EAST KENTUCKY POWER COOPERATIVE

RECEIVED

MAR 16 2007

PUBLIC SERVICE COMMISSION

March 16, 2007

HAND DELIVERED

Ms. Elizabeth O'Donnell
Executive Director
Public Service Commission
Post Office Box 615
Frankfort, KY 40602

Re: PSC Case No. 2006-00564

Dear Ms. O'Donnell:

Please find enclosed for filing with the Commission in the above-referenced case an original and eight copies of the Responses of East Kentucky Power Cooperative, Inc., to the data requests made at the hearing in this case, held on March 6, 2007.

Very truly yours,

Charles A. Lile
Senior Corporate Counsel

Enclosures

Cc: Parties of Record

4775 Lexington Road 40391
P.O. Box 707, Winchester,
Kentucky 40392-0707

Tel. (859) 744-4812
Fax: (859) 744-6008
http://www.ekpc.coop

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

AN INVESTIGATION INTO EAST KENTUCKY	**)**	**CASE NO.**
POWER COOPERATIVE, INC.'S CONTINUED	**)**	**2006-00564**
NEED FOR CERTIFICATED GENERATION	**)**	

EAST KENTUCKY POWER COOPERATIVE, INC.

PSC CASE 2006-00564
DATA REQUESTS FROM 3/6/07 PUBLIC HEARING

PUBLIC SERVICE COMMISSION'S REQUEST DATED 3/6/07

In response to the Public Service Commission's 3/6/07 Public Hearing Data Request, East Kentucky Power Cooperative, Inc. ("EKPC") submits its responses to the questions contained therein.

EAST KENTUCKY POWER COOPERATIVE, INC.

PSC CASE NO. 2006-00564

INFORMATION REQUEST RESPONSE

PUBLIC SERVICE COMMISSION STAFF DATA REQUEST

AT HEARING ON MARCH 6, 2007

REQUEST 1

RESPONSIBLE PERSON: **James C. Lamb, Jr.**

COMPANY: **East Kentucky Power Cooperative, Inc.**

Request 1. Update Status of Spurlock 4 – update information provided in response to Request 1 (a) of the data request dated January 5, 2007.

Response 1. Total expenditure for the Spurlock Unit 4 Project through February 28, 2007 is $247,337,065. This represents approximately 47 percent of the expected total project cost. Project costs and expenditures are as follows:

SPURLOCK UNIT 4 PROJECT COSTS

CONTRACT	ORIGINAL DESIGN COST	CONTRACT AWARD COST	EXPEDITURES THROUGH 2/28/07
TURBINE GENERATOR	$ 32,395,000	$ 32,895,000	$ 25,752,040
FEEDWATER HEATERS	756,000	1,207,124	1,122,645
DEAERATOR	200,000	303,094	302,460
CONDENSER	1,600,000	2,358,510	2,144,100
CIRCULATING WATER PUMPS	630,000	694,200	494,200
CONDENSATE PUMPS	245,000	323,505	323,505
BOILER FEED PUMPS	1,774,000	2,375,772	1,163,698
DISTRIBUTED CONTROL SYSTEM	4,000,000	3,928,175	
FANS & MOTORS	2,668,000	2,718,458	2,673,705
ASH HANDLING EQ ONLY	1,500,000	3,121,730	
ALLOY PIPING AND ALLOY SUPPORTS	2,450,000	3,922,297	3,619,571
TRANSFORMERS LARGE	4,625,000	3,100,552	549,589
TRANSFORMERS MEDIUM		1,354,700	301,400
SWITCHGEAR	4,273,000	3,914,646	3,902,320
BOILER ISLAND	180,500,000	194,500,000	113,523,301
EMISSIONS MONITORING	300,000		
COAL/LIMESTONE HANDLING	8,650,000	12,078,400	1,936,600
STACK / CHIMNEY	5,700,000	5,851,000	99,600
COOLING TOWER	2,454,000	3,025,100	2,833,562
PILING	5,650,000	9,270,142	9,270,142
SUBSTRUCTURE	12,900,000	17,178,476	16,436,066
CIRCULATING WATER PIPE	6,000,000	10,385,620	10,188,433
BALANCE OF PLANT	72,000,000	99,574,708	21,539,689
PAINTING	2,500,000		
SUBTOTAL	$ 353,770,000	414,081,209	218,176,626
STEEL CONTINGENCY	$ 10,000,000	$ 10,000,000	
BOILER CONTINGENCY	9,025,000	9,025,000	
BOP CONTINGENCY	7,200,000	7,200,000	
OTHER CONTINGENCY	6,887,500	6,887,500	
SUBTOTAL	$ 386,882,500	$ 447,193,709	$ 218,176,626
ENGINEERING DESIGN (EST)	$ 16,270,000	16,200,000	7,976,153
OWNERS COST (EST)	20,000,000	20,000,000	7,928,385
SITE PREPARATION (EST)			2,216,611
SUBTOTAL	$ 423,152,500	$ 483,393,709	$ 236,297,776
INTEREST DURING CONSTRUCTION (EST)	46,546,775	46,546,775	11,039,290
PROJECT TOTAL	$ 469,699,275	$ 529,940,484	$ 247,337,065

Piling is complete. Foundations are 82 percent complete with the turbine generator foundation forms being removed this week. Structural steel installation is 75 percent complete with the turbine room steel installation planned to begin this week. Boiler building concrete floor slab pours are scheduled to begin within a week. The coal and limestone silos are in place. Boiler building steel is mostly in place and the boiler cyclones are installed.

The circulating water pipe is planned for hydrostatic testing within the next week. The cooling tower is 70 percent complete with all material on site. The Turbine Generator has been assembled and is in storage off site. Shipment to site is scheduled for later this year.

The feedwater heaters, condenser, fans, pumps and transformers have all been either shipped or delivered to site. Switchgear is assembled and being prepared for shipment to site. The condenser installation and fan installation have begun. Balance of Plant electrical crews have been mobilized to the site.

The first several barge loads of boiler waterwall tube panels have arrived with several more barge loads on their way. The steam drum shipped on March 3, 2007 and is scheduled to be lifted into place starting on March 22, 2007. The tops of the boiler cyclones are currently being installed.

The following table is a summary of Spurlock Unit No. 4 contract status indicating percent complete. Some contracts are equipment supply while others are equipment supply and installation. Other contracts such as substructure, stack, and painting can be considered installation only.

The overall project schedule is being maintained for an April 2009 commercial operation date.

Spurlock 4 Construction Update March 2007			Equipment	Installation
Number	Purpose	Contractor	% Complete	% Complete
F1	TURBINE GENERATOR	GE	100	0
F6	FEEDWATER HEATERS	Yuba	100	0
F8	DEAERATOR	Ecodyne	100	0
F11	CONDENSER	TEI	100	0
F16	CIRCULATING WATER PUMPS	ITT Industries	100	0
F17	CONDENSATE PUMPS	Flowserve	100	0
F21	BOILER FEED PUMPS	Flowserve	100	0
F36	DISTRIBUTED CONTROL SYSTEM	ABB	25	0
F46	FANS & MOTORS	Howden	100	25
F71	ASH HANDLING	United Conveyor	30	0
F101	ALLOY PIPING AND ALLOY SUPPORTS	BendTec	100	20
F131A	TRANSFORMERS - Large	Pauwels	100	0
F131B	TRANSFORMERS - Medium	Waukesha	100	0
F146	SWITCHGEAR	Pederson Power	95	0
F201	BOILER ISLAND	Alstom Power	80	20
F211	COAL/LIMESTONE HANDLING	Dearborn Mid-West	15	0
F221	STACK / CHIMNEY	Pullman Power	NA	10
F222	COOLING TOWER	Marley	100	70
F251	PILING	Richard Goettle	100	100
F261	SUBSTRUCTURE	Baker Concrete	NA	82
F271	STRUCTURAL STEEL	Alstom Power	95	75
F263	CIRCULATING WATER PIPE	Reynolds	100	99
F264	ASH SILO'S	Alstom Power	50	0
F281	BALANCE OF PLANT	Cherne	50	10
F281	TURBINE CRANE	MPH	100	0
F332	PAINTING		NA	55

EAST KENTUCKY POWER COOPERATIVE, INC.

PSC CASE NO. 2006-00564

DATA REQUESTS FROM 3/6/07 PUBLIC HEARING

PUBLIC SERVICE COMMISSION STAFF DATA REQUEST

AT HEARING ON MARCH 6, 2007

REQUEST 2

RESPONSIBLE PERSON: **James C. Lamb, Jr.**

COMPANY: **East Kentucky Power Cooperative, Inc.**

Request 2. Update the project costs for Smith 1 that were provided in response to Request Item 3, page 2 of 3, of the data request dated February 13, 2007.

Response 2. Through February 28, 2007, EKPC has spent $41,038,297 on the Smith CFB Project. These expenditures are outlined below.

SMITH 1 PROJECT COST

CONTRACT	ORIGINAL DESIGN COST	CONTRACT AWARD	EXPENDITURES THROUGH 2/28/07
TURBINE GENERATOR	$ 33,430,000	$ 32,895,000	$ 19,437,888
SITE PREPARATION	1,000,000	5,258,794	
FEEDWATER HEATERS	756,000	1,639,247	
DEAERATOR	200,000		
CONDENSER	1,600,000	2,661,835	239,565
CIRCULATING WATER PUMPS	630,000		
CONDENSATE PUMPS	245,000		
BOILER FEED PUMPS	1,774,000	2,962,378	
DISTRIBUTED CONTROL SYSTEM	4,000,000		
FANS & MOTORS	2,668,000		
ASH HANDLING EQ ONLY	1,500,000		
ALLOY PIPING AND ALLOY SUPPORTS	2,450,000	4,304,930	1,216,962
TRANSFORMERS	4,625,000		
SWITCHGEAR	4,273,000		
BOILER ISLAND	180,500,000	243,139,916	13,398,905
EMISSIONS MONITORING	300,000		
COAL/LIMESTONE HANDLING	33,025,000		
STACK	4,500,000		
COOLING TOWER	2,454,000	3,489,900	
DAM & WATER STORAGE RESERVOIR	10,000,000		
CIRCULATING WATER PIPE	4,000,000		
ASH SILOS	3,000,000		
PILING			
SUBSTRUCTURE	13,000,000		
STRUCTURAL STEEL			
BALANCE OF PLANT	72,000,000		
RIVER INTAKE & RESERVOIR PUMP HOUSE AND PIPELINES	10,300,000		
COND & SW TANKS (500,000 GAL EACH)	1,020,000		
CRANES- TURBINE AND BFP	950,000		
SCR AMMONIA STORAGE SYSTEM	50,000		
POTABLE WTR TREATMENT & STRG	75,000		
CO2, H2, N2 GAS STORAGE SYSTEMS	425,000		
OCCUPIED SPACES	3,500,000		
PAINTING	2,500,000		
PERMANENT PLANT MOBILE EQUIP	2,500,000		
SUBTOTAL	$ 403,250,000	296,352,000	34,293,320
STEEL CONTINGENCY	$ 10,000,000		
COAL/LIMESTONE CONTINGENCY	3,302,500		
BOILER CONTINGENCY	9,025,000		
BOP CONTINGENCY	8,832,000		
OTHER CONTINGENCY	6,547,500		
SUBTOTAL	$ 440,957,000	$ 296,352,000	$ 34,293,320

SMITH 1 PROJECT COST

CONTRACT	ORIGINAL DESIGN COST	CONTRACT AWARD	EXPENDITURES THROUGH 2/28/07
ENGINEERING DESIGN	$ 19,270,000	21,844,000	4,479,894
OWNERS COST	20,000,000	20,000,000	105,786
SITE PREPARATION			1,055,566
ENVIRONMENTAL COSTS			1,581
SUBTOTAL	$ 480,227,000	$ 338,196,000	$ 39,936,148
INTEREST DURING CONSTRUCTION	52,824,970	52,824,970	1,102,148
PROJECT TOTAL	$ 533,051,970	$ 391,020,970	$ 41,038,297

It is estimated that EKPC has up to $10.9 million additional in commitments to date. Contracts awarded to date are listed below. The cancellation cost is the estimated dollar amount that EKPC would have to expend in order to terminate each of the awarded contracts. The owner's cost listed below includes the interest that has accumulated to date on this project. EKPC is estimating that the total committed costs are $51,953,621.

East Kentucky Power
J.K. Smith Power Station
Smith Unit 1

CONTRACT NUMBER	AWARDED CONTRACTs	AWARDED CONTRACT, $	Actual Expenditures through 2/28/07	CANCELLATION COST, $	TOTAL COMMITTED EXPENDITURES TO DATE
G1	TURBINE GENERATOR	$34,015,105	$19,437,888	$2,500,000	$21,937,888
G3	SITE PREPARATION	$5,008,375	$0	$0	$0
G6	FEEDWATER HEATERS	$1,684,665	$0	$50,540	$50,540
G11	CONDENSER	$2,661,835	$239,565	$74,769	$314,334
G21	BOILER FEED PUMPS	$2,962,378	$0	$88,871	$88,871
G101	ALLOY PIPING	$4,099,933	$1,216,962	$3,316,802	$4,533,764
G201	BOILER ISLAND	$229,967,207	$13,398,905	$3,779,645	$17,178,550
G222	COOLING TOWER	$3,489,900	$0	$104,697	$104,697
	ENGINEERING	$21,844,000	$4,479,894	$500,000	$4,979,894
	OWNERS COST including IDC	$84,000,000	$2,265,083	$500,000	$2,765,083
Total Cost as of February 28, 2007			$41,038,297	$10,915,324	$51,953,621

EAST KENTUCKY POWER COOPERATIVE, INC.

PSC CASE NO. 2006-00564

DATA REQUESTS FROM 3/6/07 PUBLIC HEARING

PUBLIC SERVICE COMMISSION STAFF DATA REQUEST
AT HEARING ON MARCH 6, 2007
REQUEST 3
RESPONSIBLE PERSON: **James C. Lamb, Jr.**
COMPANY: **East Kentucky Power Cooperative, Inc.**

Request 3. Provide the list of costs that would be considered "lost costs" if the Smith Unit 1 is delayed.

Response 3. Interest During Construction would continue to be charged to the project during the delay period. This is compounding interest charged for expenditures already committed to the project. It is estimated to be approximately $3,000,000 for a one-year delay.

If manufacturing is allowed to continue on the current schedule for each awarded contract, no other cost would be lost as a result of a delay. However, if manufacturing is delayed EKPC would be subject to contract cost escalation occurring during the delay period.

EAST KENTUCKY POWER COOPERATIVE, INC.

PSC CASE NO. 2006-00564

DATA REQUESTS FROM 3/6/07 PUBLIC HEARING

PUBLIC SERVICE COMMISSION STAFF DATA REQUEST
AT HEARING ON MARCH 6, 2007
REQUEST 4
RESPONSIBLE PERSON: **James C. Lamb, Jr.**
COMPANY: **East Kentucky Power Cooperative, Inc.**

Request 4. Provide the amount of possible purchases of base load power if Smith 1 is delayed.

Response 4. The original commercial operation date for Smith CFB 1 was April 2009 and the current expected commercial operation date is June 2011. EKPC would expect to run the Smith CFB 1 approximately 80 percent of the time at full load, thus 4.2 million MWh would have been generated by the unit during the time from April 2009 through May 2011. The energy that would have been generated by Smith CFB 1 will be replaced with multiple sources, such as any available generation on the EKPC system plus off-system purchases. Not all of the off-system purchases will be base load purchases, but rather an economic combination of hourly, daily and forward base load power purchases. Based on production costing analysis, EKPC expects to spend approximately $39 million more for base load purchases during the period April 2009 through May 2011 than it would if Smith CFB 1 had been on-line. EKPC expects to need approximately 591,000 MWh in base load energy purchases during that time period, for an average delivered cost of $65.00/MWh.

EAST KENTUCKY POWER COOPERATIVE, INC.

PSC CASE NO. 2006-00564

DATA REQUESTS FROM 3/6/07 PUBLIC HEARING

PUBLIC SERVICE COMMISSION STAFF DATA REQUEST

AT HEARING ON MARCH 6, 2007

REQUEST 5

RESPONSIBLE PERSON: **James C. Lamb, Jr.**

COMPANY: **East Kentucky Power Cooperative, Inc.**

Request 5. Provide the percentage of growth for winter and summer peak for the last 10 years.

Response 5. As shown in Table 3-1, on page 21, of EKPC's "2006 Load Forecast Report" filed as Exhibit II of the Integrated Resource Plan, Case No. 2006-00017, EKPC's historical winter peak demands have grown at an average rate of 5.3% per year for the past 10 years and the summer peak demands have grown at an average rate of 3.7% per year. The following data is from Table 1-3 of the same "2006 Load Forecast Report", page 7, and has been updated to include the annual escalation rates.

Table 1-3
Peak Demands and Total Requirements
- Historical -

Year	Firm Winter Peak Demand (MW)	Percent Difference	Firm Summer Peak Demand (MW)	Percent Difference	EKPC Total Requirements (MWh)	Percent Difference	Load Factor
1982	1,087		694		3,904,954		41%
1983	845	-22%	789	14%	4,099,007	5%	55%
1984	1,151	36%	722	-8%	4,095,268	0%	41%
1985	1,125	-2%	776	7%	4,264,517	4%	43%
1986	1,039	-8%	857	10%	4,470,627	5%	49%
1987	983	-5%	906	6%	4,710,898	5%	55%
1988	1,104	12%	1,055	16%	5,122,703	9%	53%
1989	1,114	1%	1,010	-4%	5,347,081	4%	55%
1990	1,449	30%	1,079	7%	5,489,092	3%	43%
1991	1,306	-10%	1,164	8%	5,958,422	9%	52%
1992	1,383	6%	1,131	-3%	6,099,308	2%	50%
1993	1,473	7%	1,309	16%	6,860,902	12%	53%
1994	1,788	21%	1,314	0%	6,917,414	1%	44%
1995	1,621	-9%	1,466	12%	7,761,980	12%	55%
1996	1,915	18%	1,452	-1%	8,505,621	10%	51%
1997	1,953	2%	1,549	7%	8,850,394	4%	52%
1998	1,682	-14%	1,654	7%	9,073,950	3%	62%
1999	1,971	17%	1,738	5%	9,825,866	8%	57%
2000	2,140	9%	1,832	5%	10,521,400	7%	56%
2001	2,278	6%	1,841	0%	10,750,900	2%	54%
2002	2,092	-8%	1,978	7%	11,456,830	7%	63%
2003	2,435	16%	1,845	-7%	11,568,314	1%	54%
2004	2,489	2%	1,948	6%	11,865,797	3%	54%
2005	2,615	5%	2,170	11%	12,527,829	6%	55%

EAST KENTUCKY POWER COOPERATIVE, INC.

PSC CASE NO. 2006-00564

DATA REQUESTS FROM 3/6/07 PUBLIC HEARING

PUBLIC SERVICE COMMISSION STAFF DATA REQUEST

AT HEARING ON MARCH 6, 2007

REQUEST 6

RESPONSIBLE PERSON: **James C. Lamb, Jr.**

COMPANY: **East Kentucky Power Cooperative, Inc.**

Request 6. State the transmission overload mitigation efforts that EKPC has made including all alternatives considered to resolve the projected overload situation that is discussed in the response to supplemental data request No. 7.

Response 6. The alternatives considered include the following:

Upgrades of Existing Facilities

Upgrades of existing facilities were considered to eliminate the overloads identified with the addition of the planned generation at J.K. Smith (J.K. Smith CTs 8-12 and CFB #1). The following is a list of the facilities that would require significant work and expense to upgrade:

- J.K. Smith-Fawkes 138 kV Line (14.3 miles)
- J.K. Smith-Union City-Lake Reba Tap 138 kV Line (11.6 miles)
- Dale-Newby #1 69 kV Line (11.1 miles)
- J.K. Smith-Dale 138 kV Line (9.5 miles) Dale-Three Forks-Fawkes 138 kV Line (7.3 miles)
- Boonesboro North-Winchester Water Works-Boone Avenue 69 kV Line (5.9 miles)

- Waco-Rice Tap 69 kV Line (5.9 miles)
- Beattyville-Oakdale Jct. 69 kV Line (3.9 miles)
- Clark-Sylvania 69 kV Line (0.5 miles)
- Beattyville 161-69 kV Transformer
- Boonesboro North 138-69 kV Transformer
- Dale 138-69 kV Transformer
- Farmers 138-69 kV Transformer
- Lake Reba Tap 138-161 kV Transformer
- Loudon Avenue 138-69 kV Transformer
- Paris 138-69 kV Transformer
- Powell County 138-161 kV Transformer
- Powell County 138-69 kV Transformer
- West Berea 138-69 kV Transformer
- West Irvine 161-69 kV Transformer

Therefore, substantial rebuilds of approximately 70 miles of existing transmission lines would be necessary. Furthermore, eleven existing transformers would need to be replaced with transformers with higher capacity. Many of these facilities are critical links in the transmission system in the area. Prolonged outages to perform upgrades of the 138 kV transmission lines listed are likely to create significant transmission constraints that will require uneconomic generation dispatch. These outages would create substantial reliability and operational concerns. Other reasons why upgrading existing facilities was not pursued further include the following:

- Higher transmission-system losses compared to those with new lines added
- The system is less robust (less capacity margin) during multiple contingencies
- The scope, cost, and completion time of the upgrade projects is uncertain

J.K. Smith Outlet Alternatives Considered

A large set of new outlets for the J.K. Smith Station were screened singularly and in various combinations to evaluate the performance with the proposed generators added at J.K. Smith. The following table lists all of the potential J.K. Smith outlets that were screened, along with estimated mileages for line construction.

List of J.K. Smith Outlet Alternatives Screened		
Screened Outlet	**Estimated Mileage**	**Other Required Facilities**
J.K. Smith-Cooper 345 kV	73.2	Cooper 345-161 kV
J.K. Smith-Marion County 345 kV	72.2	Marion County 345-161 kV
J.K. Smith-Maggard 345 kV	61.5	Maggard 345-138 kV; convert Maggard-Skaggs 69 kV to 138 kV; Maggard 138-69 kV
J.K. Smith-Rowan County 345 kV	48.3	Rowan County 345-138 kV
J.K. Smith-Goddard 345 kV	47.4	Goddard 345-138 kV
J.K. Smith-Tyner 345 kV	43.5	Tyner 345-161 kV
J.K. Smith-Brodhead 345 kV	40.6	Brodhead 345-161 kV; new 161 kV outlet from Brodhead; Brodhead 161-69 kV
J.K. Smith-Maytown Jct. 345 kV	37.9	Maytown Jct. 345-138 kV; Powell County-Maytown Jct. 138 kV; Maytown Jct. 138-69 kV
J.K. Smith-Brown North LGEE 345 kV	37.5	None
J.K. Smith-West Garrard 345 kV	35.5	New 345 kV switching station at West Garrard connecting to LGEE's Brown-Pineville 345 kV line; 345 kV terminal facilities at Brown and Pineville
J.K. Smith-Delvinta LGEE 345 kV	34.2	Delvinta 345-161 kV
J.K. Smith-Beattyville 345 kV	32.1	Beattyville 345-161 kV
J.K. Smith-Three Links Jct. 345 kV	31.7	Three Links Jct. 345-138 kV; Three Links Jct. 138-69 kV

List of J.K. Smith Outlet Alternatives Screened		
Screened Outlet	**Estimated Mileage**	**Other Required Facilities**
J.K. Smith-West Berea 345 kV	25.5	West Berea 345-138 kV
J.K. Smith-West Irvine Tap 345 kV	17.3	New 345 kV switching station at West Irvine Tap connecting to LGEE's Lake Reba Tap-Delvinta 161 kV line; West Irvine Tap 345-161 kV
Convert J.K. Smith-Powell County 138 kV line to 345 kV	16.4	Powell County 345-161 kV
J.K. Smith-Fawkes 345 kV	16.1	Fawkes 345-138 kV
J.K. Smith-West Irvine LGEE 345 kV	14.8	West Irvine 345-161 kV; Loop LGEE's Lake Reba Tap-Delvinta 161 kV through West Irvine Substation
J.K. Smith-Powell County 345 kV	14.2	Powell County 345-161 kV
J.K. Smith-Lake Reba Tap LGEE 345 kV	11.9	Lake Reba Tap 345-161 kV
Convert J.K. Smith-Dale 138 kV line to 345 kV	9.4	Dale 345-138 kV
J.K. Smith-Rowan County 138 kV	48.3	None
J.K. Smith-Goddard 138 kV	47.5	None
J.K. Smith-Three Links Jct. 138 kV	31.7	Three Links Jct. 138-69 kV
J.K. Smith-Baker Lane 138 kV	28.7	None
J.K. Smith-Higby Mill LGEE 138 kV	27.2	None
J.K. Smith-Loudon Avenue LGEE 138 kV	26.1	None
J.K. Smith-West Berea 138 kV	25.5	None
J.K. Smith-Fayette 138 kV	22.5	None
J.K. Smith-Newby 138 kV	20.1	Convert Dale-Newby 69 kV to 138 kV; Newby 138-69 kV
J.K. Smith-Spencer Road LGEE 138 kV	17.9	None
J.K. Smith-Avon 138 kV	17.2	None
J.K. Smith-Fawkes 138 kV	16.1	None
J.K. Smith-Powell County 138 kV	14.2	None
J.K. Smith-Lake Reba Tap LGEE 138 kV	11.9	None
J.K. Smith-Boonesboro North LGEE 138 kV	10.0	None

List of J.K. Smith Outlet Alternatives Screened		
Screened Outlet	**Estimated Mileage**	**Other Required Facilities**
J.K. Smith-Dale 138 kV	9.7	None
J.K. Smith-Clark County LGEE 138 kV	9.1	None

These outlets were developed by evaluating potential line construction from the J.K. Smith Station to other stations throughout the area.

The screening process eliminated most of these outlet options for one of the following two reasons:

- An outlet either singularly or in combination with other outlets did not eliminate a substantial number of the thermal overloads caused by the proposed generators
- An outlet did not provide any significant additional benefits when compared to the performance of another outlet that would be shorter and/or less expensive

The screening analysis determined that two of the outlet options considered have a greater impact on the transmission-system problems identified than did the remainder of the outlet options. These two outlet options are:

- ✓ The J.K. Smith-Tyner 345 kV line and the installation of a 345-161 kV transformer at Tyner
- ✓ The J.K. Smith-West Garrard 345 kV line and a new 345 kV switching station at West Garrard connecting this line with EON's Brown-Pineville 345 kV circuit

These two outlets substantially reduce the number and severity of overloads caused by the proposed generators. These options appear to provide these benefits for two primary reasons:

- Each is a 345 kV outlet providing a high outlet capacity from the J.K. Smith site
- Each provides a connection to the transmission system in the southern and southeastern parts of the Kentucky transmission system. A small amount of generation exists in this area. Therefore, a large amount of the power required by customers in this area presently flows into the area on the 138 kV and 161 kV interfaces in the Richmond, KY area (through the Fawkes and Lake Reba Tap substations). Either the J.K. Smith-Tyner or J.K. Smith-West Garrard 345 kV line would provide an EHV path bypassing these heavily loaded 138 and 161 kV interfaces.

The other outlet options listed above either did not provide as much benefit as either of these two options or provided similar benefits at the expense of much more construction. The performance of these other outlet options is discussed briefly below.

- **J.K. Smith-Cooper 345 kV**

This line provides many of the same benefits as the J.K. Smith-Tyner or J.K. Smith-West Garrard 345 kV lines. However, it requires a substantial amount of additional 345 kV line construction.

- **J.K. Smith-Marion County 345 kV**

This line provides some reduction in the number and severity of overloads caused by the proposed generators. However, it does not perform as well as the J.K. Smith-Tyner or J.K. Smith-West Garrard 345 kV lines. Furthermore, it requires a substantial amount of additional 345 kV line construction.

- **J.K. Smith-Maggard 345 kV; J.K. Smith-Rowan County 345 kV; J.K. Smith-Goddard 345 kV**

Each of these lines provides a 345 kV path between J.K. Smith and the northeastern part of the EKPC system. These lines do not provide great benefits, primarily because they build into an area that already has a generation surplus due to the presence of the Spurlock Units. Furthermore, each of these lines is longer than either the J.K. Smith-Tyner or J.K. Smith-West Garrard 345 kV line.

- **J.K. Smith-Brodhead 345 kV; J.K. Smith-Three Links Jct. 345 kV**

These two options involve construction of 345 kV line into an area where only 69 kV facilities currently exist. Therefore, in addition to the 345 kV line construction, at least one new 161 kV or 138 kV line is required. In reality, multiple new 161 kV or 138 kV lines would be required for either option to obtain reasonable performance, although the performance is still inferior to that provided by either J.K. Smith-Tyner or J.K. Smith-West Garrard.

- **J.K. Smith-Maytown Jct. 345 kV**

This option involves construction of 345 kV line into an area where only 69 kV facilities currently exist. EKPC does have included in its long-range plan a new 138 kV line from Powell County to Maytown Junction. Therefore, this line plus new 138 kV facilities connecting Maytown Junction to the 138 kV system to the east (Rowan County-Skaggs-Maggard) would be needed to obtain reasonable performance. However, this performance is still inferior to the performance of either the J.K. Smith-Tyner or J.K. Smith-West Garrard line, even with all of these modifications to the transmission system.

- **J.K. Smith-Brown North LGEE 345 kV**

This option performs similarly to the J.K. Smith-West Garrard 345 kV line. However, it requires slightly more new 345 kV line construction. Furthermore, the West Garrard

option is preferred, since it would establish a new EKPC 345 kV substation in the central portion of the EKPC transmission system.

- **J.K. Smith-Delvinta LGEE 345 kV; J.K. Smith-Beattyville 345 kV; J.K. Smith-West Irvine Tap 345 kV; J.K. Smith-West Irvine LGEE 345 kV**

These options all perform similarly. Each constructs a new 345 kV line to either Delvinta or a neighboring transmission substation/junction, which would then be connected to the existing 161 kV system that connects at Delvinta. Each of these options provides some reduction of the overloads in the immediate vicinity of the J.K. Smith and Fawkes Substations. However, each of these options results in a significant increase in the number and severity of overloads in the Delvinta/West Irvine area. Therefore, to make these outlet options work, significant upgrades would be required of the 161 and 69 kV systems in the Delvinta/West Irvine area. In addition, overloads in other areas of the system would also need to be addressed. For these reasons, these outlet options were eliminated from further consideration.

- **J.K. Smith-West Berea 345 kV; J.K. Smith-Fawkes 345 kV; J.K. Smith-Lake Reba Tap LGEE 345 kV**

These options each provide a new 345 kV outlet into the Richmond/Berea area. However, this still results in severe overloads of the underlying 138 and 161 kV transmission system in the area. None of these options provide an outlet of sufficient distance to "get beyond" the area where system overloads occur.

- **Convert J.K. Smith-Powell County 138 kV to 345 kV; Convert J.K. Smith-Dale 138 kV to 345 kV**

These conversion options do not provide substantial benefits for system loadings for three primary reasons. First, the new 345 kV line terminating at either Dale or Powell County would terminate into a 345-138 kV or 345-161 kV transformer, since no other 345 kV

outlets would be in place at those stations. Therefore, the system impedances at those stations would restrict the flow on either of these new 345 kV outlets from J.K. Smith. Second, while a new 345 kV outlet is created for the J.K. Smith Substation, an existing 138 kV line is eliminated. Therefore, the net gain in outlet capability is relatively small. Finally, the new 345 kV lines would be connected to substations adjacent to J.K. Smith. This results in a number of overloads still occurring in the vicinity of the J.K. Smith substation.

- **J.K. Smith-Powell County 345 kV**

This option connects a new 345 kV line to a substation adjacent to J.K. Smith. This results in a number of overloads still occurring in the vicinity of the J.K. Smith Substation. Furthermore, additional overloads are created on the transmission lines connected to the Powell County Substation.

- **J.K. Smith-Rowan County 138 kV; J.K. Smith-Goddard 138 kV**

Either of these lines provides a 138 kV path between J.K. Smith and the northeastern part of the EKPC system. These lines do not provide great benefits, primarily because they build into an area that already has a generation surplus due to the presence of the Spurlock Units. Furthermore, each of these lines is a particularly long 138 kV line. The screening analysis indicates that these potential lines would not transmit a significant amount of power.

- **J.K. Smith-Three Links Jct. 138 kV**

This option involves construction of 138 kV line into an area where only 69 kV facilities currently exist. Therefore, at least one more new 161 kV or 138 kV line connected to the Three Links Jct. Substation is needed for this option to perform reasonably well. However, even with these additions, several significant overloads would still exist on the transmission system due to the proposed generators at J.K. Smith.

- **J.K. Smith-Baker Lane 138 kV; J.K. Smith-Higby Mill LGEE 138 kV; J.K. Smith-Loudon Avenue 138 kV; J.K. Smith-Fayette 138 kV**

These four outlet options provide outlets from the J.K. Smith Substation to the west to the Lexington area. However, this provides limited benefits. The Lexington area already has several strong sources encircling it. The addition of a 138 kV line into the area does not result in a substantial flow increase into the area. Therefore, these outlets do not transmit a large amount of power out of the J.K. Smith area.

- **J.K. Smith-West Berea 138 kV; J.K. Smith-Fawkes 138 kV; J.K. Smith-Lake Reba Tap LGEE 138 kV**

These options each provide a new 138 kV outlet into the Richmond/Berea area, which does help to reduce loadings on the 138 kV lines from J.K. Smith into the Richmond area. However, none of the options significantly impact several of the severe overloads caused by the proposed generators at J.K. Smith, particularly the overloads on the 161 kV system connected to Delvinta.

- **J.K. Smith-Newby 138 kV**

This option involves construction of 138 kV line into an area where only 69 kV facilities currently exist. Therefore, at least one more new 161 kV or 138 kV line connected to the Newby Substation would be needed for this option to perform reasonably well. A new 138 kV line from Dale-Newby was tested in conjunction with this option. However, even with this addition, several significant overloads would still exist on the transmission system due to the proposed generators at J.K. Smith.

- **J.K. Smith-Spencer Road LGEE 138 kV**

This option provides a new 138 kV connection into LGEE's existing two-way feed 138 kV system that stretches from Fawkes to Rodburn. The screening analysis indicates that this line would carry a considerable amount of power. Therefore, it would provide some significant benefits. However, as a stand-alone option, it would not be sufficient to address many of the problems caused by the proposed generators.

- **J.K. Smith-Avon 138 kV**

This option provides a new 138 kV connection to EKPC's Avon 345-138 kV Substation. However, this has limited value with the addition of the J.K. Smith-North Clark 345 kV line, which will connect to the Spurlock-Avon 345 kV line. Therefore, much of the power flow between J.K. Smith and Avon will occur on this new 345 kV line.

- **J.K. Smith-Powell County 138 kV**

This option connects a new 138 kV line to a substation adjacent to J.K. Smith. This results in a large number of overloads still occurring in the vicinity of the J.K. Smith Substation. Furthermore, additional overloads are created on the transmission lines connected to the Powell County Substation. Finally, the power flows are not substantial enough on this new line to have a significant impact on the overloads caused by the proposed generators.

- **J.K. Smith-Boonesboro North LGEE 138 kV; J.K. Smith-Dale 138 kV**

These options provide a new 138 kV connection to the west of J.K. Smith. The construction of the J.K. Smith-North Clark 345 kV line will limit the usefulness of these lines in helping reduce loadings on facilities in the area between the Avon and Dale Substations. Furthermore, these outlets would not provide significant loading relief for the 138 and 161 kV facilities in the Fawkes and Delvinta areas, respectively.

- **J.K. Smith-Clark County LGEE 138 kV**

This option provides a new 138 kV connection into LGEE's existing two-way feed 138 kV system that stretches from Fawkes to Rodburn. The screening analysis indicates that this line would carry a considerable amount of power. In fact, due to its close proximity to the J.K. Smith Substation, the amount of power flow into the Clark County Substation would result in the introduction of severe loadings in the immediate vicinity. The J.K. Smith-Spencer Road 138 kV line provides similar flows and system benefits without creating the same number or magnitude of new loading issues in the area.

As a result of the screening analysis, it was determined that one 138 kV outlet from the J.K. Smith site would not be adequate. Screening showed that at least three 138 kV outlets would be required to accommodate the added generation. Additionally, significant upgrades would still be required on the transmission system with these multiple 138 kV outlets. Furthermore, transmission-system losses will be higher with these 138 kV outlet options than with a 345 kV outlet option. For these reasons, no transmission plans were developed that only provided 138 kV outlets from J.K. Smith Substation. All transmission alternatives developed in detail therefore included a new 345 kV outlet from the J.K. Smith site.

EAST KENTUCKY POWER COOPERATIVE, INC.

PSC CASE NO. 2006-00564

DATA REQUESTS FROM 3/6/07 PUBLIC HEARING

PUBLIC SERVICE COMMISSION STAFF DATA REQUEST

AT HEARING ON MARCH 6, 2007

REQUEST 7

RESPONSIBLE PERSON: **James C. Lamb, Jr.**

COMPANY: **East Kentucky Power Cooperative, Inc.**

Request 7. Provide the percentage of total costs spent to date on Smith CFB Unit 1.

Response 7. Expenditures for the Smith Unit No. 1 Project through February 28, 2007 are $41,038,297. This represents approximately 6 percent of the estimated project cost. Committed costs for the project are $51,953,621. This represents approximately 8 percent of the estimated project cost.