



EAST KENTUCKY POWER COOPERATIVE

January 21, 2005

Ms. Elizabeth O'Donnell
Executive Director
Commonwealth of Kentucky
Public Service Commission
211 Sower Boulevard
PO Box 615
Frankfort, KY 40602-0615

RECEIVED

JAN 21 2005

PUBLIC SERVICE
COMMISSION

RE: Responses of EKPC to Commission Staff requests dated January 18, 2005


Dear Ms. O'Donnell:

Enclosed please find an original and six (6) copies of EKPC's responses to the data requests submitted by the Commission January 18, 2005. Please note that several of the responses were of such length that it was impractical to make copies to include with these responses. As a result, we have copied the data files to CD/Rom and have included them as part of the responses.

I hope this meets with the approval of the Commission. If not, please advise and we can furnish you with the necessary hard copies.

We have also posted these responses on EKPC's FTP website, and I have provided John Rogness with the pertinent information on how to access this site. I have also advised ICF of the existence of this site and have given them access as well.

Very truly yours,


Sherman Goodpaster III
Senior Corporate Counsel

SG/ti

RECEIVED

JAN 21 2005

PUBLIC SERVICE
COMMISSION

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

**THE APPLICATION OF EAST KENTUCKY)
POWER COOPERATIVE, INC. FOR A CERTIFICATE)
OF PUBLIC CONVENIENCE AND NECESSITY FOR) CASE NO
FOR THE CONSTRUCTION OF A 161 kV ELECTRIC) 2004-00320
DISTRIBUTION SUBSTATION AND TAP IN)
SPENCER COUNTY, KENTUCKY)**

**RESPONSES OF EAST KENTUCKY POWER COOPERATIVE, INC.
TO COMMISSION STAFF REQUESTS DATED JANUARY 18, 2005**

EAST KENTUCKY POWER COOPERATIVE, INC.

PSC CASE NO. 2004-00320

INFORMATION REQUEST RESPONSE

COMMISSION STAFF'S REQUEST DATED 1/18/05

ITEM 1

RESPONSIBLE PARTY: Tim Sharp and Ronnie Terrill

ITEM 1: Provide the distribution and transmission system maps for EKPC and Salt River Electric Cooperative Corporation ("SRECC").

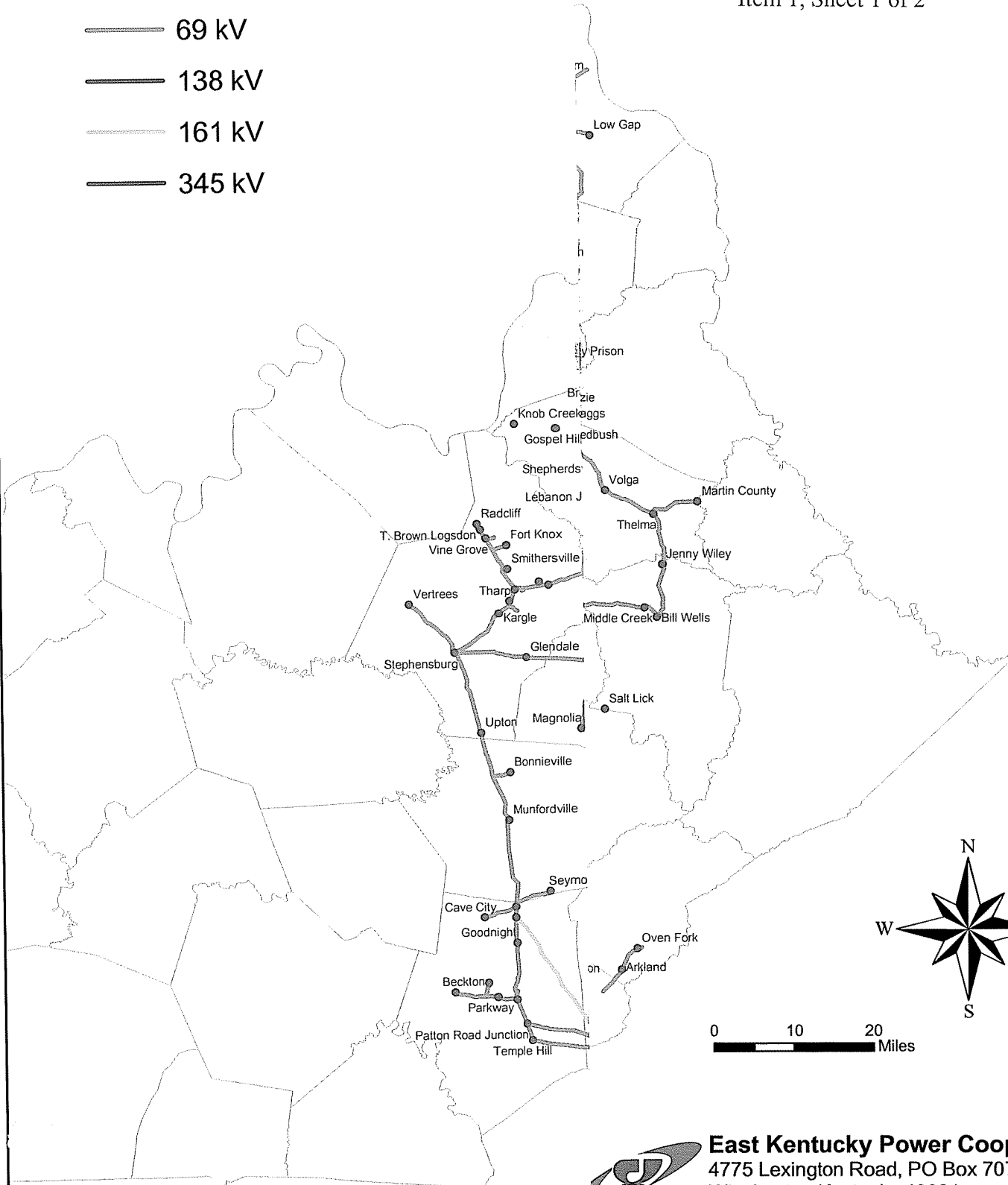
RESPONSE: See Item 1, Sheet 1 of 2 of this response for East Kentucky Power Cooperative's transmission system map and Item 1, Sheet 2 of 2 for Salt River Electric Cooperative Corporation's distribution system maps.

Power Cooperative System Map

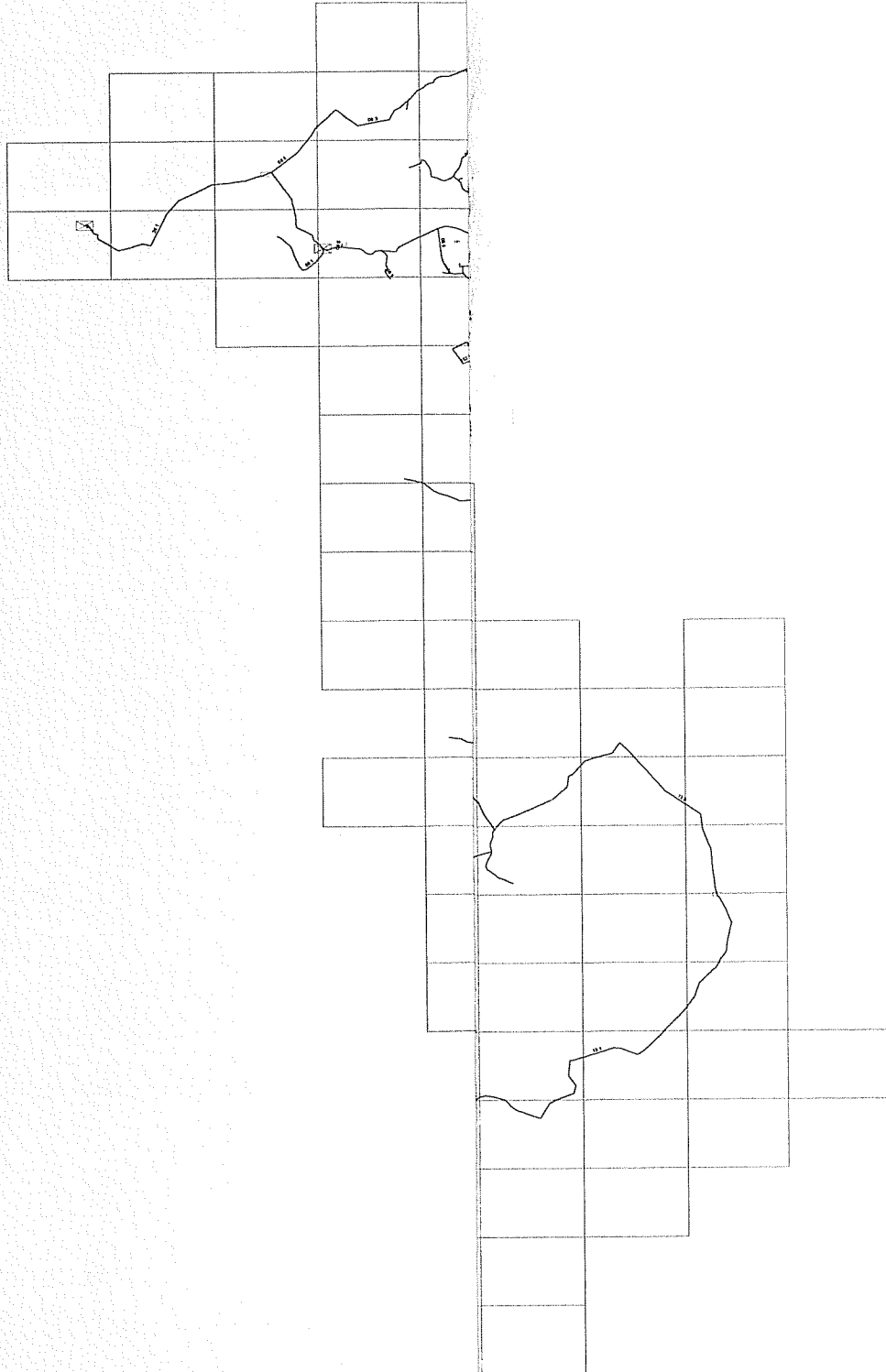
Legend

- EKPC Substation
- 69 kV
- 138 kV
- 161 kV
- 345 kV

Item 1, Sheet 1 of 2



East Kentucky Power Cooperative
4775 Lexington Road, PO Box 707
Winchester, Kentucky 40391
Phone (859)744-4812 www.ekpc.coop Fax (859)744-6008



EAST KENTUCKY POWER COOPERATIVE, INC.

PSC CASE NO. 2004-00320

INFORMATION REQUEST RESPONSE

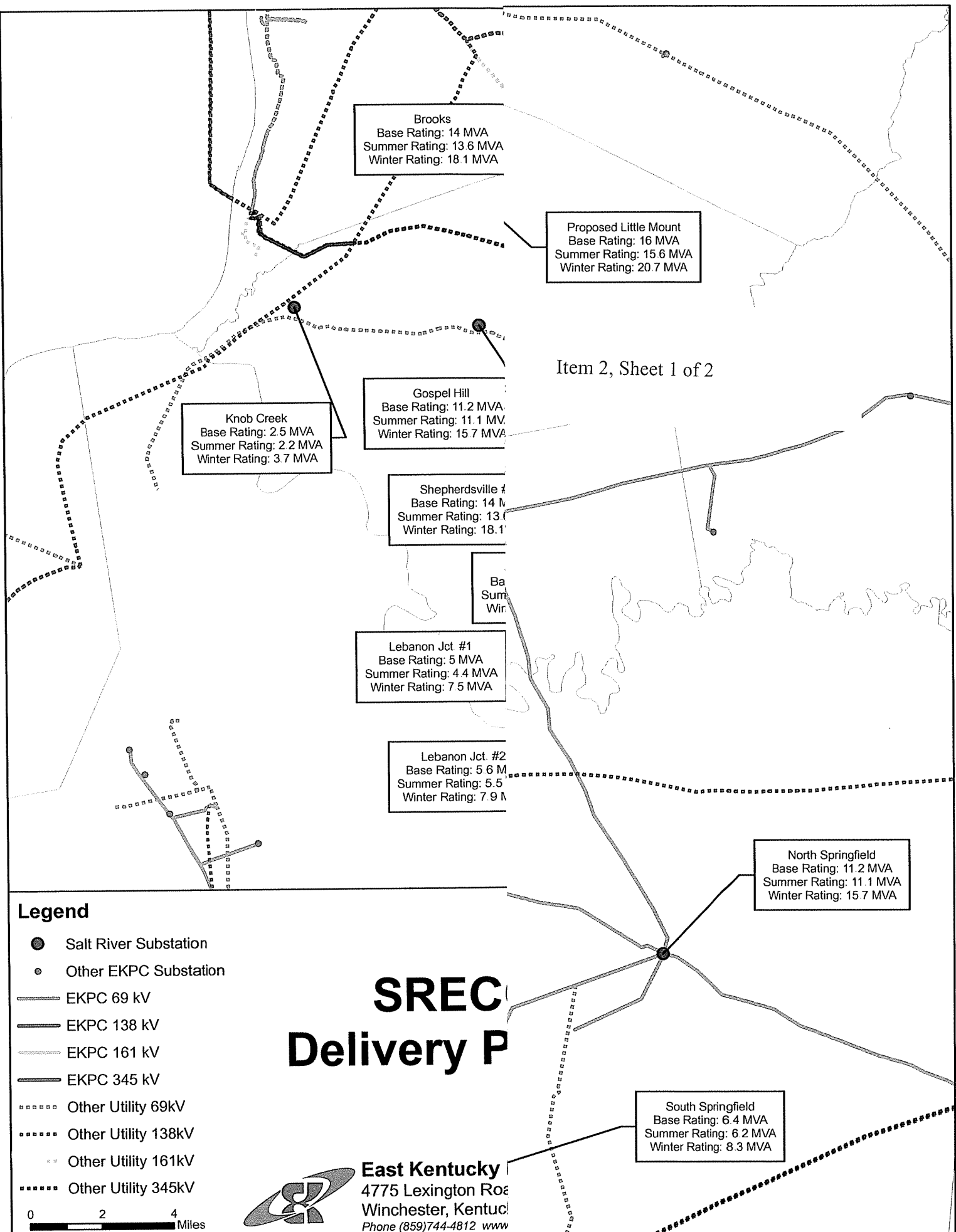
COMMISSION STAFF'S REQUEST DATED 1/18/05

ITEM 2

RESPONSIBLE PARTY: Greg McKinney and Ronnie Terrill

ITEM 2: Provide a diagram showing the number and rating of bulk supply points to the entire SRECC distribution system and sub-sections of the distribution system.

RESPONSE: See Item 2, Sheet 1 of 2 of this response for East Kentucky Power Cooperative's diagram showing the number and rating of bulk supply points to the SRECC distribution system and Item 2, Sheet 2 of 2 for Salt River Electric Cooperative Corporation's sub-sections of the distribution system.



Brooks
 Base Rating: 14 MVA
 Summer Rating: 13.6 MVA
 Winter Rating: 18.1 MVA

Proposed Little Mount
 Base Rating: 16 MVA
 Summer Rating: 15.6 MVA
 Winter Rating: 20.7 MVA

Item 2, Sheet 1 of 2

Knob Creek
 Base Rating: 2.5 MVA
 Summer Rating: 2.2 MVA
 Winter Rating: 3.7 MVA

Gospel Hill
 Base Rating: 11.2 MVA
 Summer Rating: 11.1 MVA
 Winter Rating: 15.7 MVA

Shepherdsville #1
 Base Rating: 14 MVA
 Summer Rating: 13.1 MVA
 Winter Rating: 18.1 MVA

Bas
 Sum
 Wir

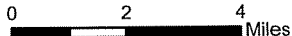
Lebanon Jct #1
 Base Rating: 5 MVA
 Summer Rating: 4.4 MVA
 Winter Rating: 7.5 MVA

Lebanon Jct #2
 Base Rating: 5.6 MVA
 Summer Rating: 5.5 MVA
 Winter Rating: 7.9 MVA

North Springfield
 Base Rating: 11.2 MVA
 Summer Rating: 11.1 MVA
 Winter Rating: 15.7 MVA

Legend

- Salt River Substation
- Other EKPC Substation
- EKPC 69 kV
- EKPC 138 kV
- EKPC 161 kV
- EKPC 345 kV
- Other Utility 69kV
- Other Utility 138kV
- Other Utility 161kV
- Other Utility 345kV

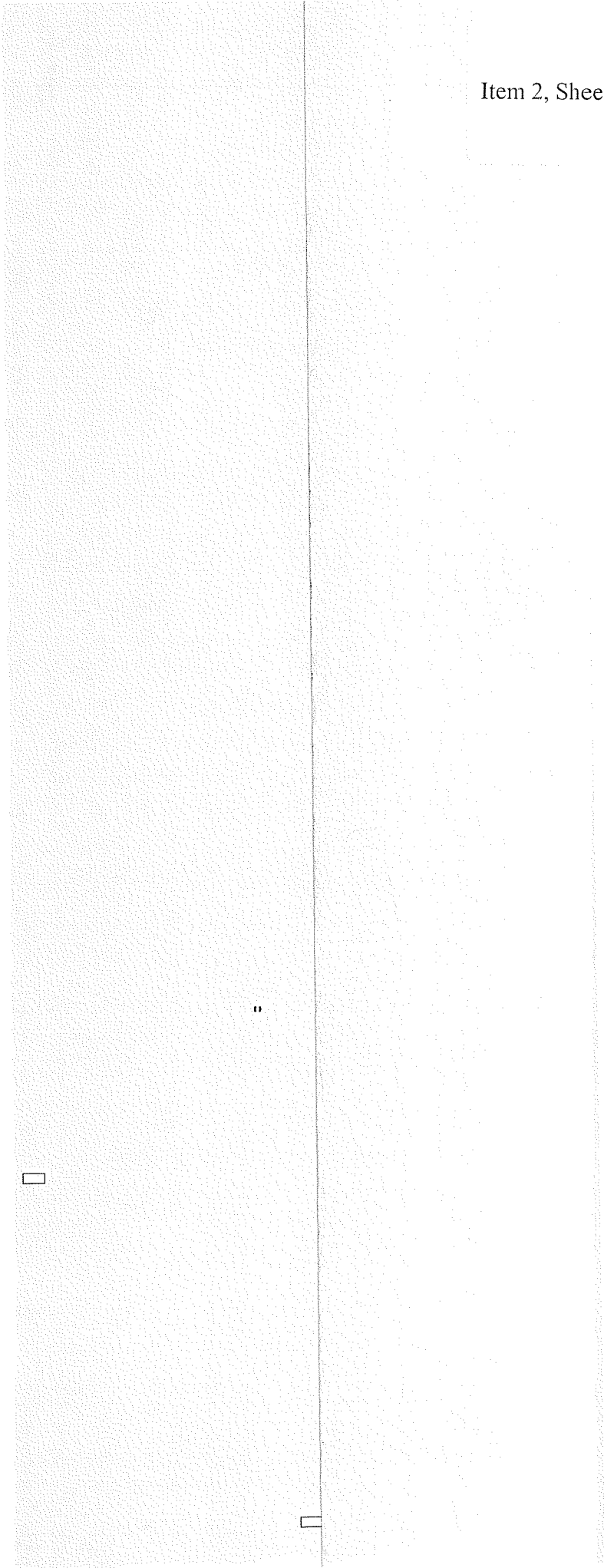


**SREC
 Delivery Point**



East Kentucky
 4775 Lexington Road
 Winchester, Kentucky
 Phone (859)744-4812 www

South Springfield
 Base Rating: 6.4 MVA
 Summer Rating: 6.2 MVA
 Winter Rating: 8.3 MVA



EAST KENTUCKY POWER COOPERATIVE, INC.

PSC CASE NO. 2004-00320

INFORMATION REQUEST RESPONSE

COMMISSION STAFF'S REQUEST DATED 1/18/05

ITEM 3

RESPONSIBLE PARTY: Tim Sharp

ITEM 3: Provide historical (5 year), existing, and projected (5 year) demand of the Little Mount/Spencer County area.

RESPONSE:

Winter Demand

Season	Taylorsville	Darwin Thomas	Little Mount	Total
1999-00	8.3	6.9	0.0	15.2
2000-01	9.9	7.9	0.0	17.8
2001-02	9.5	7.4	0.0	16.9
2002-03	12.1	9.4	0.0	21.5
2003-04	12.1	10.3	0.0	22.4
2004-05	7.1	12.3	7.1	26.5
2005-06	7.5	13.2	7.5	28.2
2006-07	7.9	13.9	7.9	29.7
2007-08	8.2	14.5	8.1	30.8
2008-09	8.5	15.1	8.4	32.0
2009-10	8.9	15.8	8.8	33.5

Summer Demand

Season	Taylorsville	Darwin Thomas	Little Mount	Total
1999	9.5	5.7	0.0	15.2
2000	8.3	6.8	0.0	15.2
2001	8.8	7.5	0.0	16.3
2002	10.0	8.4	0.0	18.4
2003	9.8	7.8	0.0	17.6
2004	9.2	8.4	0.0	17.6
2005	6.1	11.0	6.1	23.2
2006	6.5	12.0	6.5	25.0
2007	6.7	12.8	6.7	26.2
2008	6.9	13.4	6.9	27.2
2009	7.2	14.0	7.1	28.3

Note:

The five-year load projections are derived from the 2004 Load Forecast and are based on a probability of occurring once every ten years. The winter season projections are based on an ambient temperature of -14 Degrees Fahrenheit. The summer season projections are based on an ambient temperature of 101 Degrees Fahrenheit.

EAST KENTUCKY POWER COOPERATIVE, INC.

PSC CASE NO. 2004-00320

INFORMATION REQUEST RESPONSE

COMMISSION STAFF'S REQUEST DATED 1/18/05

ITEM 4

RESPONSIBLE PARTY: Tim Sharp and Jim Lamb

ITEM 4: Provide a description of the approach and workpapers used in estimating future load growth.

RESPONSE: The response to Item 4 is contained on the attached CD-Rom in one Powerpoint presentation.

EAST KENTUCKY POWER COOPERATIVE, INC.

PSC CASE NO. 2004-00320

INFORMATION REQUEST RESPONSE

COMMISSION STAFF'S REQUEST DATED 1/18/05

ITEM 5

RESPONSIBLE PARTY: Tim Sharp and Jim Lamb

ITEM 5: Provide the approximate number and after-diversity-maximum-demand of the different classes of consumers.

RESPONSE: Like many regulated utilities, EKPC and Salt River Electric utilize recording meters on class – specific retail customers, in order to collect usage data on a 15-minute interval. The meters are installed on a random sample of retail customers throughout the EKPC and Salt River system.

EKPC has used 2003 Load Research data to estimate the maximum diversified demand, (also called the class peak), of each of the rate classes served by the Taylorsville substation. Please note – since each of the classes may have peak dates and times independent of one another, the sum of the class demands may not equal the Taylorsville peak demand.

The following table summarizes the approximate number and demand for each rate class served by the substation.

**Taylorville Substation
Salt River ECC
2003 Data**

Rate	Rate Description	Load Research Class	# of Customers	Class Maximum Demand (kW)	
				Winter	Summer
1	Farm & Home	Residential	1317	7297	5748
2	Farm & Home Taxable	Residential	220	1208	960
5	Camps	Residential	1	6	4
7	Large Power 50 to 3000 kW	Metered data	2	741	649
8	Small Comm <37.5 kW	Small Commercial	173	994	1340
9	Large Power >50 kW	Medium Commercial	6	618	746
13	Large Commercial	Billing data	1	650	691
			<u>1720</u>		

EAST KENTUCKY POWER COOPERATIVE, INC.

PSC CASE NO. 2004-00320

INFORMATION REQUEST RESPONSE

COMMISSION STAFF'S REQUEST DATED 1/18/05

ITEM 6

RESPONSIBLE PARTY: Greg McKinney

ITEM 6: Provide existing supply options for the Little Mount/Spencer County area.

RESPONSE: The Little Mount Area in Spencer County currently has three supply options. Normally, the area is served by a 12.5kV, three-phase feeder from Taylorsville Substation. In the event that the normal supply is not available, two alternate supply options are available on a limited basis. One three-phase, 12.5kV feed from Darwin Thomas Substation and one three-phase, 12.5kV feed from Bloomfield Substation

EAST KENTUCKY POWER COOPERATIVE, INC.

PSC CASE NO. 2004-00320

INFORMATION REQUEST RESPONSE

COMMISSION STAFF'S REQUEST DATED 1/18/05

ITEM 7

RESPONSIBLE PARTY: Greg McKinney

ITEM 7: Provide the rating of the existing Taylorsville transformer and a schedule of the last 12 months daily or monthly peaks.

RESPONSE: See Item 7, Page 2 of 2

Transformer Ratings

Base:	14,000	kVA
Summer:	13,620	kVA
Winter:	18,140	kVA

Previous 12 Monthly Peaks

Month	Date	kW	kVAR	kVA
January-04	1/31/2004	12,095	2,577	12,366
February-04	2/16/2004	9,000	2,022	9,224
March-04	3/22/2004	7,708	1,690	7,891
April-04	4/13/2004	7,039	1,184	7,138
May-04	5/21/2004	7,847	2,961	8,387
June-04	6/14/2004	8,536	3,238	9,130
July-04	7/13/2004	8,785	3,227	9,359
August-04	8/3/2004	8,906	3,312	9,502
September-04	9/6/2004	9,207	3,509	9,853
October-04	10/24/2004	5,822	1,306	5,967
November-04	11/25/2004	7,093	961	7,158
December-04	12/24/2004	11,282	2,427	11,540

Source: EKPC's Power Billing Data

EAST KENTUCKY POWER COOPERATIVE, INC.

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COMMISSION STAFF'S REQUEST DATED 1/18/05

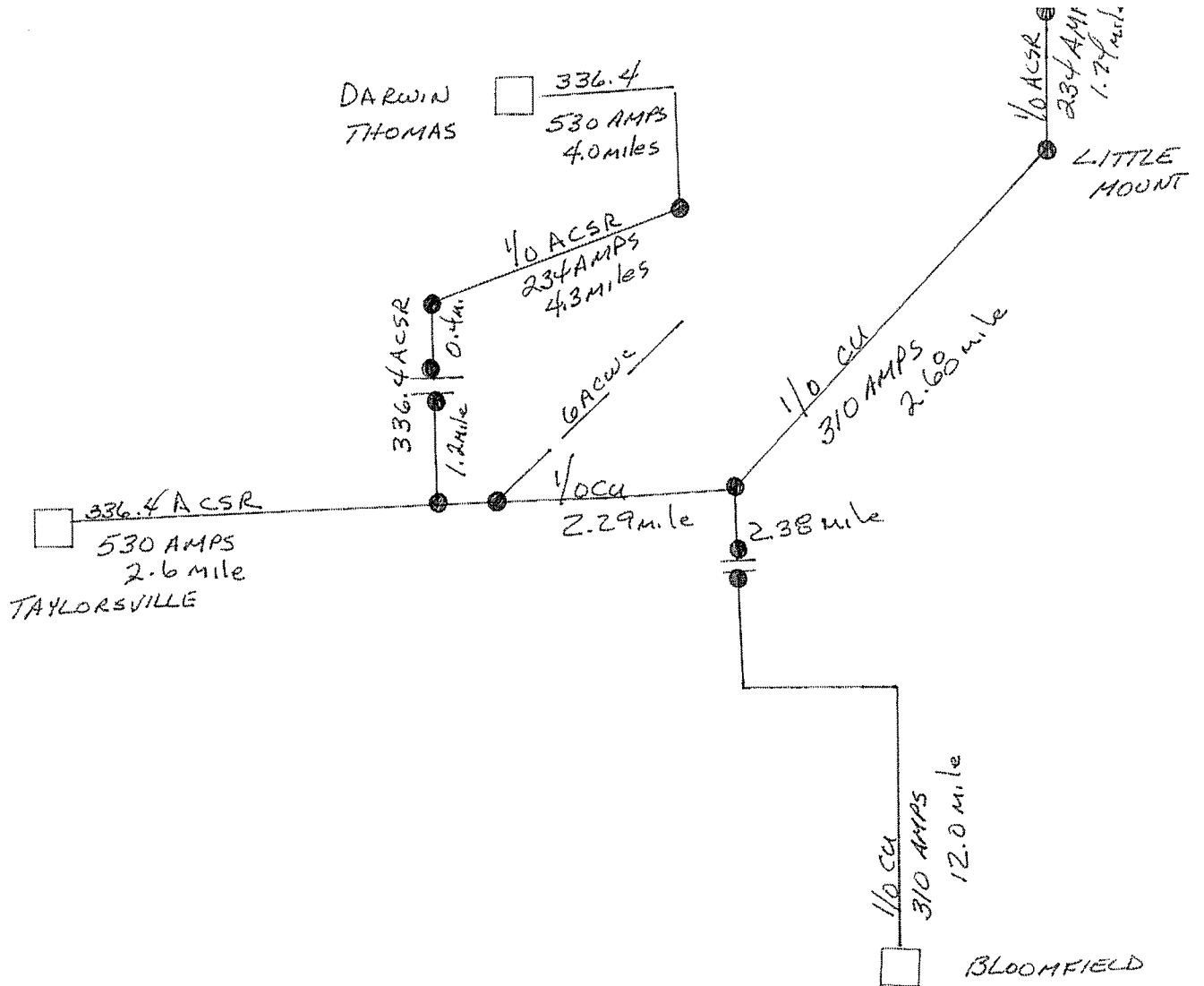
ITEM 8

RESPONSIBLE PARTY: Tim Sharp

ITEM 8: Provide the rating of the existing Taylorsville sub feeder and historical loading and a schedule of the last 12 months daily or monthly peaks. If appropriate, include any other feeders.

RESPONSE: See Item 8, Sheet 1 of 2 for the Ratings of the Existing Taylorsville, Bloomfield and Darwin Thomas feeders into the area and Item 8, Sheet 2 of 2 for the historical loading on these feeders.

#8



#8

TAYLORSVILLE, OCR 134

<u>Date/Time</u>	<u>Ph-A Amps</u>	<u>Ph-B Amps</u>	<u>Ph-C Amps</u>	<u>Ntl Amps</u>	<u>3-Ph KW</u>
12/24/04 9:00	422.5	293.2	323.0	131.6	7454.6
11/25/04 10:45	223.2	170.2	191.9	46.1	4289.5
10/24/04 19:15	206.0	159.6	184.4	42.5	3929.8
9/6/04 17:15	328.3	255.2	295.8	68.7	5986.0
8/3/04 16:45	322.8	252.4	287.8	67.1	5925.1
7/13/04 17:30	317.8	217.7	267.9	91.1	5469.8
6/14/04 18:15	306.4	231.6	271.6	73.1	5503.7
5/21/04 16:45	275.3	231.9	265.3	38.9	5270.1
4/13/04 19:30	234.7	185.5	200.9	49.5	4514.4
3/22/04 6:30	238.9	223.3	236.5	18.7	5026.6
2/16/04 7:00	277.7	249.8	291.6	49.0	5903.3
1/13/04 9:15	189.1	156.8	182.9	25.5	3900.1

BLOOMFIELD, OCR 114

<u>Date/Time</u>	<u>Ph-A Amps</u>	<u>Ph-B Amps</u>	<u>Ph-C Amps</u>	<u>Ntl Amps</u>	<u>3-Ph KW</u>
12/25/04 8:45	26.7	19.0	36.7	15.6	587.0
11/25/04 10:15	48.9	42.1	67.7	23.5	1178.2
10/17/04 20:00	33.8	19.3	37.4	16.5	648.6
9/6/04 17:15	56.8	36.5	65.5	23.3	1193.4
8/3/04 17:15	50.4	40.7	71.2	24.8	1209.3
7/13/04 17:45	58.1	33.9	76.0	32.2	1252.4
6/14/04 18:15	47.4	29.7	63.3	26.0	1046.9
5/22/04 16:45	48.0	29.5	57.6	21.2	1007.7
4/13/04 19:30	48.0	26.5	63.4	30.8	1019.3
3/23/04 7:15	46.0	28.0	51.9	21.4	934.7
2/1/04 8:30	78.9	32.5	82.2	45.6	1451.9
1/31/04 8:30	81.3	44.4	85.1	36.4	1573.3

DARWIN THOMAS, OCR 114

<u>Date/Time</u>	<u>Ph-A Amps</u>	<u>Ph-B Amps</u>	<u>Ph-C Amps</u>	<u>Ntl Amps</u>	<u>3-Ph KW</u>
12/25/04 8:30	90.1	164.9	156.4	66.1	3059.8
11/25/04 10:30	66.1	98.0	114.0	40.0	2065.2
10/9/04 20:30	186.1	203.0	155.9	42.7	3970.0
9/6/04 16:45	92.5	119.0	133.5	32.9	2404.8
8/3/04 17:30	92.8	118.6	125.7	26.3	2359.8
7/13/04 17:15	94.3	127.8	134.7	33.2	2487.3
6/8/04 17:45	86.8	118.3	124.2	30.0	2316.9
5/22/04 17:00	79.7	101.4	120.0	33.4	2122.7
4/13/04 20:00	65.3	92.6	110.3	37.0	1976.9
3/23/04 6:30	72.5	97.7	97.2	24.5	1984.5
2/1/04 8:15	77.9	110.7	135.0	47.6	2394.0
1/31/04 8:45	101.6	139.3	147.6	37.0	2900.4

EAST KENTUCKY POWER COOPERATIVE, INC.

PSC CASE NO. 2004-00320

INFORMATION REQUEST RESPONSE

COMMISSION STAFF'S REQUEST DATED 1/18/05

ITEM 9

RESPONSIBLE PARTY: Tim Sharp

ITEM 9: Provide the length of existing feeder(s) to the Little Mount/Spencer
County area.

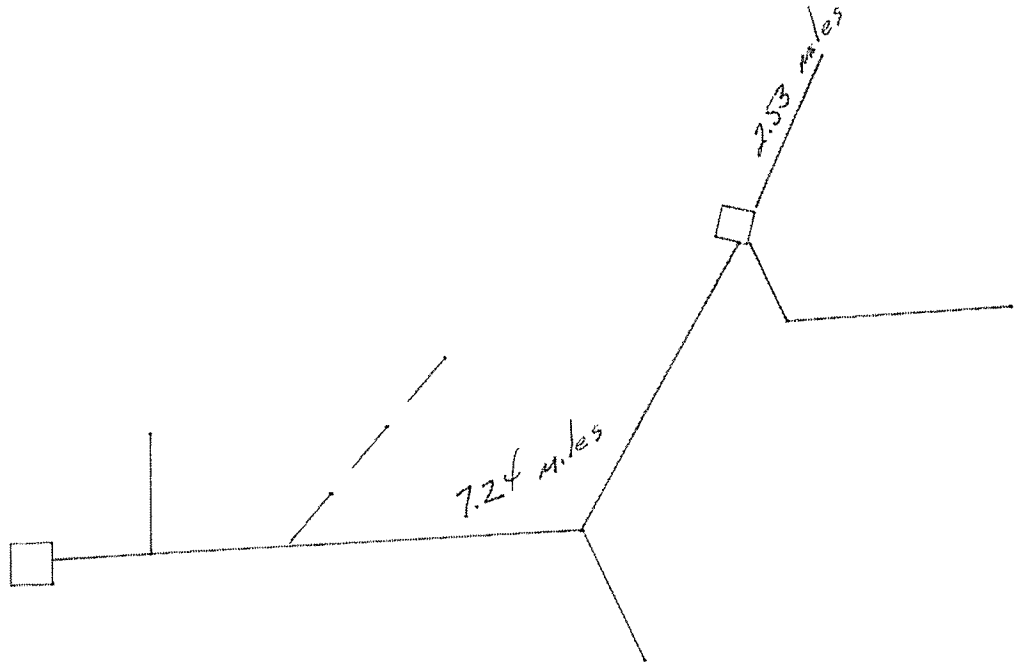
RESPONSE: See Item 9, Sheet 1 of 1 for Response

#9

1234 customers ON Taylorsville Feeder 04

7.24 miles FROM Taylorsville SUB TO PROPOSED Little Mt. SUB

9.77 miles FROM Taylorsville SUB TO END OF FEEDER



EAST KENTUCKY POWER COOPERATIVE, INC.

PSC CASE NO. 2004-00320

INFORMATION REQUEST RESPONSE

COMMISSION STAFF'S REQUEST DATED 1/18/05

ITEM 10

RESPONSIBLE PARTY: Tim Sharp

ITEM 10: Provide the historical voltage profile of the supply feeder(s) in the Little Mount/Spencer County area and provide for the receiving-end a voltage profile for one month in the last 12 months.

RESPONSE: The response to Item 10 is contained on the attached CD-Rom in one Excel File and as one PDF file.

EAST KENTUCKY POWER COOPERATIVE, INC.

PSC CASE NO. 2004-00320

INFORMATION REQUEST RESPONSE

COMMISSION STAFF'S REQUEST DATED 1/18/05

ITEM 11

RESPONSIBLE PARTY: Greg McKinney, Tim Sharp, and Joe Settles

ITEM 11: Provide a detailed evaluation including reports or work product of alternatives:

ITEM 11(a): Capital Cost

RESPONSE: Please refer to Warner Exhibit 1 of the prepared testimony of Mary Jane Warner attached as Exhibit I to the Application filed herein for a complete evaluation of the capital cost of each competing alternative.

ITEM 11 (b): Safety

RESPONSE: Safety related issues are addressed by the planning and design criteria. For example, the thermal capability on an overhead line is based on a maximum operating temperature at which the conductor can operate and still meet required ground clearances. Overloading of lines such as is occurring on the Taylorsville feeder may cause the thermal capability of the lines to be exceeded, causing the line to sag below the required clearance causing a safety problem. The proposed project will eliminate the current potential for such safety concerns.

ITEM 11 (c): Environmental issues

RESPONSE: The Applicant is required, pursuant to 7 CFR § 1794.22 to submit a single Environmental Report for the Little Mount Distribution Substation and Tap Project. The archeological workup for the distribution substation site has not yet been completed. There are also some actions still to be taken by the United States Fish and Wildlife Service on the Tap line itself. As a result, a final submittal to the Rural Utilities Service of the United States Department of Agriculture has not yet been made. The complete environmental findings as of the date of this Response were attached as Exhibit XVI to the Application filed herein.

ITEM 11d: Continuity of supply/supply security

RESPONSE: The reliability in this area has been somewhat suspect due to the length of the feeder. Therefore the amount of exposure on the feeder over the years and motor starts on the end of this feeder create considerable numbers of flickers and dips and must be limited by the customer to prevent the impact to other customers.

One example is an 800-hp pumping station motor near the end of this feeder. When started with a standard voltage reduction, a dip in excess of 20% is experienced on the feeder by neighboring customers. We have mitigated this problem by installing an Intellivar device that allows for high-speed static var compensation, limiting the dip to 3%. This has provided a solution for this particular installation but is not cost effective for smaller motors that cause less severe dips on the primary system but are still a nuisance to neighboring consumers.

In addition, the recovery of power to this area during an extended outage has become a lengthy process for customers at the end of the line. A recent example would be the ice storm experienced December 22-26, 2004, when a tree fell through a single-phase conductor adjacent to the three-phase line knocking the entire circuit out of power. The problem was found and cleared up within an hour and a half. However, due to temperatures in the teens and cold load pick up, it was not possible to re-energize the entire circuit upon completion of the repairs. Subsequently, the re-energization process of sectionalizing and re-energizing portions of the circuit took another five to six hours to complete.

ITEM 11e: Voltages within statutory limits

RESPONSE: All voltages have been maintained within statutory limits. As emphasized in 11(d), flicker due to motor starts has been a continuous problem in this area. Also the maintenance of the voltage has been done through only two additional sets of down-line reclosers from the substation.

ITEM 11f: Ease of expansion

RESPONSE: The expansion capabilities of existing and new facilities are reflected in the planning cost estimates of each alternative. For example, the planning estimate for expanding the existing Taylorsville Substation takes in consideration the size and layout of the physical space available at that location. Likewise, EKPC typically acquires enough substation property to accommodate future expansion requirements when

negotiating new substation properties. The planning cost estimates for new substations include dollars for the additional property.

ITEM 11g: Ease and cost of maintenance

RESPONSE: When evaluating alternatives, the cost of annual maintenance is addressed by applying an annual fixed-charge rate to the capital cost of each system improvement. The alternatives are then compared in terms of a twenty-year present worth of annual costs. The same fixed-charge rate is applied consistently throughout the alternatives.

EAST KENTUCKY POWER COOPERATIVE, INC.

PSC CASE NO. 2004-00320

INFORMATION REQUEST RESPONSE

COMMISSION STAFF'S REQUEST DATED 1/18/05

ITEM 12

RESPONSIBLE PARTY: Tim Sharp

ITEM 12: Describe the impact of a new substation on existing fault levels – what is the risk of premature obsolescence of existing equipment?

RESPONSE: A new substation will increase fault levels in the area and the system will have to be re-coordinated; however this is normal operating procedure for any upgrade of facilities that we do with any standard change. No equipment will be made obsolete as we will remove it from this location and reuse it at another location in the future.

EAST KENTUCKY POWER COOPERATIVE, INC.

PSC CASE NO. 2004-00320

INFORMATION REQUEST RESPONSE

COMMISSION STAFF'S REQUEST DATED 1/18/05

ITEM 13

RESPONSIBLE PARTY: Jim Lamb

ITEM 13: Provide assumptions used to simulate the Extreme 2008 Conditions.

RESPONSE: EKPC and Salt River Electric prepare peak demand sensitivities along with base peak demand projections. The sensitivities are prepared via the assumption of extreme weather. Please see the table below.

Weather Assumptions For Salt River Electric's 2008 Seasonal Peak Demands

	Normal Peak Temperature	Extreme Peak Temperature
Winter	0 Degrees	-14 Degrees
Summer	96 Degrees	101 Degrees

Once extreme temperature levels are determined, weather response factors are applied to projected numbers of customers. For 2008, Salt River Electric's weather response factor for the winter is -1.9 MW / Degree, and the weather response factor for the summer is 5.4 MW / Degree.

EAST KENTUCKY POWER COOPERATIVE, INC.

PSC CASE NO. 2004-00320

INFORMATION REQUEST RESPONSE

COMMISSION STAFF'S REQUEST DATED 1/18/05

ITEM 14

RESPONSIBLE PARTY: Greg McKinney and Tim Sharp

ITEM 14: Provide power flow case(s) used to analyze the various alternatives in RAW format.

RESPONSE: The distribution power flow cases were performed by Salt River Electric Cooperative Corporation two years in the Milsoft format, but since that time, the hard drive containing these cases failed, and these cases cannot be retrieved. There were no backups, so these are not available.

EKPC did not perform transmission load flow studies for the various alternatives considered in the study. Typically, the impact of distribution delivery points of this magnitude do not significantly differ between alternate transmission service plans. In general, transmission losses become a factor when transmission options are at different voltage levels. In this study, transmission losses were assumed to be less under the proposed Little Mount plan because the load is served from the 161kV system compared to the other options in which the load would be served from the 69kV system. The proposed plan is economically better than the other options without including the economic benefit of reduced transmission losses."

Known new loads that are going on Taylorsville Feeder 4 are as follows:

Pin Oak Subdivision	267 lots	Developed and selling lots
Spencer County Middle School	.74 mw	Under construction; slated for opening Fall 2005
Highpoint Subdivision	400 lots	Developed and selling lots
Shawnee Springs	107 lots	In design stage; have plat
Hunters Crossing	50 lots	Developed and selling lots
Edgewater	120 lots 2 hotels	Roads constructed
Early Wynne	138 lots	Developed and selling lots