same regardless of the fiber size.

24

1 **Q. Did Kentucky ALLTEL include load coils in its overall copper network costs as**
2 **alleged by Nuvox (page 43, line 19)?**

3
4 A. No. Kentucky ALLTEL did not include any load coils in its copper network costs.
5 Support data Tab BL of the Kentucky ALLTEL study includes load coils as a separate
6 item. Load coil costs, however, were not included in any of the cable configurations used
7 to develop the forward-looking network costs. This fact is verified by reviewing each
8 cable configuration provided on Tab BL in response to Nuvox Data Request No. 39, in
9 file “KYA_Q39 Response.xls”, worksheet “9_WOMS Price Book”. Load coils are
10 identified by codes starting with PG31-100-(66) through PG35-9-(66) in Column C of the
11 worksheet. Clearly, none of these codes are included with the cable configurations shown
12 in Column B of the same worksheet, thereby proving the inaccuracy of Nuvox’s
13 assertion.

14
15 **Q. Do you agree with Nuvox’s assertion that in a forward-looking network the need for**
16 **expensive “heavy” gauge cables will be greatly reduced? Did Kentucky ALLTEL’s**
17 **model take into account the reduction of “heavy” gauge cables? (page 44, line 6)**

18
19 A. Kentucky ALLTEL agrees that in a forward-looking network, gauge of cables will be
20 reduced compared to the current network. As a result, Kentucky ALLTEL’s model
21 converts certain “heavy” gauge cables to a smaller gauge. This conversion is shown in
22 response to Nuvox Data Request No. 39, in file “KYA_Q39 Response.xls”, Worksheet
23 “2_Copper Cable Re-sizing”, Gauge Overrides Table. (See, Columns T through W.)

24
25 **Q. Nuvox asserts that Kentucky ALLTEL used an arbitrary process to convert the**
26 **larger sized copper cables into fiber (page 44, line 16)? Is this accurate?**

27

1 A. No. Nuvox's assertions are false. Kentucky ALLTEL's model is not arbitrary and instead
2 correctly assumes that in a forward-looking network all feeder cable is fiber-based. The
3 model identifies the size of the exchange and the size of the copper cables to determine
4 feeder cable. In large exchanges, those having more than [REDACTED], Kentucky
5 ALLTEL's model assumes that cables larger than 200 pair are feeder cable and,
6 therefore, replaced with fiber. For smaller exchanges, cables larger than 100 pair are
7 determined to be feeder cable and replaced with fiber. By looking at the size of the
8 exchange and the size of the cable, Kentucky ALLTEL considers customer demand in its
9 determination of feeder cable.

10
11 **Q. Do you agree with Nuvox's assertion that Kentucky ALLTEL did not attempt to**
12 **compute the quantity of fibers needed to serve the number of DLC systems in the**
13 **study (page 45, line 7)?**

14
15 A. No, I do not agree. Kentucky ALLTEL's model calculates the required fiber size based
16 upon the number of access lines for (*i.e.*, size of) each exchange. The size of an exchange
17 is a very conservative indication of the forward-looking demand and number of DLCs
18 that will be required. Accordingly, larger sized fiber is placed in those exchanges that are
19 predicted to have more DLCs. By using more than one size, Kentucky ALLTEL is
20 considering the fact that there will be a reduced need for fiber capacity in those
21 exchanges where future demand and the number of DLCs are expected to be lower. The
22 48 and 72 fiber sizes used in Kentucky ALLTEL's model are reasonable for an average
23 of 19 DLCs per exchange.

24
25 **Q. Do you agree with Nuvox's assertion that deploying DLC systems of the same size**
26 **for all locations within a wire center is unreasonable (page 46, line 16)?**
27

1 A No. Kentucky ALLTEL's model considers customer demand and customer locations for
2 each wire center in order to determine the appropriate size for the DLC systems within
3 that wire center. This methodology provides a good estimate of the forward-looking costs
4 for DLC equipment. Significantly, Kentucky ALLTEL uses several size DLCs, including
5 [REDACTED] to properly account for customer demand. The FCC's Synthesis
6 model uses only two DLC sizes, one for high density and another for low density.
7 Considering the material differences in density among the RBOC exchanges, Kentucky
8 ALLTEL's utilization of multiple DLC sizes more than offsets the use of the costs
9 associated with deploying the same size DLC within a wire center location.¹ In order to
10 adjust for what Nuvox alleges is a deficiency, Nuvox adjusted (incorrectly) the fill factors
11 in the Kentucky ALLTEL model. Mr. Blessing addresses the inappropriateness of this
12 adjustment in greater detail in his rebuttal testimony.

13
14 **Q. Do you agree with Nuvox's per line cost calculations resulting from its use of a**
15 **standard size DLC (page 47, lines 1-16)?**

16
17 A. No, Nuvox used data which were biased to render a much higher cost difference than
18 actually exists. First, Nuvox used DLC material costs which included ADSL/POTS
19 combination line cards and should not have been included in the DLC investment (as
20 correctly noted in Nuvox's direct testimony); in fact, the ADSL portion was excluded
21 from Nuvox's proposed study and Kentucky ALLTEL's revised study submitted by Mr.
22 Blessing. As mentioned previously, however, while Nuvox correctly excluded the ADSL
23 costs from its proposed study, Nuvox incorrectly included ADSL costs in its per-line

¹ See, Appendix B – HAI Model Release 5.0a Inputs, Assumptions and Default Values at page 32. (The Synthesis Model utilizes 672 line DLCs for high-density areas and 120 line DLCs for low-density areas.)

1 calculations. [REDACTED]
2 [REDACTED] (as provided in study backup data Tab BB, Calix
3 Budgetary Pricing Tool (DLCs) by exchanges) - [REDACTED] as suggested
4 by Nuvox. Second, Nuvox uses a low number of 133.3 (400/3) lines per DLC. Nuvox's
5 figure does not reflect the probable average number of lines which should be 180 (the
6 midpoint between 120 and 240). In a non-biased example, the average demand would be
7 540 lines for three systems. Assurance of enough wired capacity would require at least
8 two 240-line DLCs (240+240+120=600 capacity) because using only one 240-line DLC
9 is inadequate (240+120+120=480 capacity). Therefore, the maximum by which costs
10 would be over-stated would be the difference between one [REDACTED] DLC. As Mr.
11 Blessing demonstrates, this difference amounts to only [REDACTED], which is well below the
12 [REDACTED] Nuvox suggests.

13
14 **Q. Are Nuvox's calculations of utilization factors resulting from using a standard size**
15 **DLC correct (page 48, lines 1-18)?**

16
17 A. No. Nuvox based its adjustments on the difference in perceived utilization of the DLCs
18 and, in doing so, made a fundamental error in its calculations. Nuvox assumed that
19 incremental changes in system capacity would occur at the same rate as incremental
20 changes for material costs. This is not the case as explained and shown in Table 4 of Mr.
21 Blessing's rebuttal testimony. The correct method is one which uses a fill factor
22 adjustment to reduce the material costs in the model by the incremental dollar amount
23 required to reduce DLC capacities.

24

1 **Q. Nuvox asserts that Kentucky ALLTEL erroneously included DSL costs in its DLC**
2 **equipment. Do you agree? (page 49, line 11)**

3
4 A. Kentucky ALLTEL configured [REDACTED] of the line cards in each DLC to be DSL capable by
5 placing combination ADSL/POTS cards. This ratio is reasonable considering that
6 ALLTEL's average DSL penetration is [REDACTED] Inclusion of the ADSL/POTS combo
7 cards and costs in the Kentucky ALLTEL study is appropriate since Kentucky ALLTEL
8 is configuring the forward-looking network with the capability to provide ADSL service.
9 However, Kentucky ALLTEL recognizes that such costs should not remain in the DLC
10 material costs which are allocated over all loops but should be moved, instead, to switch
11 port costs. Kentucky ALLTEL made this adjustment in its revised cost study submitted
12 by Mr. Blessing with his direct testimony.

13
14 **Q. Nuvox asserts that the Kentucky ALLTEL model fails to identify costs associated**
15 **with DS1 service? Do you agree? Is it material? (page 50, line 1)**

16
17 A. No, I do not agree as Nuvox is incorrect in its assertion. Kentucky ALLTEL's model
18 develops the costs associated with DS1 service based on the individual costs associated
19 with each component of the loop. The underlying material costs associated with DS1
20 service can be identified by following the development of DS1 costs in the model and
21 reviewing support documents provided by Kentucky ALLTEL pursuant to Commission
22 Staff and Nuvox data requests. Although Kentucky ALLTEL develops some of the costs
23 on a total network basis, the costs can be analyzed to determine the material cost portion
24 allocated to each DS1 loop. Allocation of common material costs is done on a "voice
25 grade equivalent" basis only when that is the most appropriate method of allocation. The
26 largest cost component, copper cable, is allocated based on use of two pairs per DS1.

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Q. Does this conclude your rebuttal testimony?

A. Yes, at this time.

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COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

**AN INQUIRY INTO THE DEVELOPMENT)
OF DEAVERAGED RATES FOR) ADM. CASE NO. 382
UNBUNDLED NETWORK ELEMENTS)**

**REBUTTAL TESTIMONY
OF
DAVID C. BLESSING**

ON BEHALF OF KENTUCKY ALLTEL, INC.

******* REDACTED VERSION *******

REBUTTAL TESTIMONY OF DAVID C. BLESSING

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I. Introduction and Overview of Testimony

1 **Q. Please state your name and business address.**

2 **A.** My name is David C. Blessing. I am a principal in the consulting firm of Parrish,
3 Blessing & Associates, Inc. My business address is 10905 Ft Washington Road, Suite
4 307, Ft. Washington, Maryland 20744.

5

6 **Q. Are you the same David C. Blessing that submitted direct testimony in this case on**
7 **behalf of Kentucky ALLTEL, Inc. (“Kentucky ALLTEL”)?**

8 **A.** Yes.

9

10 **Q. What is the purpose of your rebuttal testimony?**

11 **A.** I will address the inappropriateness of certain adjustments to Kentucky ALLTEL's
12 TELRIC model suggested by August H. Ankum, John Balke and Sidney L. Morrison on
13 behalf of Nuvox Communications, Inc. (“Nuvox”).¹ As the adjustments and supporting
14 testimony suggested by Nuvox are generally problematic, I will specifically critique its
15 underlying assumptions and methodologies.

16

17 **A. Adjustments Proposed by Nuvox**

18 **Q. What adjustments are proposed by the Nuvox witnesses?**

¹ The version of the Kentucky ALLTEL model addressed by Nuvox’s witnesses was replaced by the revised model attached to my direct testimony as Exhibit DCB 1.8 – Revised UNE Model. Throughout this rebuttal testimony, the term “revised model” will refer to the Revised UNE Model attached to my direct testimony. The earlier version discussed by Nuvox witnesses in their direct testimony will be referred to as the “proposed model.”

1 A. In developing their suggested UNE rates for Kentucky ALLTEL, Nuvox’s witnesses
2 begin with the Kentucky ALLTEL proposed model and make eight adjustments to arrive
3 at Nuvox's proposed rates. However, Kentucky ALLTEL filed a revised model with its
4 Direct Testimony that already makes changes similar to some of the adjustments
5 proposed by Nuvox. Additionally, Nuvox has proposed adjustments to Kentucky
6 ALLTEL's model rather than file its own model. Therefore, the issues at hand in this
7 proceeding appear to have been significantly narrowed. Despite a fair degree of rhetoric
8 in Nuvox's panel testimony criticizing the Kentucky ALLTEL proposed model, Nuvox
9 does not propose an alternative model. Instead, Nuvox uses Kentucky ALLTEL's model
10 as the appropriate platform from which to develop UNE rates that are appropriate for
11 Kentucky ALLTEL.

12
13 Nuvox lists its eight adjustments to the original proposed model on the tab marked “QSI
14 Changes” of the Nuvox Exhibit 4 – Restated KAUNEw1. The eight adjustments
15 proposed by Nuvox are as follows:

- 16 1. Adjustment of the Proposed Depreciation Lives;
- 17 2. Adjustment of the Common Cost Factor: Change advertising from 90% to
18 100% retail; restate General Support Facilities ("GSF") factor using
19 accounting data and adjust the common cost factor denominator;
- 20 3. Adjustment of Direct Expense Factor using FCC 1997/1998 current to
21 book factor;
- 22 4. Change Cost of Capital from 11.25% to 10.78%;
- 23 5. Adjustment of DLC costs to reflect removal of ADSL cards;

- 1 6. Correct Fiber Loop Equipment Investment;
- 2 7. Adjust Fill Factor Variable at Line 10 of the model’s loop-related network
- 3 element cost sheets (Non-loop related fill assumptions were unchanged);
- 4 and
- 5 8. Adjustment of Activity times in the tab labeled “Conditioning.”
- 6

7 **B. Adjustments Kentucky ALLTEL Has Already Made Or Will Agree To Make**

8

9 **Q. Of the eight adjustments above, which adjustments has Kentucky ALLTEL already**

10 **made to its cost model?**

11

12 A. I have already addressed three of these eight adjustments in the revised model attached to

13 my direct testimony. Kentucky ALLTEL's revised model features adjusted depreciation

14 lives that so closely approximate the Nuvox proposals that Kentucky ALLTEL will

15 accept those proposed by Nuvox. At page 20 of its panel testimony, Nuvox presents a

16 table with its proposed depreciation lives. With the exception of the NID, Loop

17 Underground Cable, Loop Fiber Cable and IX Transport Facility, Nuvox has utilized

18 Kentucky ALLTEL’s original proposed model. Again, while Kentucky ALLTEL has

19 updated many of the proposed lives in its revised model filed with my direct testimony,

20 Kentucky ALLTEL accepts the lives proposed by Nuvox and has incorporated them into

21 its study.

22

23 In its revised model, Kentucky ALLTEL also has made the adjustment to Loop Fiber

24 Equipment such that the investment suggested by Nuvox equals that found in Kentucky

25 ALLTEL's revised model. Finally, Kentucky ALLTEL's revised model also features a

1 reduction in DLC investment that accounts for the removal of ADSL cards. The end
2 result is that of the eight adjustments proposed by Nuvox, three of them have been
3 accepted by Kentucky ALLTEL and are incorporated into Kentucky ALLTEL's revised
4 model.

5
6 Accordingly, only five adjustments require further discussion. As I will discuss later,
7 Kentucky ALLTEL accepts and has incorporated portions of two of the remaining five
8 Nuvox proposals. Kentucky ALLTEL accepts the Nuvox changes that relate to the
9 development of the GSF expense level used in the calculation of the common cost factor
10 and the use of an inappropriate line count in the sizing calculation for DLCs. Therefore,
11 only three of the Nuvox adjustments remain fully disputed while the remaining two are
12 partially disputed. I will, however, discuss each of the five adjustments below and
13 demonstrate why the Commission should accept, revise, or reject each adjustment. I have
14 prepared a revised version of Nuvox's Exhibit 4 UNE model that incorporates those
15 adjustments that should be accepted and/or revised and excludes those that are incorrect
16 and should be rejected.

17 18 **C. Results from Revision of Nuvox Exhibit 4 Restates KAUNEW1 Confidential**

19
20 **Q. Please summarize the rates that result from your revision of Nuvox's Exhibit 4**
21 **Restated KAUNEW1.**

22
23 A. Table 1 below identifies and compares the Zone 1 rates proposed by Nuvox and
24 Kentucky ALLTEL in their direct testimonies and those developed using my revision of
25 Nuvox's Exhibit 4 –Restated KAUNEW1.

1
2
3
4
5
6
7

[REDACTED]

[REDACTED]



[REDACTED]

[REDACTED]
[REDACTED]
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14

The above table illustrates the impact of the Nuvox adjustments to Kentucky ALLTEL's proposed model as well as the effect of my revisions to their adjustments. It is my understanding that Nuvox is primarily concerned with the DS1 loop rate. As the highlighted portion of the table above indicates, the revised model filed with my direct testimony estimates the forward-looking cost of DS1 loops at [REDACTED] per month. The adjustments proposed by Nuvox result in an unreasonable proposed rate of [REDACTED] per

1 month for DS1 loops. My corrections to Nuvox's analysis establish a proposed rate of
2 ██████████ per month.

3
4 **Q. Please discuss your general concerns with respect to Nuvox's direct testimony.**

5 A. The Nuvox panel lists several concerns with Kentucky ALLTEL's proposed model. To
6 reiterate, several of these concerns (such as depreciation lives, the correction of the Loop
7 Fiber Equipment and the elimination of ADSL line card cost) were already addressed, in
8 Kentucky ALLTEL's revised model filed with my direct testimony. Most of Nuvox's
9 remaining concerns are unsubstantiated and, in many cases, based on incorrect assertions
10 with respect to the Kentucky ALLTEL model.

11
12 As described above, Nuvox has proposed certain very significant adjustments to
13 Kentucky ALLTEL's proposed model based on incorrect assertions or its
14 misunderstanding or misuse of unrelated or erroneous data. These adjustments would
15 dramatically (and inappropriately) reduce the UNE rates developed by the proposed
16 model. In general, the adjustments suggested by Nuvox pertain to a reduction in the loop
17 capacity in the model that would result in a significant decrease in the estimated forward-
18 looking investment and a sizable reduction in the annual cost factors ("ACF") that when
19 applied to forward-looking investment determine forward-looking cost. Below, I will
20 demonstrate why each of the five remaining Nuvox adjustments is fully or partially
21 incorrect.

1 **Q. Please list the Nuvox adjustments that Kentucky ALLTEL disputes in whole or in**
2 **part.**

3 A. The following adjustments proposed by Nuvox remain in dispute for the reason that they
4 are incorrect or inappropriate:

- 5 1. Adjustment of the Fill Factor Variable at Line 10 of the model's loop-
6 related network element cost sheets;
- 7 2. Adjustment of the Cost of Capital from 11.25% to 10.78%;
- 8 3. Adjustment of Direct Expense Factor using FCC 1997/1998 current-to-
9 book factor;
- 10 4. Adjustment of the Common Cost Factor; and
- 11 5. Adjustment of loop conditioning costs.

12
13 **II. Fill Ratios - Nuvox incorrectly analyzed Kentucky ALLTEL's fill ratio and used a**
14 **flawed methodology to apply an incorrect ratio to reduce Kentucky ALLTEL's**
15 **network investment.**
16

17 **Q. In TELRIC modeling, what is the purpose of a fill factor?**

18 A. Fill factors are intended to allow a modeled network to have sufficient network capacity
19 to meet foreseeable demand and cover anticipated breakage. In other words, the challenge
20 is to establish a fill factor that does not cause the study to overestimate or underestimate
21 network plant necessary to service anticipated demand and to cover anticipated breakage
22 in the network. A low utilization ratio implies that there is excess network capacity, and a
23 relatively high utilization ratio indicates there is insufficient network capacity.² Because

² A capacity utilization ratio is calculated as the number of pairs actually being used by customers divided by the number of pairs deployed. Thus, a 900 pair cable that has 600 pairs assigned to customers has a 600/900 or 67%

1 the fill factor assumption impacts network capacity for a given level of anticipated
2 demand, changes in the fill factor assumption in a TELRIC study significantly affect the
3 level of investment in the model and, thus, the resulting UNE costs. Generally, a higher
4 fill factor assumption means fewer pairs (less capacity) is built into the modeled network.
5 All else being equal, less investment corresponds to a lower UNE rate.

6
7 **Q. Why is it appropriate for Kentucky ALLTEL to set the fill factor variable in its**
8 **model at 100%?**

9 A. While most TELRIC models use a fill factor assumption less than 100%, the way those
10 models apply the fill factor is very different from how the Kentucky ALLTEL model
11 applies this factor; accordingly, a direct comparison on this point is not appropriate. The
12 fill factor in Kentucky ALLTEL's model is applied to a very different variable than is
13 generally the case in other models. In the FCC Synthesis Model, for example, the fill
14 factor assumption is applied to a base-line level of investment just sufficient to service
15 actual customer demand. This base-line investment does not include capacity to service
16 foreseeable demand growth and anticipated pair breakage and/or failure. In other words,
17 the fill factor is used to increase or gross up the base line network capacity to meet the
18 design standards required to service expected future growth in demand and breakage. In
19 contrast, the Kentucky ALLTEL model starts with the current capacity as the base line
20 and, therefore, appropriately uses a fill factor of 100%, which has the effect of
21 multiplying the current capacity by 1 and retains the current capacity. Thus, Kentucky

capacity utilization ratio. A fill ratio or fill factor is a modeling assumption used to ensure that the capacity utilization in a forward-looking model is set at an appropriate level. Assuming that 50% is the appropriate capacity utilization for copper cable means that the fill factor assumption should be set in such a way as to generate a capacity utilization of 50%.

1 ALLTEL is not using fill factors to factor in or gross up capacity for extra demand but
2 uses instead the current network capacity that already contains sufficient spare facilities
3 to meet anticipated requirements. In short, using a fill factor of 100% in Kentucky
4 ALLTEL's model is appropriate.

5
6 In practice, companies build networks that have extra capacity designed to handle this
7 short-term growth and breakage, and many engineer their network plant capacities to
8 contain pairs equal to some multiple, such as two times, the number of residences to be
9 served and some higher multiple for business locations. Companies justifiably take such
10 precautions because adding pairs at the time of the initial cable provisioning is much
11 more cost effective than having to return later and add more cable due to available cable
12 pair exhaust. Kentucky ALLTEL has applied similar principles, and the existing network
13 capacity, therefore, needs no adjustment.

14
15 The fill factor values (but not the baseline network) used in many models are determined
16 based on these same assumptions. In models such as the HAI and FCC's Synthesis
17 Models, the fill factors are set below 100% and divided into base-line cable investment in
18 order to scale up cable material investment from the level just sufficient to cover current
19 actual customer demand to the capacity needed to meet future demand growth. Kentucky
20 ALLTEL's model, however, does not start with a loop capacity level just sufficient to
21 cover current actual demand; instead, Kentucky ALLTEL starts with capacity equal to
22 that currently in the network but does not increase it for increased future demand. The
23 Kentucky ALLTEL network's current capacity already contains additional capacity

1 designed to handle foreseeable growth and pair failure and/or breakage. Using the
2 Synthesis Model's default fill factor assumptions of less than 100% in the Kentucky
3 ALLTEL model, therefore, would increase forward-looking capacity to levels that may
4 be excessive. However, by setting the fill factor assumption at 100%, the level of current
5 capacity in the network is maintained as an appropriate proxy for forward-looking
6 capacity.

7
8 In an attempt to drive down rates, Nuvox uses the fill factor variable in the opposite
9 fashion. Specifically, Nuvox proposes to set the fill factor variable above 100% in order
10 to scale down investment, because Nuvox contends that there is excess capacity in the
11 forward-looking network developed by Kentucky ALLTEL's proposed model. Nuvox's
12 use of fill factor variables which are significantly greater than 100% means that Nuvox is
13 implying that the current Kentucky ALLTEL network contains significant excess
14 capacity. Based on the fact that the Kentucky ALLTEL model works differently from
15 some other models, this is incorrect as discussed below.

16
17 **Q. Why does Nuvox claim that an adjustment to the fill factor variable assumptions in**
18 **Kentucky ALLTEL's proposed model is warranted?**

19
20 A. In its testimony, Nuvox repeatedly insists that the forward-looking loop plant utilized in
21 Kentucky ALLTEL's proposed model contains more capacity than is needed to service
22 foreseeable demand and account for expected breakage. To account for this alleged over
23 capacity, Nuvox proposes to increase the model's fill factor assumptions. By way of this
24 adjustment, Nuvox attempts to drastically reduce the level of forward-looking capacity in
25 the Kentucky ALLTEL model's loop plant. Reducing the level of loop capacity in the

1 forward-looking network, in effect, reduces the estimated level of forward-looking loop
 2 plant investment. As a result, Nuvox proposes to increase the fill factor assumptions and,
 3 therefore, the level of loop element investment.³ But as discussed above, Nuvox's
 4 conclusion that Kentucky ALLTEL's model develops costs based on a network with
 5 excess capacity implies that the actual Kentucky ALLTEL network also contains
 6 significant over capacity, which is false. In order for Nuvox's adjustment to be justified or
 7 appropriate, the existing Kentucky ALLTEL network would have to include excess
 8 capacity, which it does not. Table 2 shows the Nuvox fill factor adjustments and their
 9 impact on the model's level of network investment.

10
 11 **Table 2**
 12 **Nuvox Fill Factor Variable Adjustments**

13	<u>Network Component</u>	<u>Adjustment</u>	<u>Investment Reduction</u>
14	Loop Aerial Copper	125.73%	20.4%
15	Loop Buried Copper	125.73%	20.4%
16	Loop UG Copper	125.73%	20.4%
17	Loop Fiber Cable	176.09%	43.2%
18	Drop Aerial	125.73%	20.4%
19	Drop Buried	125.73%	20.4%
20	Loop Copper Equipment	194.42%	48.5%
21	Loop Fiber Equipment	194.42%	48.5%
22			
23			
24			

25
 26 **Q. Has this Commission determined that the current level of capacity in Kentucky**
 27 **ALLTEL's network is excessive?**
 28

³ As filed by Nuvox, fill factor adjustments are made on Line 10 of the Loop Aerial Copper, Loop Buried Copper, Loop Underground Copper, Loop Fiber Cable, Loop Fiber Equipment, Loop Copper Equipment, Drop Aerial and Drop Buried sheets.

1 A. To my knowledge, the Commission has not made any such determination, nor is there
2 any support for such a finding.

3
4 **Q. Has Nuvox presented any evidence to support its contention that the current level of
5 capacity in Kentucky ALLTEL's network is excessive?**

6
7 A. No, Nuvox has not presented any evidence on this issue.

8
9 **Q. Does the current Kentucky ALLTEL network have excess capacity that justifies
10 adjusting the model as suggested by Nuvox?**

11
12 A. No. In fact, actual capacity utilization rates for the Lexington exchanges indicate that the
13 actual fill is consistent with the post adjustment ranges proposed by Nuvox. In other
14 words, the current fill of the Kentucky ALLTEL network that Kentucky ALLTEL used in
15 its model is already at or near the fill level to which Nuvox proposes. Thus, there is no
16 need to further reduce the current capacity. Exhibit DCB R2 contains exchange level
17 copper cable utilization ratios from May 2004 for the Lexington exchanges. They range
18 from [REDACTED] for the Lakeside exchange to [REDACTED] for the Lexington South exchange.
19 Nuvox's proposed adjustment would result in a range between [REDACTED] and [REDACTED]. At
20 page 54 of its testimony, Nuvox proposes a cable utilization ratio of 50% - below the
21 lowest actual utilization ratio of any of the Lexington exchanges.

22
23 **Q. In addition to the Nuvox fill factor adjustments being inappropriate, are they also
24 incorrect?**

25
26 A. The adjustments proposed by Nuvox are incorrect. There are two components to this
27 conclusion. First, the methodology Nuvox uses to conclude that the current network
28 contains excessive capacity is flawed, and second, even if one accepts Nuvox's excessive

1 capacity conclusion, Nuvox's application of the adjustment to material cost (investment)
2 is improper. Nuvox's conclusion that there is excessive capacity is based on inaccurate
3 data and is, therefore, wrong, and its application of the adjustment in the model is
4 incorrect.

5
6 **Q. On what inaccurate data does Nuvox base its conclusion that excessive capacity**
7 **exists in Kentucky ALLTEL's network, and why are the data inaccurate?**

8
9 A. Nuvox uses the cable pair foot data contained in the Import Data sheet of the Kentucky
10 ALLTEL model to conclude that excessive capacity exists. However, that data are not
11 correct and cannot be used as Nuvox attempts to do. The data were not used by Kentucky
12 ALLTEL in running its model and, for the same reason, should not be used by Nuvox.
13 The data are erroneous because they were generated based on incorrect average loop
14 length assumptions that are not representative of total loops in the Kentucky ALLTEL
15 network. These data were derived from a limited sample of private line circuits, and only
16 those that were provisioned after Kentucky ALLTEL acquired the study area from
17 Verizon. As a result, the loop length assumptions in these erroneous data are not
18 representative of total loops and are misleading. Therefore, the pair feet values in the data
19 sheet used by Nuvox are based on these assumptions and provide no usable information.
20 Very simply, Nuvox uses erroneous data that cannot be used to evaluate the model's
21 network capacity assumptions.

22
23 **Q. If the data are erroneous, why are they included in Kentucky ALLTEL's data input**
24 **sheets?**
25

1 A. In an attempt to be fully responsive to requests for all information and data related to its
2 proposed model, Kentucky ALLTEL did not exclude any data appearing on the data input
3 sheets, even if Kentucky ALLTEL did not use the data in the specific model prepared
4 with respect to this proceeding. These erroneous data are contained in the model input
5 data sheets because in running earlier versions of ALLTEL's TELRIC model for other
6 states, ALLTEL attempted to develop individual loop costs based on the number of pair
7 feet.⁴ Subsequently, this methodology was determined to be unreliable due to insufficient
8 loop length data required to generate estimates of the number of pair feet; accordingly,
9 this method and data were abandoned and replaced by the methodology used in Kentucky
10 ALLTEL's initially proposed and revised models. In short, the incorrect average loop
11 length and pair feet data used by Nuvox remain on the data input sheets of the model but
12 are not used by Kentucky ALLTEL in any of the cost/rate calculations and are not
13 reliable for use by Nuvox.

14

15 **Q. How does Nuvox calculate its fill factor adjustment for copper cable?**

16 A. Nuvox calculates its fill ratios for copper cable, fiber cable and DLCs based on its own
17 overcapacity calculations. For copper cable, Nuvox bases its overcapacity calculation on
18 a ratio of working pair feet to capacity pair feet. Nuvox compares this "implicit
19 utilization" or fill to what it claims is an industry standard fill ratio.⁵ According to Nuvox,
20 the industry standard fill ratio provides the appropriate level of excess capacity. For

⁴ The number of pair feet is determined by multiplying the number of pairs in a cable by the cable's length. For example, the number of pair feet in 1,000 feet of 900 pair cable would be equal to 1,000 times 900 or 900,000 pair feet. It is clear that without reliable assumptions concerning loop length, there is no way to reliably estimate the quantity of pair feet per loop.

⁵ Nuvox direct testimony at page 53.

1 example, Nuvox claims that the industry standard fill factor for loop facility is 50%.
2 Under its approach, any capacity utilization ratio below 50% would result in too much
3 capacity. Nuvox then divides the alleged industry standard fill factor by its estimate of
4 the implicit utilization of copper cable to generate the fill factor adjustment.⁶ Continuing
5 with the above example, if the calculated implicit utilization is assumed to be 25%, the
6 resulting fill factor adjustment would equal 50%/25% (*i.e.*, two). As explained below,
7 this adjustment would cause the level of copper cable investment in the model to be cut in
8 half. Any implicit utilization ratio less than what Nuvox has claimed is the industry
9 standard would result in a fill factor adjustment greater than one. Based on how Kentucky
10 ALLTEL's model uses the fill factor adjustment, Nuvox's approach would reduce the
11 level of investment. On the other hand, any implicit utilization greater than Nuvox's
12 suggested industry standard would result in a fill factor adjustment less than one.
13 Inserting a fill factor less than one into Kentucky ALLTEL's model would increase the
14 level of investment and corresponding UNE rate as well. As discussed above, the implicit
15 utilization ratio for copper cable calculated by Nuvox is based on flawed data and is
16 incorrect for that reason. If Kentucky ALLTEL replaced the incorrect implicit utilization
17 ratio calculated by Nuvox with the actual fill ratios from the Lexington exchanges, the fill
18 factor adjustment using Nuvox's method would be less than one. Based on the above
19 discussion, this would actually increase copper cable investment in the model - not
20 reduce it as Nuvox proposes.

⁶ See, Nuvox Exhibit 4, Sheet QSI-Calc for fill adjustment.

1 **Q. To correct Nuvox's error, are you proposing to increase the level of copper cable**
2 **investment in the model by inserting a copper fill adjustment of less than one?**

3
4 A. No. Based on the utilization ratios from the Lexington exchanges and given that there is
5 no evidence to the contrary, the utilization ratios in the current network are appropriate
6 for use in Kentucky ALLTEL's forward-looking model. In other words, there is no need
7 at all for the Nuvox adjustment. By the same token, the fact that Nuvox's calculated
8 implicit utilization ratios are so far from the actual Lexington ratios suggests that its
9 simplistic methodology using invalid data leads to nothing but misleading conclusions.
10 Thus, Nuvox's implicit copper cable utilization ratio should be rejected.

11
12 **Q. How does Nuvox calculate its fill factor adjustment for fiber cable?**

13 A. Nuvox uses a methodology similar to the one it uses for copper cable to estimate a fill
14 ratio for fiber cable. Nuvox attempts to use a fiber pair feet figure from the 'Import Data'
15 sheet of the proposed model to calculate "loop fiber strand feet." Nuvox then reverts to an
16 unclear and undocumented method to develop a figure it names "fiber strand feet
17 working feet." Dividing the second figure by the first, Nuvox arrives at its estimate of
18 fiber fill (*i.e.*, fiber strand working feet ÷ loop fiber strand feet = estimated fiber fill).
19 These calculations are shown in Exhibit 6 of Nuvox's Direct Testimony. It is unclear
20 what either of these figures represents and whether the ratio has any meaning whatsoever;
21 however, it is easy to see that at least one of the figures is incorrect. "Loop fiber strand
22 feet" is the total number of fiber strands times their individual lengths. One would expect
23 such a number for "loop fiber strand feet" to be calculated by multiplying the size of the
24 fiber cable (72, 48 or 24 strands) by the cable length and then summing all of the results
25 for all fiber cables used as feeder plant. Nuvox uses 2,118,042,198 as the amount of loop

1 fiber strand feet. Its calculated fiber strand working feet value is 601,416,000. Dividing
2 601,416,000 fiber strand working feet by 2,118,042,198 loop fiber strand feet results in
3 Nuvox's estimated implicit fiber fill of 28.39%. Nuvox then divides this percentage into
4 the proposed 50% fiber fill to arrive at its fiber fill adjustment factor of 176%.

5
6 **Q. Is Nuvox's calculation correct?**

7 A. No. The fundamental flaw with Nuvox's methodology is that Nuvox bases the 601
8 million working feet value on the assumption that several DLCs will be along the same
9 fiber route and, therefore, will share the same fiber cable. Nuvox's Exhibit 6 assumes that
10 the DLCs for each exchange will be placed on 3, 4 or 5 separate routes. The assumption
11 that multiple DLCs will share a single cable route is reasonable given that standard
12 engineering practice places DLCs on fiber rings. The use of fiber rings allows for both
13 redundancy (in case the fiber cable is cut) and cost savings (since the per-strand installed
14 cost of a larger cable is less than that of a smaller fiber cable). Unfortunately, however,
15 Nuvox does not follow the same reasonable practice with the loop fiber strand feet value.
16 Nuvox's value of 2.1 billion appears to be based on an incorrect assumption by Nuvox
17 that each DLC will be served with its own fiber cable. Using the data found on Nuvox
18 Exhibit 6, Nuvox appears to use the following calculation to arrive at the amount of loop
19 fiber strand feet per exchange assuming each DLC is served by a separate fiber cable
20 route:

21
$$\frac{\# \text{ of DLCs (Col. B) X \# of Strands (Col. C) X 18 kft (DLC max dist. Cell P5)}}{\text{Loop Fiber Strand Feet}} =$$

1 Adding across all exchanges results in 2.167 billion strand feet. In other words, if all
2 DLCs were served by individual fiber cables on individual routes, the total fiber strand
3 feet would be equal to 2.167 billion strand feet, which is only 2% higher than the 2.1
4 billion figure Nuvox uses to calculate implicit fill. It is no wonder that the Nuvox implicit
5 fiber fill is so low when its calculation assumes separate routes and cables for the
6 denominator and shared routes and cables for the numerator.

7
8 **Q. Nuvox also calculates a fill ratio for DLCs. Is this adjustment correct?**

9
10 A. Yes. In its direct testimony, Nuvox explains that Kentucky ALLTEL has used a higher
11 line count for sizing DLCs than is used elsewhere in the proposed model.⁷ I have
12 researched this discrepancy and agree with Nuvox that the use of the higher line count
13 results in excessive DLC capacity. As a result, Kentucky ALLTEL accepts the Nuvox
14 calculation of the DLC fill ratio. However, as will be discussed below, Nuvox does not
15 correctly apply the ratio in the model.

16
17 **Q. What is the impact of Nuvox's fill factor adjustments?**

18 A. Under the Nuvox methodology, the calculated fill ratio adjustments reduce forward-
19 looking investment for loop components ranging from 20.4% for copper cable to 48.5%
20 for loop copper and fiber equipment. In total for the eight loop components, Nuvox's fill
21 adjustment results in an estimated forward-looking loop investment of [REDACTED] million or
22 [REDACTED] then the revised Kentucky ALLTEL model's estimate of [REDACTED] million.

23

⁷ Nuvox direct testimony at page 59.

1 **Q. How does the Nuvox derived loop investment per line compare to Kentucky**
2 **ALLTEL's determination and that of the FCC Synthesis Model?**

3
4 A. Nuvox calculates per line loop investment to be [REDACTED]. By comparison, Kentucky
5 ALLTEL's model reflects [REDACTED] per line loop and investment, while the FCC's
6 Synthesis Model shows [REDACTED] for GTE of the South (Kentucky ALLTEL's
7 predecessor).⁸ Clearly, the Nuvox method is flawed and produces results that are out of
8 line with FCC TELRIC results.

9
10 **Q. Please explain how Nuvox applies its calculated fill ratios in the model.**

11 A. Nuvox calculates three fill ratios – one for copper cable, one for fiber cable and one for
12 DLCs. The copper fill ratio as calculated by Nuvox is 125.73 and is applied at line 10 of
13 the Loop Aerial Cable, Loop Buried Cable, Loop Underground Cable, Aerial Drop and
14 Buried Drop tabs of Nuvox's Exhibit 4 – KAUNEW1. The fiber fill ratio as calculated by
15 Nuvox is 176.09 and is applied to line 10 of the Loop Fiber Cable tab. Nuvox calculates
16 the DLC fill ratio as 194.42 and applies it to line 10 of the Loop Copper Equipments and
17 Loop Fiber Equipment tabs. These values are then divided into material cost investment
18 to arrive at an adjusted level of investment. Since Nuvox's ratios all exceed 100%, the
19 calculation reduces the level of investment used to develop UNE rates. The fill factor
20 adjustments reduce the material cost of the network component by a factor of one minus

⁸ GTE of the South value from HCPM default result file for KY_GTE South Inc - Kent_Default Scenario_WC, Investment Input Sheet, Columns I to AB, AF to AI. This value represents only the exchanges associated with the Lexington study area. Since the London exchanges are considered rural by the FCC, no HCPM results are available for these exchanges.

1 one divided by the adjustment. For example, the adjustment for Loop Fiber cable of
2 176.09% reduces the loop fiber cable material cost by $1 - 1/1.7609$ or 43.2%.

3
4 **Q. Why is Nuvox's application of its adjusted fill ratios incorrect?**

5 A. While the Nuvox calculated fill ratios are intended to illustrate the level of excess copper
6 pairs, fiber strands or DLC size, Nuvox erroneously applies these ratios directly to
7 Kentucky ALLTEL's proposed model material cost (investment) inputs without first
8 translating the impact of reducing capacity to the corresponding reduction in investment.

9 By skipping this step, Nuvox implicitly assumes that reduction in the number of pairs,
10 strands or DLC capacity will result in a equal percentage reduction in material cost. This
11 assumption is incorrect for two reasons. First, it assumes that as cable size (number of
12 pairs or strands) decreases the numbers of poles or lengths of conduit will also be
13 reduced. Nuvox wrongly assumes that a smaller DLC does not require a site, pad and
14 power. These assumptions are simply wrong. For example, the same number of poles are
15 needed whether one has a 900 pair or 600 pair cable. Second, Nuvox's reliance on a fill
16 factor ratio ignores the fact that investment in fiber, copper and DLCs is not uniform. For
17 example, replacing a 900 pair cable with a 600 cable will reduce capacity by $1 - 600/900$,
18 or 33%. Nuvox assumes the same relationship will exist in the difference between the
19 cost of a 900 pair cable versus a 600 pair cable. Again, this is not the case since the
20 difference in cost between 1,000 feet of 600 versus 900 pair cable is far less than 33%.
21 This problem also exists with fiber cable and may be illustrated using the following
22 example. Kentucky ALLTEL provided Nuvox material cost information in response to

1 Discovery Request No. 39 that showed the following relationship between fiber cable
2 size and cost.

3
4
5
6

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

7

8 The above table shows that moving from a 72 strand fiber cable to a 48 strand cable
9 reduces capacity by [REDACTED] while cost falls only by [REDACTED]. Moving from a 48 strand cable
10 to one with 24 strands reduces capacity by [REDACTED] while costs falls only by [REDACTED]. Nuvox's
11 methodology erroneously assumes that material cost falls by the same percentage as the
12 number of strands. Nuvox ignores the fact that capacity and investment do not follow a
13 1:1 relationship. Instead, the capacity-to-cost relationship of moving from a 72 strand to
14 48 strand cable is 1:.2665 (*i.e.*, for every 1 % reduction in capacity, cost falls by only
15 0.2665%.) Therefore, a 33% reduction in capacity will result in a reduction in investment
16 of far less than 33%. Applying the fill ratios directly to material cost without accounting

1 for the fact that reducing capacity by a certain percentage will not lead to the same
2 percentage reduction in investment results in investment being significantly understated.

3
4 **Q. Does this same problem exist in Nuvox's application of the fill ratio for DLCs?**

5 A. Yes. The following table shows that reducing the size of DLC capacity by a certain
6 percentage will not reduce the cost by that same percentage.

7

8

9 As can be seen on the table, moving down in DLC size reduces capacity by [redacted] and
10 reduces cost by only [redacted]. Thus, applying the fill ratio directly to investment
11 will result in the DLC investment being dramatically understated.

12
13 **Q. Please summarize your conclusions concerning the fill ratio adjustments proposed**
14 **by Nuvox.**

1 A. As discussed above, Nuvox clearly erred in calculating its implicit fill ratios for copper,
2 fiber and DLCs and also made fundamental mistakes in how it applies these calculations
3 to Kentucky ALLTEL's proposed model. In addition to using invalid pair feet data to
4 estimate the implicit utilization ratios for copper and fiber cable, Nuvox applied its fill
5 factor adjustments directly to investment without accounting for the fact that a percentage
6 reduction in capacity will not translate into the same percentage reduction in investment
7 cost. As demonstrated above, these errors by Nuvox negatively impact the estimated
8 levels of copper cable, fiber cable and DLC investment. For these reasons, the fill factor
9 adjustments proposed by Nuvox are flawed and must be rejected.

10
11 **Q. What changes have you made to the fill ratio adjustments proposed by Nuvox?**

12
13 A For the reasons discussed above, I removed the fill factor adjustment proposed by Nuvox
14 by resetting the adjustment factors to 1. The exact cell references for this change are
15 shown on the sheet labeled 'Blessing Revisions' in my Exhibit DCB-R1 Revision of
16 Exhibit 4 Restated KAUNEW1 Confidential.

17
18 **III. Cost Factors Overview - Nuvox's Proposed Adjustments to Kentucky ALLTEL's**
19 **Cost Factors**

20
21 **Q. Please summarize the adjustments made by Nuvox to the model's cost factors.**

22 A. Nuvox suggested adjustments to Kentucky ALLTEL's proposed depreciation lives, cost
23 of capital, direct expense factor and common cost and GSF factors.

24
25 **Q. Are all of these adjustments still in dispute?**

1 A. No. As discussed earlier, Kentucky ALLTEL accepts the depreciation lives proposed by
2 Nuvox.

3
4 **Q. What is the cumulative impact of aggregate cost factor adjustments proposed by**
5 **Nuvox?**

6
7 A. Nuvox's adjustments reduce the composite loop cost factor (total model annual loop cost
8 / total forward-looking investment) by almost [REDACTED] As the table below illustrates, the
9 composite loop cost factor proposed by Nuvox is well below that proposed by Kentucky
10 ALLTEL and well below that used by the FCC in the Synthesis Model for Kentucky
11 ALLTEL's predecessor company -- GTE of the South. These data indicate that the
12 adjustments made by Nuvox result in unreasonably lower costs.

13

The table is completely redacted with black boxes, obscuring all data and headers.

14
15

16 **IV. Cost of Capital - Nuvox fails to present sufficient evidence to warrant reducing**
17 **Kentucky ALLTEL's cost of capital below the FCC's recommended 11.25%.**

18

1 **Q. Please describe the adjustments made by Nuvox to the cost of capital.**

2 A. Nuvox proposes to use a 10.78% return. It proposes to use a “composite value”
3 calculated as the composite of the FCC’s 11.25% return and an intrastate return of
4 10.60%. The intrastate return that Nuvox attempts to use is apparently a return
5 historically developed by Verizon when it owned the assets of what is now Kentucky
6 ALLTEL. As such, the 10.60% return has no relation to Kentucky ALLTEL and is not
7 representative of Kentucky ALLTEL’s cost of capital. Therefore, the 10.60% value
8 should not be used in a cost of capital calculation to develop rates for Kentucky ALLTEL
9 services.

10
11 **Q. Is the Nuvox proposed rate of return consistent with more recent approved returns?**

12 A. No. For example, in 2004 the Regulatory Commission of Alaska (“RCA”) granted ACS-
13 Anchorage, an independent telephone company like Kentucky ALLTEL, a cost of capital
14 of 14.28%.⁹ In another recent decision, the FCC granted Verizon Virginia a cost of
15 capital of 12.95%.¹⁰

16
17
18 **Q. What cost of capital percentage does Kentucky ALLTEL propose?**

19 A. Kentucky ALLTEL proposes a weighted average cost of capital of 11.25%. This value
20 was selected based upon direction from the FCC, which stated in the Local Competition

⁹ RCA Case U-96-89 Order No. 42, Order Setting Prices for Access to Unbundled Network Elements, Resale and Terms and Conditions of Interconnection, Released 6/25/04, page 15.

¹⁰ *In the Matter of Petition of AT&T Communications of Virginia Inc., Pursuant to Section 252(e)(5) of the Communications Act for Preemption of the Jurisdiction of the Virginia Corporation Commission Regarding Interconnection Disputes With Verizon Virginia Inc.* Memorandum Opinion and Order (August 29, 2003) CC Docket No. 00-251 (“Verizon UNE TELRIC Order”), ¶63 – 64 and Triennial Review Order ¶681.

1 Order at ¶702 that the "currently authorized return at the federal or state level is a
2 reasonable starting point," and "states may adjust the cost of capital if a party has
3 demonstrated that either a higher or lower cost of capital is warranted." The cost of
4 capital awards granted in the Verizon Virginia and the ACS-Anchorage cases were the
5 result of in-depth analyses of the cost of equity, cost of debt and capital structures of the
6 companies in question. While no such analysis has been made in the present case, no
7 demonstration has been made to warrant a reduction from 11.25%.

8
9 **Q. Why is 11.25% the correct rate of return to use for determining Kentucky**
10 **ALLTEL's UNE prices?**

11
12 **A.** In its first Local Competition Order, the FCC stated that the currently authorized 11.25%
13 rate of return used in federal cost proceedings was a reasonable starting point for states to
14 use in determining an incumbent LEC's rate of return in a state TELRIC proceeding.¹¹
15 The 11.25% rate of return is a key component in the guidelines the FCC established to
16 assist states in setting fair and equitable prices for UNEs. The FCC sought to establish a
17 framework for pricing UNEs that would lead to consistent and reasonable UNE prices
18 across the 50 states by using a consistent set of assumptions for cost of capital, network
19 design, and other components. The FCC established the costing principles that TELRIC
20 prices should be based on a forward-looking network design using a specific set of
21 assumptions for cost of capital, depreciation, and operating expenses:

22
23 "…state commissions must use a consistent set of assumptions when they
24 calculate the three components of rates (operating expenses, cost of

¹¹ *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket No. 96-98, First Report and Order, 11 FCC Rcd 15856, ¶702 (1996) (*Local Competition Order*).

1 capital, and depreciation expense). That is, if the network assumptions are
2 based on projections about what a network would look like in the long-run
3 assuming facilities-based competition, the same approach should be
4 followed in developing the cost of capital.”¹²

5
6 Accordingly, the FCC determined that 11.25%, the current federally approved rate of
7 return, was also the appropriate rate of return for states to use when setting TELRIC UNE
8 prices.

9
10 **Q. Does 11.25% account for the risk of facilities-based competition that Kentucky**
11 **ALLTEL faces?**

12
13 A. Not necessarily. In its Triennial Review Order, the FCC clarified that a TELRIC-based
14 cost of capital should reflect the risks of a competitive facilities-based market.¹³ The FCC
15 determined that TELRIC prices should reflect the risk that LECs such as Kentucky
16 ALLTEL face of losing customers to Nuvox and other facilities-based CLECs.¹⁴ If
17 TELRIC prices do not appropriately compensate for the risks associated with investing in
18 a forward-looking network, then UNE prices will be set artificially low and will send
19 improper pricing signals to competitors. The FCC’s rules are clear – the return should be
20 set at the allowed rate of return unless it can be demonstrated that a different return is
21 warranted. The use of anecdotal evidence alone does not meet this standard. It is my
22 understanding that the Kentucky Commission has not established an allowed rate of

¹² *Review of the Commission’s Rules Regarding the Pricing of Unbundled Network Elements and the Resale of Service by Incumbent Local Exchange Carriers*, WC Docket No. 03-173, Notice Of Proposed Rulemaking, (Sep. 15, 2003), (“FCC UNE Pricing NOPR”), ¶84.

¹³ *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, CC Docket No. 01-338, FCC 03-36, para. 682 (released Aug. 21, 2003) (“Triennial Review Order”) at ¶¶680-84.

¹⁴ *Id.* at ¶680.

1 return for Kentucky ALLTEL's intrastate services and certainly not since the present
2 level of competition has been experienced. That leaves the FCC's 11.25% return as the
3 appropriate cost of capital in this case.
4

5 **Q. Is an 11.25% rate of return low compared to recent FCC investigations of an**
6 **appropriate rate of return factor for LECs facing facilities-based competition?**

7
8 A. Yes. In a recent TELRIC UNE proceeding, the FCC determined that Verizon's
9 appropriate rate of return should be set at 12.95%. Kentucky ALLTEL's use of the FCC's
10 11.25% rate of return benchmark is likely too low relative to the increased risk Kentucky
11 ALLTEL faces from facilities-based CLEC competitors such as Nuvox, not to mention
12 competition from wireless and VoIP providers. In determining that 12.95% was the
13 appropriate rate of return for Verizon, the FCC stated that the rate of return used in
14 calculating TELRIC prices must consider the increased risk of future competition.¹⁵
15 These increased risks include the risk that network investment will be stranded if a
16 customer leaves the LEC's network to go to a competitor's network. The FCC went on
17 to state that in a competitive market, all facilities-based carriers face the risk of losing
18 customers to other facilities-based carriers, and that risk should be reflected in TELRIC
19 prices.¹⁶
20

21 **Q. What is the risk of setting the rate of return too low?**

¹⁵ Verizon Virginia Order at ¶¶63-64.

¹⁶ Triennial Review Order at ¶680.

1 A. If the rate of return is set too low, CLECs such as Nuvox will be discouraged from
2 building their own networks which will slow the development of true facilities-based
3 competition. The FCC recognized this problem in the UNE NPRM when it stated:

4 “...establishing UNE prices based on an unreasonably low cost of capital
5 would discourage competitive LECs from investing in their own facilities
6 and thus slow the development of facilities-based competition.”¹⁷ (¶ 83)

7 An artificially low rate of return would force Kentucky ALLTEL’s UNE prices to be
8 lower than the cost Nuvox would incur if Nuvox were to build its own facilities rather
9 than lease them from Kentucky ALLTEL, thereby discouraging CLECs from investing in
10 their own network facilities. Since facilities-based competition leads to the best services
11 and prices for consumers, the Kentucky Commission should do all it can to foster
12 facilities-based competition. A key factor in fostering facilities-based competition is to
13 set UNE prices at the correct level by using the 11.25% rate of return recommended by
14 the FCC.

15
16 **Q. In your revision of Nuvox’s adjustments, what changes do you make to the cost of**
17 **capital adjustment?**

18
19 A. Because Nuvox has offered no credible support for its proposed 10.78% cost of capital, I
20 reverted to 11.25%. The exact cell reference for this change is shown in Exhibit DCB-R1
21 Revision of Exhibit 4 Restated KAUNew1 Confidential.

22
23
24 **V. Direct Expenses - Nuvox grossly understates Kentucky ALLTEL's direct expense**
25 **factors by applying 1997/1998 ratios to 2003 data.**
26

¹⁷ See, FCC UNE Pricing NOPR at ¶83.

1 **Q. Please explain how direct expense factors are generally developed.**

2 A. Direct expense factors are typically calculated as the ratio of the maintenance expense
3 account balance for a particular type of plant (aerial cable, digital switching, etc.) to the
4 investment account balance corresponding to that plant type. For example, a direct
5 expense (or cost) factor for cable and wire plant would be calculated as the ratio of the
6 balance of the aerial cable maintenance account (6421) to the balance of the aerial cable
7 investment account (2421). The ratio is then multiplied by estimated forward-looking
8 investment derived from a TELRIC model to yield an estimate of forward-looking
9 maintenance expenses. Kentucky ALLTEL's methodology takes it one step further.
10 Before the direct expense factor is applied to investment Kentucky ALLTEL's proposed
11 model reduces the expense to investment ratio by a forward-looking adjustment factor.¹⁸
12 This forward-looking adjustment has the effect of reducing the cost factor that is then
13 applied to forward-looking investment.

14
15 **Q. Please describe Nuvox's adjustment to Kentucky ALLTEL's direct expense factors?**

16 A. On pages 28 -30 of its testimony, Nuvox explains its use of the Current-to-Book
17 Investment factors from the FCC's Synthesis Model to adjust the factors proposed by
18 Kentucky ALLTEL. The FCC developed these factors in the universal service proceeding
19 to express investment in current dollars to better reflect the relationship between the new
20 plant envisioned in the forward-looking model and current expenses. Expressing
21 investment in current dollars is accomplished under the FCC's approach by applying a

¹⁸ For example, to see how the ALLTEL model applies the forward-looking adjustment factor to the maintenance ratio please see the Loop Aerial Cable Tab Lines 27 -29 in ALLTEL's proposed or revised models.

1 replacement cost factor to each vintage of each type of plant on the company's books.
2 The replacement cost factor represents an aggregation across all vintages of plant of the
3 ratio of the asset's historical-to-current price. In effect, the replacement cost factor re-
4 prices the individual plant items as if they were purchased in the same year. If the price
5 for a certain plant asset has risen over time, the current-to-book ratio would be greater
6 than one. Applying it to a booked investment balance would yield an adjusted balance
7 that exceeds the actual balance. In this case, application of current expenses to the
8 adjusted balance would reduce the direct cost ratio. In this way, the current-to-book ratio
9 approach attempts to adjust for any anticipated trends in investment prices. Without such
10 an adjustment, the FCC reasoned, expected asset price increases would cause application
11 of a direct cost ratio calculated using book investment balances that leads to an
12 overstatement of the appropriate direct cost factor and therefore over estimate forward-
13 looking expenses. In effect, the current-to-book investment ratio is the FCC's method of
14 applying a forward-looking adjustment to the maintenance expense ratios derived from
15 booked accounts.¹⁹

16
17 **Q. Do you agree with how Nuvox used these current-to-book investment ratios to**
18 **adjust the direct cost factor?**

19
20 A. No. Nuvox's methodology is inappropriate for four reasons. First, the current-to-book
21 factors themselves are extremely stale. The FCC used data from 1997 and 1998 to
22 compute them. They were then applied to 1998 expense balances. Nuvox, on the other
23 hand, uses the FCC's 1998 data and attempts to use them on 2003 expense account

¹⁹ *Federal-State Joint Board on Universal Service*, CC Docket Nos. 96-45, 97-160, Tenth Report and Order, 14 FCC Rcd 20156, 20301-02, 20304, Appendix D (*Inputs Order*).

1 balances. Second, the factors were developed from data derived from the RBOCs. As a
2 result, they are not relevant to an independent such as Kentucky ALLTEL. Third, Nuvox
3 follows the FCC's example of calculating the weighted average of the current to book
4 ratios for copper cable and fiber cable based on RBOC 1997/1998 copper/fiber mix
5 ratios. Certainly the passing of six years makes the use of this dated mix ratio
6 inappropriate for current use. Fourth, while applying the current-to-book investment ratio
7 to Kentucky ALLTEL's booked investment, Nuvox effectively inserted a duplicate
8 forward-looking adjustment into the model. Nuvox inserted the current-to-book
9 investment ratios and kept the forward-looking adjustment already in Kentucky
10 ALLTEL's proposed model. Essentially, Nuvox made two forward-looking adjustments.

11
12 **Q. What is the impact of the Nuvox adjustment?**

13 A. The result of all these problems is that the use of the current-to-book investment ratios
14 drive up the network investment value used to calculate the direct loop cost factors to
15 [REDACTED] while the forward-looking network investment to which the ratios are
16 applied is only [REDACTED] according to Nuvox.²⁰ The formulas below showing how the
17 direct expense factor is calculated and how it is applied demonstrate why this is such a
18 problem:

19
20

²⁰ The forward-looking network investment of [REDACTED] is the sum of the utilized investment totals for all network elements (loop, NID, port, switching and transport). The current network investment total of [REDACTED] calculated by Nuvox is the sum of Cells E10-E13 of the 'Cost Factors' sheet in Nuvox Exhibit 4.

1 Direct Expense Factor = Current Booked Maintenance Expenses / Booked Investment.(1)
2 Forward-Looking Expenses = Forward-looking Investment X Direct Expense Factor.(2)
3 Rearranging terms in Equation 2 yields:
4 Forward-Looking Expenses / Forward-Looking Investment = Direct Expense Factor.(3)
5

6 From the above formulas it can be seen that ratio of forward-looking expense to forward-
7 looking investment will be equal to the ratio of current expenses to the level of
8 investment used to calculate the direct expense factor. Thus, the greater the difference
9 between the booked investment used in Equation 1 and the forward-looking investment in
10 Equation 2, the greater the difference between current expenses and estimated forward-
11 looking expenses. Under the Nuvox approach, this mismatch estimates forward-looking
12 maintenance expenses as [REDACTED] of their current level.²¹ Forward-looking
13 expenses as estimated by Nuvox will be forced even lower when the forward-looking
14 adjustment built into the Kentucky ALLTEL model is also applied. Clearly, it is not
15 reasonable to assume that forward-looking maintenance expenses will be reduced by
16 more than [REDACTED] from their current level. To further illustrate this point, consider that
17 Nuvox' application of the current-to-book ratio yields adjusted investment that exceeds
18 the booked levels. This means that in the aggregate asset prices are increasing. How then
19 can one explain the fact that Nuvox uses the current-to-book ratio that contains the
20 implicit assumption that asset prices are rising while at the same time proposing forward-
21 looking investment that is over [REDACTED] lower than the current balance?²² In proposing this
22 adjustment, Nuvox has not provided any support for this illogical result.
23

21 [REDACTED]

1 **Q. What would be the difference between current and forward-looking maintenance**
2 **expenses had Nuvox used Kentucky ALLTEL's methodology for estimating direct**
3 **expense factors?**

4
5 A. Had Nuvox used Kentucky ALLTEL's methodology, forward-looking maintenance
6 expenses would be reduced in excess of [REDACTED] of the current level.²³

7
8 **Q. Please explain why Nuvox's use of the 1997/1998 FCC current-to-book investment**
9 **ratios are inappropriate for current use.**

10
11 A. As discussed above, the FCC calculated the current-to-book investment ratios based on
12 1997 and 1998 data and applied the ratios to 1998 investment levels. Thus, the FCC's
13 factors measured the change in asset costs from 1997 to 1998 and applied them to 1998
14 expense balances. Nuvox is proposing to apply this same relationship to 2003 Kentucky
15 ALLTEL expense balances. In order for this approach to be valid, the same relationship
16 between book asset balances and those same assets re-priced to 1998 dollars must be still
17 true in 2003. Given the evolution of technologies, such as the accelerated deployment of
18 fiber and DLCs, etc., this is unlikely. Nuvox has not provided any support for its use of
19 these outdated current-to-book ratios. Additionally, Nuvox has not provided any
20 explanation for the anomalous results generated by the use of these ratios.

21
22 **Q. Please describe why Nuvox's use of the 1997/1998 data to calculate a weighted**
23 **average of the current-to-book ratio for copper and fiber cable is incorrect.**
24

[REDACTED]

[REDACTED]

23 [REDACTED]

1 A. The FCC's approach relied on a copper-to-fiber mix ratio to generate a weighted average
2 of the current-to-book investment ratios of copper and fiber. This was done because the
3 ARMIS Reports, which are the FCC model's public source of financial data, do not
4 breakout fiber and copper expense. In 1997/1998, the copper/fiber investment mix ratio
5 used by the FCC was 10.49%. Based on Nuvox's adjustments, the suggested copper fiber
6 investment mix is [REDACTED]. This results in a change in the weighted average fiber/copper
7 current to book ratio from [REDACTED].

8
9 **Q. What changes do you make to this adjustment by Nuvox?**

10 A. Nuvox did not present any support for its use of the outdated current-to-book investment
11 ratios other than the fact that the FCC used them. What Nuvox has failed to point out is
12 that the FCC used the ratios in conjunction with 1998 data in the USF proceeding and
13 1999 data in the case of Verizon Virginia. There is no support for using the ratios with
14 2003 Kentucky ALLTEL data. Finally, the Kentucky ALLTEL model included a
15 different forward-looking adjustment component. Therefore, I have eliminated the impact
16 of the current-to-book investment ratios by resetting them to 1. The exact cell reference
17 for this change is shown in my Exhibit DCB-R1 Revision of Exhibit 4 Restated
18 KAUNew1 Confidential.

19
20 **VI. Common Costs - Nuvox erroneously includes retail costs in its calculation of a**
21 **common cost factor for Kentucky ALLTEL's Wholesale Services.**
22

²⁴ This figure is calculated as the ratio of fiber loop cable utilized investment to the total copper utilized investment from the Loop Aerial Cable, Loop Buried Cable, Loop Underground Cable, Aerial Drop and Buried Drop worksheets.

1 **Q. Please describe the adjustments made by Nuvox to the calculation of the common**
2 **cost factor in Kentucky ALLTEL's proposed model.**

3
4 A. Nuvox made four adjustments to the methodology proposed by Kentucky ALLTEL to
5 calculate the common cost factor. First, it adjusted the retail percentage of advertising
6 from 90% to 100%. Second, it recalculated the General Support Facilities expense. Third,
7 Nuvox replaced revenue requirement minus Common and Retail Cost with a more direct
8 method to determine direct costs to be used as the denominator in the common cost factor
9 calculation. Fourth, it included retail costs as part of direct costs in the denominator of the
10 common cost factor calculation.

11
12 **Q. Are these adjustments appropriate?**

13 A. The first three adjustments are acceptable as their underlying logic is reasonable and
14 consistent with standard TELRIC analysis. However, the fourth modification proposed by
15 Nuvox is unacceptable. Including retail expenses in the estimate of direct expense used in
16 the denominator of the common cost calculation not only violates FCC guidance and
17 standard costing principals, it is also mathematically incorrect.

18
19 **Q. Please describe why the inclusion of retail expenses in the estimate of direct expense**
20 **used in the denominator of the common cost calculation is incorrect.**

21
22 A. As Nuvox correctly states at page 37 of its direct testimony, “the common cost factor in
23 ALLTEL’s study is applied to direct costs, which means that the common cost
24 denominator has to measure total direct costs.” In the Kentucky ALLTEL model
25 platform, including that revised by Nuvox, the common cost factor is applied to direct
26 cost (expenses). In the model, direct expenses for a given network component are

1 calculated as the sum of maintenance expense, depreciation, return and income taxes for
2 that component. For example, in the model's Loop Aerial Cable cost development sheet,
3 the forward-looking common costs associated with loop aerial cable are estimated by
4 multiplying the common cost factor (Line 31) by the direct costs associated with loop
5 aerial cable (Line 30). These direct costs are made up of maintenance (Line 29),
6 depreciation (Line 22), return (Line 25), and income tax (Line 26). These direct costs are
7 functions of the utilized investment in loop aerial cable (Line 19). Thus, there is no retail
8 cost associated with loop aerial cable investment since retail expenses are associated with
9 the customer service and marketing functions. Nuvox adjusts the common cost factor
10 calculation by adding to these direct costs what Nuvox claims is the retail portion of
11 common cost including that associated with general support facilities. This is incorrect
12 for three reasons. First, the proper denominator as Nuvox itself admits should exclude
13 common and GSF costs.²⁵ It is illogical, then, to add back in dollars said to be the retail
14 portion of common and GSF costs – especially when all retail costs are excluded from the
15 numerator. Second, Nuvox's methodology is just mathematically wrong. Nuvox
16 calculates the common cost factor using direct costs plus the retail portion of common
17 and GSF and then applies it in the model to estimated direct costs – not including any
18 retail costs especially those associated with common and GSF costs. The inclusion of the
19 common and GSF retail expenses as part of the booked direct costs in the calculation of
20 the common cost factor (when the costs are not included in the forward-looking direct
21 costs estimated by the model that the factor will be applied against) will understate the
22 common cost factor and, therefore, underestimate forward-looking common costs. Third,

²⁵ Nuvox direct testimony at page 37.

1 Nuvox itself quotes from the FCC's Verizon Virginia Order that states that retail-related
2 expenses should not be used in the calculation of annual cost factors for wholesale
3 services such as UNEs.²⁶

4
5 **Q. Based on the above discussion, how did you adjust the Nuvox Exhibit Restated**
6 **KAUNEW1 Confidential?**

7
8 A. In order to compensate for Nuvox's incorrect mathematical methodology, I removed the
9 purported estimates of the retail portion of common and GSF costs from the calculation
10 of direct cost on line 41 of the Exhibits 'Common Cost ' worksheet.

11
12
13 **VII. Loop Conditioning - Nuvox wrongly contends that Kentucky ALLTEL should not**
14 **be allowed to recover loop conditioning costs contrary to recent FCC orders**
15 **confirming that LECs can recover such costs.**

16
17 **Q. At page 14 of its direct testimony, Nuvox states that loop-conditioning charges are**
18 **inconsistent with the TELRIC pricing methodology. As a result Nuvox claims that**
19 **Kentucky ALLTEL should not be allowed to recover loop conditioning costs. Is this**
20 **correct?**

21
22 A. No. While the FCC recognizes that there may seem to be an inconsistency between the
23 concept of a forward-looking network and the need for line conditioning, the FCC does
24 not dispute that some occasions require line conditioning in the actual network.²⁷ When
25 loop conditioning is required, an expense will be incurred. Simple logic dictates that an
26 ILEC should be able to recover this expense. Since the CLEC caused the expense to be
27 incurred, it follows that the CLEC should reimburse the ILEC for that expense. While the

²⁶ Nuvox direct testimony at page 37. Verizon Virginia at ¶145. The entire quote from the Verizon Virginia Order is as follows: "As the Commission found in the *Inputs Order*, retail related expenses, which these are, should not be included in the calculation of ACFs."

²⁷ See, FCC Triennial Review Order at ¶641 and FCC UNE NPRM at ¶129.

1 FCC has asked for comment on this issue in the UNE NPRM, in practice the FCC has
2 repeatedly followed this logic and ruled that the ILEC may recover these costs from the
3 CLEC.²⁸ The FCC addressed Nuvox's theory directly in the Verizon Virginia case and
4 held that if the ILEC incurs an expense in conditioning a loop for use by a CLEC, the
5 ILEC may recover those costs.²⁹ In the FCC case, AT&T and WorldCom made the
6 identical argument that Nuvox is making in the present case and argued that "an efficient,
7 forward-looking network ... need not be 'deconditioned' to carry DSL-based services."³⁰
8 The FCC rejected this argument and allowed Verizon Virginia to assess conditioning
9 charges.³¹ It is only appropriate then that the Kentucky Commission do the same here
10 with respect to Nuvox's argument.

11
12 **Q. Has Kentucky ALLTEL made any changes to the estimated hours required for**
13 **conditioning as proposed by Nuvox?**

14 A. Yes. Kentucky ALLTEL reevaluated some of the conditioning times it originally
15 proposed in light of Nuvox's direct testimony. While these changes are discussed in detail
16 in Mr. McAbee's rebuttal testimony, I entered Mr. McAbee's recommendations into the
17 'Conditioning' Sheet of my Exhibit DCB R2 - Restated KAUNew1 Confidential -
18 Blessing Revisions.

19

²⁸ See, the Local Competition Order at ¶382, FCC Triennial Review Order at ¶641 and footnote 1947, UNE NPRM at ¶129, and the Verizon Virginia Order at ¶639.

²⁹ See, Verizon Virginia at ¶¶ 633 -639.

³⁰ *Id.* at ¶636.

³¹ *Id.* at ¶639.

1 **VIII. Summary and Recommendations**

2
3 **Q. Please summarize the proposed adjustments by Nuvox that are appropriately**
4 **incorporated into Kentucky ALLTEL's TELRIC model.**

5
6 A. Kentucky ALLTEL filed a revised TELRIC cost model with my direct testimony that
7 already makes three of the eight adjustments proposed by Nuvox. Specifically, Kentucky
8 ALLTEL agrees to use the depreciation lives proposed by Nuvox because they closely
9 approximate the revised depreciation rates used by Kentucky ALLTEL. Kentucky
10 ALLTEL also previously made an adjustment to Loop Fiber Equipment that equaled the
11 adjustment proposed by Nuvox. Finally, Kentucky ALLTEL's revised model features a
12 reduction in DLC investment that accounts for the removal of ADSL cards. The end
13 result is that three of the eight adjustments proposed by Nuvox have already been
14 incorporated into Kentucky ALLTEL's revised model.

15
16 Additionally, Kentucky ALLTEL has incorporated portions of two more of Nuvox's
17 proposed revisions. In particular, Kentucky ALLTEL accepts Nuvox's changes relating to
18 the development of the GSF expense level used in the calculation of the common cost
19 factor and the use of an inappropriate line count in the sizing calculation for DLCs.
20 Accordingly, two of Nuvox's adjustments remain only partially disputed, and another
21 three are wholly inappropriate for inclusion in Kentucky ALLTEL's model.

22
23 **Q. Please summarize your findings regarding the proposed adjustments by Nuvox that**
24 **are not properly incorporated into Kentucky ALLTEL's TELRIC model.**
25

1 A. Nuvox has proposed some adjustments which should be rejected by the Commission as
2 the adjustments are either unsubstantiated or based on faulty assumptions and erroneous
3 calculations. Specifically, Nuvox incorrectly analyzed Kentucky ALLTEL's fill ratio and
4 used a flawed methodology when it applied its flawed fill ratio to reduce Kentucky
5 ALLTEL's network investment. Thus, Nuvox's fill factor adjustment must be rejected.
6 Similarly, Nuvox's proposed changes to Kentucky ALLTEL's cost factors must be
7 rejected. Nuvox first failed to present sufficient evidence to warrant reducing Kentucky
8 ALLTEL's cost of capital below the FCC's recommended rate of 11.25%. Accordingly,
9 Nuvox's cost of capital adjustment is not appropriate, and the Commission should use the
10 11.25% cost of capital factor set forth by Kentucky ALLTEL. Second, Nuvox
11 understated Kentucky ALLTEL's direct expense factors by incorrectly applying
12 1997/1998 ratios to 2003 data. Third, Nuvox erroneously included retail costs in its
13 calculation of a common cost factor for Kentucky ALLTEL's wholesale services. Due to
14 the inappropriate nature of mixing retail costs with wholesale costs, Nuvox's proposal
15 must be rejected. Finally, Nuvox contends that Kentucky ALLTEL should not be allowed
16 to recover loop conditioning costs for loops which Nuvox asks Kentucky ALLTEL to
17 condition; however, this Nuvox proposal is wholly inappropriate as the FCC has found it
18 is reasonable to require CLECs to pay for loop conditioning.

19
20 **Q. Have you incorporated these changes into the model?**

21 A. Yes. I revised Nuvox's Exhibit 4 to incorporate the adjustments that should be accepted
22 and/or revised and exclude those that are incorrect and should be rejected.

23

1 **Q. Does this conclude your testimony?**

2 A. Yes, at this time.
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COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

**AN INQUIRY INTO THE DEVELOPMENT)
OF DEAVERAGED RATES FOR) ADM. CASE NO. 382
UNBUNDLED NETWORK ELEMENTS)**

**REBUTTAL TESTIMONY
OF
MICHAEL E. SKUDIN**

******* REDACTED VERSION *******

ON BEHALF OF KENTUCKY ALLTEL, INC.

RECEIVED

JAN 24 2005

**PUBLIC SERVICE
COMMISSION**

REBUTTAL TESTIMONY OF MICHAEL E. SKUDIN

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Q. Please state your name and business address.

A. My name is Michael E. Skudin. I am the Staff Manager of Wireline Current Planning for ALLTEL Communications. My business address is One Allied Drive, Little Rock, Arkansas 72202.

Q. Are you the same Michael E. Skudin that submitted direct testimony in this case on behalf of Kentucky ALLTEL, Inc. (“Kentucky ALLTEL”)?

A. Yes.

Q. What is the purpose of your rebuttal testimony?

A. The purpose of my testimony is to explain the inadequacies of certain aspects of the direct testimony proffered by August H. Ankum, John Balke and Sidney L. Morrison on behalf of Nuvox Communications, Inc. (“Nuvox”).

Q. Nuvox contends that Kentucky ALLTEL used no engineering guidelines or actual customer-specific data on which to base its assumption that 40% of the loops in the forward-looking network will be served via fiber-based DLC systems. Is this true? (page 40, line 14)

A. No, this assertion is false. Additionally, I commissioned a study in January to verify Kentucky ALLTEL’s assumption. Attached as Exhibit MS1 is a copy of the study. My study confirmed that Kentucky ALLTEL’s current percent of lines served from DLCs is over 40%. Therefore, the 40% figure used in the Kentucky ALLTEL forward-looking model is actually a conservative number. It is also conservative because: (1) Kentucky ALLTEL has not yet reached total compliance with its current engineering guidelines for

1 loop length; and (2) because more and more customers are moving away from the
2 downtown or close-in older subdivided areas and exchanges, to new subdivisions or
3 unrestricted building lots toward the outer boundaries of the exchanges, such that the
4 need for fiber-fed DLCs will increase.

5
6 **Q. Please explain the results of your study.**

7 A. The study determined how many lines in the existing Kentucky ALLTEL network are fed
8 from the central office and from DLCs. The first column of the spreadsheet lists the
9 exchanges by name. The second column contains the total number of lines that are fed
10 from the central office. The third column contains the number of lines fed from DLCs.
11 The fourth column shows the total number of lines served by that exchange; in other
12 words, it is the sum of the lines fed by the central office and the DLCs in columns two
13 and three, respectively. The fifth column calculates the percentage of lines that are fed
14 from DLCs by dividing the number of lines fed from DLCs by total lines. This
15 calculation shows that [REDACTED] of Kentucky ALLTEL's lines are fed from DLCs, which is
16 right in line with the Kentucky ALLTEL model assumption of 40%.

17
18 **Q. What would be the impact on your study if Kentucky ALLTEL were compliant with**
19 **its current engineering guidelines?**

20
21 A. In order for Kentucky ALLTEL to reach total compliance with its engineering guidelines
22 with regard to loop lengths, Kentucky ALLTEL would have to deploy additional DLCs.
23 Obviously, this deployment would increase the number of lines fed from DLCs and
24 would increase the associated percentage. Therefore, Kentucky ALLTEL's 40%
25 assumption is conservative.

1 Q. Do you agree with Nuvox's assertion that Kentucky ALLTEL's use of 48 and 72
2 fiber cable overstates the quantity of fiber?
3

4 A. No, I do not agree. Kentucky ALLTEL selects fiber sizes that are forward-looking using
5 ring topology. (Ring topology utilizes fibers in two separate directions from each node or
6 point on the network.) In other words, fiber is sized according to the total number of
7 DLCs that will have to be placed along a route both out of and returning via a
8 geographically separate route to the central office. As stated in Mr. Caballero's rebuttal
9 testimony, the cost of additional fiber strands in the sheath is negligible, so ALLTEL also
10 considers additional potential for fiber-based services to certain types of customer
11 locations such as schools. In addition, ALLTEL considers whether the route taken out of
12 the central office is also a potential interoffice and/or inter-company route.
13

14 Kentucky ALLTEL agrees with Nuvox that the forward-looking model should include 4
15 fibers per DLC but disagrees with Nuvox's contradictory statement that the use of 4
16 fibers per partially equipped DLC somehow wastes digital bandwidth (page 45, lines 16
17 and 17). The fact is that 4 fibers will be required for a DLC serving 100 lines, and 4
18 fibers will be required to serve a DLC serving 1000 lines. The four-fiber is standard
19 across the industry and is the same figure stated by Nuvox. Engineering guidelines
20 specify four for the following reasons: (1) the electronics required to allow the use of two
21 fibers are more expensive than the fiber strands themselves; (2) the electronics introduce
22 more points of failure into the network and, therefore, make it less reliable; and (3) using
23 less than four fibers will not allow for the fiber redundancy required to retain standard
24 network reliability.
25

1 **Q. Do you agree with Nuvox's assertion that Kentucky ALLTEL has overbuilt the**
2 **network containing significant fiber capacity in addition to the retention of its**
3 **current, underutilized copper facilities (page 43, line 13)?**
4

5 A. No. To begin, I do not agree with the contention that the current copper facilities are
6 underutilized. Furthermore, Kentucky ALLTEL's reuse of 90% of the copper cable is not
7 unreasonable, nor does it overstate the cost of the network. In a simplified forward-
8 looking model, there are three sections of copper cable to consider. For the sake of this
9 rebuttal, I will refer to the three sections as follows: (1) the DLC forward feed, (2) the
10 DLC back feed, and (3) the central office fed area. The DLC forward feed is the section
11 of cable that derives dial tone from the DLC and serves those customers that are on the
12 field side of the DLC (*i.e.*, the side farthest away from the central office). The DLC back
13 feed is the section of copper cable that derives dial tone from the DLC but serves those
14 customers on the central office side of the DLC. The central office feed derives dial tone
15 from the central office. It is my understanding that the Kentucky ALLTEL model
16 assumes that the customers remain in their present position. Below, I will compare the
17 forward-looking model to the existing network one section at a time:

18
19 (1) DLC forward feed: The existing copper cable is properly sized as this section
20 remains identical in both the existing and future-looking networks.

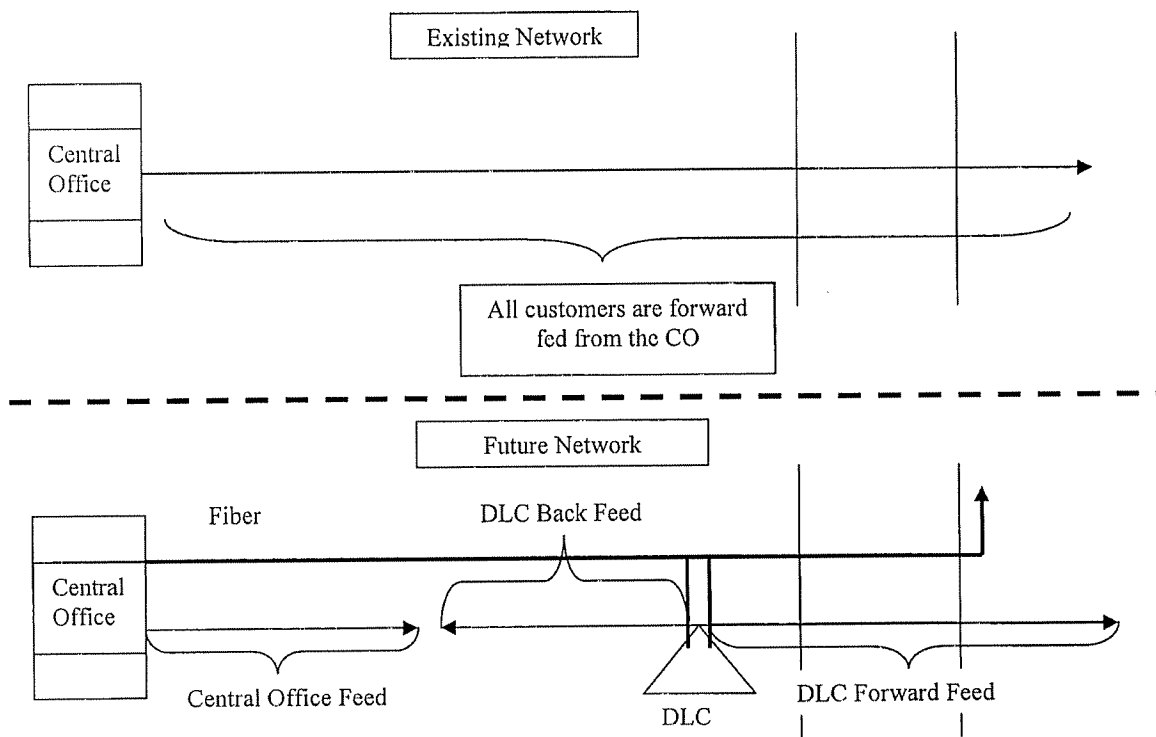
21 (2) DLC back feed: Some pairs in this section are no longer used. Many of the pairs are
22 typically reused as distribution which allows Kentucky ALLTEL to remove bridge taps
23 associated with the Multiple Count Networks that were standard in the industry years
24 ago. The removal of Multiple Plant (bridge taps) is consistent with current standards and
25 a forward-looking network. The utilization of those pairs within that section of cable is

1 reduced, which is also consistent with distribution cable as opposed to feeder and may or
2 may not add to the cost of the network.

3

4 (3) Central Office Feed: In the feeder cable closer to the central office than the last back
5 fed subscriber, pairs are indeed relieved. Those pairs are treated similarly to the pairs in
6 the DLC back feed section discussed above.

7



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Q. Does this conclude your testimony?

A. Yes, at this time.

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PUBLIC SERVICE
COMMISSION

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

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PHILLIP MCABEE

***** REDACTED VERSION *****

ON BEHALF OF KENTUCKY ALLTEL, INC.

REBUTTAL TESTIMONY OF PHILLIP MCABEE

1 **Q. Please state your name and business address.**

2 A. My name is Phillip McAbee. I am the Area Manager of Operations for Kentucky
3 ALLTEL, Inc. (“Kentucky ALLTEL”). My business address is 210 Corral St, Lexington
4 Kentucky.

5
6 **Q. Please describe your experience in the telecommunications industry.**

7 A. I have been employed by ALLTEL for over 15 years. My current area of responsibility is
8 managing the installation and repair of residential service. I have worked in many areas
9 within the telecommunications industry, including the installation process for special
10 circuits as a Technician, Engineer and Local Supervisor.

11
12 **Q. What is the purpose of your rebuttal testimony?**

13 A. The purpose of my testimony is to rebut certain inaccuracies set forth in the direct
14 testimony proffered by August H. Ankum, John Balke and Sidney L. Morrison on behalf
15 of Nuvox Communications, Inc. (“Nuvox”) found under Section IX, NRC Costs.

16
17 **Q. Are Nuvox’s proposed times for work group functions reasonable? (page 65, line 5)**

18 A. No. While some of the work times in Kentucky ALLTEL's initial study needed adjusting,
19 Nuvox’s proposed times are substantially understated and are, therefore, unreasonable.
20 Below, I will provide support times that are appropriate for performance of the tasks for

1 the conditioning rate elements in the Kentucky ALLTEL study. It is my understanding
2 that these adjustments have been made by Kentucky ALLTEL.

3
4 **Q. When is “conditioning” required to provide a loop?**

5 A. Conditioning is required whenever a request is made for any type of high speed data
6 circuit, ADSL capable lines or DS1 loops. At a minimum, the loop route must be
7 evaluated to “qualify” each loop on that route for service. Without conditioning, there is a
8 potential for line interference which will degrade the quality of service and cause
9 problems with high speed data transmission. The service may not function at all or may
10 appear to be working properly and then encounter service problems due to disturbances,
11 such as bridge taps, that were not removed. Kentucky ALLTEL incurs additional labor to
12 perform the tasks required to condition and make ready the loops. These tasks include the
13 review of facilities, determining the best route for provisioning the highest quality
14 service, determining any necessary work needed to qualify the line for service, and
15 eliminating any problem areas (disturbance removal).

16
17 **Q. Why does Kentucky ALLTEL incur costs for the loop qualification covered by the**
18 **Inquiry Fee (page 83, line 16)?**

19
20 A. ALLTEL engineering systems do not contain data which would readily determine the
21 qualification status of a loop at the time an order is placed. Therefore, the following tasks
22 must be performed: (1) The engineer must first identify the serving terminal and
23 determine its actual distance from the host office. In most instances, this requires an
24 actual premise visit by the engineer to accurately determine which facilities are involved;

1 (2) Loop makeup (type of facilities, cable size and gauge, available capacity) must be
2 considered. Before preparing the construction work order, the engineer must identify the
3 actual cable, counts, size and gauge to determine the best routes to provide the best
4 service possible; (3) Once the loop makeup has been determined, the engineer must
5 investigate the plant records (drawings) to identify the presence of load coils, build out
6 coils, bridge taps and other facilities that could degrade service. Should the actual cable
7 count be full (no vacant cable), the engineer would also draw up any cut sheets (drawings
8 containing the pertinent cable data and splicing information) at that time to coincide with
9 any requirements to insert the pair into a repeater housing. These tasks must be completed
10 before the engineer can agree to the CLEC PTD (Plant Test Date) or Due Date requested.
11

12 **Q. What times are appropriate for performance of the loop qualification tasks (page**
13 **84, line 21)?**

14
15 A. The minimum time required to perform the conditioning review is [REDACTED]
16 [REDACTED]. Maximum time could be [REDACTED], including approximately [REDACTED]
17 [REDACTED]. Field inspection is required on almost all requests because the process is
18 not automated, and a physical check of the facilities is required to determine the exact
19 cable pairs to be conditioned. Average time required for this portion of the process is [REDACTED]
20 [REDACTED]. (See, Exhibit PM-1, Worksheet "Inquiry" for development of this time.) Nuvox's
21 assertion that the time for this task should be zero is unreasonable considering the amount
22 of effort that is normally expended.

1 The tasks involved cannot readily be performed by a CLEC as Nuvox contends. Nuvox
2 incorrectly assumes that the conditioning status of a loop is readily available in some
3 database, but this is not the case. No ALLTEL database contains this information.
4

5 **Q. Do you agree with Nuvox's description of the engineering tasks required for Basic**
6 **Conditioning (page 85, line 4)?**

7
8 A. No. Nuvox does not include many of the tasks required to perform such work in the real
9 world. Nuvox is envisioning a highly automated system which does not exist. Status of
10 loops cannot be determined through a simple review of one database. Time must be spent
11 to research the appropriate records in order to determine the conditioning required on a
12 requested loop.
13

14 **Q. Do you agree with Nuvox's proposed time of 45 minutes for Basic Conditioning**
15 **(Page 86, Line 12)?**

16
17 A. No. Nuvox is developing the time based on a highly automated cost scenario which does
18 not exist. Nuvox provides no support for its proposed 45 minutes. Nuvox also does not
19 include adequate time for reviewing engineering records or sufficient time for initiating
20 equipment removal and cable rearrangement job orders. Kentucky ALLTEL itemizes
21 these additional tasks and shows appropriate times to complete each in Exhibit PM-1.
22

23 **Q. How much time is appropriate for the basic conditioning tasks?**

24 A. An average of [REDACTED] is appropriate for the following reasons. Multiple actions are
25 usually required for each route, including extraction of data from the engineering

1 database, determining action to be taken, drawing up cut sheets for repeater placement
2 when necessary, and updating the records for pending and completed activities. Once the
3 conditioning tasks are identified, a detailed job order must be initiated, including
4 additional documentation when repeater installation is involved. These job orders include
5 cutsheets, job drawings, disturber removals, as well as any repeater installation. See
6 Exhibit PM_1 for a summary of the tasks and times involved.

7
8 **Q. Do you agree with Nuvox's description of the activities involved in the removal of**
9 **bridge taps, load coils, and repeaters? (page 86, line 15 to page 96, line 2)**

10
11 A. No. Nuvox fails to account for many tasks and safety considerations which affect the total
12 time. These tasks include: maintaining pressure in underground cable, requirement for a
13 second individual to monitor underground work, performance of leak tests, removing
14 water from manholes, verifying circuits back to the central office, and extra time to get to
15 off-road aerial cable locations. The fact that most of Kentucky ALLTEL duct systems use
16 pressurized cable would certainly add a significant amount of time to each task. Having to
17 haul air to bridge around the splice is another factor not included in Nuvox's example.
18 Nuvox does not consider the fact that OSHA safety regulations require a minimum of two
19 individuals at the job site when performing work in manholes. One person must remain
20 above ground. This doubles the chargeable time for all tasks involved in removal of
21 underground disturbances. When removing aerial load coils, technicians are often
22 required to carry a ladder and equipment to an off-road location. This could triple the
23 time for getting up a pole to do the work. These additional tasks and appropriate times are
24 itemized and attached to my testimony as Exhibit PM_1.

1

2 **Q. Do you agree with Nuvox's proposed work activity times? (pages 91, 93, 95)**

3 A. No. Times are not specific to Kentucky ALLTEL's situation and do not include all of the
 4 tasks required to perform the work. For example, Nuvox's proposed times do not include
 5 adequate travel time to get to the job site. The five minutes proposed by Nuvox are far
 6 below the [REDACTED] experienced by Kentucky ALLTEL in its rural operating
 7 territories. As I mentioned before, the fact that most of our underground cable is
 8 pressurized certainly adds time to each task. Many times a splicer must go into multiple
 9 closures. Nuvox's example is only appropriate if every manhole entry is under the best
 10 conditions, with all pairs, cables and repeater tails in one closure. The following three
 11 tables provide a comparison of the tasks and activity times proposed by Nuvox compared
 12 to those actually experienced by Kentucky ALLTEL. The times proposed by Kentucky
 13 ALLTEL were developed based on business requirements and consultation with the
 14 managers responsible for conditioning work in Kentucky ALLTEL exchanges.

15

16

[REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

1

2



1 the central office) will usually occur in the underground conduit system. The second load
2 coil may still be in the underground conduit system, or just as likely in buried or aerial
3 facilities. The third load coil will usually be in the aerial or buried distribution cables
4 closest to the customer premises. This means that on average more than one third of the
5 load coils to be removed will be in an underground conduit system. Since underground
6 removals take a considerably longer amount of time, the most conservative approach to
7 blending would be to weight each scenario at one third. Kentucky ALLTEL did just that
8 to arrive at the [REDACTED] proposed in its study. The following table shows how this
9 blended time was developed.

10

11 [REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

12

13

14 **Q. What conditioning times are appropriate for Kentucky ALLTEL? (pages 91, 93, 95)**

15 **A.** Appropriate times for conditioning work are summarized in Exhibit PM-1. The times
16 applicable to a DS1 loop consist of [REDACTED]

17 [REDACTED]

18 [REDACTED]

1 [REDACTED]. These times are reasonable when considering the tasks required to
2 perform each element and the times required for each task.

3

4 **Q. Do you propose any changes to the tasks and hours contained in the Kentucky**
5 **ALLTEL study?**

6

7 A. Yes. The hours in the Kentucky ALLTEL study should be changed to those proposed in
8 Exhibit PM-1. These times are reasonable for Kentucky ALLTEL. Clearly, the
9 conditioning tasks included in the Kentucky ALLTEL study are required and should be
10 approved by this Commission. Revised non-recurring costs will be calculated using these
11 times and provided in Mr. Blessing's testimony.

12

13 **Q. Does this conclude your testimony?**

14 A. Yes, at this time.

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