KENTUCKY UTILITIES COMPANY

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 24

Responding Witness: Christopher M. Garrett

- Q.1-24. For each taxing authority to which aggregate property tax payments exceeding \$10,000 were made in 2016, please indicate whether there is a period of temporary abatement of taxes during the construction phase of assets to he placed in service. If so, please describe in detail.
- A.1-24. There is no period of temporary abatement of taxes during the construction phase of assets to be placed in service. Items in CWIP have historically been subject to property tax.

KENTUCKY UTILITIES COMPANY

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 25

Responding Witness: Christopher M. Garrett

- Q.1-25. Please provide a schedule showing how property taxes were computed for the base year and include copies of all workpapers used to determine the amount in electronic format with all formulas intact.
- A.1-25. See the attachment being provided in Excel format.

The attachment is being provided in a separate file in Excel format.

KENTUCKY UTILITIES COMPANY

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 26

Responding Witness: Christopher M. Garrett

- Q.1-26. Please provide a schedule showing how property taxes were computed for the test year and include copies of all workpapers used to determine the amount in electronic format with all formulas intact.
- A.1-26. See the response to Question No. 25.

KENTUCKY UTILITIES COMPANY

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 27

Responding Witness: Valerie L. Scott

- Q.1-27. Please provide a schedule of the amortization expense associated with each regulatory asset for (a) each year 2012 through 2016, (b) the base year and (c) the test year. Provide the balance of each regulatory asset at the beginning and end of each of those years, the amortization period that was used in each of those years, and the FERC accounts utilized to record the amortization expense. In addition, please source the amortization period to the Case No. in which the Commission approved the recovery and the amortization period, if any.
- A.1-27. See attached. Also see the response to PSC 1-8.

Account	Description	Account Used for Amortization	Amortization Period	Order No. / Docket No.
182320/182345	WINTER STORM 2009 - ELECTRIC	571/593	Aug-10 to Jul-20	KPSC 2009-00174 KPSC 2009-00548 KPSC 2012-00221 KPSC 2014-00371
182321	MISO EXIT FEE	440-445	Mar-09 to Dec-14	KPSC 2003-00266 KPSC 2008-00251 FERC ER13-2428-000 FERC EL14-5-000 FERC EC06-4-000 FERC EC06-4-001 FERC ER06-20-000 FERC ER06-20-001
182322/182335	RATE CASE EXPENSES - ELECTRIC	928	Jan-13 to Jun-18	KPSC 2009-00548 KPSC 2012-00222 KPSC 2014-00371 307 U.S. at 120-121 294 U.S. at 73
182324/182337 182332/182348	EKPC FERC TRANSMISSION COST - KY PORTION CARBON MANAGEMENT RESEARCH GROUP	930	Mar-09 to Feb-14 Aug-10 to Jul-20	FERC ER06-1458 KPSC 2008-00308 KPSC 2009-00548 KPSC 2012-00221 KPSC 2014-00371
182333/182349 182334/182347	KY CONSORTIUM FOR CARBON STORAGE WIND STORM 2008	930 593	Aug-10 to Jul-14 Aug-10 to Jul-20	KPSC 2009-00548 KPSC 2008-00457 KPSC 2009-00548 KPSC 2012-00221 KPSC 2014-00371
182339	MOUNTAIN STORM - ELECTRIC	593	Nov-11 to Dec-17	VSCC PUE 2011-00013 VSCC PUE 2013-00013 VSCC PUE-2015-00063
182364/182371	FORWARD STARTING SWAP LOSSES	427	Ranging maturities from Sep-15 to Oct-45	KPSC 2014 - 00082 KPSC 2014-00371
182359 182367	GENERAL MANAGEMENT AUDIT - ELECTRIC REG ASSET - MUNI MISO EXIT FEE	928 440-445	Jan-13 to Dec-15 Jul-15 to May-17	KPSC 2012-00222 FERC ER13-2428-000 FERC EL14-5-000 FERC EC06-4-000 FERC EC06-4-001 FERC ER06-20-000 FERC ER06-20-001
182313 182369	PENSION GAIN/LOSS AMORTIZATION-15 YEAR GREEN RIVER RETIREMENT	926 408, 500-514, 925-92	Rolling 15 years 26 Jul-15 to Jun-18	KPSC 2014-00371 KPSC 2014-00371

Account	Description	Beginning Balance	2012 Annual Activity	Amortization	Ending Balance
			Annual Activity		-
182320/182345	WINTER STORM 2009 - ELECTRIC	49,128,218	-	(5,723,676)	43,404,542
182321	MISO EXIT FEE	3,643,950		(1,345,267)	2,298,683
102321		5,045,750		(1,545,207)	2,270,005
182322/182335	RATE CASE EXPENSES - ELECTRIC	1,140,004	1,654,125	(748,283)	2,045,847
182324/182337 182332/182348	EKPC FERC TRANSMISSION COST - KY PORTION CARBON MANAGEMENT RESEARCH GROUP	725,177 162,197	- 102,440	(334,697) (102,440)	390,480 162,197
182333/182349 182334/182347	KY CONSORTIUM FOR CARBON STORAGE WIND STORM 2008	595,433 1,884,485	-	(230,490) (219,552)	364,943 1,664,933
182339	MOUNTAIN STORM - ELECTRIC	5,840,281	-	(1,208,334)	4,631,947
182364/182371	FORWARD STARTING SWAP LOSSES				
182359 182367	GENERAL MANAGEMENT AUDIT - ELECTRIC REG ASSET - MUNI MISO EXIT FEE	140,906	1,615	-	142,521
182313 182369	PENSION GAIN/LOSS AMORTIZATION-15 YEAR GREEN RIVER RETIREMENT	-	-	-	-

Account	Description	Beginning Balance	2013 Annual Activity	Amortization	Ending Balance
182320/182345	WINTER STORM 2009 - ELECTRIC	43,404,542	-	(5,723,676)	37,680,866
				(0,1-0,000)	,,
182321	MISO EXIT FEE	2,298,683	(382,728)	(127,069)	1,788,886
182322/182335	RATE CASE EXPENSES - ELECTRIC	2,045,847	116	(943,097)	1,102,866
182324/182337	EKPC FERC TRANSMISSION COST - KY PORTION	390,480		(334,697)	55,783
182332/182337	CARBON MANAGEMENT RESEARCH GROUP	162,197	122,000	(102,440)	181,757
182333/182349	KY CONSORTIUM FOR CARBON STORAGE	364,943	-	(230,490)	134,453
182334/182347	WIND STORM 2008	1,664,933	-	(219,552)	1,445,382
182339	MOUNTAIN STORM - ELECTRIC	4,631,947		(1,208,334)	3,423,613
182339	MOUNTAIN STOKM - ELECTRIC	4,031,947	-	(1,208,554)	5,425,015
182364/182371	FORWARD STARTING SWAP LOSSES	-			-
182359 182367	GENERAL MANAGEMENT AUDIT - ELECTRIC REG ASSET - MUNI MISO EXIT FEE	142,521	-	(47,507)	95,014
182313	PENSION GAIN/LOSS AMORTIZATION-15 YEAR	-	-	-	-
182369	GREEN RIVER RETIREMENT	-	-	-	-

182313	PENSION GAIN/LOSS AMORTIZATION-15 YEAR	-
182369	GREEN RIVER RETIREMENT	-

Account	Description	Beginning Balance	2014 Annual Activity	Amortization	Ending Balance
182320/182345	WINTER STORM 2009 - ELECTRIC	37,680,866	-	(5,723,676)	31,957,190
182321	MISO EXIT FEE	1,788,886	(1,679,029)	(109,857)	-
182322/182335	RATE CASE EXPENSES - ELECTRIC	1,102,866	1,357,905	(551,375)	1,909,396
182324/182337 182332/182348	EKPC FERC TRANSMISSION COST - KY PORTION CARBON MANAGEMENT RESEARCH GROUP	55,783 181,757	122,000	(55,783) (141,560)	- 162,197
182333/182349 182334/182347	KY CONSORTIUM FOR CARBON STORAGE WIND STORM 2008	134,453 1,445,382	-	(134,453) (219,552)	1,225,830
182339	MOUNTAIN STORM - ELECTRIC	3,423,613	-	(1,208,334)	2,215,279
182364/182371	FORWARD STARTING SWAP LOSSES	-	33,287,299	-	33,287,299
182359 182367	GENERAL MANAGEMENT AUDIT - ELECTRIC REG ASSET - MUNI MISO EXIT FEE	95,014	1,208,048	(47,507) -	47,507 1,208,048

182313	PENSION GAIN/LOSS AMORTIZATION-15 YEAR	-	-	-	-
182369	GREEN RIVER RETIREMENT	-	-	-	-

Account	Description	Beginning Balance	2015 Annual Activity	Amortization	Ending Balance
182320/182345	WINTER STORM 2009 - ELECTRIC	31,957,190	-	(5,723,676)	26,233,515
		, ,		.,,,,	, ,
182321	MISO EXIT FEE	-			-
182322/182335	RATE CASE EXPENSES - ELECTRIC	1,909,396	554,664	(870,322)	1,593,738
182324/182337 182332/182348	EKPC FERC TRANSMISSION COST - KY PORTION CARBON MANAGEMENT RESEARCH GROUP	- 162,197	224,440	(224,440)	- 162,197
182333/182349	KY CONSORTIUM FOR CARBON STORAGE	-		(210,552)	-
182334/182347	WIND STORM 2008	1,225,830	-	(219,552)	1,006,278
182339	MOUNTAIN STORM - ELECTRIC	2,215,279		(1,208,334)	1,006,945
162337	MOONTAIN STORM - ELECTRIC	2,213,279	-	(1,208,334)	1,000,945
182364/182371	FORWARD STARTING SWAP LOSSES	33,287,299	43,065,873	(33,287,299)	43,065,873
182359 182367	GENERAL MANAGEMENT AUDIT - ELECTRIC REG ASSET - MUNI MISO EXIT FEE	47,507 1,208,048	- 77,758	(47,507) (563,539)	- 722,267
102007		1,200,010	11,100	(800,8097)	, 22,20,
182313	PENSION GAIN/LOSS AMORTIZATION-15 YEAR	-	4,544,466	-	4,544,466
182369	GREEN RIVER RETIREMENT	-	6,457,622	-	6,457,622

Account	Description	Beginning Balance	2016 Annual Activity	Amortization	Ending Balance
182320/182345	WINTER STORM 2009 - ELECTRIC	26,233,515	-	(5,723,676)	20,509,839
		, ,			, ,
182321	MISO EXIT FEE	-			-
182322/182335	RATE CASE EXPENSES - ELECTRIC	1,593,738	4,486,484	(2,812,290)	3,267,932
182324/182337	EKPC FERC TRANSMISSION COST - KY PORTION	-			-
182332/182348	CARBON MANAGEMENT RESEARCH GROUP	162,197	224,440	(224,440)	162,197
182333/182349	KY CONSORTIUM FOR CARBON STORAGE	-			-
182334/182347	WIND STORM 2008	1,006,278	-	(219,552)	786,727
182339	MOUNTAIN STORM - ELECTRIC	1,006,945	-	(534,119)	472,826
182364/182371	FORWARD STARTING SWAP LOSSES	43,065,873		(2,397,988)	40,667,885
182359 182367	GENERAL MANAGEMENT AUDIT - ELECTRIC REG ASSET - MUNI MISO EXIT FEE	- 722.267	240,683	(814,536)	- 148,414
			.,	(- ,2-0)	-,
182313	PENSION GAIN/LOSS AMORTIZATION-15 YEAR	4,544,466	4,624,843	(361,502)	8,807,807
182369	GREEN RIVER RETIREMENT	6,457,622	(2,583,049)		3,874,573

		Forecast Base Period (3/16 - 2/17)					
Account	Description	Beginning Balance	Annual Activity	Ending Balance			
182320/182345	WINTER STORM 2009 - ELECTRIC	25,280,000	(5,724,000)	19,556,000			
182321	MISO EXIT FEE	-	-	-			
182322/182335	RATE CASE EXPENSES - ELECTRIC	1,487,000	877,000	2,364,000			
182324/182337 182332/182348	EKPC FERC TRANSMISSION COST - KY PORTION CARBON MANAGEMENT RESEARCH GROUP	248,000	-	- 248,000			
182333/182349 182334/182347	KY CONSORTIUM FOR CARBON STORAGE WIND STORM 2008	970,000	(220,000)	750,000			
182339	MOUNTAIN STORM - ELECTRIC	866,000	(472,000)	394,000			
182364/182371	FORWARD STARTING SWAP LOSSES	42,673,000	(2,392,000)	40,281,000			
182359 182367	GENERAL MANAGEMENT AUDIT - ELECTRIC REG ASSET - MUNI MISO EXIT FEE	642,000	(574,000)	68,000			
182313 182369	PENSION GAIN/LOSS AMORTIZATION-15 YEAR GREEN RIVER RETIREMENT	4,544,000 6,027,000	4,006,000 (2,583,000)	8,550,000 3,444,000			

		Forecast Test Period (7/17 - 6/18)					
Account	Description	Beginning Balance	Annual Activity	Ending Balance			
182320/182345	WINTER STORM 2009 - ELECTRIC	17,171,000	(5,247,000)	11,924,000			
182321	MISO EXIT FEE		-	-			
182322/182335	RATE CASE EXPENSES - ELECTRIC	2,463,000	(1,194,000)	1,269,000			
182324/182337 182332/182348	EKPC FERC TRANSMISSION COST - KY PORTION CARBON MANAGEMENT RESEARCH GROUP	213,000	-	213,000			
182333/182349 182334/182347	KY CONSORTIUM FOR CARBON STORAGE WIND STORM 2008	677,000	- (220,000)	457,000			
182339	MOUNTAIN STORM - ELECTRIC	236,000	(236,000)	-			
182364/182371	FORWARD STARTING SWAP LOSSES	39,482,000	(2,391,000)	37,091,000			
182359 182367	GENERAL MANAGEMENT AUDIT - ELECTRIC REG ASSET - MUNI MISO EXIT FEE	-	-	-			
182313	PENSION GAIN/LOSS AMORTIZATION-15 YEAR	12,929,000	7,532,000	20,461,000			

2,583,000

(1,409,000)

1,174,000

182369

GREEN RIVER RETIREMENT

	KPSC 2003-00434 KPSC 2008-00251 KPSC 2009-00548 KPSC 2012-00221 KPSC 2014-00371 FERC A104-2-000 FERC A107-1-000
182328-182331 ASC 740 - INCOME TAXES 282/283 Ongoing	KPSC 2005-00181 KPSC 2006-00456 KPSC 2009-00548 KPSC 2012-00221 KPSC 2014-00371
	KPSC 2003-00427 KPSC 2003-00434 KPSC 2008-00251 KPSC 2012-00221 KPSC 2012-00221 KPSC 2014-00371 FERC FA 12-12-000 FERC ER08-1588-000 VSCC PUE 2011-00013 VSCC PUE 2013-00013
182372 - 182380 ARO - GENERATION - COAL COMBUSTION RESIDUALS (b) 407 Jul-16 to Jun-26 Jul-16 to Jun-41	KPSC 2003-00427 KPSC 2003-00434 KPSC 2008-00251 KPSC 2009-00548 KPSC 2012-00221 KPSC 2014-00371 FERC FA 12-12-000 FERC ER08-1588-000 VSCC PUE 2011-00013 VSCC PUE 2013-00013 VSCC PUE 2013-00013 KPSC 2016-00026 FERC ER17-234-000
182311 FERC JURISDICTIONAL PENSION EXPENSES 926 Ongoing I	FERC AI04-2-000 FERC AI07-1-000
182356 VA FUEL COMPONENT 440-445 Ongoing	Title 56 of the Code of Virginia, Chapter 10; Section 56-249.6
182363 DSM COST RECOVERY 440-445, 480-482, 485 Ongoing 1	KRS 278.285
	KRS 278.183
	807 KAR 5:056
	FERC ER-13-2428
	KPSC 2014-00371

KU Regulatory Assets 1 otala) Business Plan assumed a regulatory asset would be recorded as retirements of meters occurred. Since then the Company determined it should establish a regulatory asset at the end of the b) ARO CCR detail is not available from the Business Plan in UI Planner - detail is combined in the ARO line item

* These balances are a result of netting the regulatory asset and the regulatory liability in the forecast - the net balance was a regulatory liability

Account	Description	Beginning Balance	2012 Annual Activity	Amortization	Ending Balance
182305/182315	AMS REGULATORY ASSET (a) ASC 715 - PENSION AND POSTRETIREMENT	113,264,146	30,318,408	(7,539,817)	136,042,737
182328-182331	ASC 740 - INCOME TAXES	75,212,355	33,090	(2,415,064)	72,830,381
182317-18/182325	ASSET RETIREMENT OBLIGATION	7,421,292	15,399,231	(11,591,122)	11,229,401

182372 - 182380	ARO - GENERATION - COAL COMBUSTION RESIDUALS (b)	-	-	-	-

182311	FERC JURISDICTIONAL PENSION EXPENSES	5,875,853	793,470	(2,562)	6,666,761
182356	VA FUEL COMPONENT	3,794,000	1,702,000	(1,853,000)	3,643,000
182363	DSM COST RECOVERY		1,008,008	(606,096)	401,912
182307	ENVIRONMENTAL COST RECOVERY	-	-	-	-
182306	FUEL ADJUSTMENT CLAUSE		-	-	-
182366	MUNICIPAL FORMULA RATE TRUE-UP		-	-	-
182370	OFF-SYSTEM TRACKER		-	-	-
KU Regulatory Ass	sets Total	268,828,296	51,012,386	(33,920,399)	285,920,284

a) Business Plan assumed a regulatory asset would be recorded as retirements of meters occurred. meter replacement

b) ARO CCR detail is not available from the Business Plan in UI Planner - detail is combined in t

Account	Description	Beginning Balance	2013 Annual Activity	Amortization	Ending Balance
182305/182315	AMS REGULATORY ASSET (a) ASC 715 - PENSION AND POSTRETIREMENT	136,042,737	12,304,469	(60,493,548)	87,853,658
182328-182331	ASC 740 - INCOME TAXES	72,830,381	249,447	(1,803,509)	71,276,319
182317-18/182325	ASSET RETIREMENT OBLIGATION	11,229,401	12,208,433	(879,757)	22,558,077

182372 - 182380	ARO - GENERATION - COAL COMBUSTION RESIDUALS (b)	-	-	-	-

182311	FERC JURISDICTIONAL PENSION EXPENSES	6,666,761	-	(6,666,761)	-
182356	VA FUEL COMPONENT	3,643,000	64,000	(3,707,000)	
182363	DSM COST RECOVERY	401,912	6,578,440	(1,633,843)	5,346,509
182307	ENVIRONMENTAL COST RECOVERY	-	6,763,123	(2,127,797)	4,635,326
182306	FUEL ADJUSTMENT CLAUSE	-	-	-	-
182366	MUNICIPAL FORMULA RATE TRUE-UP	-	-	-	-
182370	OFF-SYSTEM TRACKER	-	-	-	-
KU Regulatory	Assets Total	285,920,284	37,907,300	(86,249,076)	237,578,508

a) Business Plan assumed a regulatory asset would be recorded as retirements of meters occurred.

b) ARO CCR detail is not available from the Business Plan in UI Planner - detail is combined in t

Account	Description	Beginning Balance	2014 Annual Activity	Amortization	Ending Balance
182305/182315	AMS REGULATORY ASSET (a) ASC 715 - PENSION AND POSTRETIREMENT	87,853,658	49,839,661	(4,725,090)	132,968,229
182328-182331	ASC 740 - INCOME TAXES	71,276,319	1,106,327	(1,917,617)	70,465,029
182317-18/182325	ASSET RETIREMENT OBLIGATION	22,558,077	28,905,698	(708,077)	50,755,698

182372 - 182380	ARO - GENERATION - COAL COMBUSTION RESIDUALS (b)	-	-	-	-

182311	FERC JURISDICTIONAL PENSION EXPENSES	-	-	-	-
182356	VA FUEL COMPONENT	-	-	-	-
182363	DSM COST RECOVERY	5,346,509	2,316,317	(7,662,826)	-
182307	ENVIRONMENTAL COST RECOVERY	4,635,326	2,007,000	(5,839,326)	803,000
182306	FUEL ADJUSTMENT CLAUSE	-	12,320,000	(9,856,000)	2,464,000
182366	MUNICIPAL FORMULA RATE TRUE-UP	-	-	-	-
182370	OFF-SYSTEM TRACKER	-	-	-	-
KU Regulatory A	Assets Total	237,578,508	130,791,225	(38,901,032)	329,468,702

a) Business Plan assumed a regulatory asset would be recorded as retirements of meters occurred.

b) ARO CCR detail is not available from the Business Plan in UI Planner - detail is combined in t

Account	Description	Beginning Balance	2015 Annual Activity	Amortization	Ending Balance
182305/182315	AMS REGULATORY ASSET (a) ASC 715 - PENSION AND POSTRETIREMENT	132,968,229	12,508,031	(24,770,247)	120,706,013
182328-182331	ASC 740 - INCOME TAXES	70,465,029	1,420,946	(1,924,923)	69,961,052
182317-18/182325	ASSET RETIREMENT OBLIGATION	50,755,698	54,140,172	(19,201,691)	85,694,179

182372 - 182380	ARO - GENERATION - COAL COMBUSTION RESIDUALS (b)	-	-	-

182311	FERC JURISDICTIONAL PENSION EXPENSES	-	-	-	-
182356	VA FUEL COMPONENT	-	-	-	-
182363	DSM COST RECOVERY	-	-	-	-
182307	ENVIRONMENTAL COST RECOVERY	803,000	11,590,000	(1,337,000)	11,056,000
182306	FUEL ADJUSTMENT CLAUSE	2,464,000	-	(2,464,000)	-
182366	MUNICIPAL FORMULA RATE TRUE-UP	-	15,563,209	(8,622,209)	6,941,000
182370	OFF-SYSTEM TRACKER	-	-	-	-
KU Regulatory A	ssets Total	329,468,702	150,147,181	(100,464,738)	379,151,144

a) Business Plan assumed a regulatory asset would be recorded as retirements of meters occurred.

b) ARO CCR detail is not available from the Business Plan in UI Planner - detail is combined in t

Account	Description	Beginning Balance	2016 Annual Activity	Amortization	Ending Balance
182305/182315	AMS REGULATORY ASSET (a) ASC 715 - PENSION AND POSTRETIREMENT	120,706,013	7,190,261	(8,243,980)	119,652,294
182328-182331	ASC 740 - INCOME TAXES	69,961,052	2,446,697	(2,491,238)	69,916,511
182317-18/182325	ASSET RETIREMENT OBLIGATION	85,694,179	42,762,892	(118,135,322)	10,321,749
182372 - 182380	ARO - GENERATION - COAL COMBUSTION RESIDUALS (b)	-	131,600,004	(573,002)	131,027,002
102211					
182311 182356	FERC JURISDICTIONAL PENSION EXPENSES	-	-	-	-
182363	DSM COST RECOVERY	-	-	-	-
182307	ENVIRONMENTAL COST RECOVERY	11,056,000	2,098,000	(13,154,000)	-
182306 182366	FUEL ADJUSTMENT CLAUSE MUNICIPAL FORMULA RATE TRUE-UP	- 6,941,000	16,548,565	(13,217,897)	- 10,271,668
182370	OFF-SYSTEM TRACKER		10,346,303	(13,217,697)	
KU Regulatory Asset	ts Total	379,151,144	209,639,821	(168,903,541)	419,887,424

 KU Regulatory Assets Total

 a) Business Plan assumed a regulatory asset would be recorded as retirements of meters occurred.

b) ARO CCR detail is not available from the Business Plan in UI Planner - detail is combined in t

Account	Description	Forecast Beginning Balance	Base Period (3/16 - Annual Activity	2/17) Ending Balance
182305/182315	AMS REGULATORY ASSET (a) ASC 715 - PENSION AND POSTRETIREMENT	120,706,013	43,867,987	164,574,000
182328-182331	ASC 740 - INCOME TAXES	404,000	(404,000)	
182317-18/182325	ASSET RETIREMENT OBLIGATION	95,950,000	61,579,000	157,529,000

182372 - 182380 ARO - GENERATION - COAL COMBUSTION RESIDUALS (b)

182311	FERC JURISDICTIONAL PENSION EXPENSES	-	-	-
182356	VA FUEL COMPONENT	-	-	-
182363	DSM COST RECOVERY	-	-	-
182307	ENVIRONMENTAL COST RECOVERY	697,000	(4,494,459)	(3,797,459)
182306	FUEL ADJUSTMENT CLAUSE	-	-	-
182366	MUNICIPAL FORMULA RATE TRUE-UP	8,335,000	345,000	8,680,000
182370	OFF-SYSTEM TRACKER	4,300	(23,793)	(19,493)
KU Regulatory As	sets Total	308,833,313	93,787,735	402,621,048

a) Business Plan assumed a regulatory asset would be recorded as retirements of meters occurred.

b) ARO CCR detail is not available from the Business Plan in UI Planner - detail is combined in t

Account	Description	Forecast Beginning Balance	Test Period (7/17 - Annual Activity	6/18) Ending Balance
182305/182315	AMS REGULATORY ASSET (a) ASC 715 - PENSION AND POSTRETIREMENT	157,742,000	2,300,000 (13,393,000)	2,300,000 144,349,000
182328-182331	ASC 740 - INCOME TAXES		1,959,000	1,959,000
182317-18/182325	ASSET RETIREMENT OBLIGATION	183,423,000	53,312,000	236,735,000

182372 - 182380 ARO - GENERATION - COAL COMBUSTION RESIDUALS (b)

182311	FERC JURISDICTIONAL PENSION EXPENSES	-	-	-
182356	VA FUEL COMPONENT	-	-	-
182363	DSM COST RECOVERY	-	-	-
182307	ENVIRONMENTAL COST RECOVERY	(1,368,874)	4,918,265	3,549,391 *
182306	FUEL ADJUSTMENT CLAUSE	-	-	-
182366	MUNICIPAL FORMULA RATE TRUE-UP	6,137,000	(6,831,000)	(694,000) *
182370	OFF-SYSTEM TRACKER	(71,000)	6,000	(65,000) *
KU Regulatory As	sets Total	421,616,126	39,106,265	460,722,391

a) Business Plan assumed a regulatory asset would be recorded as retirements of meters occurred.

b) ARO CCR detail is not available from the Business Plan in UI Planner - detail is combined in t

KENTUCKY UTILITIES COMPANY

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 28

Responding Witness: Daniel K. Arbough

- Q.1-28. Please provide the Company's 2015, 2016, and 2017 pension and OPEB actuarial reports as well as the actuarial cost projections for the base year and the test year in a comparable format. Please identify all changes in assumptions, including mortality tables used in these actuarial reports compared to the actuarial reports relied on in the prior rate case.
- A.1-28. The Company's 2015 and 2016 pension actuarial reports and the actuarial cost projections for 2017 and 2018 which are included in the base year and the test year are provided in Attachment #1. The Company's 2015 and 2016 OPEB actuarial reports and the actuarial cost projections for 2017 and 2018 which are included in the base year and the test year are provided in Attachment #2. The Company anticipates receiving the 2017 pension actuarial report in the second quarter of 2017.

All changes in significant assumptions, including mortality tables, used in these actuarial reports compared to the actuarial reports relied on in the prior rate case are summarized in Attachment #3.



April 15, 2015

Ms. Kelli Higdon Senior Accounting Analyst LG&E and KU Energy LLC 220 West Main Street Louisville, KY 40202

Dear Kelli:

2015 ASC 715 ACCOUNTING RESULTS FOR QUALIFIED PENSION PLANS

LG&E and KU Energy LLC ("LKE" or "the Company") engaged Towers Watson Delaware, Inc. ("Towers Watson") to determine the Net Periodic Pension Cost/Income ("NPPC") for its qualified pension plans, in accordance with FASB Accounting Standards Codification Topic 715 ("ASC 715") for the fiscal year beginning January 1, 2015. The exhibits that follow provide results on a plan by plan basis, with allocations as requested by LKE.

The benefit obligations were measured as of LKE's fiscal year begin date of January 1, 2015, and are based on January 1, 2015 census data collected from the plan administrator for the following valuations:

- LG&E and KU Retirement Plan
- Louisville Gas and Electric Company Bargaining Employees' Retirement Plan

We have reviewed the census information for reasonableness and consistency, but have neither audited nor independently verified this information. Based on discussions with and concurrence by the plan sponsor, assumptions or estimates may have been made if data were not available. We are not aware of any errors or omissions in the data that would have a significant effect on the results of our calculations.

Reconciliation to May 30, 2014 Budget Projections

The preliminary 2015 consolidated U.S. GAAP NPPC for the three pension plans of \$44.8 million compares to the <u>projected 2015</u> consolidated expense of \$49.1 million provided in our May 30, 2014 e-mail as follows:

	Consolidated U.S. GAAP
	NPPC (in \$millions)
2015 Projected NPPC provided on May 30, 2014	\$49.1
Economic gains due to higher than expected 2014 asset returns and earlier than expected contribution timing during 2015	(6.4)
Reflection of updated data compared to roll-forward	(0.2)
Impact of assumption changes other than discount rate and mortality	(2.0)
Updated discount rate at December 31, 2014	4.7
Updated mortality assumption at December 31, 2014	(4.2)
Reflection of final plan changes, including early retirement factor improvements and Bargaining plan multiplier increase	3.8
2015 Preliminary NPPC	\$44.8



Reconciliation to Actual 2014 Expense

The preliminary 2015 consolidated U.S. GAAP NPPC for the three pension plans of \$44.8 million compares to the <u>actual 2014</u> consolidated NPPC of \$17.9 million as follows:

	Consolidated U.S. GAAP
	NPPC (in \$millions)
2014 Actual U.S. GAAP NPPC	\$17.9
Economic gains due to higher than expected asset returns	(5.5)
Demographic gains due to updated data	(0.6)
Impact of assumption changes other than discount rate and	(2.0)
mortality	(2.0)
Discount rate change	11.3
Mortality assumption change	18.2
Full effect of plan changes, including Early retirement factor	5.5
improvements and Bargaining plan multiplier increase	3.5
2015 Preliminary U.S. GAAP NPPC	\$44.8

Please note the following regarding these results:

1. As of January 1, 2015, LG&E and KU Energy LLC has selected the following economic assumptions: Discount rate:

	January 1, 2015	
LG&E and KU Retirement Plan	4.27%	
Louisville Gas and Electric Company Bargaining Employees' Retirement Plan	4.20%	

All discount rates are based on the results of the Towers Watson BOND:Link model. At December 31, 2014, cash flows by plan were used to develop individual plan discount rates. Further information regarding the BOND:Link model parameters chosen by LKE can be found in our e-mail correspondence from January 7, 2015.

Rate of compensation increase:

The January 1, 2015 rate of compensation increase assumption for all LKE plans is a flat 3.50% at all ages. This amount decreased from the flat 4.00% assumption as of January 1, 2014 based on long-term expectations of salary increase rates for the covered plan populations.

Expected return on assets (EROA):

LG&E and KU Retirement Plan 7.00%	January 1, 2015	
	7.00%	LG&E and KU Retirement Plan
Louisville Gas and Electric Company7.00%Bargaining Employees' Retirement Plan7.00%	7.00%	1 5



2. During 2014, LKE completed a demographic experience study to assess the appropriateness of the plans' current demographic assumptions. Details regarding the results of the study can be found in our 2014 Experience Study and Demographic Assumptions Review presentation provided to PPL and LKE on November 12, 2014. As a result of that study, the following demographic assumptions were refined to better reflect anticipated future demographic experience. All remaining demographic assumptions remain consistent with those selected by LKE at January 1, 2014. Detailed descriptions of all demographic assumptions will be included in the actuarial valuation reports for the fiscal year ending December 31, 2015 (to be published during the coming months).

Age	January 1, 2015	January 1, 2014
55	3%	2%
56	3%	2%
57	4%	2%
58	5%	4%
59	10%	4%
60	20%	10%
61	20%	10%
62	35%	50%
63	25%	15%
64	25%	10%
65 - 67	50%	100%
68+	100%	100%

Retirement rates for active participants:

Retirement age for deferred vested participants:

	January 1, 2015	January 1, 2014
LG&E hired before 2003/2004	60	65
ERF improvement		
LG&E hired after 2003/2004	58	55
ERF improvement		
KU	58 (65 if <10 years of	55 (65 if <10 years of
	service)	service)

Termination:

For both the union and non-union populations, the termination assumption was updated to the SOA Hourly Union Termination Table.

Form of payment:

75% of future LG&E bargained and non-bargained retirees are now assumed to elect a 50% J&S form of payment and 25% are assumed to elect a single life annuity. No change was made for KU participants.



Mortality:

For the non-bargained plans, the mortality assumption was updated to reflect the RP-2014 gender specific healthy employee and healthy annuitant mortality tables with white collar adjustment (removing MP-2014 improvement projections from 2006-2014), increased by 2%, and applying Scale BB 2-Dimensional mortality improvements from 2006 on a generational basis.

For bargained plans, the mortality assumption was updated to reflect the RP-2014 gender specific healthy employee and healthy annuitant mortality tables with blue collar adjustment (removing MP-2014 improvement projections from 2006-2014), increased by 7%, and applying Scale BB 2-Dimensional mortality improvements from 2006 on a generational basis.

The disabled mortality assumption was updated to reflect the RP-2014 "Disabled Retirees" table (removing MP-2014 improvement projections from 2006-2014) and applying Scale BB 2-Dimensional mortality improvements from 2006 on a generational basis.

3. All plan provisions are the same as those valued at January 1, 2014, with the following exceptions:

LG&E Bargaining Plan	 Early retirement factors improved by two years for participants who retire after attaining early retirement eligibility Flat dollar pension multiplier improvement reflected in the 2014 Collective Bargaining Agreement between LG&E and IBEW Local 2100
LG&E and KU Retirement Plan	Early retirement factors improved by two years for participants who retire after attaining early retirement eligibility

Detailed descriptions of the plan provisions will be included in the actuarial valuation reports for the fiscal year ending December 31, 2015 (to be published during the coming months).

The retirement assumption was modified to reflect anticipated experience under the new plan provisions, the impact of which was included in the prior service cost bases established for the above changes in early retirement factors.

4. The following contributions made on January 14, 2015 for the LG&E and KU Retirement Plan and the Louisville Gas and Electric Company Bargaining Employees' Retirement Plan,

were reflected

in the development of the expected return on plan assets:

	Contribution (in \$millions)
LG&F and KU Retirement Plan	
KU	\$14.7



Actuarial Certification

In preparing the results presented in this letter (including attached exhibits), we have relied upon information regarding plan provisions, participants, assets and sponsor accounting policies and methods provided by LKE and other persons or organizations designated by LKE. We have relied on all the data and information provided as complete and accurate. We have reviewed this information for overall reasonableness and consistency, but have neither audited nor independently verified this information. Based on discussions with and concurrence by the plan sponsor, assumptions or estimates may have been made if data were not available. We are not aware of any errors or omissions in the data that would have a significant effect on the results of our calculations. The results presented in this report are directly dependent upon the accuracy and completeness of the underlying data and information. Any material inaccuracy in the data, assets, plan provisions or other information provided to us may have produced results that are not suitable for the purposes of this report and such inaccuracies, as corrected by LKE, may produce materially different results that could require that a revised report be issued.

The measurement date is January 1, 2015. The benefit obligations were measured as of January 1, 2015 and are based on participant data as of the census date, January 1, 2015.

Information about the fair value of plan assets was furnished to us by BNY Mellon. LKE also provided information about the general ledger account balances for the pension plan costs at December 31, 2014, which reflect the expected funded status of the plans before adjustment to reflect the plans' funded status based on the year-end measurements. Towers Watson used information supplied by LKE regarding amounts recognized in accumulated other comprehensive income as of December 31, 2014. This data was reviewed for reasonableness and consistency, but no audit was performed.

As required by U.S. GAAP, the actuarial assumptions and the accounting policies and methods employed in the development of the pension cost and other financial reporting have been selected by LKE. Towers Watson has concurred with these assumptions and methods. U.S. GAAP requires that each significant assumption "individually represent the best estimate of a particular future event."

The results shown in this report have been developed based on actuarial assumptions that, to the extent evaluated by Towers Watson, we consider to be reasonable. Other actuarial assumptions could also be considered to be reasonable. Thus, reasonable results differing from those presented in this report could have been developed by selecting different reasonable assumptions.

The results shown in this report are estimates based on data that may be imperfect and on assumptions about future events that cannot be predicted with any certainty. The effects of certain plan provisions may be approximated, or determined to be insignificant and therefore not valued. Reasonable efforts were made in preparing this valuation to confirm that items that are significant in the context of the actuarial liabilities or costs are treated appropriately, and are not excluded or included inappropriately. The numbers shown in this report are not rounded, but this is for convenience and should not imply precision, which is not a characteristic of actuarial calculations.

If overall future plan experience produces higher benefit payments or lower investment returns than assumed, the relative level of plan costs reported in this valuation will likely increase in future valuations (and vice versa). Future actuarial measurements may differ significantly from the current measurements presented in this report due to many factors, including: plan experience differing from the anticipated by the economic or demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for the measurements (such as the end of an amortization period), and changes in plan provisions or applicable law.

The information contained in this report was prepared for the internal use of LKE and its auditors in connection with our actuarial valuations of the qualified pension plans. It is neither intended for and may not be used for other purposes, and we accept no responsibility or liability in this regard. LKE may distribute this actuarial valuation report to the appropriate authorities who have the legal right to require



LKE to provide them this report, in which case LKE will use best efforts to notify Towers Watson in advance of this distribution. Further distribution to, or use by, other parties of all or part of this document is expressly prohibited without Towers Watson's prior written consent. Towers Watson accepts no responsibility for any consequences arising from any other party relying on this report or any advice relating to its contents.

The undersigned consulting actuaries are members of the Society of Actuaries and meet the "Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States" relating to pension plans. Our objectivity is not impaired by any relationship between the plan sponsor and our employer, Towers Watson Delaware Inc.

* * * * *

Please do not hesitate to call if you have any questions.

Sincerely,

nufu a. Della litto

Jennifer A. Della Pietra, ASA, EA

Senior Consulting Actuary Direct Dial: 215-246-6861

Koyre Kosof

Royce S. Kosoff, FSA, EA, CFA

Senior Consulting Actuary Direct Dial: 215-246-6815

William Lot

William R. Loth, FSA, EA Consulting Actuary Direct Dial: 215-246-6647

cc: George Sunder – PPL Corporation Dan Arbough – LG&E and KU Energy LLC Jeanne Kugler – LG&E and KU Energy LLC Karla Durn – PPL Corporation Kristin May, FSA, EA – Towers Watson

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Attachment #1 to Response to KIUC-1 Question No. 28 Page 7 of 27 Arbough

LG&E and KU Energy LLC ("LKE")

2015 Net Periodic Pension Cost Reflecting 15-year (Gain)/Loss Amortization Method Qualified Pension Plans

	Reg-15	Reg-15	Reg-15	Reg-15
			Non-Union Retirement Plan	
	LG&E Union	LG&E	KU	ServCo (Regulatory)
Funded Status				
ABO			397,358,763	
РВО			440,143,173	
Fair value of assets			382,578,520	
Funded status			(57,564,653)	
Amounts recognized in accumulated other comprehensive				
income consist of:				
Net actuarial loss/(gain)			125,857,465	
Prior service cost/(credit)			5,809,201	
Transition obligation/(asset) Total			- 131,666,666	
l Otal			131,000,000	
Marked as later develops of an arts			205 007 000	
Market related value of assets			365,807,902	
2015 Net Periodic Pension Cost				
Service cost	1,431,466	2,167,471	8,562,474	13,767,439
Interest cost	13,618,634	10,142,890	18,417,671	21,704,049
Expected return on assets	(20,362,203)	(14,423,958)	(25,981,276)	(26,386,798)
Amortization of:				
Transition obligation (asset)	-	-	-	-
Prior service cost (credit)	3,166,370	1,824,525	1,257,147	3,520,645
Actuarial (gain) loss	8,244,110	6,016,150	9,163,918	8,633,975
Net periodic pension cost	6,098,377	5,727,078	11,419,934	21,239,310
Gain/Loss Amortization Detail				
Net actuarial loss/(gain) at 1/1/2015	99,269,492	76,347,804	125,857,465	130,306,103
6 months of amortization using "Double Corridor" method	5,725,546	4,112,022	6,079,440	5,515,507
Net actuarial loss/(gain) at 7/1/2015	93,543,946	72,235,782	119,778,025	124,790,596
6 months of amortization using 15-year "Vintage" method	2,518,564	1,904,128	3,084,478	3,118,468
Key assumptions:				
Discount rate	4.20%	4.27%	4.27%	4.27%
Expected return on plan assets	7.00%	7.00%	7.00%	7.00%
Rate of compensation increase	N/A	3.50%	3.50%	3.50%

The results contained in this document are based on the data provided by LKE's outside administrator as of January 1, 2015. All other assumptions, methods, and plan provisions are the same as those used for the year-end 2014 financial statement fisclosures provided on January 20, 2015, with the exception of the gain/loss amortization method, which is based on the double corridor method for the first half of the year and based on a 15-year amortization of the 7/1/2015 unrecognized loss/(gain) with a single 10% corridor for the second half of the year. Per discussions with LKE, the plans were not remeasured as of 7/1/2015. The descriptions of the assumptions, methods, plan provisions, and limitations as set forth in the year-end 2014 financial statement disclosure letter should be considered part of these results.

Attachment #1 to Response to KIUC-1 Question No. 28 Page 8 of 27 Arbough

LG&E and KU Energy LLC ("LKE") 2015 Net Periodic Pension Cost Qualified Pension Plans						Arbou
	Regulatory	Regulatory		Regulatory		Regulatory
			Nor	-Union Retirement F	Plan	Non-Union
	LG&E Union	LG&E		кu		ServCo
Funded Status	EGGE ONION	LGaL				361700
ABO				397,358,763		
РВО				440,143,173		
Fair value of assets				382,578,520		
Funded status				(57,564,653)		
Amounts recognized in accumulated other comprehensive income consist of:						
Net actuarial loss/(gain)				125,857,465		
Prior service cost/(credit) Transition obligation/(asset)				5,809,201		
Total				131,666,666		
Market related value of assets				365,807,902		
2015 Net Periodic Pension Cost						
Service cost	1,431,466	2,167,471		8,562,474		13,767,439
Interest cost Expected return on assets	13,618,634 (20,362,203)	10,142,890 (14,423,958)		18,417,671 (25,981,276)		21,704,049 (26,386,798)
Amortization of:	(20,002,200)	(14,425,550)		(23,301,270)		(20,300,730)
Transition obligation (asset)	-	-		-		-
Prior service cost (credit)	3,166,370	1,824,525		1,257,147		3,520,645
Actuarial (gain) loss Net periodic pension cost	<u>11,451,092</u> 9,305,359	8,224,043 7,934,971		<u>12,158,880</u> 14,414,896		<u>11,031,014</u> 23,636,349
ner benoare bension cost	9,303,359	1,934,971		14,414,090		23,030,349
Key assumptions:						
Discount rate	4.20%	4.27%		4.27%		4.27%
Expected return on plan assets Rate of compensation increase	7.00% N/A	7.00% 3.50%		7.00% 3.50%		7.00% 3.50%
Nate of compensation increase	IN/A	3.30%		3.50%		3.30%

The results contained in this document are based on the data provided by LKE's outside administrator as of January 1, 2015. All other assumptions, methods, and plan provisions are the same as those used for the year-end 2014 financial statement fisclosures provided on January 20, 2015, with the exception of the WKE Bargaining Plan terminated vested lump sum interest rate assumption which decreased from 5.00% to 3.25%. The descriptions of the assumptions, methods, plan provisions, and limitations as set forth in the year-end 2014 financial statement disclosure letter should be considered part of these results.

May 2, 2016

Ms. Jeanne Kugler Manager, Risk Management LG&E and KU Energy LLC 220 West Main Street Louisville, KY 40202

Dear Jeanne:

2016 ASC 715 ACCOUNTING RESULTS FOR QUALIFIED PENSION PLANS

LG&E and KU Energy LLC ("LKE" or "the Company") engaged Towers Watson Delaware, Inc. ("Willis Towers Watson") to determine the Net Periodic Pension Cost/Income ("NPPC") for its qualified pension plans, in accordance with FASB Accounting Standards Codification Topic 715 ("ASC 715") for the fiscal year beginning January 1, 2016. The exhibits that follow provide results on a plan by plan basis, with allocations as requested by LKE.

The benefit obligations were measured as of LKE's fiscal year begin date of January 1, 2016, and are based on January 1, 2016 census data collected from the plan administrator for the following valuations:

- LG&E and KU Retirement Plan
- Louisville Gas and Electric Company Bargaining Employees' Retirement Plan

We have reviewed the census information for reasonableness and consistency, but have neither audited nor independently verified this information. Based on discussions with and concurrence by the plan sponsor, assumptions or estimates may have been made if data were not available. We are not aware of any errors or omissions in the data that would have a significant effect on the results of our calculations.

Reconciliation to September 2, 2015 Budget Projections (Reflecting 15-year Amortization Method)

The preliminary 2016 NPPC for the two pension plans of \$26.3 million based on the Regulatory 15-year amortization method compares to the <u>projected 2016</u> expense of \$26.8 million based on the Regulatory 15-year amortization method provided in our September 2, 2015 e-mail as follows:

	Consolidated NPPC (in \$millions)
2016 Projected NPPC provided on September 2, 2015	\$26.8
Actual 2015 return (vs. expected return in budget), 7.00%	
expected return on assets assumption (compared to 6.75% in	(5.8)
budget), and actual contribution timing	
Reflection of updated data compared to roll-forward	(0.5)
Updated discount rate at December 31, 2015	(0.9)
Reflection of December 31, 2015 lump sum mortality assumption (budget reflected preliminary assumption set prior to November meeting with LKE/PPL)	6.7
2016 Preliminary NPPC	\$26.3

* Excludes WKE Non-Union results

Reconciliation to Actual 2015 Expense (Reflecting 15-year Amortization Method)

The preliminary 2016 NPPC for the two pension plans of \$26.3 million based on the Regulatory 15-year amortization method compares to the <u>actual 2015</u> expense of \$44.5 million based on the Regulatory 15-year amortization method as follows:

	Consolidated NPPC (in
	\$millions)
2015 Actual NPPC	\$44.5
Economic gains due to contributions, offset by lower and deferred asset losses	(3.5)
Reflection of updated data compared to roll-forward	(0.7)
Updated discount rate at December 31, 2015	(4.3)
Impact of lump sum plan change measured at December 31, 2015, offset by expiration of several prior service cost bases	1.1
Reflection of full year of 15-year (gain)/loss amortization (vs. 2015 use of 6 months of "Double Corridor")	(10.8)
2016 Preliminary NPPC	\$26.3

* Excludes WKE Non-Union results

Please note the following regarding these results:

1. As of January 1, 2016, LG&E and KU Energy LLC has selected the following economic assumptions: Discount rate:

	January 1, 2016	
LG&E and KU Retirement Plan	4.58%	
Louisville Gas and Electric Company	4.49%	
Bargaining Employees' Retirement Plan	4.49%	

All discount rates are based on the results of the Towers Watson BOND:Link model. At December 31, 2015, cash flows by plan were used to develop individual plan discount rates. Further information regarding the BOND:Link model parameters chosen by LKE can be found in our e-mail correspondence from January 8, 2016.

Rate of compensation increase:

The January 1, 2016 rate of compensation increase assumption for all LKE plans is a flat 3.50% at all ages.

Expected return on assets (EROA):

	January 1, 2016
LG&E and KU Retirement Plan	7.00%
Louisville Gas and Electric Company Bargaining Employees' Retirement Plan	7.00%
Darganning Employeee Hearement Han	

2. All plan provisions are the same as those valued at January 1, 2015, with the exception of the lump sum option effective January 1, 2016 for the LG&E Bargaining Plan and the LG&E and KU Retirement Plan.

The percentage of retiring and terminating participants assumed to take a lump sum is 50%.

Lump sum benefits are valued reflecting the discount rate employed for accounting purposes and unisex RP-2014 healthy annuitant mortality table (e.g., 50/50 blend of gender specific tables), without collar adjustment (removing MP-2014 improvement projections from 2006-2014) and applying Scale BB 2-Dimensional mortality improvements form 2006 on a generational basis.

Detailed descriptions of the plan provisions will be included in the actuarial valuation reports for the fiscal year ending December 31, 2016 (to be published during the coming months).

3. The following contributions made on January 15, 2016 for the LG&E and KU Retirement Plan and the Louisville Gas and Electric Company Bargaining Employees' Retirement Plan.

	Contribution (in \$millions)	
LG&E and KU Retirement Plan		
KU	\$9.1	

Actuarial Certification

In preparing the results presented in this letter (including attached exhibits), we have relied upon information regarding plan provisions, participants, assets and sponsor accounting policies and methods provided by LKE and other persons or organizations designated by LKE. We have relied on all the data and information provided as complete and accurate. We have reviewed this information for overall reasonableness and consistency, but have neither audited nor independently verified this information. Based on discussions with and concurrence by the plan sponsor, assumptions or estimates may have been made if data were not available. We are not aware of any errors or omissions in the data that would have a significant effect on the results of our calculations. The results presented in this report are directly dependent upon the accuracy and completeness of the underlying data and information. Any material inaccuracy in the data, assets, plan provisions or other information provided to us may have produced results that are not suitable for the purposes of this report and such inaccuracies, as corrected by LKE, may produce materially different results that could require that a revised report be issued.

The measurement date is January 1, 2016. The benefit obligations were measured as of January 1, 2016 and are based on participant data as of the census date, January 1, 2016.

Information about the fair value of plan assets was furnished to us by BNY Mellon. LKE also provided information about the general ledger account balances for the pension plan costs at December 31, 2015, which reflect the expected funded status of the plans before adjustment to reflect the plans' funded status based on the year-end measurements. Willis Towers Watson used information supplied by LKE regarding amounts recognized in accumulated other comprehensive income as of December 31, 2015. This data was reviewed for reasonableness and consistency, but no audit was performed.

As required by U.S. GAAP, the actuarial assumptions and the accounting policies and methods employed in the development of the pension cost and other financial reporting have been selected by LKE. Willis Towers Watson has concurred with these assumptions and methods. U.S. GAAP requires that each significant assumption "individually represent the best estimate of a particular future event."

The results shown in this report have been developed based on actuarial assumptions that, to the extent evaluated by Willis Towers Watson, we consider to be reasonable. Other actuarial assumptions could also be considered to be reasonable. Thus, reasonable results differing from those presented in this report could have been developed by selecting different reasonable assumptions.

The results shown in this report are estimates based on data that may be imperfect and on assumptions about future events that cannot be predicted with any certainty. The effects of certain plan provisions may be approximated, or determined to be insignificant and therefore not valued. Reasonable efforts were made in preparing this valuation to confirm that items that are significant in the context of the actuarial liabilities or costs are treated appropriately, and are not excluded or included inappropriately. The numbers shown in this report are not rounded, but this is for convenience and should not imply precision, which is not a characteristic of actuarial calculations.

If overall future plan experience produces higher benefit payments or lower investment returns than assumed, the relative level of plan costs reported in this valuation will likely increase in future valuations (and vice versa). Future actuarial measurements may differ significantly from the current measurements presented in this report due to many factors, including: plan experience differing from the anticipated by the economic or demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for the measurements (such as the end of an amortization period), and changes in plan provisions or applicable law.

The information contained in this report was prepared for the internal use of LKE and its auditors in connection with our actuarial valuations of the qualified pension plans. It is neither intended for and may not be used for other purposes, and we accept no responsibility or liability in this regard. LKE may distribute this actuarial valuation report to the appropriate authorities who have the legal right to require LKE to provide them this report, in which case LKE will use best efforts to notify Willis Towers Watson in advance of this distribution. Further distribution to, or use by, other parties of all or part of this document is expressly prohibited without Willis Towers Watson's prior written consent. Willis Towers Watson accepts no responsibility for any consequences arising from any other party relying on this report or any advice relating to its contents.

The undersigned consulting actuaries are members of the Society of Actuaries and meet the "Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States" relating to pension plans. Our objectivity is not impaired by any relationship between the plan sponsor and our employer, Towers Watson Delaware Inc. * *

*

Please do not hesitate to call if you have any questions.

Sincerely,

Jerrifu a. Della litto

Jennifer A. Della Pietra, ASA, EA

Senior Consulting Actuary Direct Dial: 215-246-6861

cc: Dan Arbough – LG&E and KU Energy LLC Jeanne Kugler – LG&E and KU Energy LLC David Ark - LG&E and KU Energy LLC George Sunder – PPL Corporation Julissa Burgos – PPL Corporation Kristin May, FSA, EA – Willis Towers Watson Brad Dreisbach, ASA – Willis Towers Watson

Ray losof

Royce S. Kosoff, FSA, EA, CFA

Senior Consulting Actuary Direct Dial: 215-246-6815

http://natct.internal.towerswatson.com/clients/604575/2016LKEProjects/Documents/FASB ASC 715 Results - LKE Qualified Pension Plans 2016.doc

Attachment #1 to Response to KIUC-1 Question No. 28 Page 14 of 27

Arbough

	Regulatory	Regulatory	Re	gulatory		Regulatory	
			Non-Union				
				Retirement Plar			
	LG&E Union	LG&E		кU		ServCo	
Funded Status		LOUL					
ABO			3	88,796,682			
PBO			4	25,041,607			
Fair value of assets				76,875,993			
Funded status			(*	48,165,614)			
Amounts recognized in accumulated other							
comprehensive income consist of: Net actuarial loss/(gain)			1	18,635,836			
Prior service cost/(credit)				3,916,894			
Transition obligation/(asset)				-			
Total			1.	22,552,730			
Market related value of assets			3	85,965,731			
2016 Net Periodic Pension Cost							
Service cost Interest cost	1,165,140 14,152,287	1,839,898 10,705,521		7,390,298 18,825,168		12,213,263 22,600,171	
Expected return on assets	(20,800,325)	(14,702,169)		26,649,007)		(27,615,212)	
Amortization of:	(_0,000,0_0)	(1,1,02,100)				(=:,0:0,=:=)	
Transition obligation (asset)	-	-		-		-	
Prior service cost (credit)	4,471,357	1,697,500		565,441		4,068,717	
Actuarial (gain) loss	6,840,372	5,763,202		7,775,196		5,910,275	
Net periodic pension cost	5,828,831	5,303,952		7,907,096		17,177,214	
Key assumptions:							
Discount rate	4.49%	4.58%		4.58%		4.58%	
Expected return on plan assets	7.00%	7.00%		7.00%		7.00%	
Rate of compensation increase	N/A	3.50%		3.50%		3.50%	

The results contained in this document are based on the data provided by LKE's outside administrator as of January 1, 2016. All other assumptions, methods, and plan provisions are the same as those used for the year-end 2015 financial statement fisclosures provided on January 22, 2016. The descriptions of the assumptions, methods, plan provisions, and limitations as set forth in the year-end 2015 financial statement disclosure letter should be considered part of these results.

LG&E and KU Energy LLC ("LKE")

2016 Net Periodic Pension Cost Qualified Pension Plans
Attachment #1 to Response to KIUC-1 Question No. 28 Page 15 of 27 Arbough

LG&E and KU Energy LLC ("LKE") 2016 Net Periodic Pension Cost Reflecting 15-year (Gain)/Loss Amortization Method

Qualified Pension Plans

Willis Towers Watson IIIIIII

	Reg-15	Reg-15	Reg-15	Reg-15	Fin-15
	_	Non-Union Retirement Plan			
5 1 100	LG&E Union	LG&E	KU	ServCo (Regulatory)	
Funded Status ABO			388,796,682		
PBO Fair value of assets			425,041,607 376,875,993		
Funded status			(48,165,614)		
Amounts recognized in accumulated other comprehensive income consist of: Net actuarial loss/(gain) Prior service cost/(credit) Transition obligation/(asset)			121,630,799 3,916,894 -		
Total			125,547,693		
Market related value of assets			385,965,731		
2016 Net Periodic Pension Cost					
Service cost Interest cost	1,165,140	1,839,898	7,390,298	12,213,263	
Expected return on assets	14,152,287 (20,800,325)	10,705,521 (14,702,169)	18,825,168 (26,649,007)	22,600,171 (27,615,212)	
Amortization of: Transition obligation (asset)	-	-	-	-	
Prior service cost (credit)	4,471,357	1,697,500	565,441	4,068,717	
Actuarial (gain) loss	4,174,202	3,541,006	4,874,758	3,765,140	
Net periodic pension cost	3,162,661	3,081,756	5,006,658	15,032,079	
Key assumptions:					
Discount rate	4.49%	4.58%	4.58%	4.58%	
Expected return on plan assets	7.00%	7.00%	7.00%	7.00%	
Rate of compensation increase	N/A	3.50%	3.50%	3.50%	

The results contained in this document are based on the data provided by LKE's outside administrator as of January 1, 2016. All other assumptions, methods, and plan provisions are the same as those used for the year-end 2015 financial statement fisclosures provided on January 22, 2016. The descriptions of the assumptions, methods, plan provisions, and limitations as set forth in the year-end 2015 financial statement disclosure letter should be considered part of these results.

June 3, 2016

Ms. Jeanne Kugler Manager, Risk Management LG&E and KU Energy LLC 220 West Main Street Louisville, KY 40202

Dear Jeanne:

2017-2021 PROJECTIONS OF PENSION

PLANS

Towers Watson Delaware, Inc. ("Willis Towers Watson") was engaged by LG&E and KU Energy LLC ("LKE" or "the Company") to provide 5-year projections of the Financial Accounting Standards Codification ("ASC") Topic 715 accounting cost for the following pension and plans with allocations as requested by LKE:

- LG&E and KU Retirement Plan
- Louisville Gas and Electric Company Bargaining Employees' Retirement Plan

The exhibits for the years 2017-2021 are as follows:

- Estimated ASC 715 accounting cost
- Estimated cash contributions to the pension plan trusts for the LG&E and KU Retirement Plan and the Louisville Gas and Electric Company Bargaining Employees' Retirement Plan

The projections are based on the 2016 actuarial valuation results provided to you on May 2 (qualified pension plans) Except where otherwise noted, the assumptions, methods, data, and plan provisions used to develop these projections are the same as those used to develop the 2016 actuarial valuation results.

In addition, Willis Towers Watson was also engaged to provide 5-year projections of the PPA Funding Minimum Required Contribution for both pension plans. The exhibit for 2016-2021 shows the following:

- Estimated Minimum Required Contribution under ERISA/PPA
- Estimated Funding Balance used to supplement the expected cash contributions as determined by the ASC 715 projections under the "double corridor" method
- Estimated Funded Status both before and after adjustment for Funding Balances

The projections are based on the preliminary 2016 funding results to be published during the coming months. Except where otherwise noted, the assumptions, methods, data, and plan provisions used to develop these projections are the same as those used to develop the 2016 actuarial valuation results.

Reconciliation to September 2, 2015 Budget Projections (Reflecting 15-year Amortization Method)

The projected 2017 consolidated NPPC for the two pension plans of \$29.2 million compares to the projected 2017 consolidated expense of \$27.1 million based on the Regulatory 15-year amortization method provided in our September 2, 2015 e-mail as follows:

	Consolidated NPPC (in \$millions)
2017 Projected NPPC provided on September 2, 2016	\$27.1
Actual 2015 return (vs. expected return in budget), 7.00% expected return on assets assumption (compared to 6.75% in budget)	(4.9)
Reflection of updated data compared to roll-forward	(0.5)
Updated discount rate	1.3
Change in service cost growth assumption	(0.5)
Reflection of December 31, 2015 lump sum mortality assumption (budget reflected preliminary assumption set prior to November meeting with LKE/PPL)	6.7
2017 Budget Estimate	\$29.2

* Excludes WKE Non-Union results

Results of Funding Projections 2016-2021

Current funding policy of contributing an amount equal to U.S. GAAP NPPC, plus use of credit balance, is expected to be sufficient throughout the projection period for both qualified plans.

- Estimated Minimum Required Contributions in all years exceed estimated cash contributions for the LG&E and KU Retirement Plan. For the Bargaining Plan, estimated cash contributions exceed the Minimum Required Contribution for all years.
- For the LG&E and KU Retirement Plan, there is sufficient Funding Balance to apply as needed to satisfy the remaining Minimum Required Contribution, so no additional cash contributions are required for the entire projection period.
- Additional funding strategies, for example, voluntary forfeiture of Funding Balances as of January 1, 2016 to avoid funding shortfall entirely, were outside the scope of these projections. We anticipate discussing this in greater detail in July.

These projections reflect the following key economic assumptions:

Discount rate:

	December 31, 2016 and all subsequent	December 31, 2015
	years	
LG&E and KU Retirement Plan	4.42%	4.58%
Louisville Gas and Electric Company Bargaining Employees' Retirement Plan	4.34%	4.49%

December 31, 2015 discount rates are based on the results of the Willis Towers Watson BOND:Link model as of December 31, 2015. Annuity cash flows by plan are based on the results of the 2015 actuarial valuation results.

December 31, 2016 and all subsequent years discount rates were developed based on April 30, 2016 BOND:Link results plus 25 basis points.

Rate of compensation increase:

The projected rates of compensation increase for all legacy LKE plans are flat at all ages.

	December 31, 2016 and all subsequent years	December 31, 2015
All legacy LKE plans	3.50%	3.50%

Expected return on assets (EROA):

	December 31, 2016 and all subsequent years	December 31, 2015
LG&E and KU Retirement Plan	7.00%	7.00%
Louisville Gas and Electric Company Bargaining Employees' Retirement Plan	7.00%	7.00%

* Historically used as a short-term payment vehicle, not long-term investment trust

Service cost growth:

The service cost for the qualified pension plans is assumed to remain constant for future years. The service cost for the welfare plan is assumed to grow at the same rate as the discount rate.

	All projection years
LG&E and KU Retirement Plan	0.00%
Louisville Gas and Electric Company	0.00%
Bargaining Employees' Retirement Plan	0.00 %

Actual return on assets:

	2016 and all
	subsequent years
LG&E and KU Retirement Plan	7.00%
Louisville Gas and Electric Company	7.00%
Bargaining Employees' Retirement Plan	7.00%



Demographic assumptions:

1. All demographic assumptions are the same as those selected by LKE at December 31, 2015.

A summary of all other assumptions can be found in the Financial Disclosure letter provided to LKE on January 20, 2016. Detailed descriptions of these assumptions will be included in the actuarial valuation reports for the fiscal year ending December 31, 2016 (to be published during the coming months).

2. All plan provisions are the same as those valued at January 1, 2016 with the exception of the dollar per month multiplier for the Louisville Gas and Electric Company Bargaining Employees' Retirement Plan, which is assumed to increase 3% per year throughout the projection.

Detailed descriptions of the plan provisions will be included in the actuarial valuation reports for the fiscal year ending December 31, 2016 (to be published during the coming months).

- 3. For the Louisville Gas and Electric Company Bargaining Employees' Retirement Plan, the increases in benefit multipliers are assumed to be collectively bargained and reflected every three years. The increase in Prior Service Cost for the increase in the benefit multipliers for 2018-2020 is assumed to be reflected at December 31, 2017 and the increase for 2021-2023 is assumed to be reflected at December 31, 2020. For funding purposes, one-year increases are reflected annually.
- 4. The expected future service to retirement age used in the development of the unrecognized (gain) / loss amortization for the two pension plans is equal to the amount developed in the January 1, 2016 actuarial valuation results and is assumed to decrease 0.5 per year for the pension plans to reflect

the aging of the closed populations.

- 5. For funding purposes, all contributions to the two pension plans are assumed to be made on January 15 of the year shown and are reflected as a receivable contribution for the prior plan year. For accounting purposes, all pension contributions are assumed to be made at the end of the year shown.
- 6. Administrative expenses of the qualified pension plans were assumed to remain level with 2016 during the projection period and are allocated based on actual administrative expenses in 2015.

Actuarial certification

In preparing the calculations contained in this letter, Willis Towers Watson has used information and data provided to us by LKE and other persons or organizations designated by LKE. We have relied on all the data and information provided, including plan provisions and asset information, as being complete and accurate. We have reviewed this information for overall reasonableness and consistency but have neither audited nor independently verified this information.

As required by ASC 715, the actuarial assumptions and methods employed in the development of the pension and postretirement plan obligations have been selected by the plan sponsor. Willis Towers Watson has concurred with these assumptions and methods. ASC 715 requires that each significant assumption "individually represent the best estimate of a particular future event."

For funding purposes, the plan sponsor selected, as prescribed by regulation, key assumptions and funding methods (including asset valuation method and choice among prescribed interest rates) employed in the development of the contribution. To the extent not prescribed by ERISA, the Internal Revenue Code and regulatory guidance from the Treasury and the IRS, or selected by the sponsor, the actuarial assumptions and methods employed in the development of the contribution amounts have been selected by Willis Towers Watson, with the concurrence of the plan sponsor. It is beyond the scope of this forecast to analyze the reasonableness and appropriateness of prescribed methods and assumptions, or to analyze other sponsor elections from among the alternatives available for prescribed methods and assumptions.

The results documented in this letter are estimates based on data that may be imperfect and on assumptions about future events that cannot be predicted with any certainty. Certain plan provisions may be approximated or determined to be immaterial and therefore not valued. Assumptions may be made about participant data or other factors. We have made reasonable efforts to ensure that items that are material in the context of the actuarial liabilities or costs are treated appropriately, and not excluded or included inappropriately.

Actual future experience will differ from the assumptions used in our calculations. As these differences arise, contributions or the cost for accounting purposes will be adjusted in future valuations to take changes into account. If these adjustments become material, they may result in future adjustments to the valuation model.

The results shown in this letter have been developed based on actuarial assumptions that, to the extent evaluated or selected by Willis Towers Watson, we consider to be reasonable. Other actuarial assumptions could also be considered to be reasonable. Thus, reasonable results differing from those presented in this report could have been developed by selecting different reasonable assumptions.

The numbers in this letter are not rounded, but this is for convenience only and should not imply precision, which is not a characteristic of actuarial calculations.

The calculations provided in this letter have been prepared solely for the benefit of LKE for budgeting purposes. This letter should not be used for other purposes, and we accept no responsibility for any such use. It should not be relied upon by, or shared with, any third parties without Willis Towers Watson's prior written consent.

This letter is provided subject to the terms set out herein and in our engagement letter dated March 28, 2013 and any accompanying or referenced terms and conditions.

This letter provides actuarial calculations. It does not constitute legal, accounting, tax or investment advice. We encourage you to consult with qualified advisors with respect to those matters.

The undersigned consulting actuaries are members of the Society of Actuaries and other professional actuarial organizations and meet the "Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States" relating to retirement plans. Our objectivity is not impaired by any relationship between the plan sponsor and our employer, Willis Towers Watson.

* * * * *

Please do not hesitate to call if you have any questions.

Sincerely,

Koyre Koso

Royce S. Kosoff, FSA, EA, CFA Senior Consulting Actuary Direct Dial: 215-246-6815

Jennifer A. Della Pietra, ASA, EA Senior Consulting Actuary Direct Dial: 215-246-6861

cc: David Crosby – LG&E and KU Energy LLC Dan Arbough – LG&E and KU Energy LLC George Sunder – PPL Corporation Julissa Burgos – PPL Corporation Brad Dreisbach – Willis Towers Watson

http://natct.internal.towerswatson.com/clients/604575/2016lkeprojects/documents/fasb asc 715 and ppa funding projections 2017-2021.docx

LG&E & KU Energy LLC Estimated ASC 715 Net Periodic Pension Cost ("NPPC") For Qualified Pension Plans 2017 Fiscal Year

	Regulatory	Regulatory		Regulatory	Regulatory
		LG&E a	and KU Retirement Plan		
	LG&E				
	Non-union	KU		LG&E Union	Servco
Service cost	2,213,200	8,586,896		1,401,836	14,293,601
Interest cost	9,703,879	17,329,469		12,506,524	21,550,246
Expected return on assets	(14,526,869)	(26,374,148)		(20,417,041)	(27,362,375)
Amortizations:					
Transition	-	-		-	-
Prior service cost	1,564,417	565,441		4,471,357	3,960,771
(Gain)/loss	10,418,050	14,641,410		12,149,737	13,651,338
ASC 715 NPBC	9,372,677	14,749,068		10,112,413	26,093,581

LG&E & KU Energy LLC Estimated ASC 715 Net Periodic Pension Cost ("NPPC") For Qualified Pension Plans 2018 Fiscal Year

	Regulatory	Regulatory		Regulatory	Regulatory
		LG&E :	and KU Retirement Plan		
	LG&E				
	Non-union	KU		LG&E Union	Servco
Service cost	2,213,200	8,586,896		1,401,836	14,293,601
Interest cost	9,524,874	17,212,770		12,500,873	21,740,794
Expected return on assets	(14,937,988)	(27,052,175)		(20,635,008)	(28,163,857
Amortizations:					
Transition	-	-		-	-
Prior service cost	1,334,204	565,441		6,050,811	3,459,919
(Gain)/loss	8,961,742	12,555,860		10,162,085	12,945,610
ASC 715 NPBC	7,096,032	11,868,792		9,480,597	24,276,067

<u>Notes</u>

1. These accounting projections are based on the January 1, 2016 valuation results provided on May 2, 2016. The description of the data, assumptions, methods, plan provisions, and limitations as set forth in the accounting valuation results cover letter should be considered part of these results. Please see the attached letter for a description of all other assumptions and methods used in this analysis.

2. Discount rate is assumed to be 3.78% for the Non-Union plan and 3.69% for the Union plan, which reflects an 80 basis points decrease from the December 31, 2015 discount rate for both plans for measurement date December 31, 2016 and beyond. The decrease in discount rate reflects the market conditions from December 31, 2015 to June 30, 2016.

3. The fair value of assets is assumed to earn 7.00% in all years.

4. Service cost is assumed to remain constant (0.00% growth).

5. Expected future service is assumed to decrease 0.5 per year for both qualified plans.

	Regulatory	Regulatory		Regulatory	Regulatory
		LG&E a	Ind KU Retirement Plan		
	LG&E				
	Non-union	KU		LG&E Union	Servco
Service cost	2,213,200	8,586,896		1,401,836	14,293,601
Interest cost	9,322,048	17,092,082		12,067,498	21,905,121
Expected return on assets	(15,196,238)	(27,593,143)		(20,832,663)	(28,910,890)
Amortizations:					
Transition	-	-		-	-
Prior service cost	409,879	565,441		5,887,146	1,678,075
(Gain)/loss	7,716,345	11,906,658		9,530,971	12,224,992
ASC 715 NPBC	4,465,234	10,557,934		8,054,788	21,190,899

LG&E & KU Energy LLC Estimated ASC 715 Net Periodic Pension Cost ("NPPC") For Qualified Pension Plans 2019 Fiscal Year



<u>Notes</u>

1. These accounting projections are based on the January 1, 2016 valuation results provided on May 2, 2016. The description of the data, assumptions, methods, plan provisions, and limitations as set forth in the accounting valuation results cover letter should be considered part of these results. Please see the attached letter for a description of all other assumptions and methods used in this analysis.

2. Discount rate is assumed to be 3.78% for the Non-Union plan and 3.69% for the Union plan, which reflects an 80 basis points decrease from the December 31, 2015 discount rate for both plans for measurement date December 31, 2016 and beyond. The decrease in discount rate reflects the market conditions from December 31, 2015 to June 30, 2016.

3. The fair value of assets is assumed to earn 7.00% in all years.

4. Service cost is assumed to remain constant (0.00% growth).

5. Expected future service is assumed to decrease 0.5 per year for both qualified plans.



<u>Notes</u>

1. These accounting projections are based on the January 1, 2016 valuation results provided on May 2, 2016. The description of the data, assumptions, methods, plan provisions, and limitations as set forth in the accounting valuation results cover letter should be considered part of these results. Please see the attached letter for a description of all other assumptions and methods used in this analysis.

2. Discount rate is assumed to be 3.78% for the Non-Union plan and 3.69% for the Union plan, which reflects an 80 basis points decrease from the December 31, 2015 discount rate for both plans for measurement date December 31, 2016 and beyond. The decrease in discount rate reflects the market conditions from December 31, 2015 to June 30, 2016.

3. The fair value of assets is assumed to earn 7.00% in all years.

4. Service cost is assumed to remain constant (0.00% growth).

5. Expected future service is assumed to decrease 0.5 per year for both qualified plans.





LG&E & KU Energy LLC Estimated Net Periodic Pension Cost ("NPPC") Reflecting 15-year (Gain)/Loss Amortization Method For Qualified Pension Plans 2017 Fiscal Year

	Reg-15	Reg-15	Reg-15	Reg-15
		LG&E and KU R	etirement Plan	
	LG&E			
	Non-union	KU	Servco (Regulatory)	LG&E Union
Service cost	2,213,200	8,586,896	14,293,601	1,401,836
Interest cost	9,703,879	17,329,469	21,550,246	12,506,524
Expected return on assets	(14,526,869)	(26,374,148)	(27,362,375)	(20,417,041)
Amortizations:				
Transition	-	-	-	-
Prior service cost	1,564,417	565,441	3,960,771	4,471,357
(Gain)/loss	5,244,493	8,039,632	8,153,955	6,347,677
ASC 715 NPBC	4,199,120	8,147,290	20,596,198	4,310,353

LG&E & KU Energy LLC Estimated Net Periodic Pension Cost ("NPPC") Reflecting 15-year (Gain)/Loss Amortization Method For Qualified Pension Plans 2018 Fiscal Year

	Reg-15	Reg-15	Reg-15	Reg-15
		LG&E and KU Re	tirement Plan	
	LG&E			
	Non-union	KU	Servco (Regulatory)	LG&E Union
Service cost	2,213,200	8,586,896	14,293,601	1,401,836
Interest cost	9,524,874	17,212,770	21,740,794	12,500,873
Expected return on assets	(14,937,988)	(27,052,175)	(28,163,857)	(20,635,008)
Amortizations:				
Transition	-	-	-	-
Prior service cost	1,334,204	565,441	3,459,919	6,050,811
(Gain)/loss	5,365,802	8,221,855	8,250,371	6,468,967
ASC 715 NPBC	3,500,092	7,534,787	19,580,828	5,787,479

<u>Notes</u>

1. These accounting projections are based on the 15-year amortization method valuation results provided on May 2, 2016. The description of the data, assumptions, methods, plan provisions, and limitations as set forth in the accounting valuation results cover letter should be considered part of these results. Please see the attached letter for a description of all other assumptions and methods used in this analysis.

2. Discount rate is assumed to be 3.78% for the Non-Union plan and 3.69% for the Union plan, which reflects an 80 basis points decrease from the December 31, 2015 discount rate for both plans for measurement date December 31, 2016 and beyond. The decrease in discount rate reflects the market conditions from December 31, 2015 to June 30, 2016.

3. The fair value of assets is assumed to earn 7.00% in all years.

4. Service cost is assumed to remain constant (0.00% growth).

5. Expected future service is assumed to decrease 0.5 per year for both qualified plans.

6. Projections reflect the 15-year amortization method as outlined in the April 20, 2015 rate settlement agreement and as confirmed on June 17, 2015 by LKE.

LG&E & KU Energy LLC Estimated Net Periodic Pension Cost ("NPPC") Reflecting 15-year (Gain)/Loss Amortization Method For Qualified Pension Plans 2019 Fiscal Year

	Reg-15	Reg-15	Reg-15		Reg-15
		LG&E and KU Re	etirement Plan		
	LG&E				
	Non-union	KU	Servco (Regulatory)		LG&E Union
Service cost	2,213,200	8,586,896	14,293,601		1,401,836
Interest cost	9,322,048	17,092,082	21,905,121		12,067,498
Expected return on assets	(15,196,238)	(27,593,143)	(28,910,890)		(20,832,663)
Amortizations:					
Transition	-	-	-		-
Prior service cost	409,879	565,441	1,678,075		5,887,146
(Gain)/loss	5,483,406	8,390,503	8,339,715		6,656,330
ASC 715 NPBC	2,232,295	7,041,779	17,305,622	, , ,	5,180,147



Notes

1. These accounting projections are based on the 15-year amortization method valuation results provided on May 2, 2016. The description of the data, assumptions, methods, plan provisions, and limitations as set forth in the accounting valuation results cover letter should be considered part of these results. Please see the attached letter for a description of all other assumptions and methods used in this analysis.

2. Discount rate is assumed to be 3.78% for the Non-Union plan and 3.69% for the Union plan, which reflects an 80 basis points decrease from the December 31, 2015 discount rate for both plans for measurement date December 31, 2016 and beyond. The decrease in discount rate reflects the market conditions from December 31, 2015 to June 30, 2016.

3. The fair value of assets is assumed to earn 7.00% in all years.

4. Service cost is assumed to remain constant (0.00% growth).

5. Expected future service is assumed to decrease 0.5 per year for both qualified plans.

6. Projections reflect the 15-year amortization method as outlined in the April 20, 2015 rate settlement agreement and as confirmed on June 17, 2015 by LKE.



Notes

1. These accounting projections are based on the 15-year amortization method valuation results provided on May 2, 2016. The description of the data, assumptions, methods, plan provisions, and limitations as set forth in the accounting valuation results cover letter should be considered part of these results. Please see the attached letter for a description of all other assumptions and methods used in this analysis.

2. Discount rate is assumed to be 3.78% for the Non-Union plan and 3.69% for the Union plan, which reflects an 80 basis points decrease from the December 31, 2015 discount rate for both plans for measurement date December 31, 2016 and beyond. The decrease in discount rate reflects the market conditions from December 31, 2015 to June 30, 2016.

3. The fair value of assets is assumed to earn 7.00% in all years.

4. Service cost is assumed to remain constant (0.00% growth).

5. Expected future service is assumed to decrease 0.5 per year for both qualified plans.

6. Projections reflect the 15-year amortization method as outlined in the April 20, 2015 rate settlement agreement and as confirmed on June 17, 2015 by LKE.

June 3, 2016

Ms. Jeanne Kugler Manager, Risk Management LG&E and KU Energy LLC 220 West Main Street Louisville, KY 40202

Dear Jeanne:

2017-2021 PROJECTIONS OF POSTRETIREMENT WELFARE PLANS

Towers Watson Delaware, Inc. ("Willis Towers Watson") was engaged by LG&E and KU Energy LLC ("LKE" or "the Company") to provide 5-year projections of the Financial Accounting Standards Codification ("ASC") Topic 715 accounting cost for the following pension and postretirement welfare plans with allocations as requested by LKE:

- LG&E and KU Postretirement Benefit Plan

The exhibits for the years 2017-2021 are as follows:

Estimated ASC 715 accounting cost

Expected cash flows for the LG&E and KU Postretirement Benefit Plan

Expected employer contributions to the 401(h) account of the LG&E and KU Postretirement Benefit Plan

The projections are based on the 2016 actuarial valuation results provided to you on

May 6 (LG&E and KU Postretirement Benefit Plan). Except where otherwise noted, the assumptions, methods, data, and plan provisions used to develop these projections are the same as those used to develop the 2016 actuarial valuation results.

Except where otherwise noted, the assumptions, methods, data, and plan provisions used to develop these projections are the same as those used to develop the 2016 actuarial valuation results.

Reconciliation to September 2, 2015 Budget Projections

The projected 2017 consolidated U.S. GAAP NPBC for the postretirement benefit plan is \$7.5 million compared to the projected 2017 consolidated NPBC of \$8.5 million provided in our June 15, 2015 e-mail. The decrease of \$1.0 million is primarily due to demographic gains resulting from the reflection of valuation data as of 1/1/2016 and updated per capita claim cost assumptions, including aging table, for the 2016 valuation.



These projections reflect the following key economic assumptions:

Discount rate:

December 31, 2015 discount rates are based on the results of the Willis Towers Watson BOND:Link model as of December 31, 2015. Annuity cash flows by plan are based on the results of the 2015 actuarial valuation results.

December 31, 2016 and all subsequent years discount rates were developed based on April 30, 2016 BOND:Link results plus 25 basis points.



Expected return on assets (EROA):

	December 31, 2016 and all subsequent years	December 31, 2015	
LG&E Energy LLC Postretirement Benefit			
Plan			
- Union VEBA*	0.00%	0.00%	
- Nonunion VEBA*	0.00%	0.00%	
- 401(h) sub-account	7.00%	7.00%	

* Historically used as a short-term payment vehicle, not long-term investment trust

Service cost growth:

The service cost for the qualified pension plans is assumed to remain constant for future years. The service cost for the welfare plan is assumed to grow at the same rate as the discount rate.

	All projection years
LG&E and KU Postretirement Benefit Plan	4 31%
	4.0170

Actual return on assets:

	2016 and all
	subsequent years
LG&E Energy LLC Postretirement Benefit	
Plan	
- Union VEBA*	0.00%
- Nonunion VEBA*	0.00%
- 401(h) sub-account	7.00%

Health care cost trend:

	December 31, 2016 and December 31, 2015	
	all subsequent years	
2016	N/A	6.8%
2017	7.0%	6.4%
2018	6.8%	6.0%
2019	6.6%	5.5%
2020	6.2%	5.0%
2021	5.8%	5.0%
2022	5.4%	5.0%
2023+	5.0%	5.0%

Demographic assumptions:

1. All demographic assumptions are the same as those selected by LKE at December 31, 2015.

A summary of all other assumptions can be found in the Financial Disclosure letter provided to LKE on January 20, 2016. Detailed descriptions of these assumptions will be included in the actuarial valuation reports for the fiscal year ending December 31, 2016 (to be published during the coming months).

2. All plan provisions are the same as those valued at January 1, 2016

Detailed descriptions of the plan provisions will be included in the actuarial valuation reports for the fiscal year ending December 31, 2016 (to be published during the coming months).

The LG&E and KU Postretirement Benefit Plan is not closed, so there is no assumed decrease in the amortization period.

5.

All contributions to the LG&E and KU Postretirement Benefit Plan are assumed to be made at the middle of the year (6/30). The projections reflect no prefunding for the Non-union and Union VEBAS.

6.

Postretirement Benefit Plan administrative expenses were kept consistent with 2015 actual expenses during the projection period.

Actuarial certification

In preparing the calculations contained in this letter, Willis Towers Watson has used information and data provided to us by LKE and other persons or organizations designated by LKE. We have relied on all the data and information provided, including plan provisions and asset information, as being complete and accurate. We have reviewed this information for overall reasonableness and consistency but have neither audited nor independently verified this information.

As required by ASC 715, the actuarial assumptions and methods employed in the development of the pension and postretirement plan obligations have been selected by the plan sponsor. Willis Towers Watson has concurred with these assumptions and methods. ASC 715 requires that each significant assumption "individually represent the best estimate of a particular future event."

For funding purposes, the plan sponsor selected, as prescribed by regulation, key assumptions and funding methods (including asset valuation method and choice among prescribed interest rates) employed in the development of the contribution. To the extent not prescribed by ERISA, the Internal Revenue Code and regulatory guidance from the Treasury and the IRS, or selected by the sponsor, the actuarial assumptions and methods employed in the development of the contribution amounts have been selected by Willis Towers Watson, with the concurrence of the plan sponsor. It is beyond the scope of this forecast to analyze the reasonableness and appropriateness of prescribed methods and assumptions, or to analyze other sponsor elections from among the alternatives available for prescribed methods and assumptions.

The results documented in this letter are estimates based on data that may be imperfect and on assumptions about future events that cannot be predicted with any certainty. Certain plan provisions may be approximated or determined to be immaterial and therefore not valued. Assumptions may be made about participant data or other factors. We have made reasonable efforts to ensure that items that are material in the context of the actuarial liabilities or costs are treated appropriately, and not excluded or included inappropriately.

Actual future experience will differ from the assumptions used in our calculations. As these differences arise, contributions or the cost for accounting purposes will be adjusted in future valuations to take changes into account. If these adjustments become material, they may result in future adjustments to the valuation model.

The results shown in this letter have been developed based on actuarial assumptions that, to the extent evaluated or selected by Willis Towers Watson, we consider to be reasonable. Other actuarial assumptions could also be considered to be reasonable. Thus, reasonable results differing from those presented in this report could have been developed by selecting different reasonable assumptions.

The numbers in this letter are not rounded, but this is for convenience only and should not imply precision, which is not a characteristic of actuarial calculations.

The calculations provided in this letter have been prepared solely for the benefit of LKE for budgeting purposes. This letter should not be used for other purposes, and we accept no responsibility for any such use. It should not be relied upon by, or shared with, any third parties without Willis Towers Watson's prior written consent.

This letter is provided subject to the terms set out herein and in our engagement letter dated March 28, 2013 and any accompanying or referenced terms and conditions.

This letter provides actuarial calculations. It does not constitute legal, accounting, tax or investment advice. We encourage you to consult with qualified advisors with respect to those matters.

The undersigned consulting actuaries are members of the Society of Actuaries and other professional actuarial organizations and meet the "Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States" relating to retirement plans. Our objectivity is not impaired by any relationship between the plan sponsor and our employer, Willis Towers Watson.

* * * * *

Please do not hesitate to call if you have any questions.

Sincerely,

Kayre Kose

Royce S. Kosoff, FSA, EA, CFA Senior Consulting Actuary Direct Dial: 215-246-6815

Jennifer A. Della Pietra, ASA, EA Senior Consulting Actuary Direct Dial: 215-246-6861

cc: David Crosby – LG&E and KU Energy LLC Dan Arbough – LG&E and KU Energy LLC George Sunder – PPL Corporation Julissa Burgos – PPL Corporation Brad Dreisbach – Willis Towers Watson

LG&E & KU Energy LLC 2017 Estimated ASC 715 Net Periodic Benefit Cost ("NPBC") For Postretirement Benefit Plan

	Regulatory	Regulatory	Regulatory	Regulator
	LG&E	KU	LG&E Union	ServCo
Service cost	601,912		485,592	2,490,9
Interest cost	1,348,668		1,943,933	1,986,9
Expected return on assets	(745,535)	(2,722,739)	-	(3,251,2
Amortizations:	, , , , , , , , , , , , , , , , , , ,	, · · · · ,		
Transition	-	-	-	-
Prior service cost	78,595	139,169	496,348	131,6
(Gain)/loss	-	-	(58,961)	
ASC 715 NPBC	1,283,640	2,250,758	2,866,912	1,358,2
	,,	,,	, ,	.,

LG&E & KU Energy LLC 2018 Estimated ASC 715 Net Periodic Benefit Cost ("NPBC") For Postretirement Benefit Plan

	Regulatory	Regulatory	Re	egulatory	, 	Regulatory
	LG&E	KU	LG	S&E Union		ServCo
Service cost	624,123	1,935,213		503,510		2,582,8
Interest cost	1,328,698	2,952,353		1,894,707		2,063,7
Expected return on assets	(720,796)	(2,790,592)		_		(3,604,5
Amortizations:		, , , , ,				•
Transition	-	-		-		-
Prior service cost	78,595	139,169		496,348		131,6
(Gain)/loss	-	-		(63,928)		-
ASC 715 NPBC	1,310,620	2,236,143		2,830,637		1,173,6

<u>Notes</u>

1. These accounting projections are based on the January 1, 2016 valuation results provided on May 6, 2016. The description of the data, assumptions, methods, plan provisions, and limitations as set forth in the accounting valuation results cover letter should be considered part of these results. Please see the attached letter for a description of all other assumptions and methods used in this analysis, including a discount rate of 3.69% and revised per capital claim cost trend assumption.

Non-union and Union VEBA amounts are assumed to remain level over the projection period (i.e., contributions equal disbursements and a 0.00% actual return on assets). 401(h) amounts are assumed to earn 7.00% in 2016 and subsequent years. Contributions to the 401(h) account are assumed to be equal to the maximum deductible amount, starting in 2016 and are expected to be contributed at June 30th of the following fiscal year. Benefit payments are assumed to be paid from the 401(h) account beginning in 2017, to the extent allowable.
 We have assumed service cost growth equal to the discount rate (3.69% per year).

LG&E & KU Energy LLC 2019 Estimated ASC 715 Net Periodic Benefit Cost ("NPBC") For Postretirement Benefit Plan

	Regulatory	Regulatory	Regulatory	Regula
	LG&E	KU	LG&E Union	ServC
Service cost	647,153	2,006,622	522,090	2,678
Interest cost	1,307,008	2,932,657	1,839,559	2,132
Expected return on assets	(691,726)	(2,849,285)	-	(3,955
Amortizations:				
Transition	-	-	-	
Prior service cost	78,595	139,169	496,348	131
(Gain)/loss	-	-	(69,710)	
ASC 715 NPBC	1,341,030	2,229,163	2,788,287	987





<u>Notes</u>

1. These accounting projections are based on the January 1, 2016 valuation results provided on May 6, 2016. The description of the data, assumptions, methods, plan provisions, and limitations as set forth in the accounting valuation results cover letter should be considered part of these results. Please see the attached letter for a description of all other assumptions and methods used in this analysis, including a discount rate of 3.69% and revised per capita claim trend assumption.

Non-union and Union VEBA amounts are assumed to remain level over the projection period (i.e., contributions equal disbursements and a 0.00% actual return on assets). 401(h) amounts are assumed to earn 7.00% in 2016 and subsequent years. Contributions to the 401(h) account are assumed to be equal to the maximum deductible amount, starting in 2016 and are expected to be contributed at June 30th of the following fiscal year. Benefit payments are assumed to be paid from the 401(h) account beginning in 2017, to the extent allowable.
 We have assumed service cost growth equal to the discount rate (3.69% per year).



PLAN PROVISION CHANGES FOR POSTRETIREMENT BENEFIT PLAN USED IN 2017-2021 PROJECTIONS

Effective Date for Projection		
Purposes	Non-Union and LG&E Union Plans	
January 1, 2017		
January 1, 2018		
January 1 2019		



May 2, 2016

Ms. Jeanne Kugler Manager, Risk Management LG&E and KU Energy LLC 220 West Main Street Louisville, KY 40202

Dear Jeanne:

2016 ASC 715 ACCOUNTING RESULTS FOR THE POSTRETIREMENT BENEFIT PLAN

LG&E and KU Energy LLC ("LKE" or "the Company") engaged Towers Watson Delaware, Inc. ("Willis Towers Watson") to determine the Net Periodic Benefit Cost/Income ("NPBC") for the LG&E and KU Energy Postretirement Benefit Plan, in accordance with FASB Accounting Standards Codification Topic 715 ("ASC 715") for the fiscal year beginning January 1, 2016. The exhibits that follow provide results for the plan, with allocations as requested by LKE.

Reconciliation to June 26, 2015 Budget Projections

The preliminary 2016 consolidated US GAAP NPBC for the postretirement benefit plan of \$9.4 million compares to the projected 2016 consolidated NPBC of \$10.3 million provided in our June 26, 2015 e-mail as follows:

	Consolidated US GAAP NPBC (in
	\$millions)
2016 Projected NPBC provided on June 26, 2015	\$10.3
Actual 2015 return (vs. expected return in budget), offset by 7.00% EROA compared to 6.75% in budget	0.2
Demographic gains due to updated data compared to roll forward	(0.5)
Updated discount rate at December 31, 2015	0.0
Reflection of updated per capita claims data, including aging table	(0.6)
2016 Preliminary NPBC	\$9.4

Reconciliation to Actual 2015 NPBC

The preliminary 2016 consolidated US GAAP NPBC for the postretirement benefit plan of \$9.4 million compares to the actual 2015 consolidated NPBC of \$11.1 million as follows:

	Consolidated US
	GAAP NPBC (in
	\$millions)
2015 Actual NPBC	\$11.1
Economic gains due to asset increases during 2015	(0.4)
Demographic gains due to updated data	(0.3)
Updated discount rate at December 31, 2015	0.0
Reflection of updated per capita claims data, including aging table	(0.6)
Expiration of Prior Service Cost Bases for LG&E Union	(0.4)
2016 Preliminary NPBC	\$9.4

Retiree Drug Subsidy under the Medicare Modernization Act

2016 Net Periodic Benefit Cost (\$)	With Subsidy	Effect of Subsidy	Without Subsidy
Service cost	4,514,462	-	4,514,462
Interest cost	9,133,059	152,202	9,285,261
Expected return on assets	(6,270,337)	-	(6,270,337)
Amortization of:			
Transition obligation (asset)	-	-	-
Prior service cost (credit)	2,527,171	-	2,527,171
Actuarial (gain) loss	(524,205)	-	(524,205)
Net periodic benefit cost	\$ 9,380,150	\$ 152,202	\$ 9,532,352

The present value of the Medicare Retiree Drug Subsidy for the pre-2000 Kentucky Utilities retirees, measured as of January 1, 2016, using the assumptions outlined in this letter is \$3,540,766.

Please note the following regarding these results:

1. As of January 1, 2016, LG&E and KU Energy LLC has selected the following economic assumptions:

Discount rate:

The discount rate of 4.49% is based on the results of the Towers Watson BOND:Link model. At December 31, 2015, cash flows by plan were used to develop individual discount rates. Further information regarding the BOND:Link model parameters chosen by LKE can be found in our e-mail correspondence from January 8, 2016.

Rate of compensation increase:

The January 1, 2016 rate of compensation increase assumption for the plan is a flat 3.50% at all ages.

Expected return on assets (EROA):

The January 1, 2016 EROA assumption for the plan is 7.00% for the 401(h) sub-account and 0.00% for the Union and Non-union VEBAs, which have historically been used as short-term payment vehicles.

Health care cost trend:

	December 31, 2015
2016	6.8%
2017	6.4%
2018	6.0%
2019	5.5%
2020+	5.0%

Per capita claims cost:

The per capita claims costs and employee contribution amounts for 2016 were provided by Mercer. We have reviewed the claims information for reasonableness and consistency, but have neither audited nor independently verified this information.

In addition, the aging table was updated and provided by Mercer as follows:

Age	January 1, 2016	January 1, 2015
20 – 24	2.35%	3.5%
25 – 29	5.89%	3.5%
30 – 34	2.53%	3.5%
35 – 39	1.92%	3.5%
40 – 44	2.73%	3.5%
45 – 49	4.23%	3.5%
50 – 54	4.38%	3.5%
55 – 59	4.11%	3.5%
60 – 64	4.57%	3.5%
65 – 69	2.41%	2.5%
70 – 74	1.94%	2.0%
75 – 79	1.33%	1.5%
80 – 84	0.78%	1.5%
85 – 90	0.19%	1.5%
90 – 94	-1.12%	1.5%
95+	0.00%	1.5%

 All plan provisions are the same as those valued at January 1, 2015. Detailed descriptions of the plan provisions will be included in the actuarial valuation reports for the fiscal year ending December 31, 2015 (to be published during the coming months). 3. The expected contributions to the 401(h) sub-account are assumed to be contributed on June 30th, 2016 and, therefore, six months of expected return on assets is reflected. The expected contributions to the Union and Non-union VEBAs are assumed to be made monthly equal to the amounts paid out of the VEBA account each month.

\$ millions	401(h) Sub-account Contributions
LG&E Non-union	\$ 0.937
ServCo	\$ 3.887
KU	\$ 3.091
Total	\$ 7.915

4. Under PPACA, the Transitional Reinsurance Fee ("TRF") is scheduled to be collected from both selfinsured employer medical plans and fully insured medical plans beginning in 2014 and continuing through 2016 as a means to help stabilize premiums for coverage in the individual market (inside and outside the exchanges). Consistent with the prior year, the TRF will be accounted for outside of the plan, and therefore, the 2016 postretirement benefit obligations have not been adjusted to reflect the expected cost of the TRF.

Actuarial Certification

In preparing the results presented in this letter (including the attached exhibit), we have relied upon information regarding plan provisions, participants, assets and sponsor accounting policies and methods provided by LKE and other persons or organizations designated by LKE. We have relied on all the data and information provided as complete and accurate. We have reviewed this information for overall reasonableness and consistency, but have neither audited nor independently verified this information. Based on discussions with and concurrence by the plan sponsor, assumptions or estimates may have been made if data were not available. We are not aware of any errors or omissions in the data that would have a significant effect on the results of our calculations. The results presented in this report are directly dependent upon the accuracy and completeness of the underlying data and information. Any material inaccuracy in the data, assets, plan provisions or other information provided to us may have produced results that are not suitable for the purposes of this report and such inaccuracies, as corrected by LKE, may produce materially different results that could require that a revised report be issued.

The measurement date is January 1, 2016. The benefit obligations were measured as of January 1, 2016 and are based on participant data as of the census date, January 1, 2016.

Information about the fair value of plan assets was furnished to us by BNY Mellon. LKE also provided information about the general ledger account balances for the postretirement benefit plan cost at December 31, 2015, which reflect the expected funded status of the plans before adjustment to reflect the plans' funded status based on the year-end measurements, and differences between the expected Medicare Part D subsidies and amounts received during the year. Willis Towers Watson used information supplied by LKE regarding postretirement benefit asset, postretirement liability and amounts recognized in accumulated other comprehensive income as of December 31, 2015. This data was reviewed for reasonableness and consistency, but no audit was performed.

Attachment #2 to Response to KIUC-1 Question No. 28 Page 15 of 24 Arbough

Accumulated other comprehensive (income)/loss amounts shown in this letter are shown prior to adjustment for deferred taxes. Any deferred tax effects in AOCI should be determined in consultation with LKE's tax advisors and auditors.

As required by U.S. GAAP, the actuarial assumptions and the accounting policies and methods employed in the development of the postretirement benefit cost and financial reporting have been selected by LKE. Willis Towers Watson has concurred with these assumptions and methods. ASC 715-30-35 requires that each significant assumption "individually represent the best estimate of a particular future event."

The results shown in this report have been developed based on actuarial assumptions that, to the extent evaluated by Willis Towers Watson, we consider to be reasonable. Other actuarial assumptions could also be considered to be reasonable. Thus, reasonable results differing from those presented in this report could have been developed by selecting different reasonable assumptions.

The results shown in this report are estimates based on data that may be imperfect and on assumptions about future events that cannot be predicted with any certainty. The effects of certain plan provisions may be approximated, or determined to be insignificant and therefore not valued. Reasonable efforts were made in preparing this valuation to confirm that items that are significant in the context of the actuarial liabilities or costs are treated appropriately, and are not excluded or included inappropriately. The numbers shown in this report are not rounded, but this is for convenience and should not imply precision, which is not a characteristic of actuarial calculations.

If overall future plan experience produces higher benefit payments or lower investment returns than assumed, the relative level of plan costs reported in this valuation will likely increase in future valuations (and vice versa). Future actuarial measurements may differ significantly from the current measurements presented in this report due to many factors, including: plan experience differing from that anticipated by the economic or demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for the measurements (such as the end of an amortization period), and changes in plan provisions or applicable law.

The information contained in this report was prepared for the internal use of LKE and its auditors in connection with our actuarial valuation of the postretirement benefit plan. It is neither intended for and may not be used for other purposes, and we accept no responsibility or liability in this regard. LKE may distribute this actuarial valuation report to the appropriate authorities who have the legal right to require LKE to provide them this report, in which case LKE will use best efforts to notify Willis Towers Watson in advance of this distribution. Further distribution to, or use by, other parties of all or part of this document is expressly prohibited without Willis Towers Watson's prior written consent. Willis Towers Watson accepts no responsibility for any consequences arising from any other party relying on this report or any advice relating to its contents.

The undersigned consulting actuaries are members of the Society of Actuaries and meet the "Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States" relating to other postretirement benefit plans. Our objectivity is not impaired by any relationship between the plan sponsor and our employer, Towers Watson Delaware Inc. * * * *

Please do not hesitate to call if you have any questions.

Sincerely,

Jerrufu a. Della litto

Jennifer A. Della Pietra, ASA, EA Senior Consulting Actuary Direct Dial: 215-246-6861

Kayre Kosoff

Royce S. Kosoff, FSA, EA, CFA Senior Consulting Actuary Direct Dial: 215-246-6815

cc: Dan Arbough – LG&E and KU Energy LLC Jeanne Kugler – LG&E and KU Energy LLC Kayla Coleman – LG&E and KU Energy LLC George Sunder – PPL Corporation Julissa Burgos – PPL Corporation Kristin May, FSA, EA – Willis Towers Watson Brad Dreisbach, ASA – Willis Towers Watson

Attachment #2 to Response to KIUC-1 Question No. 28 Page 17 of 24 Arbough

2016 Net Periodic Benefit Cost - Revised May 6, 2 Post Retirement Welfare Plans	016				Arb
	Regulatory	Regulatory	Regulatory	Regulatory	Regulatory
	1	4	6	8	1 + 6
	LG&E Non-				
	union	<u> </u>	LG&E Union	ServCo	LG&E Total
Funded Status					
АРВО		75,653,533			
Fair Value of Assets	_	36,451,022			
Funded Status		(39,202,511)			
Amounts recognized in accumulated other					
comprehensive income consist of:					
Net actuarial loss/(gain)		(28,643,420)			
Prior service cost/(credit)		2,130,447			
Transition obligation/(asset)					
Total		(26,512,973)			
		(,)			
2016 Net Periodic Benefit Cost					
Service cost	490,625	1,548,797	395,857	2,079,183	886,482
Interest cost	1,518,353	3,287,017	2,187,830	2,086,335	3,706,183
Expected return on assets	(705,154)	(2,532,954)	-	(2,830,234)	(705,154)
Amortization of:					-
Transition obligation (asset)	-	-	-	-	-
Prior service cost (credit)	362,456	725,258	785,717	644,568	1,148,173
Actuarial (gain) loss	<u> </u>	<u> </u>	(515,034)	-	(515,034)
Net periodic benefit cost	1,666,280	3,028,118	2,854,370	1,979,852	4,520,650
Key assumptions:					
Discount Rate	4.49%	4.49%	4.49%	4.49%	4.49%
Expected return on 401(h) assets	7.00%	7.00%	7.00%	7.00%	7.00%
Rate of compensation increase	3.50%	3.50%	3.50%	3.50%	3.50%
Mortality		r for Non-union increased by 2%, blue collar for Union increased			
	2006 on a generational basis	······································	<i>,,,</i>		
Health care cost trend rate	-				
Initial rate	6.80%	6.80%	6.80%	6.80%	6.80%
Ultimate rate	5.00%	5.00%	5.00%	5.00%	5.00%
Years to ultimate	4	4	4	4	4

LG&E and KU Energy LLC ("LKE")

The results contained in this document are based on the individual participant data provided by Mercer and LKE as of January 1, 2016. 2016 per capita claim cost assumptions were provided by Mercer Health and Welfare actuaries. All other assumptions, methods, and plan provisions are the same as those used for the year-end 2015 financial statement disclosures provided on January 19, 2016. The descriptions of the assumptions, methods, plan provisions, and limitations as set forth in the year-end 2015 financial statement disclosure letter should be considered part of these results.



May 15, 2015

Ms. Kelli Higdon Senior Accounting Analyst LG&E and KU Energy LLC 220 West Main Street Louisville, KY 40202

Dear Kelli:

2015 ASC 715 ACCOUNTING RESULTS FOR THE POSTRETIREMENT BENEFIT PLAN

LG&E and KU Energy LLC ("LKE" or "the Company") engaged Towers Watson Delaware, Inc. ("Towers Watson") to determine the Net Periodic Benefit Cost/Income ("NPBC") for the LG&E and KU Energy Postretirement Benefit Plan, in accordance with FASB Accounting Standards Codification Topic 715 ("ASC 715") for the fiscal year beginning January 1, 2015. The exhibits that follow provide results for the plan, with allocations as requested by LKE.

Reconciliation to May 30, 2014 Budget Projections

The preliminary 2015 consolidated US GAAP NPBC for the postretirement benefit plan of \$11.1 million compares to the projected 2015 consolidated NPBC of \$11.6 million provided in our May 30, 2014 e-mail as follows:

	Consolidated US GAAP NPBC (in \$millions)
2015 Projected NPBC provided on May 30, 2014	\$11.6
Economic gains due to higher than expected asset returns	(1.0)
Demographic gains due to updated data compared to roll forward	(0.6)
Impact of assumption changes other than discount rate and mortality	0.8
Updated discount rate at December 31, 2014	0.1
Updated mortality assumption at December 31, 2014	0.0
Reflection of updated per capita claims data	(0.5)
Effect of plan changes, including RMA contributions and RMC credits	0.9
Impact of 401(h) contribution at 6/30/15	(0.2)
2015 Preliminary NPBC	\$11.1



Reconciliation to Actual 2014 NPBC

The preliminary 2015 consolidated U.S. GAAP NPBC for the postretirement benefit plan of \$11.1 million compares to the <u>actual 2014</u> consolidated NPBC of \$10.4 million as follows:

	Consolidated U.S. GAAP
	NPBC (in \$millions)
2014 Actual U.S. GAAP NPBC	\$10.4
Economic gains due to higher than expected asset returns	(0.9)
Demographic gains due to updated data	(1.0)
Impact of assumption changes other than discount rate and mortality	0.8
Discount rate change	0.6
Mortality assumption change	1.0
Reflection of updated per capita claims data	(0.5)
Effect of plan changes, including RMA contributions and RMC credits	0.9
Impact of 401(h) contribution at 6/30/15	(0.2)
2015 Preliminary U.S. GAAP NPBC	\$11.1

Retiree Drug Subsidy under the Medicare Modernization Act

2015 Net Periodic Benefit Cost (\$)	With Subsidy	Effect of Subsidy	Without Subsidy
Service cost	5,389,842	-	5,389,842
Interest cost	8,856,776	168,995	9,025,771
Expected return on assets	(5,898,175)	-	(5,898,175)
Amortization of:			
Transition obligation (asset)	-	-	-
Prior service cost (credit)	2,926,824	-	2,926,824
Actuarial (gain) loss	(167,540)	-	(167,540)
Net periodic benefit cost	\$ 11,107,727	\$ 168,995	\$ 11,276,722

The present value of the Medicare Retiree Drug Subsidy for the pre-2000 Kentucky Utilities retirees, measured as of January 1, 2015, using the assumptions outlined in this letter is \$4,332,653.

Please note the following regarding these results:

1. As of January 1, 2014, LG&E and KU Energy LLC has selected the following economic assumptions: Discount rate:

The discount rate of 4.06% is based on the results of the Towers Watson BOND:Link model. At December 31, 2014, cash flows by plan were used to develop individual discount rates. Further information regarding the BOND:Link model parameters chosen by LKE can be found in our e-mail correspondence from January 7, 2015.



Rate of compensation increase:

The January 1, 2015 rate of compensation increase assumption for the plan is a flat 3.50% at all ages. This amount decreased from the flat 4.00% assumption as of January 1, 2014 based on long-term expectations of salary increase rates for the covered plan populations.

Expected return on assets (EROA):

The January 1, 2015 EROA assumption for the plan is 7.00% for the 401(h) sub-account and 0.00% for the Union and Non-union VEBAs, which have historically been used as short-term payment vehicles.

Health care cost trend:

	December 31, 2014
2015	7.2%
2016	6.8%
2017	6.4%
2018	6.0%
2019	5.5%
2020+	5.0%

Per capita claims cost:

The per capita claims costs and employee contribution amounts for 2015 were provided by Mercer. We have reviewed the claims information for reasonableness and consistency, but have neither audited nor independently verified this information.

2. During 2014, LKE completed a demographic experience study to assess the appropriateness of the plans' current demographic assumptions. Details regarding the results of the study can be found in our 2014 Experience Study and Demographic Assumptions Review presentation provided to PPL and LKE on November 12, 2014. As a result of that study, the following demographic assumptions were refined to better reflect anticipated future demographic experience. All remaining demographic assumptions remain consistent with those selected by LKE at January 1, 2014. Detailed descriptions of all demographic assumptions will be included in the actuarial valuation reports for the fiscal year ending December 31, 2015 (to be published during the coming months).

Age	January 1, 2015	January 1, 2014
55	3%	2%
56	3%	2%
57	4%	2%
58	5%	4%
59	10%	4%
60	20%	10%
61	20%	10%
62	35%	50%
63	25%	15%
64	25%	10%
65 - 67	50%	100%
68+	100%	100%

Retirement rates for active participants:



Termination:

For both the union and non-union populations, the termination assumption was updated to the SOA Hourly Union Termination Table.

Mortality:

For the non-bargained plans, the mortality assumption was updated to reflect the RP-2014 gender specific healthy employee and healthy annuitant mortality tables with white collar adjustment (removing MP-2014 improvement projections from 2006-2014), increased by 2%, and applying Scale BB 2-Dimensional mortality improvements from 2006 on a generational basis.

For bargained plans, the mortality assumption was updated to reflect the RP-2014 gender specific healthy employee and healthy annuitant mortality tables with blue collar adjustment (removing MP-2014 improvement projections from 2006-2014), increased by 7%, and applying Scale BB 2-Dimensional mortality improvements from 2006 on a generational basis.

The disabled mortality assumption was updated to reflect the RP-2014 "Disabled Retirees" table (removing MP-2014 improvement projections from 2006-2014) and applying Scale BB 2-Dimensional mortality improvements from 2006 on a generational basis.

3. All plan provisions are the same as those valued at January 1, 2014, with the following exceptions:

Retiree Medical Account (RMA)	 RMA contribution increased from \$2,000 to \$2,500 per year Maximum RMA account balance limit for retirees increased from \$30,000 to \$37,500 Corresponding increase for dependents (50% of RMA)
Retiree Medical Credit (RMC)	 For ages 55-62, RMC retiree credit increased from \$200/mo to \$210/mo For ages 62-65, RMC retiree credit increased from \$465/mo to \$500/mo For ages 65 and older, RMC retiree credit increased from \$200/mo to \$210/mo

Detailed descriptions of the plan provisions will be included in the actuarial valuation reports for the fiscal year ending December 31, 2015 (to be published during the coming months).

4. The expected contributions to the 401(h) sub-account are assumed to be contributed on June 30th, 2015 and, therefore, six months of expected return on assets is reflected. The expected contributions to the Union and Non-union VEBAs are assumed to be made monthly equal to the amounts paid out of the VEBA account each month.

\$ millions	401(h) Sub-account Contributions
LG&E Non-union	\$ 0.81
ServCo	\$ 3.35
KU	\$ 2.66
Total	\$ 6.82



5. Under PPACA, the Transitional Reinsurance Fee ("TRF") is scheduled to be collected from both selfinsured employer medical plans and fully insured medical plans beginning in 2014 and continuing through 2016 as a means to help stabilize premiums for coverage in the individual market (inside and outside the exchanges). Consistent with the prior year, the TRF will be accounted for outside of the plan, and therefore, the 2015 postretirement benefit obligations have not been adjusted to reflect the expected cost of the TRF.

Actuarial Certification

In preparing the results presented in this letter (including the attached exhibit), we have relied upon information regarding plan provisions, participants, assets and sponsor accounting policies and methods provided by LKE and other persons or organizations designated by LKE. We have relied on all the data and information provided as complete and accurate. We have reviewed this information for overall reasonableness and consistency, but have neither audited nor independently verified this information. Based on discussions with and concurrence by the plan sponsor, assumptions or estimates may have been made if data were not available. We are not aware of any errors or omissions in the data that would have a significant effect on the results of our calculations. The results presented in this report are directly dependent upon the accuracy and completeness of the underlying data and information. Any material inaccuracy in the data, assets, plan provisions or other information provided to us may have produced results that are not suitable for the purposes of this report and such inaccuracies, as corrected by LKE, may produce materially different results that could require that a revised report be issued.

The measurement date is January 1, 2015. The benefit obligations were measured as of January 1, 2015 and are based on participant data as of the census date, January 1, 2015.

Information about the fair value of plan assets was furnished to us by BNY Mellon. LKE also provided information about the general ledger account balances for the postretirement benefit plan cost at December 31, 2014, which reflect the expected funded status of the plans before adjustment to reflect the plans' funded status based on the year-end measurements, and differences between the expected Medicare Part D subsidies and amounts received during the year. Towers Watson used information supplied by LKE regarding postretirement benefit asset, postretirement liability and amounts recognized in accumulated other comprehensive income as of December 31, 2014. This data was reviewed for reasonableness and consistency, but no audit was performed.

Accumulated other comprehensive (income)/loss amounts shown in this letter are shown prior to adjustment for deferred taxes. Any deferred tax effects in AOCI should be determined in consultation with LKE's tax advisors and auditors.

As required by U.S. GAAP, the actuarial assumptions and the accounting policies and methods employed in the development of the postretirement benefit cost and financial reporting have been selected by LKE. Towers Watson has concurred with these assumptions and methods. ASC 715-30-35 requires that each significant assumption "individually represent the best estimate of a particular future event."

The results shown in this report have been developed based on actuarial assumptions that, to the extent evaluated by Towers Watson, we consider to be reasonable. Other actuarial assumptions could also be considered to be reasonable. Thus, reasonable results differing from those presented in this report could have been developed by selecting different reasonable assumptions.

The results shown in this report are estimates based on data that may be imperfect and on assumptions about future events that cannot be predicted with any certainty. The effects of certain plan provisions may be approximated, or determined to be insignificant and therefore not valued. Reasonable efforts were made in preparing this valuation to confirm that items that are significant in the context of the actuarial liabilities or costs are treated appropriately, and are not excluded or included inappropriately. The



numbers shown in this report are not rounded, but this is for convenience and should not imply precision, which is not a characteristic of actuarial calculations.

If overall future plan experience produces higher benefit payments or lower investment returns than assumed, the relative level of plan costs reported in this valuation will likely increase in future valuations (and vice versa). Future actuarial measurements may differ significantly from the current measurements presented in this report due to many factors, including: plan experience differing from that anticipated by the economic or demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for the measurements (such as the end of an amortization period), and changes in plan provisions or applicable law.

The information contained in this report was prepared for the internal use of LKE and its auditors in connection with our actuarial valuation of the postretirement benefit plan. It is neither intended for and may not be used for other purposes, and we accept no responsibility or liability in this regard. LKE may distribute this actuarial valuation report to the appropriate authorities who have the legal right to require LKE to provide them this report, in which case LKE will use best efforts to notify Towers Watson in advance of this distribution. Further distribution to, or use by, other parties of all or part of this document is expressly prohibited without Towers Watson's prior written consent. Towers Watson accepts no responsibility for any consequences arising from any other party relying on this report or any advice relating to its contents.

The undersigned consulting actuaries are members of the Society of Actuaries and meet the "Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States" relating to other postretirement benefit plans. Our objectivity is not impaired by any relationship between the plan sponsor and our employer, Towers Watson Delaware Inc.

* * * *

Please do not hesitate to call if you have any questions.

Sincerely,

mile a. Dellatitto

Jennifer A. Della Pietra, ASA, EA Senior Consulting Actuary Direct Dial: 215-246-6861

William Lot

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cc: George Sunder – PPL Corporation Dan Arbough – LG&E and KU Energy LLC Jeanne Kugler– LG&E and KU Energy LLC Julissa Burgos – PPL Corporation Kristin May, FSA, EA – Towers Watson Brad Dreisbach, ASA – Towers Watson

Kayre Kosof

Royce S. Kosoff, FSA, EA, CFA Senior Consulting Actuary Direct Dial: 215-246-6815
Attachment #2 to Response to KIUC-1 Question No. 28 Page 24 of 24 Arbough

LG&E and KU Energy LLC ("LKE")

2015 Net Periodic Benefit Cost - Revised to include additional retirees in the WKE Non-union results Post Retirement Welfare Plans

	Regulatory	Regulatory	Regulatory	Regulatory	Regulatory	
	1			8	1 + 6	
	LG&E Non- union	KU	LG&E Union	ServCo	LG&E Total	
Funded Status		K0		Serveo		
APBO		81,516,692	55,638,162	49,280,060	92,595,149	
Fair Value of Assets		34,161,489	954.431	35,246,504		
Funded Status		(47,355,203)		(14,033,556		
Amounts recognized in accumulated other comprehensive income consist of:						
Net actuarial loss/(gain)		(23,898,173)	(7,493,176)	9,505,844	6,371,462	
Prior service cost/(credit)		2,855,708	4,755,391	2,618,541	6,273,874	
Transition obligation/(asset)		-		-	-	
Total		(21,042,465)	(2,737,785)	12,124,385	12,645,336	
2015 Net Periodic Benefit Cost						
Service cost	577,928	1,905,965	509,460	2,396,489	1,087,388	
Interest cost	1,448,386	3,211,705	2,186,041	1,968,430	3,634,427	
Expected return on assets	(679,797)	(2,429,180)	-	(2,585,157	(679,797)	
Amortization of:						
Transition obligation (asset)	-	-	-	-	-	
Prior service cost (credit)	362,458	725,261	1,185,365	644,568	1,547,823	
Actuarial (gain) loss	-	-	(156,948)	-	(156,948)	
Net periodic benefit cost	1,708,975	3,413,751	3,723,918	2,424,330	5,432,893	
Key assumptions:						
Discount Rate	4.06%	4.06%	4.06%	4.06%	4.06%	
Expected return on 401(h) assets	7.00%	7.00%	7.00%	7.00%		
Rate of compensation increase	3.50%	3.50%	3.50%	3.50%	3.50%	
Mortality	RP-2014 with collar adjus 2006 on a generational ba		collar for Union increased by 7%), removing MP-2014 improvem	ent projections from 2006 to 2014 and applying Scale BB 2-Dir	nensional mortality improvements from	n
Health care cost trend rate	2000 on a generational ba					
Initial rate	7.20%	7.20%	7.20%	7.209	7.20%	
Ultimate rate	5.00%	5.00%	5.00%	5.009		
Years to ultimate	5	5	5	5	5	

The results contained in this document are based on the individual participant data provided by Mercer and LKE as of January 1, 2015. 2015 per capita claim cost assumptions were provided by Mercer Health and Welfare actuaries. All other assumptions, methods, and plan provisions are the same as those used for the year-end 2014 financial statement disclosures provided on January 20, 2015. The descriptions of the assumptions, methods, plan provisions, and limitations as set forth in the year-end 2014 financial statement disclosure letter should be considered part of these results.

Assumptions	Test Year				
	7/1/2015-6/30/2016	7/1/2017-6/30/2018			
Mortality Assumption					
LG&E and KU Retirement Plan & LG&E Energy LLC Postretirement Benefit Plan	Fully generational RP-2014 mortality table with MP-2014 projection sc with white collar adjustment.	ale RP-2014 gender specific healthy employee and healthy annuitant mortality tables with white collar adjustment (removing MP-2014 improvement projections from 2006-2014), increased by 2%, and applying Scale BB 2-Dimensional mortality improvements from 2006 on a generational basis.			
Louisville Gas and Electric Company Bargaining Employees' Retirement Plan	Fully generational RP-2014 mortality table with MP-2014 projection sc with no collar adjustment.	ale RP-2014 gender specific healthy employee and healthy annuitant mortality tables with blue collar adjustment (removing MP-2014 improvement projections from 2006-2014), increased by 7%, and applying Scale BB 2-Dimensional mortality improvements from 2006 on a generational basis.			
Discount Rate					
LG&E and KU Retirement Plan	4.70%	4.42%			
Louisville Gas and Electric Company Bargaining					
Employees' Retirement Plan	4.63%	4.34%			
LG&E Energy LLC Postretirement Benefit Plan	4.41%	4.31%			
Rate of Compensation Increase	4.00%	3.50%			
Expected Return on Assets	7.00%	7.00%			
Health Care Cost Trend					
2015	7.20%	N/A			
2016	6.80%	N/A			
2017	6.40%	7.00%			
2018	6.00%	6.80%			
	No Lump Sum Option was available.	The percentage of retiring and terminating participants assumed to take a lump sum is 50%. Lump sum benefits are valued reflecting the discount			

Lump Sum Option

The percentage of retiring and terminating participants assumed to take a lump sum is 50%. Lump sum benefits are valued reflecting the discount rate employed for accounting purposes and unisex RP-2014 healthy annuitant mortality table (e.g., 50/50 blend of gender specific tables), without collar adjustment (removing MP-2014 improvement projections from 2006-2014) and applying Scale BB 2-Dimensional mortality improvements form 2006 on a generational basis.

KENTUCKY UTILITIES COMPANY

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 29

Responding Witness: Daniel K. Arbough

- Q.1-29. Please provide the Company's 2017, 2018, and 2019 pension actuarial cost projections.
- A.1-29. See attachment #1 to the response to Question No. 28.

Response to Question No. 30 Page 1 of 2 Bellar

KENTUCKY UTILITIES COMPANY

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 30

Responding Witness: Lonnie E. Bellar

- Q.1-30. Refer to page 16, lines 11-14, of Mr. Garrett's Direct Testimony wherein he describes an annual increase of \$5.0 million in transmission maintenance of overhead lines resulting primarily from a move to a five-year cycled approach from a just-in time approach.
 - a. Please provide copies of all studies and/or analyses relied upon to justify the change in methodology and the amount of the annual increase.
 - b. Please quantify the expected annual benefits resulting in reduced outage maintenance expense as the result of moving to the cycle approach. If none, then please explain why.
 - c. Please confirm that the change to a five-year cycle approach from a just-in time approach should be expense neutral or result in a savings due to more efficient trimming aside from any savings in outage maintenance expense. If this cannot be confirmed, then please provide a detailed explanation why this is not correct.

A.1-30.

- a. See attached.
- b. Conversion to a cycle based approach and implementation of a hazard tree identification and removal program as part of transmission vegetation management is expected to primarily provide reliability benefits to customers. The full benefit of these programs will not be realized until after conversion to the five-year maintenance cycle and completion of the first cycle of the hazard tree program. The Company expects some reduction in outage maintenance expense, but has not quantified the reduction.
- c. The referenced increases include the cost to convert to a five year maintenance cycle and implementation of a new hazard tree identification and removal program which are expected to reduce tree related customer

outages but may not be expense neutral. The Company did not specifically perform detailed analysis to determine O&M costs beyond the conversion timeframe.



Louisville Gas & Electric and Kentucky Utilities Transmission Program Review

Prepared for Louisville Gas & Electric Kentucky Utilities Lexington, KY

February 20, 2015

Prepared by ECI 520 Business Park Circle Stoughton, WI 53589

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Executive Summary At the request of Louisville Gas & Electric (LG&E) and Kentucky Utilities (KU), ECI has completed the survey of transmission rights-of-way and a review of the vegetation management program. The primary goal of the evaluation was to assess the vegetation workload on the LG&E and KU overhead transmission and develop a budget to support the vegetation management program. A secondary goal was to conduct a high-level assessment of the vegetation management program and identify general opportunities to enhance program management, reliability and cost effectiveness.

The workload survey was performed while accompanying LG&E and KU during fourth quarter aerial inspection. ECI's program assessment consisted of a review of available program documentation provided by LG&E and KU and interviews with key personnel involved with the program. The survey and program review was a cooperative effort between LG&E, KU and ECI.

On the basis of ECI's review, program strengths and opportunities for improvement were identified. Recommendations, based on the results of the review, ECI's experience, and industry best practices, have been developed to provide LG&E and KU with a general plan for program improvement.

Key Metrics Vegetation conditions were sampled on approximately 18 percent of the total transmission line miles while the ECI survey team accompanied LG&E and KU during regularly scheduled aerial inspections. ECI survey teams inventoried approximately 1,076 transmission miles. The field data collected was used to estimate the total transmission system vegetation workload, maintenance budget and resource requirements. Table 1 presents a system summary of these results.

 Table 1.
 Tree and Brush Workload Summary on the LG&E and KU Transmission System.

Voltage (kV)	System Miles	Yard Trees	Edge Pruning – Mechanica l (ft.)	Edge Pruning – Manual (ft.)	Re-Clear (ft.)	Manageable Brush Acres	¹ Total System Cost (Millions)
69	2,570	10,400	6,602,600	1,826,300	26,900	16,900	\$23.16
138	1,264	4,000	4,154,200	254,500	5,000	8,700	\$10.62
161	667	400	2,636,700	887,400	10,500	6,800	\$9.35
345	1,090	1,400	2,945,400	395,700		7,100	\$8.30
500	237		224,600	1,019,600	5,400	3,000	\$4.91
System:	5,827	16,200	16,563,500	4,383,500	47,800	42,500	\$56.32

¹ Reflects the cost to maintain the entire system. The exact cycle length to distribute the cost will need to be determined by LG&E and KU.

General Assessment

 STRENGTHS
 Key strengths of the current LG&E and KU vegetation maintenance program include the following:

- LG&E and KU management is supportive of program improvements.
- The program is focused on reliability and regulatory compliance.
- A centralized management structure is in place.
- Right-of-way (ROW) conditions are inspected on a quarterly basis.
- 'Action Threshold Clearance' has been established to ensure minimum acceptable clearances are not encroached upon, providing increased margin of safety regarding reliability.
- Tree-caused outages are formally investigated and document, with trained personnel.
- Aerial herbicide applications are effectively used to control brush in rural ROW areas.

Recommendation ECI recommends the following program specific items based on the field data collection and observations of current vegetation practices on the LG&E and KU transmission system:

- 1. Transition maintenance program to cyclical maintenance.
- 2. Continue to remove incompatible trees within the ROW and particularly under the conductors (within the wire zone corridor).
- 3. Determine and document the ROW width for all LG&E and KU transmission circuits.
- 4. Develop a hazard tree² ground patrol to address potential risk from trees that may not be visible through normal routine aerial inspections.
- 5. Establish a list or database of hazard tree locations and develop a priority program to determine which trees should be removed first. This database may include ash trees that could be affected by the emerald ash borer (EAB).
- 6. Continue to enforce vegetation maintenance clearance specifications for transmission voltages and the policies and standards specific to LG&E and KU needs and conditions. Current specifications appear adequate to maintain vegetation on the transmission system.
- 7. Ensure that vegetation maintenance crews exhibit reasonable production levels by implementing a work reporting / measurement system and utilize the records to evaluate crews and compare contractor performance.
- 8. Implement Integrated Vegetation Management (IVM³) as the guiding maintenance principle on the LG&E and KU transmission system.

 2 Danger trees are trees tall enough to breach action threshold if they fell toward lines regardless of condition.

- 9. Re-establish the transmission corridor ROW edges wherever practical to bring the corridors back to specification by voltage.
- 10. Continue to maximize herbicide use where practical to minimize future vegetation management costs and better manage for compatible plant communities.
- 11. Once established maintain consistent transmission vegetation maintenance program funding to maximize overall program effectiveness and ensure compliance with NERC Standards FAC-003.
- 12. Consider increasing vegetation management oversight to address the addition of approximately 46 crews to meet workload requirement for a 5-year cycle (Appendix D).

³ IVM = A system of managing plant communities in which compatible and incompatible vegetation is identified, action thresholds are considered, control methods are evaluated, and selected control(s) are implemented to achieve a specific objective. Choice of control methods is based on effectiveness, environmental impact, site characteristics, safety, security and economics. *ANSI A300 (part 7)-2012 IVM*.

- **Introduction** At the request of LG&E and KU, ECI has documented the quantity and characteristics of the existing tree and brush workload that currently exists on the transmission system. In preparation for the survey:
 - LG&E and KU supplied GPS transmission structure locations, flight schedule and helicopter for the vegetation survey, which included the states of Indiana, Kentucky, and Virginia.
 - ECI provided the methodology, field personnel, and expertise necessary to conduct the study.

The fieldwork consisted of a sample survey of vegetation conditions that resulted in 18 percent (1,076 miles) of the transmission line miles throughout the service areas of two Pennsylvania Power and Light Corporation operating companies (OPCOs). These OPCOs are LG&E and KU. LG&E and KU supply power to 98 counties with combined total of approximately 1.3 million customers. The aerial survey occurred between October 20 and November 21, 2014. All data was collected on a span-by-span basis. Aerial data collection included: brush maintenance recommendations (mow, hand cut, foliar spray), edge tree maintenance workload, accessibility, and notations on danger⁴ and hazard⁵⁶ trees adjacent to the ROW corridor (dead, dying, severe lean toward line, etc.). This report includes the following areas of evaluation:

- 1. Evaluation of field conditions designed to quantify the extent of maintenance required and recommended maintenance practices.
- 2. Evaluation of vegetation management practices and effectiveness compared to industry best practice methods.

Through phone interview and via email questionnaires, the current operation procedures and vegetation management practices were discussed with LG&E and KU staff.

Coordinate present during the flight.

⁴ Danger tree: any tree that could contact the conductor if it fell or fall within the action threshold.

⁵ Hazard tree: a danger tree predisposed to failure due to disease, structure, dead or in decline, lean or soil conditions.
⁶ The six hazard trees observed during the aerial workload survey were reported to the LG&E and KU ROW

Current Operating Practices

This section presents general findings of ECI's interview with LG&E and KU staff and the program information (i.e., historical budget, reliability, staffing level, etc.). On the basis of ECI's review, program strengths and opportunities for improvement were identified. Recommendations, based on the results of the review, ECI's experience, and industry best practices, have been developed to provide LG&E and KU with a general plan for program improvement.

Program Management and Supervision

LG&E and KU has a centralized staff that manages vegetation on the system. Supervision over the vegetation management group has recently changed to the Transmission Line Construction department. The overall transmission vegetation management program goals are based on safety, reliability, cost effectiveness, fire safety and utilizing industry best management practices. LG&E and KU does have a comprehensive vegetation management plan and clearance specifications; however, does not manage a specific cycle. Currently, there are three ROW Coordinators who are each assigned to a specific region (East, Central and West) to manage.

Vegetation maintenance needs are determined by LG&E and KU ROW Coordinators based upon quarterly inspections performed. The patrol of transmission lines is predominately performed by helicopter. The ROW Coordinators and other experienced staff have received training on recognizing vegetation maintenance priorities or conditions that require immediate attention.

Contract Crews ROW Coordinators oversee vegetation maintenance performed by three vendors under a T&M contract. Asplundh Tree Expert, Co. and Phillips Tree Experts, Inc. are tree contractors used for vegetation maintenance from the ground. LG&E and KU are contracted with Summit Helicopters, Inc. to perform herbicide aerial spray treatments. Haverfield Aviation, Inc. was contracted to provide a helicopter for quarterly aerial inspection of the transmission lines.

Asplundh Tree Expert, Co. and Phillips Tree Experts, Inc. have signed a 5year contract with LG&E and KU. The maintenance from the ground is equally split between the two contractors. Phillips Tree Experts, Inc. works in the eastern half of the transmission system where the terrain is stepper because of the rolling foothills and mountain ridges common to the Appalachian Mountain Range.

Customer Interface LG&E and KU provide notification to land owners regarding maintenance activities based upon the location of the transmission line within the state. Customers abutting rural sections of transmission line typically do not receive notification in the eastern half of Kentucky. Landowners of agricultural land and horse farms and those located in urban area generally receive notifications. Special notification and access permission to ROW is provided when working on USDA Forest Service lands, military bases (Fort Knox) and other government owned land.

During a recent peer review project, LG&E and KU explained that land owner issues, skips, special areas were not tracked in any database. However, LG&E and KU informed ECI during an interview on August 20, 2014 that a spreadsheet to capture this information was being developed. Tracking customer issues or special previsions can help with reliability improvements, work planning, cycle selection, and tracking resolution status of refusals.

LG&E and KU follow the Kentucky Public Service Commission regulation Regulatory Agencies pertaining to tree energized electrical equipment limits of approach. If these limits are breached by tree(s), lines are de-energized to perform vegetation maintenance. LG&E and KU have guidelines to determine immediate maintenance requirements (emergency or high priority due to vegetation proximity) vs. scheduled maintenance. LG&E and KU are subject to North American Electric Reliability Corporation (NERC) reliability standards and must practice due diligence in complying with NERC FAC-003 standards. LG&E and KU transmission system are specifically regulated by SERC Reliability Corporation, a regional entity of NERC. LG&E and KU have 1,327 miles of NERC lines (345 and 500kV system) and 4,500 miles of non-NERC lines (69, 138 and 161 kV system). LIDAR is performed on 50 percent of the NERC lines each year. Even though NERC FAC 003-3⁷ standards require only one inspection per calendar year of vegetation conditions, LG&E and KU performs two vegetation only patrols during May and July. In addition, while LG&E and KU perform aerial patrols each quarter for critical visual inspection, the ROW Coordinator will document any vegetation that may have been missed during the vegetation only patrols in May and July.

Tree-Related Interruptions

LG&E and KU reliability staff perform an in-depth post-outage investigation of vegetation-caused outages. Outages listed as "vegetation" are separated by a secondary cause code (i.e., grow-in, fall-in from off-ROW, and fall-in from inside-ROW). The specific reason for a tree-caused outage is limited to three codes, but could be expanded to include additional cause codes for further reliability improvement. The additional secondary cause codes (i.e., hazard tree, mode of tree failure, etc.) would assist in further diagnosis of tree-caused outages.

A major concern for LG&E and KU are: hazard and danger trees – risk of fallin from on and off ROW trees (117 fall-ins on 69, 138 and 161kV lines between 2008 and 2014). The all tree-caused interruptions are on non-NERC

⁷ Each applicable Transmission Owner and applicable Generator Owner shall perform a Vegetation Inspection of 100% of its applicable transmission lines (measured in units of choice – circuit, pole line, line miles of kilometers, etc.) at least once per calendar year and with no more than 18 calendar months between inspections on the same ROW. FAC 003-3 R6. 2013

transmission lines due to on and off-ROW trees falling into the ROW. LG&E and KU have very few "grow-in" outages on the 69kV and higher voltage lines. No "grows-in" have been recorded on 345 and 500kV lines between 2008 and 2014. Before 2012 the secondary cause code was limited to fall-in within in the ROW. The interruption may have resulted from a tree outside of the ROW but cause was classified as fall-in from inside the ROW. The secondary cause codes were expanded in 2012 to allow for the distinction between fall-ins for inside or outside of the ROW and grow-ins. Figure 1 shows the number of tree-caused outages between 2012 and 2014 for each of the secondary cause codes. Tree fall-ins, outside of the ROW, account for 85 percent of the tree-caused outages between 2012 and 2014.



Total Number Tree-Caused Outages Between 2012 and 2014 on the LG&E and KU Transmission System

Figure 1. Total number tree-caused outages by secondary caused.

Hazard trees are removed as they are found. However, since LG&E and KU have had 117 fall-ins over the course of 7 years there appears to be hazard trees that are possibly being missed during aerial inspections. A ground patrol may be warranted to identify hazard trees that are hidden under the canopy of larger mature trees.

Recordkeeping and Crew Productivity A comprehensive recordkeeping and reporting system is an essential component of an effective line clearance program. A record keeping system should be capable of providing management with the following information:

- Justification of management decisions.
- Projections of annual budget requirements.
- Determination of the most cost effective crew type for various locations and work types.
- Prioritizing work by analysis of tree-caused outages and the inclusion of other metrics important to the utility.
- Detailed monitoring of crew productivity.

- Establishment of guidelines for tree removal and replacement (if implemented).
- Establishing a tracking process for customer refusals and hazard trees.

A comprehensive line clearance record keeping system depends on recording four components of all field activities: work location (i.e. circuit number), description of work completed (number of trims, removals, etc.), time required to complete the activity and any required materials (man and equipment hours). Time report verification, evaluation of crew productivity and accumulation of cost and production data all depend on these elements of activity reporting.

Recording crew time by specific work units and work related activities will provide the means to (1) examine detailed costs, (2) evaluate productivity, and (3) initiate appropriate changes to maximize the efficiency of the program. All record keeping needs to be adjusted to conform to the type of contract in place and the desired system metrics LG&E and KU desires.

Time Utilization

Time utilization measures can be used to evaluate crew time and production figures: time utilization, performance, and effectiveness.

Time utilization calculations allow a utility to determine what each crew does with the time it controls on a daily basis. For example, if time utilization is low, it indicates that the crew has excessive nonproductive time.

Performance

Performance is a measure that compares the actual time required to prune or remove a tree to the expected or standard time. Standards are developed from actual local data and are periodically evaluated for accuracy. The performance rating provides a good means for evaluating the production rates of each crew relative to an established set of standards. If performance is too high, it may suggest that a crew is inaccurately reporting work, obtaining inadequate clearance, or trimming brush (rather than removing brush). If performance is too low, it may suggest that the need for increased supervision and/or training.

Effectiveness

Effectiveness is calculated as a product of time utilization and performance (time utilization X performance/100). It provides a relative measure of what the return on expenditures is for each contract crew. Effectiveness ratings can be used to compare individual crews.

LG&E and KU has an electronic record keeping system to track circuit history, crew number, man hours, start and stop pole locations, labor cost, material cost, equipment cost, aerial spray acres and aerial spray cost. Even though their record keeping system tracks this information, the detail is limited and prevents any crew production analysis. The start/stop pole information does not include a linear distance and type of work performed (i.e., number of trims, linear distance mechanically pruned, removal, brush acres mowed, etc.). While LG&E and KU record the crew number for all work performed, the number of men or type of equipped used by the crew is not included. Once the electronic record keeping system is expanded to include this additional information, LG&E and KU can establish production metrics to track the efficiency of the vegetation maintenance program (i.e., cost per acre, cost per mile, etc.).

LG&E and KU does not currently possess the metrics necessary to effectively and efficiently manage the program. Data is collected from contractor invoices regarding total cost and man-hours only and are not tracked by individual work unit even though this type of information is available. The data contractor invoice does include information regarding number of units maintained or miles covered. Work is categorized on the LG&E and KUrequired timesheet by the following classifications:

- Man-hours for each employee and equipment
 - Daily Hours (RT, OT, and DT)
 - o Holiday
 - Vacation
 - o Other
- Type of Work
- Type of Billing (T&M, Cost Plus, Unit, and Contract)
- Type of Crew (Tree or Other)
- Project number or account number (i.e. distribution, new construction)
- Herbicide Concentrate
 - Amount by unit (lbs or gallons)
- Tree Units and Man-hours by Unit
- Brush Units and Man-hours by Unit

Unit data (i.e. number of trees by maintenance type) is recorded on the timesheet but not captured as part of the current process for the electronic record keeping system. Additional details about contractor production would allow movement toward a performance-based component within a T&M contract, or become a basis for a unit cost removal component of firm priced

contracts (Appendix A). At a minimum, more detailed production data would provide an accurate assessment of production cost for various work-types for both internal and external comparisons.

Both record keeping software and record keeping services are available to provide streamlined invoice verification, cost tracking by asset and work type, metrics for process improvement and documentation of work accomplishment.

Vegetation Work Practices

LG&E and KU are doing an admirable job in managing transmission vegetation with a limited budget. The size of the annual budget has necessitated a "just-in-time" approach to vegetation maintenance. The current maintenance practice of "just in time" or "hot spot" mowing, herbicide treatment, edge pruning on non-NERC lines has resulted in a system that is a patch work of various vegetation conditions on the ROW's. Vegetation conditions on any given line range from clear (just maintained) to very tall brush or edge trees on low voltage lines requiring immediate attention. This can result in excessive "jumping" from location to location by the contractor, thus incurring additional travel time. The limited detail in the records regarding maintenance cost preclude developing a line maintenance history, determining the efficiency of the vendor and over-all lack of data to forecast future work effort and cost.

Through ECI's aerial patrols, the vegetation workload was quantified, and utilizing LG&E and KU historical maintenance cost and available supplemental industry cost data, a maintenance budget has been established. Because maintenance has been on a "hot spot" basis, conversion to a more efficient and cost effective cyclic maintenance schedule will require several years to implement. During this implementation phase, "hot spot" maintenance will be required to maintain system reliability until cycles can be established. In addition, the early years of the conversion to cyclic maintenance may require a higher budget. Converting to a cyclic maintenance schedule will reduce unit production cost (lower density and shorter height brush), provide for reduced planning effort each year through reducing the number aerial inspections and provide for a sound basis to consider other contracting strategies.

Vegetation Maintenance Expenditures

The vegetation maintenance budget is presented to LG&E and KU senior management on an annual basis for approval. Budgets have been based on historical levels, not specifically to address cyclic maintenance requirements. The annual budget has remained fairly flat over the past 6 years (Table 2).

Year	ROW Actuals	CPI ⁸ – 2014 ⁹
2009	\$4,425,830.31	\$4,883,788.64
2010	\$4,616,948.52	\$5,012,464.34
2011	\$5,313,879.93	\$5,592,568.11
2012	\$4,912,862.53	\$5,065,687.36
2013	\$5,570,389.98	\$5,660,752.17
2014	\$6,151,060.19 ¹⁰	\$6,151,060.19

 Table 2.
 LG&E and KU Historical Transmission Vegetation Maintenance

 Expenditures.

Production and Cost LG&E and KU provided ECI with the electronic record keeping system for records from 2010 through 2014. From these records, ECI calculated aerial spray cost per acre. In addition, LG&E and KU provided ECI with weekly rates by crew type for calculating the estimated number crews need to manage the transmission system. LG&E and KU may choose to re-calculate the budget by changing some of the brush acres classified as low and high-volume foliar treatments to aerial spray treatments.

Vegetation Assessment Vegetation conditions were sampled on 18 percent of the total transmission line miles to estimate the existing vegetation workload for each of the five voltages. ECI survey teams inventoried approximately 1,076 transmission miles. Field data gathered by the survey teams focused on tree and brush quantities, conditions, and maintenance requirements. The results of the study are included in the following sections.

Specific Survey
CriterionECI's survey teams utilized the Louisville Gas & Electric and Kentucky
Utilities Services Company Transmission Vegetation Management Program
(Revision 2013) as the basis for determining current and future vegetation
work load. The survey teams collected data on the vegetation conditions on
the LG&E and KU transmission system using the form found in Appendix B.

⁸ CPI – Consumer Price Index.

⁹ The actual vegetation expenses for each year were adjusted using the correct CPI and the base year of 2014. The adjustment was down to allow for a better comparison between years.

¹⁰ Actual vegetation expense through the end of November.

Vegetation	This section presents general findings of ECI's workload assessment. Total
Workload Survey Data	workload projections are based on the total line miles as provided by LG&E and KU.

Total Workload Table 3 represents the estimated total vegetation workload summary for the LG&E and KU transmission system by voltage class based on the sample survey.

Voltage	System Miles	System Acres	Yard Trees	Edge Pruning - Mechanical (ft.)	Edge Pruning - Manual (ft.)	Re-clear (ft.)	Manageable Brush Acres
69	2,570	46,723	10,400	6,602,600	1,826,300	26,900	16,900
138	1,264	22,973	4,000	4,154,200	254,500	5,000	8,700
161	667	12,119	400	2,636,700	887,400	10,500	6,800
345	1,090	19,822	1,400	2,945,400	395,700		7,100
500	237	4,313		224,600	1,019,600	5,400	3,000
TOTAL	5,827	105,949	16,200	16,563,500	4,383,500	47,800	42,500

 Table 3.
 Tree and Brush Workload by Voltage Category (Transmission).

Total projected workload was projected for the LG&E and KU system based upon the conditions noted on the sampled miles. Table 2 indicates that approximately 16,563,500 linear feet (actual footage to be pruned not line footage) of ROW edge can be pruned using mechanical equipment (i.e. Jarraff or Skytrim crews), 4,383,500 feet consist of manual workload and 47,800 feet of ROW edge needs to be re-cleared to the establish ROW width. The estimated linear footage of ROW needing to be re-cleared was minimal because the ECI survey team counted work that had encroached from the established ROW width and not the actual easement width. LG&E and KU could not provide ECI the actual ROW easement or edge-to-edge width for each circuit. The small amount of estimated re-clear footage for 500kV lines resulted from the need to achieve additional clearance when a span of line extended from one ridge top to another.

More than 59 percent of the ROW edge workload was found on 138, 161, 345 and 500 kV lines which is expected considering these four voltages comprise approximately 55 percent of the total transmission line miles. Figure 2 shows the distribution of edge tree maintenance workload across the varying voltage classifications. Alternatively, Figure 3 presents the linear distance of edge tree maintenance on a per mile basis, which shows 161kV lines as having the highest concentration, followed by 500kV and 138kV lines.



Figure 2. Percentage of Edge Tree Maintenance Workload by Voltage Classification.



Figure 3. Linear Distance of Edge Tree Maintenance per Mile by Voltage Classification¹¹.

Yard trees account for approximately 16,200 total trees or 2.7 trees per mile at the system level. ECI estimates there are approximately 105,950 acres that comprise the entire LG&E and KU transmission system. Of those total acres, approximately 40 percent (or 42,500 acres) contain manageable brush acreage. Brush will be defined in greater detail later in the Brush Workload Characteristics section.

Average Density and Statistical Error

Tree and brush density was quantified in terms of trees per mile, linear distance per mile and acres per mile. Table 4 shows the average trees per mile (Yard Trees), linear distance per mile of ROW edge trimming (Mechanical, Manual and Re-clear), and brush acres per mile by voltage class on the LG&E and KU transmission system. These are trees and acres of brush requiring maintenance according to *Louisville Gas & Electric and Kentucky Utilities Services Company Transmission Vegetation Management Program (Revision 2013).* The tree counts and brush acres per mile values as expressed in Table 4 were used to estimate the total quantities at the system level (as shown in Table 3).

¹¹ Each side of the ROW was counted separately and then combined to provide actual footage to be pruned. Therefore, the liner footage per mile of workload can result in a number larger than a mile.

Voltage	Total System Miles	Number of Yard Trees	Linear Distance for Mechanical Trimming (ft.)	Linear Distance for Manual Trimming (ft.)	Linear Distance for Re-clear of ROW (ft.)	Manageable Brush Acres
69	2,570	4.0	2569.4	710.7	10.5	6.6
138	1,264	3.2	3287.8	201.4	4.0	6.9
161	667	0.6	3955.6	1331.3	15.7	10.1
345	1,090	1.3	2701.7	363.0	0.0	6.5
500	237	0.0	946.9	4298.6	23.0	12.5
SYSTEM						
AVERAGE	5,827	2.7	2918.8	692.8	7.8	7.3

Table 4. Average per mile tree and brush densities per mile on the LG&E and KU transmission system.

The statistical sampling error was calculated for the transmission survey samples by voltage class. Statistical sampling error calculation was based upon the mean linear distance of tree workload and brush acreage per span at the 90 percent level of confidence. Sampling error for linear distance of tree workload per span for each voltage category were: $69kV = \pm 3$ percent; $138kV = \pm 4$ percent; $161kV = \pm 4$ percent; $345kV = \pm 5$ percent; and $500kV = \pm 11$ percent. Sampling error for brush acres per span for each voltage category were: $69kV = \pm 4$ percent; $161kV = \pm 4$ percent; $138kV = \pm 4$ percent; $161kV = \pm 4$ percent; $138kV = \pm 4$ percent; $161kV = \pm 4$ percent; $138kV = \pm 4$ percent; $161kV = \pm 4$ percent; $345kV = \pm 4$ percent; $and 500kV = \pm 7$ percent.

Brush Workload Characteristics

Brush workload was collected and characterized by maintenance practice. Table 5 shows the total estimated brush acres on the LG&E and KU system by maintenance practice.

 Table 5.
 Brush Workload by Voltage Category and Maintenance Practice.

Voltage	Total System Miles	Total System Acres	Mow Acres	Hand Cut and Treat Acres	Low- Volume Foliar Acres	High- Volume Foliar Acres	Manageable Brush Acres
69	2,570	46,723	1,100	1,500	13,500	800	16,900
138	1,264	22,973	1,100	800	6,300	500	8,700
161	667	12,119	500	500	5,500	300	6,800
345	1,090	19,822	500	500	5,300	800	7,100
500	237	4,314	100	100	900	1,900	3,000
TOTAL	5,827	105,950	3,300	3,400	31,500	4,300	42,500

Of the 105,950 total system acres identified on the LG&E and KU transmission system, approximately 40 percent (or 42,500 acres) currently

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contain brush species (Figure 4). When estimating brush acres, locations that had the potential to support brush were included in the in low-volume foliar management practice. The remaining 60 percent (or 63,450 acres) (Figure 5) are currently void of brush due to land use (e.g., agricultural land, maintained lawns, waterways, etc.).

Approximately 74 percent of the total manageable transmission brush acres were classified suitable for the maintenance practice of low-volume foliar treatment (i.e., backpack application of herbicide). For a location to be classified as low-volume foliar the stem heights were shorter than seven feet and stem density was approximately 1,500 or less per acre. Therefore, a large majority of the LG&E and KU transmission system is potentially manageable through low-volume herbicide maintenance work.



Figure 4. Percentage of Brush Acreage by Voltage Classification.



Figure 5. Percentage of Brush Acreage by Maintenance Practice.

Since the manageable brush acres on LG&E and KU transmission system was comprised of approximately 84 percent brush acres in the low and highvolume foliar treatment category, aerial treatments can be performed in an extremely cost effective manner using herbicides (where practical).

ROW Edge Clearing Characteristics

ECI documented specific transmission spans that fell short of the established ROW width. Table 2 presents the estimated linear feet of edge clearing required to reclaim existing overgrown rights-of-way to the established ROW edge. The tree and immature tree categories were deemed important in understanding the nature of the widening or re-clearing requirements, particularly since each may yield different clearing costs. Immature trees that could be cleared with a bush hog or hydro-axe were classified as mow acres. When clearing large trees required equipment such as a bull dozer or feller buncher then the work was classified as re-clear footage. Figure 6 shows examples of the specialized equipment commonly used for ROW clearing.







Hydro-Axe



Figure 6. Specialized Equipment Commonly Used in Transmission ROW Clearing and Widening.

The 47,800 feet of ROW edge identified as requiring re-clearing back to the established ROW edge, comprised of less than one percent of the total linear distance requiring some form of tree maintenance.

Maintenance Characteristics As part of the field data collection, the ECI surveyors classified the workload within each span into eight maintenance categories. Accessibility was also recorded for each span for the purpose to estimate potential workload that would be ideal for aerial saw trimming. ECI estimated that for 17 percent of the workload, aerial saw trimming may be a suitable means to maintain the edge of the ROW. The categories used for classifying the workload are:

- MST Mechanical side Trim (sky trim, Jarraff, etc)
- MT manual trim
- RC re-clear
- YT yard tree
- MBH mow: brush hog or hydro Ax (kershaw or similar)
- HC hand cutting
- LVF low-volume foliar herbicide treatment
- HVF high-volume foliar herbicide treatment

Dependent upon the location a span may have work that was separated into different categories. For example, due to terrain a span may have a mixture of mechanical and manual side trimming work. It should also be noted that the total brush acres to be maintained over a five-year cycle would be higher than total brush acres observed on the system because some brush acres mechanically cut or hand cut should have a subsequent follow-up herbicide application scheduled in a future year (currently two years).

Recommendations were assigned based on current field conditions with emphasis on minimizing maintenance costs. In most cases, herbicide was recommended in lieu of mowing unless specific site conditions warranted otherwise. However, specific herbicide restrictions may negate some herbicide recommendations. The data provided here has not been adjusted to balance the annual spend.

Note that these recommendations serve only as an estimate of the workload by maintenance practice. Prior to beginning any work or budgeting for specific vegetation needs, it is recommended that the specific transmission lines to be worked be individually prescribed. This data serves only to characterize the existing workload.

Budget and Man-Hour Estimates

Total vegetation management estimated costs and man-hours for the LG&E and KU transmission system are presented in Table 6. The detail in Table 7 presents the system total cost to maintain the tree and brush workload by management category and voltage on the LG&E and KU transmission system. Unit costs and weekly crew rates were used to calculate loaded labor and equipment rates (Table 8). The unit cost values were derived by ECI utilizing available industry data.

Table 6. Total Transmission Budget and Man-Hour Estimate By Voltage.

	Estimated Total	Estimated Total	
Voltage	Cost	Man Hours	
69	\$23,158,000	716,800	
138	\$10,616,000	316,000	
161	\$9,345,000	289,500	
345	\$8,295,000	269,700	
500	\$4,908,000	231,400	
Grand Total	\$56,322,000	1,823,200	

 Table 7.
 Total Budget by Management Category and Voltage for the LG&E and KU Transmission System.

	Yard			Re-			Low- Volume	High- Volume
Voltage	Trees	Mechanical	Manual	Clear	Mow	Hand Cut	Foliar	Foliar
69	\$780,000	\$7,923,000	\$5,844,000	\$148,000	\$556,000	\$2,850,000	\$4,725,000	\$332,000
138	\$300,000	\$4,985,000	\$814,000	\$28,000	\$556,000	\$1,520,000	\$2,205,000	\$208,000
161	\$30,000	\$3,164,000	\$2,840,000	\$58,000	\$253,000	\$950,000	\$1,925,000	\$125,000
345	\$105,000	\$3,534,000	\$1,266,000		\$253,000	\$950,000	\$1,855,000	\$332,000
500		\$270,000	\$3,263,000	\$30,000	\$51,000	\$190,000	\$315,000	\$789,000
Total	\$1,215,000	\$19,876,000	\$14,027,000	\$263,000	\$1,667,000	\$6,460,000	\$11,025,000	\$1,785,000

Table 8. Unit Cost and LLER

Management Category	Unit Cost	Unit	LLER
Yard Tree	\$75.00	per tree	\$31.48
Mechanical	\$1.20	per foot	\$41.05
Manual	\$3.20	per foot	\$29.47
Re-Clear	\$5.50	per foot	\$82.58
Mow	\$505.00	per acre	\$57.22
Hand Cut and Treat	\$1,900.00	per acre	\$32.22
Low-Volume Foliar	\$350.00	per acre	\$29.49
High-Volume Foliar	\$415.00	per acre	\$50.61
Aerial Spray	\$297.00	per acre	

Total budget to maintain the LG&E and KU transmission system for a targeted five-year cycle is estimated to be approximately \$56.32 million (or

approximately \$11.26M annually) and requires approximately 1.82 million man-hours (or 364,640 man-hours annually). The average system cost per transmission mile based on the estimated budget is \$9,665 per mile or roughly \$532 per system acre. Approximately 20 percent of the total budget dollars are allocated to low-volume herbicide work (LVF). Yard trees account for another two percent and incompatible ROW trees less than one percent. The three maintenance types (mechanical side trim, manual trim, and re-clear) for which industry unit cost values were used, account for approximately 61 percent of the total budget.

Crew Resource Allocations Based on the existing vegetation workload and the production values provided by LG&E and KU, crew resource needs were estimated. Table 9 presents a summary of the estimated annual crew resource requirements based on a fiveyear cycle.

It should be noted that crew estimates are approximate and are based on the average crew sizes as indicated. Available annual work hours were estimated to be 1,800 hours.

Voltage	3-Man Yard Tree Crew	3-Man Mechanical Trimmer	3-Man Climbing Crew	3-Man Excavator Re-Clear Crew	3-Man Mowing Crew	3-Man Hand Cut Brush Crew	3-Man Low- Volume Foliar Crew	2-Man High- Volume Foliar Crew
69	0.92	7.15	7.35	0.07	0.36	3.28	5.93	2.25
138	0.35	4.50	1.02	0.01	0.36	1.75	2.77	1.41
161	0.04	2.85	3.57	0.03	0.16	1.09	2.33	2.25
345	0.12	3.19	1.59	0.00	0.16	1.09	2.33	2.25
500	0.00	0.24	4.10	0.01	0.03	0.22	0.40	5.34
Total	1.43	17.93	17.63	0.12	1.08	7.43	13.85	12.09

 Table 9.
 Annual Crew Resource Allocation Estimate by Crew Type (# of crews).

Crew estimates are based on the work type and recommended maintenance practice as determined by the ECI field surveyor. Changes to the maintenance practice will affect crew make-ups and allocations.

Herbicide crews account for approximately 25.9 crews annually or 36 percent of the total crews and will utilize approximately 34 percent of the annual budget. The two and three-man herbicide crews will provide the required support to complete the low and high-volume herbicide workload. Three-man mechanical and climbing crews are the largest resource requirement at approximately 35.7 crews annually or 50 percent of the total crews and will utilize approximately 60 percent of the annual spend. The three-man mechanical and climbing crews will be responsible for all side trimming, incompatible ROW tree removals, and priority trees.

Recommendations Utilizing the information gathered in the ground survey, ECI developed the estimated total transmission workload, budget, and man-hour requirements for the LG&E and KU transmission system.

Budget and workload assumptions:

- Recommended maintenance practices for the identified work units assume the utilization of Integrated Vegetation Management (IVM) principals and the maximization of herbicide use wherever possible to minimize future vegetation management expenditures. The use of herbicides will decrease future work (fewer stems per acre) thus requiring far less effort when IVM is fully implemented on the LG&E and KU system. With the implementation of IVM and continued herbicide use there should be minimal mowing required in future cycles.
- Brush acres maintained through mechanical brush clearing methods (i.e. mowers) were not incorporated into acre counts for high or low-volume herbicide treatment.
- Per request from LG&E and KU, the ROW width used for calculating the amount of brush acres was 150 feet for all transmission voltages. Actual ROW width varies between and within each voltage category and it is recommend that prior to assigning work brush acres would be re-calculated to represent actual ROW width for those schedule circuits.

Best management practices and IVM are the focus of the ECI recommendations presented in this section. Refer to Appendix C for additional details on recommended industry best management practices.

Recommendations ECI recommends the following program specific items based on the field data collection and observations of current vegetation practices on the LG&E and KU transmission system:

- 1. Transition maintenance program to cyclical maintenance.
- 2. Continue to remove incompatible trees within the ROW and particularly under the conductors (within the wire zone corridor).
- 3. Determine and document the ROW width for all LG&E and KU transmission circuits.
- 4. Develop a hazard tree¹² ground patrol to address potential risk from trees that may not be visible through normal routine aerial inspections.
- 5. Establish a list or database of hazard tree locations and develop a priority program to determine which trees should be removed first.

¹² Danger trees are trees tall enough to breach action threshold if they fell toward lines regardless of condition.

This database may include ash trees that could be affected by the emerald ash borer (EAB).

- 6. Continue to enforce vegetation maintenance clearance specifications for transmission voltages and the policies and standards specific to LG&E and KU needs and conditions. Current specifications appear adequate to maintain vegetation on the transmission system.
- 7. Ensure that vegetation maintenance crews exhibit reasonable production levels by implementing a work reporting / measurement system and utilize the records to evaluate crews and compare contractor performance.
- 8. Implement Integrated Vegetation Management (IVM¹³) as the guiding maintenance principle on the LG&E and KU transmission system.
- 9. Re-establish the transmission corridor ROW edges wherever practical to bring the corridors back to specification by voltage.
- 10. Continue to maximize herbicide use where practical to minimize future vegetation management costs and better manage for compatible plant communities.
- 11. Once established maintain consistent transmission vegetation maintenance program funding to maximize overall program effectiveness and ensure compliance with NERC Standards FAC-003.
- 12. Consider increasing vegetation management oversight to address the addition of approximately 46 crews to meet workload requirement for a 5-year cycle (Appendix D).

¹³ IVM = A system of managing plant communities in which compatible and incompatible vegetation is identified, action thresholds are considered, control methods are evaluated, and selected control(s) are implemented to achieve a specific objective. Choice of control methods is based on effectiveness, environmental impact, site characteristics, safety, security and economics. ANSI A300 (part 7)-2012 IVM.

Appendix A: Contracting Strategies

Introduction to Contracting Strategies

Three different approaches are commonly used by electric utilities to contract line clearance work. These include "time and material/equipment" (T&M), "unit price" and "firm price" or "lump sum" pricing strategies. Each has advantages and disadvantages that are important to understand, and there are multiple variations possible within each pricing family. Each carries a different risk profile for the contractor and the utility. Unit price and firm price contacts are inherently performance-based contracts. However, T&M with incentive pricing can also be a performance-based contracting strategy.

Performance-based contract strategies generally offer the lowest production risk for the utility by placing the burden to monitor crew productivity on the tree contractor and "incentivizing" the contractor to control costs. This applies to firm price, lump sum, unit price, and T&M with incentive type contracts. However, it should be understood that in order for these contract strategies to be effective, the utility and contractor should have a thorough understanding of the work scope, historical man-hours and costs for the work units to be maintained within the contract period. While it is possible to utilize these specific contract types for all work (i.e. ticket type work as well as preventative maintenance work), they are the most effective in situations where the scope of work is better defined such as on preventative maintenance. Ticket work such as Customer Trim Requests and Restoration are often too variable and can lead to higher "unit" prices due to the "contingency" contractors may build into their bid to account for this uncertainty.

Where historical data is not available, some utilities are successful in developing performance-based contracts by clearly defining the project scope prior to bidding through the development of detailed work plans. Pre-planning to define clearances, clearance exceptions, and removals has proven to be a very effective strategy in receiving least cost competitive bids. Contractors provide pricing on the defined work scope that the utility has pre-designated, thus eliminating guess work on the part of the contractor and eliminating the "contingency" cost that contractors build into bids. However, this does require additional effort on the part of the utility to employ knowledgeable personnel to perform the pre-work planning as well as post work acceptance. This strategy generally works well when the utility is developing firm price contracts in the form of a guaranteed cost per mile or a guaranteed cost per circuit.

Utilizing a T&M with incentives, such as Target Pricing, is a viable alternative for preventative maintenance work, but does require an extensive knowledge of historical man-hours in order to develop "should take times" in order to set contractor valid targets or thresholds for each work unit. In this contract type, the utility agrees to pay the contractor for their total actual manhours incurred to complete the work unit. The contractor in turn, agrees to meet the established target and "share" with the utility any cost savings

achieved by completing the work unit with less man-hours than allotted. Some contracts also include a shared "penalty" where the contractor agrees to also share the cost of any work units exceeding the threshold man-hours thus, this provides the contractor with an incentive to find cost savings while minimizing their perceived risk in relation to their skepticism to utility provided targets.

Another variation to this contract type includes a T&M not to exceed. In this contract type, the contractor and utility agree that any cost savings will be shared; however, the contractor bears the entire burden for any cost over-runs above the man-hour threshold set by the utility. The advantage to this contract strategy is that the utility can have 100 percent confidence in their maximum expenditure which they can then use to better plan and budget. The disadvantage is that the contractor may include higher pricing due to the "contingency" variable and therefore, it may not offer the same cost savings as could be expected through the shared incentive/penalty contract.

Utilizing multiple contract strategies for vegetation management is generally the most cost effective. Performance based contracts are preferred for preventative maintenance type work but should be utilized in combination with other contract strategies to ensure overall program cost effectiveness. Firm price or unit price contracts are most effective for brush maintenance or herbicide treatment programs where the contractor can easily inspect and quantify the work volume. Competitive bidding of these work types ensures the contractor will provide the lowest unit price based on their estimated cost to complete the defined work scope and their known material costs (i.e. herbicide costs). T&M contracts (without incentives) offer the greatest level of flexibility to the utility in terms of being able to easily add or remove work scope and therefore are recommended for ticket type work. For the contractor, T&M minimizes their risk where work scope is variable or undefined as in Customer Trim Requests and Restoration type work. This allows the contractor to provide better pricing but shifts the burden to the utility to ensure that crews remain productive. Even so, T&M is generally considered the preferred method for these work types. A combination of all the contract strategies tailored toward specific work types, will offer the greatest potential for cost savings to the utility while minimizing the resources required to monitor contractor performance.

Well-documented inspection of completed work and establishment of clear standards are critical to achieving value from firm price or unit price contracts. Where clearance requirements may be variable due to customer concerns or in situations where work scope is not clearly defined (as with ticket work), T&M normally can provide a better value.

In recent years, the impacts of fuel price fluctuations have become a major concern for contractors as well for the utilities they work for. Concerns arise when contract rates are set at a time when fuel prices are at the extremes and then change dramatically over the life of the contract. This either leaves the contractor with a windfall profit if fuel prices decrease (and the utility with higher costs) or can result in significant loss of profits for the contractor if fuel prices increase. Shorter contract periods (i.e. one-year) can minimize potential risk, but can be costly in terms of the cost to develop new contracts every year, and in terms of higher rates from contractors due to increased risk from shorter contract periods. Many utilities have elected to incorporate fuel escalators into their contracts to offset this concern.

The following are brief descriptions of the common contracting strategies:

Time and Materials (T&M)

T&M is normally the least risky for the contractor since most of the production-related risk is born by the utility. T&M contracts with performance measures and incentives tend to move some of the production risk back to the contractor. T&M often results in the highest work quality. Poor performance may subject a contractor to contract termination or result in assignment of "penalty points" as part of future bid evaluations. For work that is highly variable in nature, difficult to quantify in advance and where quality and customer relations are significant concerns, T&M may be the most desirable method.

Unit Price

Unit price work shifts production risk to the contractor but requires preplanning by the utility to designate which units the contractor should complete. Units are normally a tree trimmed, a square area of brush removed, footage cleared, or a tree removed by diameter classes. There is a natural incentive for the contractor to provide only the level of quality enforced by the utility. Consequently, quality control inspection by the utility is an important administrative requirement for this pricing strategy as well as work completion inspection. Administration of unit price contracts can become burdensome for utilities with high tree densities.

Firm Price

Firm price work also shifts production to the contractor but also shifts work unit selection to the contractor. The natural incentive in this pricing strategy is for the contractor to select the minimum acceptable units and provide the minimum acceptable quality. Post-work inspection by the utility is critical to assuring that all work was completed in compliance with the established specification. Tree removal is often an issue in a firm price contract since costs for tree removal can be highly variable. Consequently, trees to be removed are sometimes identified in advance as part of the bid package preparation. Alternatively, unit prices by size class for tree removal can be established or tree removal can be completed on a T&M basis for trees specifically authorized by the utility. Firm price is best suited to situations where the work can be clearly defined and understood by the bidders. It should also be limited to locations where there will be good competition by a number of bidders. Awarding of concurrent firm price contracts to multiple contractors is desirable. Small firm price contracts bid to companies that do not have a local presence frequently results in higher pricing to cover the cost of per diems or personnel relocations necessary to establish a labor force.

Turnkey and Incentive Based Contracts

Turnkey pricing shifts the maximum risk from the utility to the turnkey service provider. This pricing strategy normally is accomplished by establishing incentives tied to accomplishment of specific objectives such as cost control, tree-related reliability targets, and customer relations. Because most of the program management responsibility is that of the contractor, it is critical that the utility closely monitor the performance objects through periodic review of key performance indicators. A variation of turnkey pricing is a management services contract with a third party management firm that administers contracts on behalf of the utility. The contracts for craft labor and equipment may continue to be with the utility or through the management company. The management services company may utilize any or all of the other pricing methods. This pricing strategy should be utilized if the utility has limited management resources or desires to totally overhaul existing systems, methods and practices.

Target Pricing Strategy

Target Pricing involves an efficient and effective use of combined customer notification and tree selection work planning that becomes a basis for establishment of Target Price for individual circuits or circuit segments. Documented workload in terms of tree pruning, tree removal and brush control units, multiplied by realistic costs per unit worked (based on work history by district) allows creation of the target price that contractors can be incented to meet or beat.

Using this system the line clearance contractor is paid on the basis of T&M rates as work progresses. Reconciliation of actual production cost compared to the Target Pricing occurs quarterly.

This strategy requires designation of specific work units and agreement from the line clearance contractors to work the units designated by the Work Planner. Work Plan packets are prepared and distributed to crews from a Work Planning database and populated through Work Planning data acquisition software. Line clearance crew time and production must be monitored and recorded in a production database.

A simplified example of a Target Pricing work sheet is illustrated in Table 10. Table 11 is an example of a simplified quarterly reconciliation table.

Unit Description	Plan Quantity Circuit xyz	Standard \$/Unit	Quantity x Unit Price
Bucket			
Trim 4"- 8"	300	\$20	\$6,000
Trim 8" - 12"	47	\$30	\$1,410
Removal 12.1" to 24"	3	\$170	\$510
Manual		•	• · · · ·
Trim 4"- 8"	655	\$25	\$16,375
Trim 12" - 24"	9	\$140	\$1,260
Brush removal	57	\$240	\$13,680
Total Standard Cost for Circuit xyz			\$39,235

Table 10. Target Pricing Circuit Summary.

Table 11. Target Pricing Quarterly Reconciliation.

Unit Description	Quantity x Unit Price	
Standard Cost	\$96,268	
Actual Cost	<u>\$83,040</u>	
Amount Actual Lower than Standard	\$13,228	
Percent Actual Below Standard Cost	13.7%	
5 to 25% Qualified Bonus Tier Percentage	25%	
Incentive Amount	\$3,307	

There are several requirements that must be in place for a Target Pricing strategy to be effective. They include:

- 1. Effective processes for work planning
- 2. A field data collection and work documentation system
- 3. Realistic production data by district or by characteristics such as maintained/unmaintained, accessible/inaccessible, overhang, etc.
- 4. Contracts with line clearance contractors that complement the Target Pricing strategy

Benefits of this strategy have included lower costs than firm priced or T&M bidding strategies. Because tree selection is closely aligned with utility goals, adequate reliability can be efficiently achieved.
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> Appendix B: Transmission System Vegetation Survey Form

Þ ♣, 8 2 2 S /es /es 6 6 6 Total Left Edge: 2 ~ œ œ Horse Farm: Other (explain): Patrol Required: -2 Right ROW Edge Maintenance Surveyor: 9 9 9 Yes s ŝ ŝ Take Picture marks Other Flight Date: 2/13/2015 8 4 4 4 MVCD: + + c n m 2 7 3 Yes # Yard Trees: # Hazard Trees: 📒 ---2 • <Swap> StopSub: 0 • Span Accessible: Photo#: Manual Trim (R): Mech Trim (R): Re-Clear (R): Last Maint Date: 10 9 2 10 19 2 2 8 ious Reco C 6 6 6 6 6 6 6 6 Total Left Edge: Total Brush: œ œ œ ~ œ œ œ œ 2 -2 -2 Voltage: StartSub: nance 9 9 9 9 9 9 9 9 ۲ Latitu Maint ŝ ŝ ŝ ŝ s ŝ ŝ S Clear Left ROW Edge 4 4 4 4 4 4 4 4 Begin GPS End GPS Aerial Survey Form m m m m m m m m Search 3 3 3 3 7 2 3 3 🜾 No Filter --------0 • • • • • 0 0 Trim (L): Re-Clear (L): Clear-No Veg: Hi Vol Foliar: Mech Cut/Trt: [rim (L): ow Vol Manual Hand Mow: Foliar: Record: M < 1 of 1 LineCode: LineName: Prev. Str#: SurveyForm :ructure #: ą

TRANSMISSION RIGHT-OF-WAY VEGETATION SURVEY LG&E and KU Attachment to Response to KIUC-1 Question No. 30 Page 34 of 55 Bellar

Appendix C: Recommended Industry Best Management Practice Strategies

Recommended Industry Best Practices Strategies

Transmission owners need to develop practices that fulfill the requirements of the vegetation standard in a cost effective manner. These practices or strategies must be documented and consistently implemented. Over time, certain practices have been shown to be successful in preventing outages due to vegetation. Many of these practices were incorporated into the NERC Standard FAC-003 since the group that developed and approved the standard included experienced transmission vegetation managers. The American National Standards Institute (ANSI) has established standards for vegetation maintenance on transmission ROW¹⁴. In addition, the International Society of Arboriculture (ISA) has issued a companion publication to ANSI A300 Part 7, Best Management Practices, Integrated Vegetation Management.¹⁵

Work Management ECI proposes the following best practice work management recommendations as part of any successful transmission vegetation management program. The utilization of some or all of these work management tools and methods may already be in use at LG&E and KU and therefore, these recommendations in no way imply the current lack of appropriate procedures. The original scope of this workload study did not include a review of the transmission program procedures or strategies. The recommendations presented here should be considered for implementation by LG&E and KU if not already integrated into the existing management program.

- Develop and keep current a vegetation management plan. Even though the current NERC standard FAC-003 does not explicitly require a vegetation management plan (TVMP), a TVMP is an extremely valuable tool to plan and implement both short-term and long-term vegetation management goals. A TVMP is the "road map" for vegetation management and provided direction and overview of system goals. It details how the work will be determined, planned and executed and provides a framework on how vegetation management will be implemented to ensure the reliability of the system. Annual plans are a subset of multi-year long-range plans. A plan will aid in developing budgets and tracking the work performed on individual lines.
- **Develop and keep a current work schedule.** The TVMP will detail system and procedures for documenting and tracking the planned work. Plans are in need of constant update as work progresses. Updating will track work in progress and allow notice for any necessary adjustments.
- **Implement a system of inspecting planned work.** Documenting the inspection of completed work is also necessary to properly approve payment and ensure work reported as complete by the contractor meets

¹⁴ ANSI. 2006. The American National Standard for Tree Care Operations - *Tree, Shrub, and Other Woody Plant Maintenance- Standard practices (Integrated Vegetation Management a. Electric Utility Rights-of-way).* A 300 Part 7. American National Standards Institute, NY.

¹⁵ Miller, R.H. 2007. Best Management Practices- Integrated Vegetation Management. International Society of Arboriculture, Champaign, II.

LG&E's and KU's expectations. Spot checks of completed work are commonly used with inspections of additional completed work when deficiencies are found. It is important to identify work that does not meet the standard early so that corrections can be made before more deficient work is completed. This will save time for both the utility and the contractor performing the work. Formal documentation of the work inspection is recommended.

- **Provide for consistent budgeting.** A consistent plan needs consistent funding. Budget reductions mid-year can cause workforce disruptions that increase future costs. Any changes to the established annual plan require documentation.
- Establish and enforce work specifications. The personnel performing the work must know exactly what is expected of them. The work inspector must know the specifications to properly enforce them. If future contract strategies are being considered, a clear, concise specification is required to communicate LG&E and KU vegetation maintenance goals to perspective contractors. The clearer the contract specification, the better the pricing from a perspective new contractor.
- **Develop action thresholds.** Develop a "clearance at time of maintenance" (clearance 1) distance and establish a minimum clearance threshold (clearance 2) that vegetation should never exceed. This threshold clearance will provide an additional margin of error to allow for vegetation growth, line sag and variations in maintenance cycles. Best practice utilities have developed an action threshold clearance value between Clearance 1 and Clearance 2 in order have a intermediate point to take appropriate action to avoid violating the vegetation standard. Another type of action threshold relates to the maximum height that brush¹⁶ is allowed to attain to provide efficient and cost effective foliar application of herbicides. Since herbicide application is frequently less costly than mechanical clearing, it is important that brush is not allowed to grow taller than the maximum height 8-12 feet for effective herbicide use.
- Develop a mitigation plan for exceptions/non-standard maintenance. Keeping a record of locations where exceptions to standard practices exist is important to prevent outages or violations of LG&E's and KU's minimum acceptable clearance (between vegetation and conductors). An example would be where pruning is the only vegetation maintenance option allowed by the easement. The record should be specific as to the nature of the situation and regular inspection should be scheduled. Use of an automatic reminder system is recommended. Renegotiating or acquiring easements to eliminate clearance restrictions, payment for tree removal or replacing tall

¹⁶ Brush is normally defined as immature (less than 10.2 cm or 4 inches in diameter), tall-growing tree species that would grow tall enough to interfere with conductors

growing trees with compatible vegetation should be considered to eliminate the situation.

- **Develop standardized processes.** A uniform vegetation management plan for the entire LG&E and KU system that coincides with LG&E's and KU's current specification is key.
- Implement an Integrated Vegetation Management program (IVM). IVM is the art of controlling plant populations based on scientific principles from such fields as ecology, zoology and biology. Vegetation is managed to produce desired conditions (plant community density, structure and composition) and associated values consistent with stakeholder objectives on a sustainable basis. Stakeholders include both easement or fee holders, and all stakeholders and interested parties who may be influenced by IVM activities.
- Manage the ROW by zones. Managing the ROW in the zone immediately beneath the conductors differently from the rest of the ROW, known as the wire zone-border zone concept, is a successful approach to prevent outages in a cost effective manner (Figure 7), where sufficient ROW width is present. Different management techniques can be applied to these two zones and result in the many economic, operational and environmental benefits associated with the use of IVM techniques.



Figure 7. Wire Zone / Border Zone Vegetation Management.

- Maintain the ROW edge. Side pruning consists of pruning trees on the edge of the ROW. This work can be accomplished through the use of truck-mounted aerial lift equipment (bucket trucks), by manual climbing, or through the use of mechanical pruning equipment, such as a Jarraff, Aerial Saw, or similar tools.
- Coordinate transmission work with related distribution work. Occasionally distribution lines are found on the same ROW and even the same structures as a transmission line. Managing the vegetation simultaneously on both facilities can be cost effective. Problems can arise when different departments within the same company manage facilities with varying cycles, maintenance methods and budgets. The

transmission maintenance organization should take the lead in coordinating and ensuring that the work is completed because a transmission outage has greater consequences than a distribution outage.

Integrated Vegetation Management

In Integrated Vegetation Management (IVM), the selection of control options is based on effectiveness, site characteristics, environmental impacts, safety, and economics. Good vegetation management is based on an understanding of plants and their environment. A holistic approach considers the interrelationship of plants, site, and species composition and growth rates.

IVM is recognized as an industry best practice, and it is therefore recommended that LG&E and KU adopt this strategy for the maintenance of undesirable brush on its transmission system. In general, this would be a combination of brushing, mechanical clearing (hydro-axe), and the use of herbicides to manage trees and bush on the LG&E and KU system.

Cutting deciduous brush without applying a follow-up herbicide application to the stump surface will permit the vegetation to re-sprout, thus requiring future maintenance. Trimming brush and/or allowing it to mature results in its becoming a more expensive and often permanent part of the workload. Trimming brush and the failure to use herbicides on cut stumps are not cost effective long term brush management techniques.

ECI recommends that LG&E and KU continue to remove trees with the ROW and ROW edge and treat the deciduous cut-stumps of trees and brush with appropriate herbicides whenever possible. LG&E and KU should continue to enforce the existing specifications for removal and stump treatment. This will prevent future expansion of the system vegetation workload and future line clearance cost increases.

On most of the LG&E and KU transmission system, there appears to be an opportunity to treat standing brush less than 8 - 12 feet tall with either foliar or basal herbicide applications, avoiding hand cutting. Taller standing dead brush can become a source of complaints, and taller brush can be difficult to control with foliar applications without risking exposure to off-target plants. This use of a basal bark-applied herbicide would be a particularly valuable tool in the removal of tall-growing tree species growing in sensitive areas or where there is concern for off-target damage.

Use of herbicides is essential if LG&E and KU is to maximize the benefits of mechanical clearing and brushing. Herbicide use is an important component of an IVM strategy. LG&E and KU should continue to enforce the specifications that require use of herbicides to treat stumps. The effectiveness of selective herbicide applications has been well documented through long-term studies on utility rights-of-way in the central and northeastern United States. Results from treatment simulation models developed through these studies project that sites dominated by deciduous species would nearly double in stem density by the end of two cycles if simply cut without a follow-up herbicide application (Figure 8). These same sites would be expected to

exhibit about a 50 percent reduction in stem density over the same time period if treated with a selective herbicide application.



Figure 8. Effectiveness of Herbicides for Control of Brush Over Time. Results of long term study of brush management on utility rights-of-way in the northeast United States.

Currently, herbicides are effectively used in the control of ROW vegetation. This is an integral part of any IVM program. An important consideration is that a herbicide program must be environmentally safe and professionally supervised to maintain public acceptance. Line clearance crews performing herbicide applications should receive proper training in species identification and herbicide application methods that are approved and deemed acceptable by the public and land owners.

It is recommended that LG&E and KU continue to pursue the selective use of herbicides (e.g., foliar and basal) for the management of communities of deciduous brush species as a part of IVM program. Utilizing contractors trained and experienced in the use of herbicides will ensure the continued success of the LG&E and KU vegetation management program.

Herbicide Safety and Risk Assessments Today's herbicides control tree/brush re-sprouting by blocking chemicals needed by plants to convert water, sunlight and nutrients into food for growth. Since these same chemicals are not present in animals and humans, the herbicides are very low in toxicity to people or animals. Without any food, the treated weed trees on the right-of-way wither and decompose. Treated stumps dry out and don't re-sprout. Safety for humans and the environment includes not causing adverse effects that are unacceptable. In this context, risk assessment is the process by which the likelihood of unacceptable adverse effects from the use of various methods of vegetation management can be determined.

An extensive report prepared by ECI provided the technical basis for and a summary of the risk to human health, wildlife and the environment from the use of 10 herbicides by a utility owner in the US. These herbicide uses included broadcast foliar, selective foliar, basal bark and cut stump applications. This assessment concluded that the margins of safety for herbicide use by the utility that commissioned the assessment were "adequate to assure protection of human health of workers and the general public."

ECI also completed an environmental impact statement resulting in the authorization of herbicides to control right-of-way vegetation in the LG&E and KU National Forest in Pennsylvania (US). Subsequent evaluation of herbicide use in the National Forest confirmed safe and effective use of foliar herbicides to control brush on utility right-of-way.

The human health risk assessment methodology used in these reports was the one generally recognized by the scientific community as necessary to characterize the potential adverse human health effects of chemicals in the environment. It is the same process used in judging the human health risk from cosmetics, food additives, pharmaceuticals, various household chemicals, and many other materials.

Herbicide Acceptance by Wildlife Groups in the United States In the US, stump control herbicides are used not only by electric utilities, but also by numerous private and governmental wildlife habitat improvement organizations. Examples include:

- The Nature Conservancy on projects designed to limit the spread of invasive and non-native trees and shrubs. This would be similar to the efforts in the UK to eradicate the invasive plants Japanese Knotweed and Himalayan Balsam.
- Under the banner of a former organization called Project Habitat®, groups such as the National Wild Turkey Federation, Buckmasters, Butterfly Lovers International and Quail Unlimited have joined together to encourage utilities to implement an "Integrated Vegetation Management" (IVM) approach to maintaining utility easements that appropriately utilizes herbicides as a component in the control of right-of-way vegetation. They have recognized that environmental benefits of herbicides, when properly used, outweigh any adverse risk and are far more desirable than the alternatives to herbicide use, such as frequent mowing or hand cutting of undesirable trees.

Significant research has been undertaken over the past 30 years in the United States to document the impact of right-of-way herbicide use on the

environment, wildlife and management costs. Much of this research has been conducted by ECI and its university research associates. Stems per acre decrease over time through the use of herbicides, as does associated maintenance costs.

Brush control through the use of herbicides is an extremely cost effective maintenance tool. Figure 9 illustrates the successful use of herbicides and provides cost effective, environmentally acceptable and long-term brush control.



Figure 9. Example of good brush control through the use of herbicides.

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> Appendix D: Recommended Staffing to Contract Tree Crew Ratio

Need for Additional LG&E and KU Vegetation Maintenance Staffing

The vegetation maintenance program at LG&E and KU is sufficiently staffed to effect the administration of the current line clearance contracts and contractor staffing at the time of this review. The three ROW Coordinators manage 25 contract tree crews. As LG&E and KU adopts ECI's budget and staffing recommendations additional contract crews will be added to the system manage the increase workload. Additional staff (in house or contracted) will be required to effectively manage the increased work force.

Figure 10 shows data from two benchmarking studies that evaluated the average number of line clearance crews supervised by utility arborists. In the Pennsylvania Electric Association (PEA) and Edison Electric Institute (EEI) studies, the average ratio of line clearance crews to each utility arborist was respectively 8 and 11 (Figure 10). However, in both studies 75 percent of the reporting utilities average 10 crews or less per supervising arborist. Figure 10 also shows that in a recent benchmarking study of over 20 utilities, the two overall best-in-class utilities have a ratio of approximately one utility arborist (including the system arborist) for every 6 line clearance crews. Figure 10 also compares the current crews supervised by the system forester to the anticipated ratio should seven-year cycle be adopted.



Figure 10. Comparative Data on the Average Number of Line Clearance Crews Overseen by Utility Foresters¹⁷.

Based on the anticipated increase in contractor tree crew staffing on the transmission system it is recommended that LG&E and KU establish an additional three Utility Forester positions (in-house or contract) to assist the ROW Coordinators in the day to day management of the program. If fully implemented, the LG&E and KU Transmission VM contractor tree crew work

¹⁷ PEA = Data from a 7 utility survey conducted by the Pennsylvania Electric Association.

EEI = Data from the Edison Electric Institute benchmark study of 29 utilities.

ECI = Data from a 1998 benchmarking study of 22 North American utilities.

force will be approximately 72 crews for the first cycle. This will provide a ratio of approximately 12 crews per LG&E and KU vegetation management staffing. In order for the program recommendations to be implemented properly it has to be implemented correctly in the field. These three additional individuals will be primarily responsible for planning work and auditing the tree crews. They should also be capable of assisting the ROW Coordinators with any work that is appropriate for them to do. For example inspecting customer requests, work associated with new construction, supervising tree crews, and handling of customer complaints or refusals. After the completion of the first cycle, the number of tree crews is may decline, then staffing can be reduced to meet the need. The use of contract foresters would be an option for staffing these positions as they are more easily flexed.

The individuals should primarily be responsible for field implementation of the line clearance program and the evaluation of the line clearance crews and contractors within their area of responsibility. The Utility Foresters should report directly to the ROW Coordinators. This will provide a measure of control over individual interpretation of company guidelines and will ensure consistent implementation of appropriate work practices and operating procedures across the system. These positions will assist in ensuring contractor compliance to ANSI A-300 standards and that crews are properly instructed on the correct and safe use of herbicides. The position will audit contractor work to ensure that clearance requirements are met.

The Utility Foresters will assist in managing programs that provide ongoing information on field conditions, including tree crew production records (trees pruned removals, herbicide use, and brush treatment), electric service interruption data and conduct post-outage investigations.

The Utility Foresters should be trained in all aspects of utility vegetation management, including proper pruning techniques and herbicide use. The Utility Foresters should have a minimum of 2 years of experience in utility vegetation management, ISA certification and, preferably, a Bachelor's Degree in Forestry or a related field. This will help to ensure consistent implementation of program policies and will enable the ROW Coordinators to effectively evaluate the work being completed by the line clearance crews. Attachment to Response to KIUC-1 Question No. 30 Page 45 of 55 Bellar

> Appendix E: LG&E and KU Transmission System Benchmark Comparison

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Utilities Regulated by	
a Public Utility or	
Service Commission(s)	
or other Agency(s):	
Centralized VM	
Program:	
VM Managed by	
Professional Forester	
or Arborist:	80%







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Tree Inventory System Capabilities	Utility A	Utility B	Utility C	Utility E
Work Prescription and Estimating (Work Planning)	Х			
Map, Manifest and Work Package Generation	х			
GIS Tree Location Information	X			
Electronic Facility Asset Maps with Tree Inventory Overlay	Х			
Cost Generation and Budgeting				
QA/QC Audit and Inspection Tracking	Х			
Payment Processing				
Electronic Billing and Payment Processing				
Productivity Tracking and Analysis				
Work Status and Completion Tracking (Work Management)	Х			
Reliability Tracking and Follow-Up Investigations	X			
Emergency Work and Restoration Management Coordination				
Figure 56				

Percent of Utilities Using 100 Percent vs. Sampling to Determine Workload Estimates for Annual Plans and Contracts









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CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 31

Responding Witness: John P Malloy

- Q.1-31. Refer to page 15 of Mr. Malloy's Direct Testimony wherein he describes the SAP upgrade in process for the Customer Care System. Please provide a copy of the Company's business case and all cost/benefit analyses performed in conjunction with the decision to implement the upgrade.
- A.1-31. See the attached Investment Proposal, which contains the cost-benefit analyses performed in conjunction with the decision to implement the upgrade.

Investment Proposal for Investment Committee Meeting on: October 28, 2015

Project Name: SAP Upgrade

Total Expenditures: \$27.1 million (Including \$2.6 million of Contingency)

Project Number(s): 204SER16

Business Unit/Line of Business: Customer Service and IT

Prepared/Presented By: Steve Woodworth, Alpha Troutman

Executive Summary

This Investment Committee proposal is to request approval of the SAP Upgrade project. The SAP Customer Care System ("CCS") is the customer information system platform providing meter to cash and customer service functions for LKS. The <u>recommended</u> alternative, "Upgrade with HANA", consists of three primary deliverables utilizing a System Integrator (SI):

- Reimplementation of Customer Relationship Management (CRM), upgrading to version 7.3 (the front end where customer interaction occurs),
- Technical upgrade of Enterprise Core Component (ECC) to version 6.7 (the foundational application that supports customer billing, meter reading and accounting activities), and
- Implementation of SAP Suite (CRM and ECC) on HANA database platform.

The purpose of this initiative is to utilize the existing investment in the SAP customer platform to take advantage of new developments in more recent versions and place LKS on the standard, full service level agreement for the system. Also, by implementing this recommendation, LKS can take advantage of the SAP strategic roadmap for future innovations such as Advanced Metering Systems ("AMS") and Meter Data Management System ("MDMS").

The "Do Nothing" alternative was deemed unacceptable due to system support limitations, increased potential for security vulnerabilities, significant complexity and costs to meet evolving industry and customer experience requirements and additional IT maintenance to address integrating an aging application with more current systems and databases. The "Upgrade without HANA" alternative was not selected as it would leave LKS in a less than optimal position regarding future functionality and ongoing support.

The "Upgrade with HANA" recommended alternative is estimated at \$27.1 million across 2016 and 2017 with a 12% contingency of \$2.6 million. Contingency is based on all expenditures, except hardware and licensing, and is included to cover potential cost fluctuations, changes in estimates / durations of in-scope items and minor scope changes. A total of \$26.7 million is included in the proposed 2016 Business Plan. A total of \$23.0 million is included in the approved 2015BP. Approval of this recommendation will require \$350K incremental funding over the proposed 2016 BP which will be addressed and allocated by the Corporate RAC.

This project is in compliance with the LKS IT Governance Principles to maintain fully supported information technologies and does not require separate filing with KPSC for approval.

Background

The SAP Customer Care System (CRM and ECC applications) was implemented in April 2009 with an initial capital investment of approximately \$84 million. In addition, approximately \$2.5-3.5 million in capital enhancements have been implemented annually since 2010. Since implementation, the Company has taken advantage of a common SAP platform allowing LKS to provide customers increased options through new rate structures, self-service offerings, and analytical capabilities to harmonize processes that benefit the customer experience. The goal is to upgrade to the most current stable CRM / ECC versions in order to continue maximizing the investment value through customer-focused functionality and extending the useful life of this asset. Below is a sampling of North American utilities utilizing SAP products.

Version	Utility Name					
CRM 5.2	LKS					
CRM 7.X (0,1,2,3)	American Water, PEPCO, Southern California Edison, SEMPRA,					
	Reliant, CenterPoint Energy, National Grid, Puget Sound Energy,					
	Allegheny, First Energy, Atmos Energy, Blue Bonnet, CPS Energy,					
	Hawaiian Electric, Huntsville Utilities, Hydro One, Idaho Power, LES,					
	Peoples Natural Gas, SASK Power, Source Gas, Snohomish, London					
	Hydro, Mobile Gas, and Terasen Gas					
SAP Suite on HANA	American Water, CenterPoint Energy, GRU, National Grid, Puget					
(by May 2017)	Sound Energy, Snohomish, Source Gas, TECO, Detroit Edison, and					
	Washington Gas					

CRM and ECC are SAP packaged applications that require external support from SAP for maintenance and system upgrades. Missing or deferring these upgrades increases the risk of system failure, extends restoration and recovery windows, creates compatibility issues with interfacing systems and limits the opportunity to take advantage of improved performance and new customer-focused functionality.

• Maintenance Support

Since 2011, CRM 5.2 has been on Client Specific Maintenance, which is the only standard support option available for this version. *It should be noted that LKS is the only SAP customer in North America still utilizing CRM 5.2.* It is a limited option in that Client Specific Maintenance provides no Service Level Agreement ("SLA") and, if there is not a known fix readily available to SAP, there is no guarantee of issue resolution. If a system failure occurs and cannot be resolved by LKS resources, LKS is completely dependent on the availability of qualified SAP resources on a time and materials basis.

If the CRM system became unavailable, Customer Representatives could not process customer requests such as moves, payment arrangements, and general inquiries about account(s). The customer interaction would be manually documented at that time and subsequently processed through the backend system. While payments could still be accepted, all disconnect for non-payment orders would be suspended since installment plans could not be established. Back office operations' time increases as processing steps and research are more difficult without

CRM available. Additionally, if the CRM outage occurred for an extended period of time, a degradation in bill accuracy and performance metrics would occur.

• Compatibility Issues

Running outdated versions of critical applications creates compatibility issues with interfacing applications (e.g., Genesys, GeoStan), internet browsers, databases and operating systems. Outdated versions also increase the potential for security vulnerabilities; thus, exposing LKS to new threats. Staying on aging applications creates additional IT maintenance activities to "back engineer" older versions to newer technologies increasing the risk of failures.

• Improved Performance

The replication of data between the ECC and CRM databases is a significant operational and technical challenge LKS has faced since implementation. The data inconsistencies that are created between these systems impacts LKS's ability to interact effectively with customers. This replication issue has been significantly reduced in the proposed versions of ECC and CRM. This will enable LKS to take full advantage of new customer offerings, such as Customer Notifications, using the best available customer data.

Suite on HANA provides inherent performance improvements that enhance system response time for the CRM application during customer interactions. This database platform also provides improved speed and accuracy of customer search capabilities, access to real-time data and predictive analytics.

• New Functionality

Moving to the proposed application versions will provide the standard full service product support for core functionality from SAP; thereby, managing the long-term total cost of ownership and avoiding costly custom developments for new processes and functionality requirements.

The proposed application versions will provide access to a technological platform for achieving LKS's strategic objectives to enhance the customer experience utilizing the following capabilities:

- Use of predictive analytics to effectively route customer communications to appropriate internal skill sets, providing the opportunity to increase first contact resolution.
- Real-time analytics to provide management access to more timely data for insight to operational effectiveness
- Standard AMS to avoid costly custom developments to replicate functionality
- Potentially eliminate the need for a separate Meter Data Management System which is SAP's direction for Suite on HANA.

• Alternatives Considered (1 – Recommendation, 2 – Do nothing, 3 – Delay, 4 – Next Best Alt)

 NOTE: In order to more realistically reflect the future impacts of the three alternatives considered, the NPVRR calculations below reflect the impacts of separate Automated Metering Systems and Meter Data Management implementations planned for 2019-2021. While separate initiatives, the decisions made on this upgrade directly impact the delivery and timing of these future projects.

- 1. *Recommendation:* Upgrade with HANA NPVRR: (\$000s) \$51,157 The "Recommendation" includes CRM 7.3 and ECC 6.7 on HANA as described in the Background section.
- 2. Do Nothing:

The "Do Nothing" alternative is unacceptable due to Client Specific Maintenance limitations, increased potential for security vulnerabilities, significant complexity and higher costs to meet evolving industry and customer experience requirements and additional IT maintenance to address integrating an aging application with more current systems and databases.

3. Delay:

NPVRR: (\$000s) \$61,925

The "Delay" alternative considers an implementation date of 2019, reflecting a delayed start of two years. This option exhibits the impacts of purchasing incremental support from SAP and regular capital enhancements that would be required prior to the project start date. This option is not recommended as it increases cost and does not address Client Specific Maintenance limitations as discussed above.

- 4. Next Best Alternative(s): Upgrade w/o HANA NPVRR: (\$000s) \$52,273
- The "Upgrade without HANA" alternative was evaluated during the RFP process and became a key discussion point regarding the strategic direction of SAP products. SAP, system integrators, and Gartner Inc. emphasized this is SAP's direction and all future functionality will be built on this platform. Today, 350+ companies have implemented Suite on HANA across all industry groups with another 750+ implementations currently in progress. Although this option decreases the investment by \$3.7 million compared to the recommendation, it will leave LKS in a less than optimal position regarding future functionality and ongoing support.

Project Description

• Project Scope and Timeline

This project will upgrade ECC version 6.2 to version 6.7, re-implement CRM by upgrading from version 5.2 to 7.3, and implement the SAP Suite on HANA database platform. This project will establish a foundational platform for leveraging SAP industry developments in the future and provide Enterprise Level SAP support for the solution. Key milestone dates are shown below:

Milestone Event	Date
RFP Initiated for System Integrator	Jan 2015
Select System Integrator	Aug 2015
Project Approved by IC	Oct 2015
System Integrator Contract Awarded	Q4 2015
Project kickoff	Q1 2016
Implement into Production	Q2 2017
Post Go-Live Production Support Complete	Q3 2017

The current project estimate is 15 months. The go-live date of Q2 2017 is in compliance with PPL corporate policy "Managing Changes that Impact SOX Compliance" which discourages

systems' installations or upgrades during the fourth quarter of a year or during the last month of a quarter.

• Project Cost

The total cost of this project is \$27.1 million. A contingency of 12% (\$2.6 million) on all expenditure items (except hardware and licensing) is included for potential cost fluctuations, changes in estimates/durations of in-scope items and minor scope changes. Travel and expenses have been calculated and included in the project cost. The system integrator bid is time & materials.

Expenditure Item	\$000
LKS Labor	8,219
Contract Labor:	
System Integrators, Third Party Vendors (includes expenses)	12,129
Software - SAP Licensing	725
Hardware	2,000
Other (travel, technical training, office expenses, misc.)	1,450
Sub-Total	24,523
Contingency (12% of all costs except licensing and hardware)	2,574
Total	27,097

Economic Analysis and Risks

• Bid Summary

See System Integrator for SAP Upgrade Contract Proposal for details on bid summary.

• Budget Comparison and Financial Summary

Financial Detail by Year - Capital (\$000s)	2016	2017	2018	Post	Total	
				2018		
1. Capital Investment Proposed	17,807	9,290	-		27,097	
2. Cost of Removal Proposed					-	
3. Total Capital and Removal Proposed (1+2)	17,807	9,290	-	-	27,097	
4. Capital Investment 2015 BP	17,200	5,800	-		23,000	
5. Cost of Removal 2015 BP					-	
6. Total Capital and Removal 2015 BP (4+5)	17,200	5,800	-	-	23,000	
7. Capital Investment variance to BP (4-1)	(607)	(3,490)	-	-	(4,097)	
8. Cost of Removal variance to BP (5-2)	-	-	-	-	-	
9. Total Capital and Removal variance to BP (6-3)	(607)	(3,490)	-	-	(4,097)	

Financial Detail by Year - O&M (\$000s)		2017	2018	Post	Total
				2018	
1. Project O&M Proposed	1,020	2,317	250	509	4,096
2. Project O&M 2015 BP	776	2,070	-	-	2,846
3. Total Project O&M variance to BP (2-1)	(244)	(247)	(250)	(509)	(1,250)

Financial Summary (\$000s):

Discount Rate:	6.5%
Capital Breakdown:	
Labor:	\$ 8,219
Contract Labor:	\$12,129
Materials:	\$ 4,175
Local Engineering:	\$ 0
Burdens:	\$ 0
Contingency:	\$ 2,574
Reimbursements:	(\$ 0)
Net Capital Expenditure:	\$27,097

Financial Analysis - Project Summary (\$000)	20	016	2017		2018		2019		2020		Life of Project	
Project Net Income	\$	(997)	\$	(1,142)	\$	(313)	\$	984	\$	515	\$	5,162
Project ROE	-2	21.10%		-10.00%		-2.50%		9.50%		5.70%		5.10%

By including SAP Suite on HANA in the scope of this project, internal capital related to future AMS and MDM projects is expected to decrease slightly over the 5 year planning cycle, and O&M IT costs are projected to increase due to license fees associated with SAP HANA software and hardware requirements. The existing level of capex is in the \$2.5 - \$3.5 million range. Staying on CRM 5.2 will require ongoing support and development on an aging infrastructure that is moving away from the current core SAP functionality. Upgrading to CRM 7.3 will immediately increase core capabilities and establish the platform for future functionalities which

will be supported by the IT department through break/fix, enhancements and system maintenance and will include a roadmap for support pack and version improvements.

- Assumptions
 - Project approach is to perform a technical upgrade to ECC (6.2 to 6.7), reimplement CRM (5.2 to 7.3), and replace Oracle databases with HANA for both CRM and ECC. If CRM 7.4 or ECC 6.8 become available during Q1 2016, LKS and SI will evaluate the changes and make a determination on inclusion within the overall project scope.
 - Conversion of SAP BusinessWarehouse reporting to BI is not considered in scope and is being handled as part of the overall BI conversion effort.
 - Project hardware is to be purchased in Q1 2016.
 - Customer Services O&M was increased by \$2.8 million in 2016 and 2017 to ensure sustained business / customer metric performance. This incremental budget is allocated in the proposed 2016 BP.
 - Customer Services resources (12 FTEs) will be added for 28 months and 14 FTEs will backfill positions assigned to the project.
 - Routine annual capex for CCS in 2016-17 is \$2.5 \$3.5 million and will be avoided during the pending upgrade.
 - 2016 IT O&M increased \$150k for Annual Maintenance on SAP Suite on HANA Licenses, which is being offset by \$61k in reductions on other line items in the SAP annual license fee, for a net incremental cost of \$89k.
 - The economic useful life will continue on a 10-year depreciation schedule.

• Environmental

There are no environmental considerations for this project and Environmental Affairs is not required to sign-off on the project.

- Risks
 - Proceed with upgrade to ECC 6.7 and Reimplementation of CRM to 7.3:
 - Metrics Actual impacts to long-term transaction processing times are unknown based on the current data available.
 - Change Management (Training) Customer Services employees will be required to complete classroom, virtual, and eLearning training modules diverting those resources from day-to-day customer service tasks.
 - Change Management (Learning Curve) New processes will result in a shortterm dip in performance levels for all Customer Services areas and negatively impact operational metrics.
 - Do Nothing or Delay upgrade to CRM 7.3
 - Continued Deviation from Standard Functionality Some industry specific functionality delivered in CRM 7.3 (e.g., AMS) would require costly and high-risk customizations in CRM 5.2.
 - Data Replication Data replication issues will continue to impact data integrity.
 - System downtime As CRM 5.2 continues to age and levels of support decrease, the potential for CRM to experience an extended downtime increases.
 - Future program requirements As customer expectations and regulatory mandates increase, the need for advanced functionality increases significantly; "core code" modifications will likely be needed to meet emerging business needs, which significantly increases the risk of system failure.

- Compatibility with future operating systems and technology Continuously "back engineering" older versions of IT applications increases support costs and risk of an extended outage.
- Emerging Vendor Technologies Products of certified SAP partners and other vendors are limiting compatibility only to newer versions of SAP.

Conclusions and Recommendation

To continue as a leader in customer service and operational excellence, it is recommended LKS maximize the existing investment in the SAP customer platform and take advantage of new functionality and ongoing Enterprise level support by approving the SAP Upgrade to ECC 6.7, CRM 7.3 and Suite on HANA database platform. Investment Committee approval of this recommendation is requested for \$27.1 million.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 32

Responding Witness: John P. Malloy

- Q.1-32. Please provide the increase or savings that the Company expects to achieve in IT O&M expense and customer care expense as the result of the upgrade. Provide the expenses before and after the upgrade for the test year. Provide all assumptions, data, and calculations, including all electronic spreadsheets with formulas intact.
- A.1-32. As a result of the upgrade, the annual IT O&M expense related to the SAP customer care system is expected to increase by \$123,429. See attachment 1 being provided in Excel format. This is related to license fees and associated hardware maintenance fees needed for the new HANA database which is part of the upgrade. HANA is SAP's proprietary database platform; migrating to HANA is strategically important for continued use of SAP long-term. The upgrade will be implemented before the test year begins. The total SAP license fees in the test year are \$718,139. See attachment 2 being provided in Excel format.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 33

Responding Witness: John P. Malloy

- Q.1-33. Please provide the expected useful life of the CCS and the SAP upgrade, if different than for the CCS.
- A.1-33. See the response to Question No. 8

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 34

Responding Witness: Lonnie E. Bellar

- Q.1-34. Refer to page 16, lines 6-8, of Mr. Garrett's Direct Testimony wherein he describes an annual increase of \$9.1 million in steam and other generation maintenance expense due primarily to an increase in generation plant maintenance and outage expenses. Please provide a schedule showing the total company 2012, 2013, 2014, 2015, 2016, base year and test year maintenance expenses recorded or budgeted if not yet incurred for generation plant maintenance and outage expenses by plant/unit and by FERC O&M expense account.
- A.1-34. See attached. The \$9.1 million annual increase in steam and other generation maintenance expense represents a jurisdictional amount. The amounts provided in the attachment represent total company.
| Plant/Unit | FERC Account | 2012 | 2013 | 2014 | 2015 | 2016 | Base Year | Test Year |
|--------------------------------------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|---|
| BROWN SOLAR FACILITY | 554 | - | - | - | - | 4,865 | 3,494 | 127,542 |
| CANE RUN CC GT 2016 | 551 | - | - | - | 43,578 | 345,641 | 288,113 | 159,857 |
| | 552 | - | - | - | 136,712 | 754,722 | 533,085 | 1,885,025 |
| | 553 | - | - | - | 380,776 | 1,408,004 | 219,174 | 1,345,304 |
| | 554 | - | - | - | 1,913,826 | 3,137,308 | 1,762,692 | 5,435,161 |
| CLOSED 03/14 - HAEFLING UNIT 3 | 553 | 25,686 | 157,899 | - | - | - | - | - |
| E W BROWN COMMON - STEAM | 510 | - | - | - | - | - | 1,163,312 | 2,397,132 |
| | 511 | - | - | - | - | - | 1,125,796 | 2,470,433 |
| | 512 | - | - | - | - | - | 492,830 | 1,809,106 |
| | 513 | - | - | - | - | - | 741,955 | 520,206 |
| | 514 | - | - | - | - | - | 789,368 | 1,732,230 |
| E W BROWN COMBUSTION TURBINE UNIT 10 | 551 | 1,417 | 1,449 | 23,641 | 6,500 | 8,374 | 4,143 | - |
| | 552 | 9,063 | 10,616 | 13,281 | 273,424 | 50,107 | 21,536 | - |
| | 553 | 113,510 | 16,331 | 65,905 | 455,941 | 143,821 | 83,710 | - |
| | 554 | 17,504 | 13,395 | 13,581 | 90,634 | 66,105 | 16,947 | - |
| E W BROWN COMBUSTION TURBINE UNIT 11 | 551 | 2,998 | 1,346 | 3,027 | 7,085 | 8,374 | 4,143 | - |
| | 552 | 13,433 | 11,304 | 14,011 | 42,180 | 52,923 | 25,083 | - |
| | 553 | 75,580 | 110,047 | 100,578 | 89,822 | 111,135 | 59,234 | 343,000 |
| | 554 | 13,191 | 8,164 | 23,651 | 63,403 | 56,981 | 17,263 | - |
| E W BROWN COMBUSTION TURBINE UNIT 5 | 551 | 1,588 | 517 | 1,253 | 3,294 | 3,633 | (2,584) | (10,359) |
| | 552 | 6,804 | 2,684 | 5,372 | 18,444 | 23,567 | 12,162 | - |
| | 553 | 35,652 | 17,581 | 13,475 | 49,020 | 41,171 | 16,289 | (90,338) |
| | 554 | 6,359 | 12,011 | 5,105 | 48,021 | 15,600 | 5,125 | (4,358) |
| E W BROWN COMBUSTION TURBINE UNIT 6 | 551 | 20,202 | 17,030 | 11,928 | 7,322 | 7,189 | 698 | (281) |
| | 552 | 67,813 | 79,928 | 50,405 | 38,913 | 39,258 | 16,934 | (2,440) |
| | 553 | 301,021 | 191,170 | 481,344 | 380,733 | 330,525 | 163,815 | 398,397 |
| | 554 | 101,714 | 48,410 | 51,393 | 30,023 | 30,224 | 16,557 | (9,366) |
| E W BROWN COMBUSTION TURBINE UNIT 7 | 551 | 16,065 | 13,602 | 16,094 | 7,307 | 7,189 | 746 | (,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, |
| | 552 | 52,874 | 55,790 | 65,198 | 37,120 | 37,629 | 15,373 | - |
| | 553 | 276,342 | 18,572 | 323,753 | 19,253 | 122,265 | 57,362 | 51,450 |
| | 554 | 64,740 | 40,993 | 67,016 | 25,438 | 35,832 | 12,733 | - |
| E W BROWN COMBUSTION TURBINE UNIT 8 | 551 | 2,202 | 2,498 | 2,371 | 6,255 | 8,374 | 4,143 | _ |
| | 552 | 18,255 | 18,396 | 20,987 | 38,110 | 53,590 | 23,149 | _ |
| | 553 | 70,600 | 184,240 | 82,504 | 200,591 | 194,960 | 89,030 | _ |
| | 554 | 24,581 | 19,819 | 36,937 | 76,088 | 74,820 | 52,556 | 65,000 |
| E W BROWN COMBUSTION TURBINE UNIT 9 | 551 | 3,481 | 7,619 | 1,923 | 6,995 | 8,374 | 4,143 | - |
| | 552 | 16,801 | 30,807 | 21,680 | 43,919 | 51,444 | 22,538 | _ |
| | 553 | 116,008 | 415,634 | 49,624 | 88,066 | 141,500 | 58,434 | _ |
| | 554 | 26,594 | 25,819 | 51,417 | 93,438 | 56,456 | 31,416 | _ |
| E W BROWN CT UNIT 9 GAS PIPELINE | 553 | 14,932 | 34,305 | 10,649 | 44,062 | 36,803 | - | 21,864 |
| | 555 | 4,184 | 6,812 | 6,946 | 7,700 | 168,806 | 1,359 | |
| E W BROWN STEAM UNITS 1,2,3 SCRUBBER | 512 | 4,184 | - | - | - | - | 339,915 | 1,280,472 |
| E W BROWN STEAM UNITS 1,2,5 SCRUBBER | 510 | 351,768 | 339,719 | 280,116 | 542,654 | 332,271 | 209,853 | 250,000 |
| | 511 | 263,259 | 227,746 | 210,163 | 295,901 | 324,617 | 185,815 | 230,000 |
| | 512 | 1,685,242 | 1,574,560 | 1,610,125 | 1,741,512 | 1,372,772 | 1,225,235 | 1,156,505 |
| | 512 | 1,382,130 | 375,011 | 261,961 | 3,712,752 | 1,372,772 | 1,225,235 | 1,150,505 |
| | 515 | 77,948 | 108,152 | 100,381 | 134,075 | 1,175,825 | 64,281 | 100,234 |
| E W BROWN UNIT 2 | 514 | 623,997 | 554,370 | 627,477 | 239,942 | 523,102 | 334,981 | 852,000 |
| | 510 | 023,997 | 554,570 | | | | UC-1 Ques | |

Attachment to Response to KIUC-1 Question No. 34

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Plant/Unit	FERC Account	2012	2013	2014	2015	2016	Base Year	Test Year
	511	310,489	303,883	326,660	369,204	455,793	262,383	-
	512	1,881,618	2,393,352	2,664,565	1,587,048	1,905,522	1,600,363	2,366,592
	513	280,679	693,095	1,376,987	348,091	389,568	205,171	3,262,098
	514	126,885	117,967	160,614	211,948	221,807	102,864	-
E W BROWN UNIT 3	510	1,651,589	1,289,646	1,139,136	1,108,695	1,609,166	891,830	-
	511	829,734	879,823	898,812	988,514	1,236,969	712,691	-
	512	4,273,168	4,182,701	4,704,165	4,384,963	4,609,085	3,790,216	2,619,484
	513	6,775,537	479,613	967,743	1,313,395	1,163,380	452,154	145,116
	514	337,882	370,058	482,099	536,203	554,421	252,532	-
E W BROWN UNITS 1 & 3	512	-	-	-	-	-	46,854	95,898
E W BROWN UNITS 2 & 3	511	-	-	-	-	-	-	137,000
E W BROWN-EQUIP ALL COMBUSTION TURBINE UNITS	551	-	-	-	-	-	163,101	145,054
	552	-	-	-	-	-	92,500	17,838
	553	-	-	-	-	-	-	2,011,690
	554	-	-	-	-	-	-	68,479
E W BROWN-EQUIP COM. COMBUSTION TURBINE UNITS 4, 5, 6 & 7	554	-	-	-	-	-	-	78,030
GHENT COMMON	510	-	-	-	-	-	2,159,527	4,499,567
	511	-	-	-	-	-	2,180,590	4,165,379
	512	-	-	(36,264)	(424,312)	(8,303)	8,093,173	12,850,783
	513	-	-	-	-	-	1,346,828	1,940,906
	514	-	-	-	-	-	187,630	395,956
GHENT UNIT 1	510	750,075	707,873	737,577	1,816,872	1,390,949	728,093	325,000
	511	920,444	1,096,269	1,351,598	2,026,923	1,908,967	990,620	-
	512	7,110,125	7,103,933	7,704,475	9,688,549	5,899,276	4,359,262	4,658,258
	513	2,113,181	1,213,815	1,195,620	5,948,854	1,349,924	1,090,555	200,529
	514	138,314	179,873	177,625	219,261	312,321	166,547	-
GHENT UNIT 1 SCRUBBER	511	5,542	-	-	-	-	-	-
	512	11,513	(34,720)	(12,197)	(887)	-	391,660	782,069
GHENT UNIT 2	510	1,070,632	743,513	765,551	1,364,031	1,474,039	783,564	-
	511	765,397	706,473	918,239	1,032,052	1,336,303	652,569	-
	512	9,309,511	4,633,101	5,766,081	7,405,197	5,169,601	3,715,872	4,628,061
	513	4,869,232	462,504	1,134,899	1,686,645	1,382,762	476,952	1,204,421
	514	141,223	171,417	175,723	206,118	313,575	172,176	-
GHENT UNIT 3	510	808,512	782,618	1,171,013	1,094,533	1,506,860	788,767	-
	511	598,517	748,872	936,692	896,879	1,389,777	717,227	-
	512	4,528,826	4,133,932	7,522,680	6,678,421	6,600,034	4,422,546	2,957,744
	513	2,098,549	608,423	914,487	1,830,977	1,336,574	850,623	374,901
	514	161,041	183,919	190,286	237,302	330,889	184,898	-
GHENT UNIT 4	510	1,451,238	1,314,416	1,809,543	1,305,775	1,448,907	758,431	425,000
	511	575,356	734,565	858,057	870,149	1,350,812	753,551	-
	512	4,394,155	5,980,506	8,720,215	4,168,713	6,120,035	4,447,990	1,078,043
	513	815,297	1,029,481	4,479,842	644,426	1,256,467	927,164	148,887
	514	159,198	182,474	219,612	226,015	321,943	178,256	-
GHENT UNITS 1 & 2	513	-	-	-	-	-	14,901	104,237
GHENT UNITS 3 & 4	513	-	-	-	-	-	17,774	96,390
GREEN RIVER COMMON	510	-	-	-	-	-	42,791	139,697
	511	-	-	-	-	-	40,500	82,248
	512	-	-	-	-	-	181,723	176,000

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Plant/Unit	FERC Account	2012	2013	2014	2015	2016	Base Year	Test Year
	514	-	-	-	-	-	520	9,355
GREEN RIVER UNIT 3	510	530,314	558,787	404,410	321,103	28,276	28,276	27,972
	511	336,132	334,240	328,217	184,337	36,673	36,673	19,914
	512	1,354,937	728,733	1,575,703	927,426	56,102	56,102	30,600
	513	580,546	287,222	357,235	257,075	13,923	13,923	7,596
	514	75,765	113,475	65,517	241,618	222,898	222,898	121,584
GREEN RIVER UNIT 4	510	656,320	761,456	606,615	564,833	174,909	118,773	12,552
	511	401,286	485,484	584,383	338,171	169,464	107,581	29,244
	512	1,384,972	2,328,610	2,502,697	1,519,863	205,277	144,187	14,040
	513	393,599	423,585	424,811	162,254	4,721	4,721	2,580
	514	131,783	189,959	102,789	384,892	338,728	336,672	179,628
HAEFLING UNIT 1	553	55,749	54,186	40,102	52,079	79,324	47,318	18,041
HAEFLING UNIT 2	553	24,970	12,077	1,371	6,336	10,333	8,012	18,041
HAEFLING UNITS 1, 2, & 3	553	-	-	-	-	-	-	48,240
KU GENERATION - COMMON	510	-	-	-	-	-	596,898	1,039,575
	511	-	-	-	-	-	33,615	199,204
	513	-	-	-	-	-	1,736	-
	514	-	-	-	-	-	560	3,396
PADDYS RUN GT 13	551	-	-	-	7,935	15,162	7,330	-
	552	5,982	3,269	2,873	3,236	8,756	14,817	22,546
	553	177,010	190,332	234,161	261,392	310,259	183,257	128,765
	554	10,722	6,164	18,710	46,947	135,102	53,393	119,456
TRIMBLE COUNTY #10 COMBUSTION TURBINE	553	42,157	179,801	50,592	25,876	53,698	22,695	-
TRIMBLE COUNTY #5 COMBUSTION TURBINE	553	211,781	146,021	394,050	320,659	362,432	212,716	477,537
TRIMBLE COUNTY #6 COMBUSTION TURBINE	553	156,969	93,141	195,118	271,456	267,922	180,355	-
TRIMBLE COUNTY #7 COMBUSTION TURBINE	553	53,200	47,292	64,677	269,898	123,437	73,964	829,001
TRIMBLE COUNTY #8 COMBUSTION TURBINE	553	69,351	125,355	97,796	93,474	65,936	36,530	-
TRIMBLE COUNTY #9 COMBUSTION TURBINE	553	99,663	34,966	75,691	66,055	95,315	94,515	_
TRIMBLE COUNTY 2 - GENERATION	510	625,501	471,432	820,421	589,847	1,169,392	1,383,151	2,083,779
	511	1,202,324	773,262	851,463	964,271	936,025	799,012	_
	512	5,669,171	6,806,872	9,401,888	6,993,714	7,890,857	7,302,515	10,685,117
	513	1,362,466	993,207	1,329,046	903,136	2,159,444	2,113,355	1,453,562
	514	472,151	425,130	516,160	811,114	561,400	486,084	421,383
TRIMBLE COUNTY 2 CLEARING ACCTNG	510	(156,376)	(117,858)	(205,106)	(147,462)	(292,348)	(235,789)	(265,772)
	511	(300,581)	(193,316)	(212,866)	(241,068)	(234,007)	(180,938)	(255,172)
	512	(1,292,078)	(1,776,312)	(2,335,327)	(1,750,032)	(1,972,701)	(1,452,796)	(1,496,229)
	513	(340,617)	(248,302)	(332,262)	(225,784)	(539,861)	(501,477)	(226,705)
	514	(118,038)	(106,283)	(129,040)	(202,779)	(140,350)	(89,483)	(105,350)
TYRONE COMMON	510	-	-	-	-	-	11,444	11,461
	510	-	-	_	-	-	447	2,714
TYRONE UNIT 1	511	-	-		828	140	83	-
TYRONE UNIT 3	510	20,574	9,077	12,820	4,730	8,090	8,090	-
I INOME OTHER S	510	120,045	9,077	-	4,730	8,090 2,709	8,090	-
	511	120,045			-	2,709	1,342	-
		18,093	(1,007)	2,681		1,342	1,542	-
	513	-	-	-	51		-	-
	514	256	(1,551)	-	2,317	7,428	784	-

Attachment to Response to KIUC-1 Question No. 34 Page 3 of 3 Bellar

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 35

Responding Witness: Valerie L. Scott

- Q.1-35. Please provide a schedule showing the total company 2012, 2013, 2014, 2015, 2016, base year and test year outside services expenses recorded, or expected to be recorded, in FERC accounts 923.
- A.1-35. The table below contains the total actual, base year and test year balances for FERC Account No. 923, Outside Services.

2012\$ 7,429,1282013\$15,940,1512014\$17,999,0002015\$19,603,5972016\$17,959,527Base Year\$19,339,606Test Year\$21,171,836

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 36

Responding Witness: Daniel K. Arbough

- Q.1-36. Refer to the variance explanation for FERC account 923 provided on Schedule D-1 to explain the increase in test year costs of \$1.684 million over the level of base year costs. That explanation reads, "Variance reflects higher level of contracted support for customer service initiatives and legal counsel." Please provide copies of all analyses or other support documentation that shows more details about the higher levels of costs that are expected.
- A.1-36. See the response to KSBA 1-33. See the response to AG-1 90 for further support of the legal fees.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 37

Responding Witness: Christopher M. Garrett

- Q.1-37. Please describe how the Company removed the effects of purchase accounting from the capitalization, all rate base components, and all related expenses, such as depreciation expense and property tax expense, reflected in the filing. Provide a schedule in electronic spreadsheet format with all formulas intact showing all adjustments and providing an explanation of each such adjustment.
- A.1-37. The Company maintains a separate general ledger and a separate budget entity to record the impact of all purchase accounting adjustments and to ensure that the activity can be tracked for reporting and budgeting purposes. When calculating capitalization, all rate base components and all related expenses, the Company used only the general ledger and budget entity excluding purchase accounting. As a result, there was no adjustment needed to remove purchase accounting included in the capitalization, rate base components, or all related expenses.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 38

Responding Witness: Valerie L. Scott

Q.1-38. Please provide a schedule showing all direct assignments and allocations of costs from LKS to the Company by FERC O&M, A&G, and each other account for 2012, 2013, 2014, 2015, 2016, the base year, and the test year. Provide an explanation for each increase from year to year of at least \$1 million or 5%, whichever is less.

A.1-38. See attached.

Changes from year to year are explained for increases greater than \$1 million.

			2012	
FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total
107 0	Construction Work In Progress	33,485,259	-	33,485,259
108 4	Accumulated Provision For Depreciation Of Utility Plant	344,579	-	344,579
131 (Cash	(3,171,487)	-	(3,171,487)
	Other Accounts Receivable	37,987	-	37,987
	Accounts Receivable From Associated Companies Fuel Stock	(231,408) 445,743,867	-	(231,408) 445,743,867
	Plant Materials And Operating Supplies	- 444,277	-	- 444,277
	Stores Expense Undistributed Prepayments	11,670,162	-	11,670,162
182.3	Dther Regulatory Assets	1,758,179	-	1,758,179
	Preliminary Survey And Investigation Charges Clearing Accounts	481,347 22,400,836	-	481,347 22,400,836
	Miscellaneous Deferred Debits Research, Development And Demonstration Expenses	86,037 -	- -	86,037

			2012	
FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total
228.3	Accumulated Provision For Pensions And Benefits	6,568,813	-	6,568,813
232	Accounts Payable	508,187	-	508,187
236	Taxes Accrued	(660,772)	-	(660,772
241	Tax Collections Payable	-	-	-
242	Miscellaneous Current And Accrued Liabilities	384,013	-	384,013
253	Other Deferred Credits	1,503,219	-	1,503,219
408.1	Taxes Other Than Income Taxes, Utility Operating Income	3,954,298	-	3,954,298
	Taxes Other Than Income Taxes, Other Income And Deductions	-	-	-
416	Cost And Expenses Of Merchandising, Jobbing And Contract Work	-	-	-
418	Nonoperating Rental Income	0	-	(
419	Interest And Dividend Income	-	-	-
421	Miscellaneous Nonoperating Income	-	-	-
426.1	Donations	736,242	33,210	769,452
	Penalties	378	-	37
426.4	Expenditures For Certain Civic, Political And Related Activities	548	919,388	919,930
	Other Deductions	497,077	191,141	688,21
431	Other Interest Expense	-	-	-
454	Rent From Electric Property	0	-	(
456	Other Electric Revenues	18,184	-	18,184
500	Operation Supervision And Engineering	158,551	3,161,831	3,320,382
501 502	Fuel	561,914	782,803	1,344,71
502 505	Steam Expenses	191,964	23,231	215,195
505 506	Electric Expenses Miscellaneous Steam Power Expenses	- 161,699	-	161,699
510	Maintenance Supervision And Engineering	1,446,874	-	1,446,874
511	Maintenance Of Structures	17,542	-	17,542
512	Maintenance Of Boiler Plant	24,791	-	24,791
513	Maintenance Of Electric Plant	128,943	57,763	186,706
514	Maintenance Of Miscellaneous Steam Plant	14,653	-	14,653
539	Miscellaneous Hydraulic Power Generation Expenses	1,556	-	1,556
546	Operation Supervision And Engineering	2,041	-	2,041
549	Miscellaneous Other Power Generation Expenses	1,022	-	1,022

			2012	
FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total
553	Maintenance Of Generating And Electric Equipment	-	-	-
554	Maintenance Of Miscellaneous Other Power Generation Plant	-	-	-
556	System Control And Load Dispatching	72,726	1,707,991	1,780,71
557	Other Expenses	-		-,,
560	Operation Supervision And Engineering	36,963	1,414,817	1,451,78
	Load Dispatch-Reliability	(101)	2,302,086	2,301,98
	Load Dispatch-Monitor And Operate Transmission System	-		_,,
	Load Dispatch-Transmission Service And Scheduling	-	-	-
561.5	Reliability, Planning And Standards Development	-	812,992	812,99
	Transmission Service Studies	3,733	-	3,73
562	Station Expenses	15,846	-	15,84
563	Overhead Line Expenses	95,228	-	95,22
565	Transmission Of Electricity By Others	-	-	-
566	Miscellaneous Transmission Expenses	3,637,902	1,238,555	4,876,45
567	Rents	-	-	-
570	Maintenance Of Station Equipment	319,473	-	319,47
571	Maintenance Of Overhead Lines	147,880	-	147,88
573	Maintenance Of Miscellaneous Transmission Plant	97,483	_	97,48
580	Operation Supervision And Engineering	1,047,769	177,816	1,225,58
581	Load Dispatching	-	922,050	922,05
582	Station Expenses	989	-	98
583	Overhead Line Expenses	38,504	-	38,50
584	Underground Line Expenses	2,328	-	2,32
586	Meter Expenses	562,611	40,398	603,00
587	Customer Installations Expenses	-	_	-
588	Miscellaneous Distribution Expenses	832,419	203,700	1,036,11
590	Maintenance Supervision And Engineering	7,085	-	7,08
592	Maintenance Of Station Equipment	2,277	-	2,27
593	Maintenance Of Overhead Lines	201,396	-	201,39
594	Maintenance Of Underground Lines	-	-	-
595	Maintenance Of Line Transformers	334	-	33

			2012	
FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total
597	Maintenance Of Meters	-	-	-
598	Maintenance Of Miscellaneous Distribution Plant	9,981	-	9,98
901	Supervision	1,648,294	350,681	1,998,97
902	Meter Reading Expenses	161,397	279	161,67
903	Customer Records And Collection Expenses	4,812,161	5,546,771	10,358,93
904 905 907 908	Uncollectible Accounts Miscellaneous Customer Accounts Expenses Supervision Customer Assistance Expenses	617,444 34,898 10,268,286	- - 189,949 568,631	- 617,44 224,84 10,836,93
909	Informational And Instructional Advertising Expenses	306,108	-	306,1
910	Miscellaneous Customer Service And Informational Expenses	148,871	377,470	526,34
912	Demonstrating And Selling Expenses	-	-	-
913	Advertising Expenses	1,823	-	1,82
920	Administrative And General Salaries	2,214,306	20,587,959	22,802,2

			2012	
FERC Account		Direct Assignments	Indirect Allocations of Costs	Total
923	Outside Services Employed	3,840,398	2,918,880	6,759,278
924	Property Insurance	122,553	-	122,553
925	Injuries And Damages	1,622,581	3,462	1,626,043
926	Employee Pensions And Benefits	15,646,649	160,191	15,806,840
928	Regulatory Commission Expenses	37,218	-	37,218
930.1	General Advertising Expenses	695,142	44,160	739,303
930.2	Miscellaneous General Expenses	190,688	960,453	1,151,141
931	Rents	144,576	238,650	383,226
935	Maintenance Of General Plant	1,150,669	12,030,447	13,181,117
Grand T	otal	582,617,252	62,904,018	645,521,270

			2013			Variance 2013 to 2012
FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total	Variance Amount	Explanation
107	Construction Work In Progress	37,807,651	-	37,807,651	4,322,392	Increases due primarily to software upgrades/replacements/licenses, telecommunication/IT infrastructure improvements, and construction projects at Cane Run 7 and Ghent Ash Pond.
108	Accumulated Provision For Depreciation Of Utility Plant	562,661	-	562,661	218,081	
131	Cash	(678,603)	-	(678,603)	2,492,884	Decrease in payments received by LKS for KU, primarily a reimbursement from insuranc in 2012.
143	Other Accounts Receivable	-	-	-	(37,987)	
146	Accounts Receivable From Associated Companies	-	-	-	231,408	
151	Fuel Stock	473,517,370	-	473,517,370	27,773,503	Higher purchases due to higher consumption at Ghent and Brown.
154	Plant Materials And Operating Supplies	-	-	-	-	
163	Stores Expense Undistributed	406,840	-	406,840	(37,436)	
165	Prepayments	9,378,739	-	9,378,739	(2,291,424)	
182.3	Other Regulatory Assets	122,116	-	122,116	(1,636,064)	
183	Preliminary Survey And Investigation Charges	230,890	-	230,890	(250,457)	
184	Clearing Accounts	23,596,281	-	23,596,281	1,195,444	Variance due to the function of the clearing account. This increase is offset in other accounts.
186	Miscellaneous Deferred Debits	424,706	-	424,706	338,669	
188	Research, Development And Demonstration Expenses	-	-	-	-	

			2013		V	ariance 2013 to 2012
FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total	Variance Amount	Explanation
228.3	Accumulated Provision For Pensions And Benefits	3,908,748	-	3,908,748	(2,660,065)	
232	Accounts Payable	233,665	-	233,665	(274,522)	
236	Taxes Accrued	(701,613)	-	(701,613)	(40,841)	
241	Tax Collections Payable	-	-	_	-	
242	Miscellaneous Current And Accrued Liabilities	486,505	-	486,505	102,492	
253	Other Deferred Credits	1,216,719	-	1,216,719	(286,500)	
408.1	Taxes Other Than Income Taxes, Utility Operating Income	4,279,493	-	4,279,493	325,196	
408.2	Taxes Other Than Income Taxes, Other Income And Deductions	-	-	-	-	
416	Cost And Expenses Of Merchandising, Jobbing And Contract Work	-	-	-	-	
418	Nonoperating Rental Income	-	-	-	(0)	
419	Interest And Dividend Income	(2)	-	(2)	(2)	
421	Miscellaneous Nonoperating Income	-	-	-	-	
426.1	Donations	748,129	111,645	859,774	90,322	
426.3	Penalties	171,584	-	171,584	171,206	
426.4	Expenditures For Certain Civic, Political And Related Activities	919	1,147,711	1,148,629	228,694	
426.5	Other Deductions	630,330	267,359	897,689	209,471	
431	Other Interest Expense	-	-	-	-	
454	Rent From Electric Property	-	-	-	(0)	
456	Other Electric Revenues	12,164	-	12,164	(6,020)	
500	Operation Supervision And Engineering	196,513	4,084,556	4,281,069	960,688	
501	Fuel	552,351	843,013	1,395,365	50,647	
502	Steam Expenses	152,391	18,690	171,081	(44,114)	
505	Electric Expenses	1,100	-	1,100	1,100	
506	Miscellaneous Steam Power Expenses	184,173	-	184,173	22,474	
510	Maintenance Supervision And Engineering	508,136	205,628	713,765	(733,109)	
511	Maintenance Of Structures	7,866	-	7,866	(9,676)	
512	Maintenance Of Boiler Plant	5,603	-	5,603	(19,188)	
513	Maintenance Of Electric Plant	37,042	65,215	102,257	(84,449)	
514	Maintenance Of Miscellaneous Steam Plant	10,118	-	10,118	(4,534)	
539	Miscellaneous Hydraulic Power Generation Expenses	-	-	-	(1,556)	
546	Operation Supervision And Engineering	-	-	-	(2,041)	
549	Miscellaneous Other Power Generation Expenses	2,439	-	2,439	1,417	

			2013	Var	ance 2013 to 2012	
FERC	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total	Variance Amount	Explanation
553	Maintenance Of Generating And Electric Equipment	3,622	-	3,622	3,622	
554	Maintenance Of Miscellaneous Other Power Generation Plant		-	-	-	
556	System Control And Load Dispatching	90,356	1,554,617	1,644,973	(135,744)	
557	Other Expenses	-	-		-	
560	Operation Supervision And Engineering	58,366	1,606,539	1,664,905	213,125	
561.1	Load Dispatch-Reliability	-	2,686,631	2,686,631	384,646	
561.2	Load Dispatch-Monitor And Operate Transmission System	_	-	-	-	
561.3	Load Dispatch-Transmission Service And Scheduling	_	-	-	-	
561.5	Reliability, Planning And Standards Development	-	990,247	990,247	177,256	
561.6	Transmission Service Studies	11,658	-	11,658	7,925	
562	Station Expenses	5,599	-	5,599	(10,247)	
563	Overhead Line Expenses	87,297	-	87,297	(7,931)	
565	Transmission Of Electricity By Others	-	-	-	-	
566	Miscellaneous Transmission Expenses	1,816,804	614,251	2,431,056	(2,445,401)	
567	Rents	-	-	-	-	
570	Maintenance Of Station Equipment	409,543	33,717	443,260	123,787	
571	Maintenance Of Overhead Lines	107,089	-	107,089	(40,791)	
573	Maintenance Of Miscellaneous Transmission Plant	54,212	10,487	64,699	(32,784)	
580	Operation Supervision And Engineering	749,340	448,162	1,197,502	(28,083)	
581	Load Dispatching	-	993,632	993,632	71,583	
582	Station Expenses	15,843	-	15,843	14,854	
583	Overhead Line Expenses	375,437	-	375,437	336,933	
584	Underground Line Expenses	428	-	428	(1,901)	
586	Meter Expenses	589,359	15,491	604,850	1,841	
587	Customer Installations Expenses		_	_	-	
588	Miscellaneous Distribution Expenses	710,883	438,382	1,149,265	113,147	
590	Maintenance Supervision And Engineering	4,713	1,828	6,541	(544)	
592	Maintenance Of Station Equipment	3,768	-	3,768	1,491	
593	Maintenance Of Overhead Lines	119,696	-	119,696	(81,699)	
594	Maintenance Of Underground Lines	4,919	-	4,919	4,919	
595	Maintenance Of Line Transformers	_	-	-	(334)	

			2013			Variance 2013 to 2012
FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total	Variance Amount	Explanation
597	Maintenance Of Meters	-	-	-	-	
598	Maintenance Of Miscellaneous Distribution Plant	5,852	-	5,852	(4,129)	
901	Supervision	2,086,470	429,450	2,515,920	516,945	
902	Meter Reading Expenses	116,343	54,427	170,770	9,094	
903	Customer Records And Collection Expenses	4,973,868	5,730,975	10,704,843	345,911	
904	Uncollectible Accounts	_	_	_	_	
905	Miscellaneous Customer Accounts Expenses	465,261	-	465,261	(152,184)	1
907	Supervision	22,176	261,967	284,143	59,296	
908	Customer Assistance Expenses	12,392,671	569,127	12,961,799	2,124,881	Primarily due to purchase of CFL light bulbs for the residential DSM program in 2013.
909	Informational And Instructional Advertising Expenses	404,974	-	404,974	98,866	
910	Miscellaneous Customer Service And Informational Expenses	156,086	212,025	368,112	(158,230)	1
912	Demonstrating And Selling Expenses	41,970	-	41,970	41,970	
913	Advertising Expenses	-	-	-	(1,823)	
920	Administrative And General Salaries	1,824,050	26,274,333	28,098,383	5,296,117	Primarily due to a change in account number charged by information technology employees (offset in Account 935 below); and annual wage increases.
921	Office Supplies And Expenses	1,898,392	4,782,580	6,680,972	(804,283)	•

			2013			Variance 2013 to 2012
FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total	Variance Amount	Explanation
923	Outside Services Employed	3,206,847	11,896,488	15,103,335	8,344,057	Primarily due to a change in account number charged by information technology employees (offset in Account 935 below).
924	Property Insurance	218,386	22,063	240,449	117,896	
925	Injuries And Damages	219,461	35,928	255,389	(1,370,655))
926	Employee Pensions And Benefits	17,940,979	184,625	18,125,605	2,318,765	Increased pension and medical insurance costs
928 930.1	Regulatory Commission Expenses General Advertising Expenses	610,943 455,657	- 75,352	610,943 531,009	573,725 (208,293))
930.2	Miscellaneous General Expenses	344,027	1,351,758	1,695,786	544,645	
931	Rents	62,808	162,636	225,444	(157,782))
935	Maintenance Of General Plant	1,065,255	4,341,909	5,407,165	(7,773,952))
Grand T		611,744,434	72,523,446	684,267,880	38,746,610	-

	HE SERVICE CONTRIVI (EKS)		2014	1	Variance 2014 to 2013		
FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total	Variance Amount	Explanation	
107	Construction Work In Progress	14,059,941	19,642,882	33,702,823	(4,104,828)		
108	Accumulated Provision For Depreciation Of Utility Plant	285,761	35,220	320,980	(241,680)		
131	Cash	(780,343)	-	(780,343)	(101,740)		
143 146 151 154 163	Other Accounts Receivable Accounts Receivable From Associated Companies Fuel Stock Plant Materials And Operating Supplies Stores Expense Undistributed	2,596 335 486,355,554 - 31,925	(405) - - 251,520	2,192 335 486,355,554 - 283,444		Higher coal volumes purchased at slightly higher prices.	
165	Prepayments	11,355,360	1,628,975	12,984,335	3,605,596	Difference caused by timing issue of premium being paid in Jan-14 instead of Dec-13.	
182.3	Other Regulatory Assets	579,141	-	579,141	457,025		
183 184	Preliminary Survey And Investigation Charges Clearing Accounts	118,047 20,266,792	148 4,118,628	118,196 24,385,421	(112,694) 789,140		
186 188	Miscellaneous Deferred Debits Research, Development And Demonstration Expenses	300,539	5	300,544	(124,162)		

			2014		Variance 2014 to 2013		
FERC ccount	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total	Variance Amount	Explanation	
228.3	Accumulated Provision For Pensions And Benefits	2,711,061	-	2,711,061	(1,197,686)		
232	Accounts Payable	(606,191)	-	(606,191)	(839,856)		
236	Taxes Accrued	(720,345)	-	(720,345)	(18,732)		
241	Tax Collections Payable	(4)	-	(4)	(4)		
242	Miscellaneous Current And Accrued Liabilities	623,710	-	623,710	137,205		
253	Other Deferred Credits	(13,786)	2,203,219	2,189,433	972,714		
408.1	Taxes Other Than Income Taxes, Utility Operating Income	4,501,581	-	4,501,581	222,087		
408.2	Taxes Other Than Income Taxes, Other Income And Deductions	719	-	719	719		
416	Cost And Expenses Of Merchandising, Jobbing And Contract Work	-	-	-	-		
418	Nonoperating Rental Income	-	-	-	-		
419	Interest And Dividend Income	-	-	-	2		
421	Miscellaneous Nonoperating Income	-	-	-	-		
426.1	Donations	1,059,860	49,436	1,109,296	249,522		
426.3	Penalties	121,019	15,352	136,371	(35,213)		
426.4	Expenditures For Certain Civic, Political And Related Activities	284,601	772,096	1,056,697	(91,932)		
426.5	Other Deductions	572,232	382,276	954,508	56,819		
431	Other Interest Expense	-	-	-	-		
454	Rent From Electric Property	-	-	-	-		
456	Other Electric Revenues	12,911	-	12,911	747		
500	Operation Supervision And Engineering	690,409	4,640,892	5,331,301		Higher labor costs	
501	Fuel	142,309	1,296,642	1,438,951	43,586		
502	Steam Expenses	249,217	19,091	268,308	97,226		
505	Electric Expenses	60,775	-	60,775	59,675		
506	Miscellaneous Steam Power Expenses	294,925	11,149	306,074	121,901		
510	Maintenance Supervision And Engineering	697,990	279,983	977,973	264,209		
511	Maintenance Of Structures	12,587	-	12,587	4,722		
512	Maintenance Of Boiler Plant	45,789	-	45,789	40,186		
513	Maintenance Of Electric Plant	169,980	19,812	189,792	87,535		
514	Maintenance Of Miscellaneous Steam Plant	12,584	21	12,605	2,487		
539	Miscellaneous Hydraulic Power Generation Expenses	-	-	-	-		
546	Operation Supervision And Engineering	-	-	-	-		
549	Miscellaneous Other Power Generation Expenses	3,383	-	3,383	944		

			2014			Variance 2014 to 2013
FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total	Variance Amount	Explanation
553	Maintenance Of Generating And Electric Equipment	-	-	-	(3,622)	
554	Maintenance Of Miscellaneous Other Power Generation Plant	_	-	-	-	
556	System Control And Load Dispatching	94,465	1,569,242	1,663,707	18,734	
557	Other Expenses	-	-,,		-	
560	Operation Supervision And Engineering	176,030	1,496,513	1,672,543	7,638	
561.1	Load Dispatch-Reliability	508,201	1,470,303	1,978,505	(708,126)	
561.2	Load Dispatch-Monitor And Operate Transmission System	144,864	111,867	256,730	256,730	
00112		1.1,001	111,007	200,700	200,700	
561.3	Load Dispatch-Transmission Service And Scheduling	45,249	103,990	149,238	149,238	
561.5	Reliability, Planning And Standards Development	91,142	790,506	881,648	(108,599)	
561.6	Transmission Service Studies	16,671	358	17,029	5,370	
562	Station Expenses	26,125	1,632	27,757	22,158	
563	Overhead Line Expenses	66,798	6,206	73,004	(14,292)	
565	Transmission Of Electricity By Others	_	-	-	-	
566	Miscellaneous Transmission Expenses	60,457	2,290,866	2,351,323	(79,732)	
567	Rents	-	-	-	-	
570	Maintenance Of Station Equipment	513,098	222,649	735,747	292,487	
571	Maintenance Of Overhead Lines	91,819	12,817	104,637	(2,452)	
573	Maintenance Of Miscellaneous Transmission Plant	17,738	181,869	199,606	134,907	
573 580		211,978	921,248	1,133,226	(64,276)	
580 581	Operation Supervision And Engineering Load Dispatching	211,978 280,586	921,248 542,106	822,692	(170,940)	
581	Station Expenses	280,380	1,442	35,753	(170,940) 19,909	
582 583	Overhead Line Expenses	2,757,934	7,671	2,765,605	,	Variance due primarily to storm expenses
585 584	Underground Line Expenses	2,151,934	7,671	2,705,005	2,390,108 (428)	
584 586	Meter Expenses	152,484	367,321	519,805	(428) (85,045)	
380	Meter Expenses	152,464	507,521	519,805	(85,045)	
587	Customer Installations Expenses	-	-	-	-	
588	Miscellaneous Distribution Expenses	452,225	1,242,512	1,694,737	545,471	
590	Maintenance Supervision And Engineering	8,088	9,045	17,133	10,592	
592	Maintenance Of Station Equipment	12,234	209	12,443	8,675	
593	Maintenance Of Overhead Lines	143,769	135,287	279,057	159,360	
594	Maintenance Of Underground Lines	5,891	1	5,892	973	
595	Maintenance Of Line Transformers	-	-	-	-	

			2014		Variance 2014 to 2013		
FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total	Variance Amount	Explanation	
597	Maintenance Of Meters	-	-	-	-		
598	Maintenance Of Miscellaneous Distribution Plant	61,957	723	62,680	56,828		
901	Supervision	369,297	2,431,823	2,801,120	285,199		
902	Meter Reading Expenses	25,847	121,809	147,655	(23,115)		
903	Customer Records And Collection Expenses	4,704,443	7,125,541	11,829,985	1,125,142	Wage increases and higher head count.	
904	Uncollectible Accounts		-	-	-		
905	Miscellaneous Customer Accounts Expenses	135,125	38,643	173,767	(291,493)		
907	Supervision	1,395	385,282	386,677	102,535		
908	Customer Assistance Expenses	11,922,850	248,556	12,171,407	(790,392)		
909	Informational And Instructional Advertising Expenses	351,370	49,339	400,710	(4,264)		
910	Miscellaneous Customer Service And Informational Expenses	644,120	344	644,464	276,352		
912	Demonstrating And Selling Expenses	-	-	-	(41,970)		
913	Advertising Expenses	89,677	4,631	94,307	94,307		
920	Administrative And General Salaries	1,763,056	32,152,605	33,915,661	5,817,278	Primarily due to a change in account number charged by information technology employee (offset account 935 below); and annual wag increases.	
921	Office Supplies And Expenses	1,107,512	6,483,180	7,590,692	909,720		

	HE SERVICE COMPANY (EKS)		2014			Variance 2014 to 2013
FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total	Variance Amount	Explanation
923	Outside Services Employed	4,878,936	12,705,186	17,584,122	2,480,788	Variance is primarily due to a change in the manner of charging expenses related to jointly used facilities' operations and maintenance. In 2014, these expenses were captured on LKS and then allocated to the utilities. Prior to 2013, these costs did not run through LKS.
924	Property Insurance	56,425	228,035	284,460	44,011	
925	Injuries And Damages	1,722	143,919	145,641	(109,748)	
926	Employee Pensions And Benefits	15,054,691	216,247	15,270,938	(2,854,667)	
928 930.1	Regulatory Commission Expenses General Advertising Expenses	990,977 923,663	1,599	990,977 925,262	380,033 394,252	
930.2 931	Miscellaneous General Expenses Rents	(870,742) 59,569	2,735,822 1,309,523	1,865,079 1,369,092	169,294 1,143,648	Change in methodology for handling facilities allocations. Prior to 2014, rent for the LG&E Center was charged to LG&E from the holding company. In 2014, the rent was charged from LKS.
935	Maintenance Of General Plant	1,668,032	610,312	2,278,344	(3,128,821)	
Grand T	'otal	593,355,039	113,845,723	707,200,762	22,932,882	

			2015		Variance 2015 to 2014			
FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total	Variance Amount	Explanation		
107	Construction Work In Progress	20,776,390	20,513,513	41,289,903	7,587,080	Increases due primarily to IT projects (network/software upgrades, data warehouse improvements), purchase of capital spare generator step-up transformers and demand conservation program equipment.		
108	Accumulated Provision For Depreciation Of Utility Plant	546,311	56,523	602,834	281,854			
131	Cash	(328,328)	-	(328,328)	452,015			
143	Other Accounts Receivable	5,788	213	6,001	3,810			
146 151	Accounts Receivable From Associated Companies Fuel Stock	408,975,931	-	408,975,931	(335) (77,379,623)			
	Plant Materials And Operating Supplies Stores Expense Undistributed	(43,165) 83,629	- 696,892	(43,165) 780,522	(43,165) 497,077			
165	Prepayments	3,236,969	8,234,020	11,470,989	(1,513,346)			
182.3	Other Regulatory Assets	1,985,207	-	1,985,207	1,406,066	Primarily due to the establishment of regulatory asset for 15-year amortization of pensions as a result of Case No. 2014-00371		
183	Preliminary Survey And Investigation Charges	196,334	187	196,521	78,325			
184	Clearing Accounts	14,658,400	11,379,313	26,037,713	1,652,292	Variance due to the function of the clearing account. This increase is offset in other accounts.		
186	Miscellaneous Deferred Debits	242,647	100	242,746 46,995	(57,797) 46,995			
188	Research, Development And Demonstration Expenses	-	46,995	40,995	40,995			

			2015		Variance 2015 to 2014		
FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total	Variance Amount	Explanation	
228.3	Accumulated Provision For Pensions And Benefits	3,755,072	-	3,755,072	1,044,011	Primarily due to increased accrual for post retirement benefits including medical.	
232	Accounts Payable	(42,442)	-	(42,442)	563,749	reaction objects metidang medical.	
236	Taxes Accrued	(903,198)	-	(903,198)	(182,852)		
241	Tax Collections Payable	-	-	-	4		
242	Miscellaneous Current And Accrued Liabilities	788,050	-	788,050	164,340		
253	Other Deferred Credits	-	1,348,812	1,348,812	(840,621)		
408.1	Taxes Other Than Income Taxes, Utility Operating Income	4,418,288	480,584	4,898,872	397,292		
408.2	Taxes Other Than Income Taxes, Other Income And Deductions	314	-	314	(405)		
416	Cost And Expenses Of Merchandising, Jobbing And Contract Work	-	-	-	-		
418	Nonoperating Rental Income	-	-	-	-		
419	Interest And Dividend Income	-	-	-	-		
421	Miscellaneous Nonoperating Income	-	-	-	-		
426.1	Donations	935,175	170,072	1,105,246	(4,050)		
426.3	Penalties	(182)	8,863	8,680	(127,691)		
426.4	Expenditures For Certain Civic, Political And Related Activities	7,359	873,191	880,551	(176,147)		
426.5	Other Deductions	606,891	587,066	1,193,957	239,449		
431	Other Interest Expense	-	-	-	-		
454	Rent From Electric Property	-	-	-	-		
456	Other Electric Revenues Operation Supervision And Engineering	128	-	128 5,967,350	(12,783) 636,049		
500		342,794	5,624,555	1,444,608	5,657		
501 502	Fuel Steam Expenses	425,863 148,801	1,018,744 26,852	1,444,608	(92,655)		
502 505	Electric Expenses	-	20,032	-	(60,775)		
505 506	Miscellaneous Steam Power Expenses	516,738	710,647	1,227,385	921,311		
510	Maintenance Supervision And Engineering	(168,774)	441,625	272,851	(705,122)		
511	Maintenance Of Structures	11,310	1	11,310	(1,277)		
511	Maintenance Of Structures Maintenance Of Boiler Plant	77,614	4	77,619	(1,277) 31,830		
512	Maintenance Of Electric Plant	221,691	4 112,000	333,691	143,899		
515 514	Maintenance Of Electric Plant Maintenance Of Miscellaneous Steam Plant	18,189	112,000	18,189	143,899 5,584		
514 539	Miscellaneous Hydraulic Power Generation Expenses	18,189	-	-	5,584		
539 546	Operation Supervision And Engineering	-	-	-	-		
540 549	Miscellaneous Other Power Generation Expenses	2,901	-	2,901	(482)		

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			2015			Variance 2015 to 2014
FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of	Total	Variance Amount	Explanation
552	Maintenance Of Generating And Electric Equipment	553	Costs	553	553	
553	Maintenance Of Miscellaneous Other Power Generation Plant	- 555	-			
554			-	-		
556	System Control And Load Dispatching	94,628	1,839,111	1,933,739	270,033	
557	Other Expenses	-	-	-	-	
560	Operation Supervision And Engineering	(22,955)	1,736,554	1,713,599	41,056	
	Load Dispatch-Reliability	-	524,078	524,078	(1,454,427)	
561.2	Load Dispatch-Monitor And Operate Transmission System	-	1,980,952	1,980,952	1,724,222	Amounts previously charged to account 561. are now charged to account 561.2. When FERC accounts 561.1 and 561.2 are analyzed together the change is below the threshold for review.
561.3	Load Dispatch-Transmission Service And Scheduling	-	708,930	708,930	559,692	
561.5	Reliability, Planning And Standards Development	(2,594)	886,969	884,376	2,727	
561.6	Transmission Service Studies	9,286	10,150	19,435	2,406	
562	Station Expenses	81,994	5,097	87,091	59,334	
563	Overhead Line Expenses	67,161	5,205	72,366	(638)	
565	Transmission Of Electricity By Others	_	-	-	-	
566	Miscellaneous Transmission Expenses	10,854	2,549,184	2,560,037	208,714	
567	Rents	-	-	-	-	
570	Maintenance Of Station Equipment	351,121	302,650	653,770	(81,977)	
571	Maintenance Of Overhead Lines	109,708	11,166	120,874	16,237	
573	Maintenance Of Miscellaneous Transmission Plant	80,041	328,679	408,720	209,113	
580	Operation Supervision And Engineering	218,164	944,865	1,163,029	29,804	
581	Load Dispatching	156,854	350,563	507,417	(315,276)	
582	Station Expenses	37,659	1,523	39,182	3,429	
583	Overhead Line Expenses	1,111,080	204	1,111,283	(1,654,322)	
584	Underground Line Expenses	-	-	-	-	
586	Meter Expenses	135,282	418,230	553,513	33,707	
587	Customer Installations Expenses	-	-	-	-	
588	Miscellaneous Distribution Expenses	304,870	1,493,239	1,798,109	103,372	
590	Maintenance Supervision And Engineering	1,362	12,272	13,634	(3,499)	
592	Maintenance Of Station Equipment	10,706	468	11,175	(1,268)	
593	Maintenance Of Overhead Lines	26,552	134,295	160,847	(118,210)	
594	Maintenance Of Underground Lines	637	-	637	(5,255)	
595	Maintenance Of Line Transformers	-	-	-	-	

			2015		Variance 2015 to 2014		
FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total	Variance Amount	Explanation	
597	Maintenance Of Meters	-	-	-	-		
598	Maintenance Of Miscellaneous Distribution Plant	3,618	801	4,419	(58,261)		
901	Supervision	356,605	2,889,621	3,246,225	445,106		
902	Meter Reading Expenses	9,621	162,132	171,752	24,097		
903	Customer Records And Collection Expenses	3,966,134	7,957,814	11,923,948	93,963		
004							
904	Uncollectible Accounts	-	-	-	-		
905 907	Miscellaneous Customer Accounts Expenses	- 140	3,138	3,138	(170,629)		
907 908	Supervision Customer Assistance Expenses	12,269,517	352,428 504,062	352,568 12,773,580	(34,109) 602,173		
908	Customer Assistance Expenses	12,209,517	504,002	12,775,580	002,175		
909	Informational And Instructional Advertising Expenses	653,193	80,657	733,850	333,141		
910	Miscellaneous Customer Service And Informational Expenses	202,165	440,129	642,294	(2,170)		
912	Demonstrating And Selling Expenses	-	-	-	-		
913	Advertising Expenses	303,249	2,801	306,050	211,743		
920	Administrative And General Salaries	1,910,697	34,443,092	36,353,789	2,438,128	Primarily due to annual wage increases, increased IT and Customer Services headcount, and charges previously made to other accounts (offset above).	
921	Office Supplies And Expenses	380,475	6,398,972	6,779,447	(811,245)		

		1	2015		Variance 2015 to 2014		
FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total	Variance Amount	Explanation	
923	Outside Services Employed	2,437,454	16,875,778	19,313,232	1,729,109	Primarily due to increases for software services and upgrades.	
924	Property Insurance	-	284,125	284,125	(335)		
925	Injuries And Damages	43,757	196,459	240,216	94,575		
926	Employee Pensions And Benefits	19,554,231	1,652,021	21,206,251	5,935,313	Primarily due to an increase in employee pensions (due to change in mortality table and reduced expected return on assets) and medical expenses.	
928	Regulatory Commission Expenses	337,187	-	337,187	(653,790)	•	
930.1	General Advertising Expenses	99,919	4,375	104,294	(820,968)		
930.2	Miscellaneous General Expenses	220,790	3,122,564	3,343,354	1,478,275	Primarily due to an increase in research and development expenses.	
931	Rents	19,210	1,509,436	1,528,646	159,554	-	
935	Maintenance Of General Plant	1,427,911	813,607	2,241,518	(36,826)		
Grand T	otal	508,477,528	144,269,167	652,746,695	(54,454,067)		

			2016		Variance 2016 to 2015		
FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total	Variance Amount	t Explanation	
107	Construction Work In Progress	13,328,819	27,998,216	41,327,035	37,132		
108 131	Accumulated Provision For Depreciation Of Utility Plant	881,611 (254,963)	80,203	961,814 (254,963)	358,980 73,365		
143	Other Accounts Receivable	9,450	41	9,491	3,490		
146 151	Accounts Receivable From Associated Companies Fuel Stock	362,373,333	-	362,373,333	- (46,602,598))	
154 163 165	Plant Materials And Operating Supplies Stores Expense Undistributed Prepayments	310,321 8,069,115	877,729 17,605,343	1,188,050 25,674,458	43,165 407,529 14,203,469		
182.3	Other Regulatory Assets	3,028,916	-	3,028,916	1,043,709	Primarily due to regulatory asset for rate case expenses.	
183 184	Preliminary Survey And Investigation Charges Clearing Accounts	757,002 22,182,754	6,264,209	757,002 28,446,963	560,482 2,409,250	Variance due to the function of the clearing account. This increase is offset in other accounts.	
186 188	Miscellaneous Deferred Debits Research, Development And Demonstration Expenses	551,360 (540,892)	- 1,298,712	551,360 757,820	308,613 710,825		

			2016		Variance 2016 to 2015		
FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total	Variance Amount	Explanation	
228.3	Accumulated Provision For Pensions And Benefits	4,383,601	-	4,383,601	628,529		
232	Accounts Payable	11,240,906	(12,007)	11,228,898	11,271,341	Primarily due to 401K payable. LKS began remitting the 401K company match and payroll deductions on behalf of KU in 2016 Previously this was paid by KU.	
236	Taxes Accrued	(1,822,072)	-	(1,822,072)	(918,874)		
241	Tax Collections Payable	_	-	-	-		
242	Miscellaneous Current And Accrued Liabilities	917,112	-	917,112	129,061		
253	Other Deferred Credits	-	-	-	(1,348,812)		
408.1	Taxes Other Than Income Taxes, Utility Operating Income	1,709,687	3,826,232	5,535,920	637,047		
408.2	Taxes Other Than Income Taxes, Other Income And Deductions	-	-	-	(314)		
416	Cost And Expenses Of Merchandising, Jobbing And Contract Work	32	-	32	32		
418	Nonoperating Rental Income	-	-	-	-		
419	Interest And Dividend Income	-	-	-	-		
421	Miscellaneous Nonoperating Income	4,473	(16,926)	(12,454)	(12,454)		
426.1	Donations	431,373	32,909	464,282	(640,964)		
426.3	Penalties	10,751	22,452	33,203	24,522		
426.4	Expenditures For Certain Civic, Political And Related Activities	239,893	699,305	939,198	58,648		
426.5	Other Deductions	590,542	469,345	1,059,887	(134,070)		
431	Other Interest Expense	3,790	-	3,790	3,790		
454	Rent From Electric Property	-	-	-	-		
456	Other Electric Revenues	149	-	149	21		
500	Operation Supervision And Engineering	567,465	5,132,074	5,699,539	(267,811)		
501	Fuel	214,416	1,067,056	1,281,472	(163,135)		
502	Steam Expenses	169,393	27,869	197,262	21,610		
505	Electric Expenses	2,020	-	2,020	2,020		
506	Miscellaneous Steam Power Expenses	891,340	495,479	1,386,818	159,433		
510	Maintenance Supervision And Engineering	316,130	354,648	670,778	397,927		
511	Maintenance Of Structures	23,451	_	23,451	12,140		
512	Maintenance Of Boiler Plant	17,607	-	17,607	(60,012)		
513	Maintenance Of Electric Plant	164,327	37,122	201,448	(132,243)		
514	Maintenance Of Miscellaneous Steam Plant	38,923	0	38,923	20,734		
539	Miscellaneous Hydraulic Power Generation Expenses	-	-	-	-		
546	Operation Supervision And Engineering	1,568	-	1,568	1,568		
5.0	Miscellaneous Other Power Generation Expenses	11,600	(0)	11,600	8,699		

			2016		Variance 2016 to 2015		
FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of	Total	Variance Amount	Explanation	
552	Maintenance Of Generating And Electric Equipment		Costs	_	(553)		
553 554	Maintenance Of Miscellaneous Other Power Generation Plant	1,656	-	1,656	1,656		
		,	-	1,030			
556	System Control And Load Dispatching	81,407	1,869,417		17,085		
557	Other Expenses	-	(0)	(0)	(0)		
560	Operation Supervision And Engineering	16,550	1,585,913	1,602,464	(111,135)		
561.1	Load Dispatch-Reliability	30,668	429,366	460,034	(64,044)		
561.2	Load Dispatch-Monitor And Operate Transmission System	430,338	1,547,209	1,977,547	(3,405)		
561.3	Load Dispatch-Transmission Service And Scheduling	-	778,308	778,308	69,378		
561.5	Reliability, Planning And Standards Development	8,830	805,976	814,806	(69,570)		
561.6	Transmission Service Studies	43,944	5,407	49,352	29,916		
562	Station Expenses	67,028	72,427	139,455	52,364		
563	Overhead Line Expenses	35,518	40,248	75,766	3,400		
565	Transmission Of Electricity By Others	-	-	-	_		
566	Miscellaneous Transmission Expenses	988,471	1,883,623	2,872,095	312,057		
567	Rents	-	-	-	_		
570	Maintenance Of Station Equipment	151,724	467,493	619,218	(34,553)		
571	Maintenance Of Overhead Lines	79,191	106,171	185,362	64,488		
573	Maintenance Of Miscellaneous Transmission Plant	19,871	265,589	285,460	(123,260)		
575 580	Operation Supervision And Engineering	170,248	1,125,028	1,295,276	132,246		
580 581	Load Dispatching	170,248	291,709	443,846	(63,570)		
581	Station Expenses	31,819	1,672	443,846 33,491	(5,691)		
582 583	Overhead Line Expenses	976,142	511	976,653			
		976,142	-	970,033	(134,630)		
584 586	Underground Line Expenses			-	-		
586	Meter Expenses	168,364	422,796	591,160	37,647		
587	Customer Installations Expenses	-	-	-	-		
588	Miscellaneous Distribution Expenses	620,396	1,339,783	1,960,180	162,071		
590	Maintenance Supervision And Engineering	106	2,481	2,587	(11,047)		
592	Maintenance Of Station Equipment	15,786	213	15,999	4,825		
593	Maintenance Of Overhead Lines	110,471	134,033	244,503	83,656		
594	Maintenance Of Underground Lines	-	-	-	(637)		
595	Maintenance Of Line Transformers	-	-	-	-		

			2016			Variance 2016 to 2015
FERC Account		Direct Assignments	Indirect Allocations of Costs	Total	Variance Amount	Explanation
597	Maintenance Of Meters	-	-	-	-	
598	Maintenance Of Miscellaneous Distribution Plant	82,705	1,254	83,959	79,540	
901	Supervision	294,460	2,570,180	2,864,640	(381,585)	
902	Meter Reading Expenses	2,416	163,224	165,641	(6,111)	
903	Customer Records And Collection Expenses	4,534,171	8,521,388	13,055,559	1,131,611	The change is due primarily to IT maintenance costs, previously included in FERC 935, incremental color bill printing costs and higher labor costs in the Residential Service Center for replacing team members on the CCS / SAT upgrade project to maintain service levels.
904	Uncollectible Accounts	-	-	-	-	
905	Miscellaneous Customer Accounts Expenses	6,750	1,053	7,803	4,665	
907	Supervision	1,478	399,562	401,040	48,473	
908	Customer Assistance Expenses	16,675,715	276,283	16,951,998	4,178,418	The majority of the change is related to costs recovered through the DSM mechanism.
909	Informational And Instructional Advertising Expenses	418,013	30,265	448,278	(285,573)	
910	Miscellaneous Customer Service And Informational Expenses	255,611	715,294	970,905	328,610	
912	Demonstrating And Selling Expenses	-	-	-	-	
913	Advertising Expenses	789,548	25,196	814,744	508,694	
920	Administrative And General Salaries	1,343,396	32,926,503	34,269,899	(2,083,890)	
921	Office Supplies And Expenses	761,267	5,066,858	5,828,125	(951,321)	

			2016		Variance 2016 to 2015		
FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total	Variance Amount	Explanation	
923	Outside Services Employed	3,943,180	9,716,924	13,660,104	(5,653,127)		
924	Property Insurance	-	274,178	274,178	(9,947)		
925	Injuries And Damages	6,448	163,318	169,766	(70,450)		
926	Employee Pensions And Benefits	4,417,347	14,504,164	18,921,510	(2,284,741)		
928 930.1 930.2	Regulatory Commission Expenses General Advertising Expenses Miscellaneous General Expenses	185,394 16,070 (682,934)	- 57 4,005,261	185,394 16,127 3,322,327	(151,792) (88,167) (21,028)		
931	Rents	220,781	1,275,435	1,496,216	(32,430)		
935	Maintenance Of General Plant	1,285,788	720,196	2,005,984	(235,534)		
Grand T	`otal	469,583,570	160,791,978	630,375,548	(22,371,147)		

			Base Year ¹		Variance Base Year to 2016		
FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total	Variance Amount	Explanation	
107	Construction Work In Progress	6,603,109	49,557,726	56,160,836	14,833,801	Increases due primarily to Black Start project, Customer Care System Upgrade, IT projects (network/software upgrades, multi-function devices, technology replacement), facility consolidation projects, transmission equipmen purchases, implementation of an Advanced Metering System.	
108	Accumulated Provision For Depreciation Of Utility Plant	348,912	2,622,819	2,971,730	2,009,917	Increase is primarily due to removal costs associated with the closure of the Green River Plant, included in the forecast at LKS.	
131	Cash	-	-	-	254,963		
143	Other Accounts Receivable	-	-	-	(9,491)		
146 151	Accounts Receivable From Associated Companies Fuel Stock	-	-	-	(362,373,333)		
154 163	Plant Materials And Operating Supplies Stores Expense Undistributed	- 117,285	1,075,548	- 1,192,833	4,783		
165	Prepayments	(395,900)	14,420,764	14,024,864	(11,649,595)		
182.3	Other Regulatory Assets	-	1,519,626	1,519,626	(1,509,290)		
183 184	Preliminary Survey And Investigation Charges Clearing Accounts	70,979 2,755,288	- 7,870,533	70,979 10,625,821	(686,023) (17,821,141)		
10.		2,700,200	.,0.0,000	10,020,021	(1,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
186 188	Miscellaneous Deferred Debits Research, Development And Demonstration Expenses	184,173 22,681	- 269,304	184,173 291,985	(367,187) (465,835)		

			Base Year ¹		Variance Base Year to 2016		
FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total	Variance Amount	Explanation	
228.3	Accumulated Provision For Pensions And Benefits	-	-	-	(4,383,601)		
232	Accounts Payable	90	-	90	(11,228,808)		
236	Taxes Accrued	(326,151)	-	(326,151)		Actual dollars presented for calendar year 2014 through 2016 include convenience payments. ¹	
241	Tax Collections Payable	-	-	-	-		
242	Miscellaneous Current And Accrued Liabilities	-	-	-	(917,112)		
253	Other Deferred Credits	-	-	-	-		
408.1	Taxes Other Than Income Taxes, Utility Operating Income	260,748	5,136,407	5,397,155	(138,764)		
408.2	Taxes Other Than Income Taxes, Other Income And Deductions	-	-	-	-		
416	Cost And Expenses Of Merchandising, Jobbing And Contract Work	32	-	32	-		
418	Nonoperating Rental Income	-	-	-	-		
419	Interest And Dividend Income	-	-	-	-		
421	Miscellaneous Nonoperating Income	4,473	(12,000)	(7,527)	4,927		
426.1	Donations	189,420	418,182	607,602	143,320		
426.3	Penalties	10,751	22,452	33,203	-		
426.4	Expenditures For Certain Civic, Political And Related Activities	115,485	691,967	807,452	(131,746)		
426.5	Other Deductions	254,161	584,571	838,732	(221,155)		
431	Other Interest Expense	-	-	-	(3,790)		
454	Rent From Electric Property	-	-	-	-		
456	Other Electric Revenues	-	-	-	(149)		
500	Operation Supervision And Engineering	269,385	5,935,049	6,204,434	504,895		
501	Fuel	214,416	1,211,239	1,425,656	144,184		
502	Steam Expenses	83,268	52,162	135,430	(61,832)		
505	Electric Expenses	6,909	7,080	13,989	11,969		
506	Miscellaneous Steam Power Expenses	445,777	1,738,022	2,183,799	796,981		
510	Maintenance Supervision And Engineering	274,292	939,103	1,213,395	542,618		
511	Maintenance Of Structures	16,802	1,303	18,105	(5,346)		
512	Maintenance Of Boiler Plant	5,064	-	5,064	(12,543)		
513	Maintenance Of Electric Plant	70,564	34,320	104,884	(96,564)		
514	Maintenance Of Miscellaneous Steam Plant	15,209	12,757	27,966	(10,956)		
539	Miscellaneous Hydraulic Power Generation Expenses	-	-	-	-		
546	Operation Supervision And Engineering	1,568	-	1,568	-		
549	Miscellaneous Other Power Generation Expenses	2,950	(0)	2,950	(8,649)		

			Base Year ¹		Variance Base Year to 2016		
FERC	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total	Variance Amount	Explanation	
553	Maintenance Of Generating And Electric Equipment	-	-	-	-		
554	Maintenance Of Miscellaneous Other Power Generation Plant	-	18,228	18,228	16,572		
556	System Control And Load Dispatching	50,323	1,870,863	1,921,186	(29,638)		
557	Other Expenses	-	(0)	(0)	-		
560	Operation Supervision And Engineering	16,550	1,639,469	1,656,019	53,556		
561.1	Load Dispatch-Reliability	30,668	353,587	384,254	(75,780)		
561.2		430,338	1,333,130	1,763,468	(214,079)		
00112			1,000,100	1,700,100	(21,017)		
561.3	Load Dispatch-Transmission Service And Scheduling	_	790,062	790,062	11,754		
561.5	Reliability, Planning And Standards Development	8,830	793,488	802,318	(12,488)		
561.6	Transmission Service Studies	43,944	-	43,944	(5,407)		
562	Station Expenses	67,028	157,570	224,599	85,143		
563	Overhead Line Expenses	35,518	415,444	450,962	375,196		
565	Transmission Of Electricity By Others	-	-	-	-		
566	Miscellaneous Transmission Expenses	988,471	1,647,939	2,636,411	(235,684)		
567	Rents	-	72,420	72,420	72,420		
570	Maintenance Of Station Equipment	151,724	810,363	962,087	342,870		
571	Maintenance Of Overhead Lines	79,191	2,881,435	2,960,626	2,775,264	Vegetation management charges are budget to be paid by LKS, but most of the actual changes are directly paid by KU.	
573	Maintenance Of Miscellaneous Transmission Plant	19,871	287,055	306,926	21,466		
580	Operation Supervision And Engineering	81,171	1,348,481	1,429,653	134,377		
581	Load Dispatching	75,833	280,697	356,531	(87,316)		
582	Station Expenses	17,037	915	17,953	(15,538)		
583	Overhead Line Expenses	484,561	598,715	1,083,276	106,623		
584	Underground Line Expenses	-	-	-,			
586	Meter Expenses	86,875	501,096	587,971	(3,189)		
587	Customer Installations Expenses	-	(11,200)	(11,200)	(11,200)		
588	Miscellaneous Distribution Expenses	236,438	1,496,330	1,732,768	(227,412)		
590	Maintenance Supervision And Engineering	106	1,003	1,109	(1,478)		
592	Maintenance Of Station Equipment	9,011	158	9,168	(6,831)		
593	Maintenance Of Overhead Lines	89,501	69,424	158,925	(85,579)		
594	Maintenance Of Underground Lines	-	-	-	-		
595	Maintenance Of Line Transformers	-	-	-	-		

			Base Year ¹		Variance Base Year to 2016		
FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total	Variance Amount	Explanation	
597	Maintenance Of Meters	-	- Costs	-	-		
598 901 902 903	Maintenance Of Miscellaneous Distribution Plant Supervision Meter Reading Expenses Customer Records And Collection Expenses	10,087 130,407 1,833 2,287,454	27,910 2,613,588 164,402 10,699,367	37,997 2,743,995 166,234 12,986,821	(45,962) (120,646) 593 (68,737)		
904 905 907 908	Uncollectible Accounts Miscellaneous Customer Accounts Expenses Supervision Customer Assistance Expenses	- - 796 17,717,251	148,644 620 386,423 626,051	148,644 620 387,219 18,343,302		The majority of the change is related to cost	
909 910 912 913 920	Informational And Instructional Advertising Expenses Miscellaneous Customer Service And Informational Expenses Demonstrating And Selling Expenses Advertising Expenses Administrative And General Salaries	214,782 112,175 - 189,450 770,425	253,875 759,125 - 565,104 32,907,949	468,657 871,300 - 754,554 33,678,374	20,379 (99,605) - (60,190) (591,524)	recovered through the DSM mechanism.	
921	Office Supplies And Expenses	413,090	5,899,327	6,312,416	484,291		
	THE SERVICE COMPANY (LKS)		Base Year ¹		,	Variance Base Year to 2016	
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FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total	Variance Amount	Explanation	
923	Outside Services Employed	1,924,919	12,071,669	13,996,588	336,484		
924	Property Insurance	-	1,430,675	1,430,675	1,156,497	Prepaid insurance amortization was budgeted as an affiliate charge for two months of the base year, but the actual insurance amortization is not an affiliate charge.	
925	Injuries And Damages	1,618	839,979	841,598	671,831		
926	Employee Pensions And Benefits	501,591	19,062,486	19,564,077	642,567		
928 930.1 930.2	Regulatory Commission Expenses General Advertising Expenses Miscellaneous General Expenses	114,608 11,134 (925,762)	225,026 42,315 5,578,421	339,634 53,449 4,652,659	154,240 37,321 1,330,333	Primarily due to an increase in research and	
931	Rents	107,077	1,307,880	1,414,958	(81,258)	development expenses.	
935	Maintenance Of General Plant	726,564	711,802	1,438,366	(567,618)		
Grand T	Fotal	38,934,230	207,788,247	246,722,477	(383,653,071)		

¹Actual dollars presented for calendar year 2013 through 2015 include convenience payments. A convenience payment occurs when one affiliate, as a matter of convenience for the vendor, makes a payment on behalf of other affiliates and is subsequently reimbursed by those affiliates. Convenience payments (including, but not limited to, fuel purchases, reagent purchases, medical claims and pension funding) are excluded from the base period and the forecasted test period.

			Test Year ¹		Variance Test Year to Base Year	
FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total	Variance Explanation Amount	
107	Construction Work In Progress	-	108,409,339	108,409,339	52,248,503 Primarily due to implementation o Advanced Metering System.	of an
108	Accumulated Provision For Depreciation Of Utility Plant	-	338,117	338,117	(2,633,614)	
131	Cash	-	-	-	-	
143 146 151	Other Accounts Receivable Accounts Receivable From Associated Companies Fuel Stock		- - -	- -	- -	
154 163 165	Plant Materials And Operating Supplies Stores Expense Undistributed Prepayments	-	1,975,310	1,975,310	- 782,477 (14,024,864)	
182.3	Other Regulatory Assets	-	660,032	660,032	(859,595)	
183 184	Preliminary Survey And Investigation Charges Clearing Accounts	- 258,244	12,013,007	- 12,271,250	(70,979)1,645,429 Variance due to the function of the account. This increase is offset in accounts.	
186 188	Miscellaneous Deferred Debits Research, Development And Demonstration Expenses	-	-	-	(184,173) (291,985)	

			Test Year ¹		Va	riance Test Year to Base Year
FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of	Total	Variance Amount	Explanation
220.2			Costs			
228.3	Accumulated Provision For Pensions And Benefits	-	-	-	-	
232	Accounts Payable	-	-	-	(90)	
236	Taxes Accrued	-	-	-	326,151	
241	Tax Collections Payable	-	-	-	-	
242	Miscellaneous Current And Accrued Liabilities	-	-	-	-	
253	Other Deferred Credits	-	-	-	-	
408.1	Taxes Other Than Income Taxes, Utility Operating Income	66,947	5,199,757	5,266,704	(130,451)	
408.2	Taxes Other Than Income Taxes, Other Income And Deductions	-	-	-	-	
416	Cost And Expenses Of Merchandising, Jobbing And Contract Work	-	-	-	(32)	
418	Nonoperating Rental Income	-	-	-	-	
419	Interest And Dividend Income	-	-	-	-	
421	Miscellaneous Nonoperating Income	-	-	-	7,527	
426.1	Donations	-	926,051	926,051	318,449	
426.3	Penalties	-	-	-	(33,203)	
426.4	Expenditures For Certain Civic, Political And Related Activities	-	679,808	679,808	(127,644)	
426.5	Other Deductions	-	943,154	943,154	104,422	
431	Other Interest Expense	-	-	-	-	
454	Rent From Electric Property	-	-	-	-	
456	Other Electric Revenues	-	-	-	-	
500	Operation Supervision And Engineering	-	6,323,479	6,323,479	119,046	
501	Fuel	-	1,393,257	1,393,257	(32,399)	
502	Steam Expenses	-	76,583	76,583	(58,847)	
505	Electric Expenses	-	24,147	24,147	10,159	
506	Miscellaneous Steam Power Expenses	-	2,825,109	2,825,109	641,310	
510	Maintenance Supervision And Engineering	-	3,012,539	3,012,539	1,799,143	The change is caused by the timing and scop of high energy piping and corrosion fatigue inspections that occur during outages.
511	Maintenance Of Structures	97,282	7,932	105,214	87,109	
512	Maintenance Of Boiler Plant	-	-	-	(5,064)	
513	Maintenance Of Electric Plant	-	-	-	(104,884)	
514	Maintenance Of Miscellaneous Steam Plant	-	21,348	21,348	(6,618)	
539	Miscellaneous Hydraulic Power Generation Expenses	-	-	-	-	
546	Operation Supervision And Engineering	-	-	-	(1,568)	
549	Miscellaneous Other Power Generation Expenses	-	-	-	(2,950)	

			Test Year ¹		Va	riance Test Year to Base Year
FERC .ccount	FERC Account Description	Direct Assignments	Indirect Allocations of	Total	Variance Amount	Explanation
		0	Costs			
553	Maintenance Of Generating And Electric Equipment	-	-	-	-	
554	Maintenance Of Miscellaneous Other Power Generation Plant	-	65,935	65,935	47,706	
556	System Control And Load Dispatching	-	2,129,212	2,129,212	208,026	
557	Other Expenses	-	-	-	0	
560	Operation Supervision And Engineering	-	2,001,338	2,001,338	345,319	
561.1	Load Dispatch-Reliability	-	491,027	491,027	106,773	
	Load Dispatch-Monitor And Operate Transmission System	-	1,938,653	1,938,653	175,184	
561.3	Load Dispatch-Transmission Service And Scheduling	_	848,604	848,604	58,542	
561.5	Reliability, Planning And Standards Development	-	763,705	763,705	(38,613)	
561.6	Transmission Service Studies	-	-	-	(43,944)	
562	Station Expenses	-	741,990	741,990	517,392	
563	Overhead Line Expenses	-	1,174,640	1,174,640	723,678	
565	Transmission Of Electricity By Others	-	-	-	-	
566	Miscellaneous Transmission Expenses	-	2,594,999	2,594,999	(41,411)	
567	Rents	-	124,236	124,236	51,816	
570	Maintenance Of Station Equipment	-	1,651,824	1,651,824	689,737	
571	Maintenance Of Overhead Lines	-	11,532,263	11,532,263	8,571,637	Vegetation management charges are budget to be paid by LKS, but most of the actual charges in the Base year were directly paid KU.
573	Maintenance Of Miscellaneous Transmission Plant	-	345,925	345,925	39,000	
580	Operation Supervision And Engineering	107,032	1,377,287	1,484,318	54,666	
581	Load Dispatching	-	362,687	362,687	6,157	
582	Station Expenses	-	-	-	(17,953)	
583	Overhead Line Expenses	-	1,296,656	1,296,656	213,380	
584	Underground Line Expenses	-	-	-	-	
586	Meter Expenses	-	1,863,519	1,863,519	1,275,549	The change is related to new / incremental operating expenses resulting from the Advanced Metering System (AMS) project.
587	Customer Installations Expenses	-	(100,800)	(100,800)	(89,600)	
588	Miscellaneous Distribution Expenses	9,500	2,449,184	2,458,684	725,916	
590	Maintenance Supervision And Engineering	-	-	-	(1,109)	
592	Maintenance Of Station Equipment	-	-	-	(9,168)	
593	Maintenance Of Overhead Lines	-	113,712	113,712	(45,213)	
594	Maintenance Of Underground Lines	-	- ,-	-	-	
595	Maintenance Of Line Transformers			_		

			Test Year ¹		Va	riance Test Year to Base Year
FERC	FERC Account Description	Direct	Indirect	Total	Variance	Explanation
ccount		Assignments	Allocations of		Amount	
			Costs			
597	Maintenance Of Meters	-	1,443,098	1,443,098	1,443,098	The change is related to new / incremental maintenance expenses resulting from the Advanced Metering System (AMS) project
598	Maintenance Of Miscellaneous Distribution Plant	-	56,945	56,945	18,947	
901	Supervision	-	3,140,212	3,140,212	396,217	
902	Meter Reading Expenses	-	224,438	224,438	58,204	
903	Customer Records And Collection Expenses	-	13,944,707	13,944,707	957,885	
904	Uncollectible Accounts	_	-	-	(148,644)	
905	Miscellaneous Customer Accounts Expenses	-	-	-	(620)	
907	Supervision	-	640,059	640,059	252,841	
908	Customer Assistance Expenses	20,649,645	450,051	21,099,696	2,756,393	The majority of the change is related to co recovered through the DSM mechanism.
909	Informational And Instructional Advertising Expenses	-	411,160	411,160	(57,497)	
910	Miscellaneous Customer Service And Informational Expenses	-	1,833,990	1,833,990	962,690	
912	Demonstrating And Selling Expenses	-	-	-	-	
913	Advertising Expenses	-	837,645	837,645	83,091	
920	Administrative And General Salaries	104,925	36,794,935	36,899,860	3,221,485	Primarily due to budgeted annual wage increases during the period from March 20 through June 2018.
921	Office Supplies And Expenses	-	6,771,078	6,771,078	458,661	

I KOWI I	HE SERVICE COMPANY (LKS)	1	Test Year ¹	1	Va	riance Test Year to Base Year
FERC Account	FERC Account Description	Direct Assignments	Indirect Allocations of Costs	Total	Variance Amount	Explanation
923	Outside Services Employed	-	13,796,754	13,796,754	(199,834)	
924	Property Insurance	-	6,236,560	6,236,560	4,805,884	Prepaid insurance amortization was budgeted as an affiliate charge for the test year, but only for two months of the base year.
925	Injuries And Damages	307	3,677,998	3,678,306	2,836,708	Prepaid insurance amortization was budgeted as an affiliate charge for the test year, but only for two months of the base year.
926	Employee Pensions And Benefits	279,265	22,143,297	22,422,563	2,858,486	Primarily due to a decrease in the pension discount rate, medical cost inflation, higher headcount, and higher 401K due to increased wages and headcount.
928	Regulatory Commission Expenses	-	618,436	618,436	278,802	C .
930.1	General Advertising Expenses	-	46,180	46,180	(7,269)	
930.2	Miscellaneous General Expenses	-	5,040,577	5,040,577	387,918	
931	Rents	-	1,219,491	1,219,491	(195,466)	
935	Maintenance Of General Plant	-	254,604	254,604	(1,183,762)	
Grand T	otal	21,573,147	298,177,781	319,750,927	73,028,450	

¹Actual dollars presented for calendar year 2013 through 2015 include convenience payments. A convenience payment occurs when one affiliate, as a matter of convenience for the vendor, makes a payment on behalf of other affiliates and is subsequently reimbursed by those affiliates. Convenience payments (including, but not limited to, fuel purchases, reagent purchases, medical claims and pension funding) are excluded from the base period and the forecasted test period.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 39

Responding Witness: Adrien M. McKenzie

- Q.1-39. Please provide all work papers and supporting documentation used by Mr. McKenzie in the preparation of his Direct Testimony and Exhibits. Please provide all spreadsheets with cell formulas intact. Please include all exhibits in native spreadsheets with cell formulas intact.
- A.1-39. The work papers and support documentation requested are provided in AG 1-249. See the response to PSC 1-54 for the Excel spreadsheets pertaining to my Direct Testimony and Exhibits.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 40

- Q.1-40. Please provide all credit rating and bond rating agency reports (i.e., Standard and Poor's, Moody's, Fitch) for LG&E and KU for the last two years. Please include the most recent reports for 2017, if any.
- A.1-40. See the response to AG 1-265 for KU rating agency reports. LG&E's reports can be found in the response to AG 1-266 in Case No. 2016-00371.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 41

Responding Witness: Adrien M. McKenzie

- Q.1-41. Please provide copies of all articles, regulatory commission orders, and reports cited by Mr. McKenzie in his Direct Testimony.
- A.1-41. See the response to AG 1-249 for the requested documents, with the exception of regulatory and court orders, which are publicly available from the respective agencies.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 42

- Q.1-42. Please provide all credit rating and bond rating agency reports (i.e., Standard and Poor's, Moody's, Fitch) for PPL Corporation for the last two years. Please include the most recent reports for 2017, if any.
- A.1-42. See the response to AG 1-265.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 43

- Q.1-43. Please provide all work papers and supporting documentation used by Mr. Arbough in the preparation of his Direct Testimony and Exhibits. Please provide all spreadsheets with cell formulas intact. Please include all exhibits in native spreadsheets with cell formulas intact.
- A.1-43. See attachments to this question being provided in excel format. Attachment 1 provides the calculations of the Moody's capitalization adjustments. Attachment 2 details the S&P capitalization adjustment calculations. Attachment 3 includes the excel format of the attachment provided in response to PSC 1-3(a). Schedule J in excel format was provided in response to PSC 1-54(j).

Attachment 1 is being provided in a separate file in Excel format. Attachment 2 is being provided in a separate file in Excel format. Attachment 3 is being provided in a separate file in Excel format.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 44

- Q.1-44. Please provide all supporting calculations and documentation that support the numbers for KU cited by Mr. Arbough on page 9, lines 3 through 16 of his Direct Testimony. Provide all spreadsheets with cell formulas intact.
- A.1-44. See the response to Question No. 43.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 45

- Q.1-45. Please provide all supporting calculations and documentation that support the numbers for KU cited by Mr. Arbough on page 10, lines 16 through 18 of his Direct Testimony. Provide all spreadsheets with cell formulas intact.
- A.1-45. See the response to Question No. 43.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 46

- Q.1-46. Please provide Schedules 1-1, J-1.1, J-1.2, J-2, J-3, and B-1.1 in native spreadsheet format with cell formulas intact.
- A.1-46. See the response to PSC 1-54.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 47

Responding Witness: David S. Sinclair

- Q.1-47. Please provide the remaining service lives for each of the Company's operating coal-fired units relied on in Case No. 2016-00026 to justify or that otherwise were assumed for the proposed environmental projects. Provide all documentation relied on for your response.
- A.1-47. See the response to Question No. 9. In Case No. 2016-00026, the Companies assumed the following:

The E.W. Brown coal units were assumed to operate until at least 2021. This assumption is documented in Section 2 "Analysis Methodology" on p. 3 of Exhibit CRS-1, "Analysis of 2016 ECR Projects E.W. Brown Generating Station," in Case No. 2016-00026.

The Ghent coal units were assumed to operate until at least 2021. This assumption is documented in Section 2 "Analysis Methodology" on p. 3 of Exhibit CRS-2, "Analysis of 2016 ECR Projects Ghent Generating Station," in Case No. 2016-00026.

The Trimble County coal units were assumed to operate until at least 2045. This assumption is documented in Section 2 "Analysis Methodology" on p. 3 of Exhibit CRS-3, "Analysis of 2016 ECR Projects Trimble County Generating Station," in Case No. 2016-00026.

For the testimony and exhibits in Case No. 2016-00026, see http://psc.ky.gov/pscecf/2016-00026/derek.rahn%40lge-ku.com/01292016113807/6_-_KU_Testimony_and_Exhibits.pdf.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 48

Responding Witness: Lonnie E. Bellar

- Q.1-48. Please provide a history of transmission capital expenditures and closings to plant in service for each calendar year 2006 through 2015, the base year, and the test year separated into routine projects and specific projects (by project) on a total Company and jurisdictional basis.
- A.1-48. See attached.

Closings to plant in service for each calendar year 2006 through 2015 are not readily available in a manner that can be reproduced.

	Project Number	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Period	Perio
outine	111446	KT Misc Capital Expenditures	11	530	885	(128)	-	-	-	-	-	-	-	-	-
	111446-08	KT Misc CapEx 2008	-	-	320	314	(21)	-	-	-	-	-	-	-	-
	117319	SPCC Mods - KU Transmission	96	334	863	406	(21)	-	-	-	-	-	-	-	-
	119657	EMS Consolidation - KU	122	-	-	-	-	-	-	-	-	-	-	-	-
	119953	2005 computer purchases - KU	3	-	-	-	-	-	-	-	-	-	-	-	-
	120849	2005 KU RTU purchases	-	-	-	(17)	-	-	-	-	-	-	-	-	-
	121428	2006 Computer Purchase KU	15	-	-	-	-	-	-	-	-	-	-	-	-
	121488	Firewalls for EMS-KU	29	-	-	-	-	-	-	-	-	-	-	-	-
	121494	Monarch Lite - KU	53	(15)	-	-	-	-	-	-	-	-	-	-	
	122221	Replace Dix Dam Roof	135	-	-	-	-	-	-	-	-	-	-	-	-
	122524	Breaker Replacements-KU	-	-	-	-	2	(2)	-	-	-	-	-	-	
	122527	2007 RTU Purchases-KU	-	108	6	-	-	-	-	-	-	-	-	-	
	122556	OSI EMS Wrkstn Upgrade	5	-	-	-	-	-	-	-	-	-	-	-	-
	122651	Battery Replacement 2007	-	70	20	-	-	-	-	-	-	-	-	-	
	122752	Open Java Server	-	8	-	-	-	-	-	-	-	-	-	-	
	122753	Install OSI Upgrade-KU 2007	-	52	-	-	-	-	-	-	-	-	-	-	
	123410	Purchase PC Substation	-	3	0	-	-	-	-	-	-	-	-	-	
	123650	Routine EMS - KU	-	-	11	13	-	-	-	-	-	-	-	-	
	123654	Critical Spare 161/69 Xfrmr	-	-	19	837	39	-	-	-	-	-	-	-	
	123655	Critical Spare 138/69 Xfrmr	-	-	348	496	75	-	-	-	-	-	-	-	
	123799	OpenFEP Database Expansion	-	-	13	-	-	-	-	-	-	-	-	-	
	124455	Spare Breakers	-	-	108	-	-	-	-	-	-	-	-	-	
	124580	Comp-related equip- KU 2011	-	-	16	12	40	8	(5)	-	-	-	-	-	
	125577	09 EMS Database Expansion- KU	-	-	121	-	-	-	-	-	-	-	-	-	
	125596	08 EMS Servers & Oracle UG- KU	-	-	20	29	-	-	-	-	-	-	-	-	
	125597	10 EMS Servers & Oracle UG- KU	-	-	-	-	167	82	-	-	-	-	-	-	
	125837	Spare PTs- KU	-	-	-	58	12	-	-	-	-	-	-	-	
	125955	KR09-Surge-Arrest-Rep	-	-	-	99	2	-	-	-	-	-	-	-	
	126000	KR09-BATTERIES	-	-	-	67	16	-	-	-	-	-	-	-	
	126033	Instrument Purchase	-	-	-	19	-	-	-	-	-	-	-	-	
	126038	Cntrl Ctr. Add. Office Space	-	-	-	2	-	-	-	-	-	-	-	-	
	126555	EMS Wkstation & Monitors KU 20	-	-	-	60	-	-	-	-	-	-	-	-	
	126776	Relay Replacements-2010	-	-	-	-	615	2	-	-	-	-	-	-	
	126779	Surge Arrestors - KU-2011	-	-	-	-	106	(1)	-	-	-	-	-	-	
	126780	Batteries - KU-2010	-	-	-	-	81	13	-	-	-	-	-	-	
	126781	Station Srvce Transfrmr-2010	-	-	-	-	164	16	-	-	-	-	-	-	
	126782	Instrument Xfrmr Rplment-2010	-	-	-	-	78	-	-	-	-	-	-	-	
	126787	Test Bench	-	-	-	-	23	12	-	-	-	-	-	-	
	127140	High Spd Historic Arch- KU	-	-	-	-	-	-	-	139	-	-	-	-	
	127255	EMS Software Upgrade- KU	-	-	-	3	_	-	-	-	-	-	_	-	
	127342	Ops Engineering Wrkstation- KU	-	-	-	-	5	-	-	-	-	-	_	-	
	127463	SV Conf. Table- KU	_	_	_		6	_	_	_	_	_	_		

JOS														Base	Test
	Project Number	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Period	Period
	127564	Simpsonville Ofc Furniture KU	-	-	-	-	2	-	-	-	-	-	-	-	-
	127568	Domain Controller - KU	-	-	-	-	4	-	-	-	-	-	-	-	-
	127571	DMZ Servers - KU	-	-	-	-	20	-	-	-	-	-	-	-	-
	130064	SV Bookcases KU	-	-	-	-	3	-	-	-	-	-	-	-	-
	130604	2010 Workstation Upgrade	-	-	-	-	108	-	-	-	-	-	-	-	-
	131336	500kV Brkr Replacements-2011	-	-	-	-	-	921	3	-	-	-	-	-	-
	131757	500kV Brkr Replacements-2012	-	-	-	-	-	-	606	1,217	1	-	-	-	-
	131785	Comp-related equip-KU 2012	-	-	-	-	-	-	57	(0)	-	-	-	-	-
	131786	Comp-related equip-KU 2013	-	-	-	-	-	-	-	26	4	-	-	-	-
	131790	Fiber Upgrades 2013	-	-	-	-	-	-	-	247	2	-	-	-	-
	131791	161/138kV Spare Xfrmr 2013	-	-	-	-	-	-	366	1,126	(101)	0	-	-	-
	131964	Tools - 2011	-	-	-	-	-	141	-	-	-	-	-	-	-
	131965	KU Test Equipment - 2013	-	-	-	-	-	-	-	52	48	-	-	-	-
	132213	-DIX DAM GENERATOR	-	-	-	-	116	11	-	-	-	-	-	-	-
	132217	Digital Commun Channels EMS KU	-	-	-	-	73	-	-	-	-	-	-	-	-
	132302	EMS Firewalls KU	-	-	-	-	28	-	-	-	-	-	-	-	-
	132372	138/69kV Spare Xfrmr-2011	-	-	-	-	-	1,148	5	-	-	-	-	-	-
	132489	Dix Dam AC Replacement	-	-	-	-	-	4	-	-	-	-	-	-	-
	132615	COMP-2011	-	-	-	-	-	46	7	-	-	-	-	-	-
	132681	Dix Dam Boiler	-	-	-	-	-	6	3	-	-	-	-	-	-
	132697	Dix Ctrl Console Expansion KU	-	-	-	-	-	11	-	-	-	-	-	-	-
	132871	138/69kV Spare Xfrmr-2012	-	-	-	-	-	655	556	-	-	-	-	-	-
	132885	Spare 345/138-161kV Xfrmr	-	-	-	-	-	1,338	1,438	229	0	-	-	-	-
	133175	3rd Floor Remodel KU	-	-	-	-	-	31	-	-	-	-	-	-	-
	133509	Sville Remodel - KU	-	-	-	-	-	45	2	-	-	-	-	-	-
	134197	KU Test Equipment - 2012	-	-	-	-	-	-	55	(5)	-	-	-	-	-
	134211	138/69kV Spare Xfrmr-2013	-	-	-	-	-	-	322	874	(1,181)	-	-	-	-
	134285	COMP-RELATED EQUIP-KU 2014	-	-	-	-	-	-	-	-	51	2	-	-	-
	134286	COMP-RELATED EQUIP-KU 2015	-	-	-	-	-	-	-	-	-	73	-	-	-
	134380	161/69kV Spare Xfrmr	-	-	-	-	-	-	-	389	1,002	6	-	-	-
	134412	UPGRADE EMS SOFTWARE KU	-	-	-	-	-	-	48	77	-	-	-	-	-
	134751	8 New EMS Workstations KU	-	-	-	-	-	36	1	0	-	-	-	-	-
	134797	Tools - 2015	-	-	-	-	-	-	-	-	-	3	-	-	-
	134888	SV Drainage Issue KU	-	-	-	-	-	90	(4)	-	-	-	-	-	-
	135286	EMS Laptops KU	-	-	-	-	-	3	3	-	-	-	-	-	-
	135288	EMS Satellite Servers KU	-	-	-	-	-	29	3	-	-	-	-	-	-
	135855	EMS Backup Hware/Sware KU	-	-	-	-	-	22	88	-	-	-	-	-	-
	136120	Computers-Reliability/Perf KU	-	-	-	-	-	-	7	-	-	-	-	-	-
	136196	EMS Workstations 2012 KU	-	-	-	-	-	-	34	(0)	-	-	-	-	-
	136310	System Operations Room 154 KU	-	-	-	-	-	-	8	(0)	-	-	-	-	-
	136528	Sville Videoconferencing KU	-	-	-	-	-	-	20	-	-	-	-	-	-
	137531	Fiber/Telecomm Upgrades - 2017	-	-	-	-	-	-	-	-	-	-	-	268	-
		10													

oos														Base	Test
	Project Number	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Period	Period
	137532	Fiber/Telecomm Upgrades - 2018	-	-	-	-	-	-	-	-	-	-	-	232	-
	137537	Tools - 2017	-	-	-	-	-	-	-	-	-	-	-	18	-
	137571	ROUTINE EMS-KU 2017	-	-	-	-	-	-	-	-	-	-	-	14	-
	137730	COMP-RELATED EQUIP-KU 2017	-	-	-	-	-	-	-	-	-	-	-	38	13
	137731	COMP-RELATED EQUIP-KU 2018	-	-	-	-	-	-	-	-	-	-	-	37	-
	138785	BOC Remodel - KU	-	-	-	-	-	-	5	-	-	-	-	-	-
	138853	Control Center Chairs - KU	-	-	-	-	-	-	11	-	-	-	-	-	-
	138962	TranServ License Fees-KU	-	-	-	-	-	-	-	76	-	-	-	-	-
	139022	EMS Operator Monitor-KU-2012	-	-	-	-	-	-	15	6	-	-	-	-	-
	139158	2013 DIX Battery Replace-KU	-	-	-	-	-	-	-	6	-	-	-	-	-
	139486	Oce Plotwave Printer-KU	-	-	-	-	-	-	-	4	1	-	-	-	-
	139627	Test Lab Equipment-2015-KU	-	-	-	-	-	-	-	-	-	13	0	-	-
	139628	Test Lab Equipment-2016-KU	-	-	-	-	-	-	-	-	-	-	-	-	122
	139629	Test Lab Equipment-2017-KU	-	-	-	-	-	-	-	-	-	-	-	115	-
	139630	Test Lab Equipment-2018-KU	-	-	-	-	-	-	-	-	-	-	-	99	-
	140059	EMS DBASE EXPANSION-KU-2018	-	-	-	-	-	-	-	-	-	-	-	187	-
	140070	DIGITAL EMS COM CHNLS-KU-2017	-	-	-	-	-	-	-	-	-	-	-	72	-
	140081	Upgrade EMS Software-KU-2014	-	-	-	-	-	-	-	-	317	(3)	-	-	-
	140092	EMS App Enhancements-KU-2015	-	-	-	-	-	-	-	-	-	16	-	-	-
	140098	EMS OPERATOR MONITORS-KU-2016	-	-	-	-	-	-	-	-	-	-	33	-	21
	140225	FULL UPGRD EMS SWARE-KU-2018	-	-	-	-	-	-	-	-	-	-	-	292	-
	142636	2013_EMS_Dbase_Expansion_KU	-	-	-	-	-	-	-	33	-	-	-	-	-
	142760	Rplce EMS Wkstations-KU-2013	-	-	-	-	-	-	-	115	51	-	11	-	11
	142762	ICCP Domain Cntrlrs-KU-2013	-	-	-	-	-	-	-	4	8	2	-	-	-
	142853	LOAD User Licenses-KU	-	-	-	-	-	-	-	28	-	-	-	-	-
	146072	Spare 138/69kV Xfrmr - 2014	-	-	-	-	-	-	-	-	290	686	-	-	-
	146105	Simpsonville Renovation-KU	-	-	-	-	-	-	-	-	15	-	-	-	-
	146993	OSI Database Expansion-KU	-	-	-	-	-	-	-	-	-	85	-	-	-
	147754	EMS DBASE EXPANSION-KU-2017	-	-	-	-	-	-	-	-	-	-	-	68	-
	147786	EMS APP ENHANCEMENTS-KU-2017	-	-	-	-	-	-	-	-	-	-	-	40	-
	148498	EMS CHNL EXPANSION-KU-2015	-	-	-	-	-	-	-	-	-	18	6	-	0
	149752	Simpsonville Guard Station-KU	-	-	-	-	-	-	-	-	-	12	0	-	-
	150095	FUL UPGRD EMS SWARE-KU-2016	-	-	-	-	-	-	-	-	-	61	135	-	171
	150131	Drafting Printer-KU	-	-	-	-	-	-	-	-	-	14	-	-	-
	150133	KUGO 3rd Floor Room 367	-	-	-	-	-	-	-	-	-	-	37	-	47
	150305	BW Drafting Printer - KU	-	-	-	-	-	-	-	-	-	14	2	-	-
	150468	Comp-related Equip KU 2016	-	-	-	-	-	-	-	-	-	-	23	-	24
	150932	TL 2006 UTV Asset Retirement	-	-	-	-	-	-	-	-	-	-	(1)	-	(1)
	151104	KU Spare Relay Clocks-2016	-	-	-	-	-	-	-	-	-	-	24	-	8
	151754	KU Breaker Replacements	-	-	-	-	-	-	-	-	-	-	-	1,267	262
	151763	KU Coupling Capacitor Rpl	-	-	-	-	-	-	-	-	-	-	-	50	27
	151764	KU Fence Replacements	-	-	-	-	-	-	-	-	-	-	-	201	131
		1													

													Base	Test
Project Number	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Period	Period
151765	KU Physical Security Upgrades	-	-	-	-	-	-	-	-	-	-	-	410	52
151766	KU SST Additions	-	-	-	-	-	-	-	-	-	-	-	714	-
151767	KU Transformer Bushing Rpl	-	-	-	-	-	-	-	-	-	-	-	113	-
151897	Danville Drafting Plotter-KU	-	-	-	-	-	-	-	-	-	-	8	-	8
152288	Capacitor Bank Test Set	-	-	-	-	-	-	-	-	-	-	22	-	11
152613	KU Station Grounding	-	-	-	-	-	-	-	-	-	-	-	117	-
152616	2017 Spare 345 Brk-KU	-	-	-	-	-	-	-	-	-	-	-	573	-
152619	KU Spare Misc Equip	-	-	-	-	-	-	-	-	-	-	-	105	60
152630	KU Cap and Pin Rpl	-	-	-	-	-	-	-	-	-	-	-	2,473	-
152638	KU Online Monitoring Equipment	-	-	-	-	-	-	-	-	-	-	-	63	-
153188	Etown Trans Sub Storeroom	-	-	-	-	-	-	-	-	-	-	-	-	287
153279	ROR-KU SPARE CCVT-2016	-	-	-	-	-	-	-	-	-	-	31	-	32
153370	Battery Replacements - KU	-	-	-	-	-	-	-	-	-	-	-	530	-
153371	DFR Installations - KU	-	-	-	-	-	-	-	-	-	-	-	507	-
153372	PLC Replacements - KU	-	-	-	-	-	-	-	-	-	-	-	922	-
153593	Spare 138/69 185MVA Xfrmr-2016	-	-	-	-	-	-	-	-	-	-	577	-	-
153696	P&C Computer-2016-KU	-	-	-	-	-	-	-	-	-	-	2	-	-
K5	RELOCATIONS TRANS LINES	145	445	(240)	7	4	-	-	-	-	-	-	-	-
K5-2008	RELOCATIONS TRANS LINES 2008	-	-	(14)	86	(58)	-	-	-	-	-	-	-	-
K5-2009	RELOCATIONS T LINES KU 2009	-	-	-	141	23	(4)	-	-	-	(0)	-	-	-
K5-2010	RELOCATIONS T LINES KU 2010	-	-	-	-	27	(19)	(2)	-	-	-	-	-	-
K5-2011	RELOCATIONS T LINES KU 2011	-	-	-	-	-	163	36	-	-	-	-	-	-
K5-2012	RELOCATION T-LINES KU 2012	-	-	-	-	-	-	44	19	(0)	-	-	-	-
K5-2013	RELOCATIONS T LINES KU	-	-	-	-	-	-	-	(2)	15	-	-	-	-
K5-2014	Relocations T Lines-KU	-	-	-	-	-	-	-	-	-	5	-	-	-
K5-2015	Relocations Trans Lines KU	-	-	-	-	-	-	-	-	-	(91)	80	-	-
K5-2016	Relocations T Lines KU-	-	-	-	-	-	-	-	-	-	-	0	-	48
K5-2017	Relocations T Lines KU 2017	-	-	-	-	-	-	-	-	-	-	-	31	5
K5-2018	Relocations T Lines KU 2018	-	-	-	-	-	-	-	-	-	-	-	16	-
K6	NEW FACILITIES TRANS LINE PWO	114	258	0	(62)	-	-	-	-	-	-	-	-	-
K6-2008	NEW FACILITIES T-LINE PWO 2008	-	-	156	118	102	-	-	-	-	-	-	-	-
K6-2009	NEW FACILITIES T-LINE KU 2009	-	-	-	618	(9)	(29)	-	-	-	-	-	-	-
K6-2010	NEW FACILITIES T-LINE KU 2010	-	-	-	-	230	(122)	0	-	-	-	-	-	-
K6-2011	NEW FACILITIES T-LINE KU 2011	-	-	-	-	-	48	(36)	-	-	-	-	-	-
K6-2012	NEW FACILITIES T-LINES KU 2012	-	-	-	-	-	-	155	139	-	-	-	-	-
K6-2013	NEW FACILITIES T-LINE KU 2013	-	-	-	-	-	-	-	130	(1)	-	-	-	-
K7	PARAMETER UPGRADE T LINE PWO	73	307	77	(189)	(17)	-	-	-	-	-	-	-	-
K7-2008	PARAM UPGRADE T LINE PWO 2008	-	-	296	(152)	(20)	-	-	-	-	-	-	-	-
K7-2009	PARAM UPGRADE T LINE KU 2009	-	-	-	64	(1)	-	-	-	-	-	-	-	-
K7-2011	PARAM UPGRADE T LINE KU 2011	-	-	-	-	-	240	(2)	-	-	-	-	-	-
K8	STORM DAMAGE T-LINE PWO	664	468	998	61	(1)	-	- `	-	-	-	-	-	-
K8-2008	STORM DAMAGE T-LINE PWO-2008	-	-	371	16	- ` `	-	-	-	-	-	-	-	-

Jurisdictional Capital Expenditures \$'000s

													Base	Test
Project Number	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Period	Period
K8-2009	STORM DAMAGE T-LINE KU 2009	-	-	-	15,752	166	-	-	-	-	-	-	-	-
K8-2010	STORM DAMAGE T-LINE KU 2010	-	-	-	-	510	(7)	-	-	-	(0)	-	-	-
K8-2011	STORM DAMAGE T-LINE KU 2011	-	-	-	-	-	1,000	(17)	-	-	-	-	-	-
K8-2012	STORM DAMAGE T-LINE KU 2012	-	-	-	-	-	-	1,499	43	(7)	-	-	-	-
K8-2013	STORM DAMAGE T-LINE KU 2013	-	-	-	-	-	-	-	1,164	202	2	-	-	-
K8-2014	STORM DAMAGE T-LINE-KU 2014	-	-	-	-	-	-	-	-	991	82	(4)	-	(4)
K8-2015	STORM DAMAGE T-LINE KU 2015	-	-	-	-	-	-	-	-	-	1,056	(41)	-	1
K8-2016	STORM DAMAGE T-LINE KU 2016	-	-	-	-	-	-	-	-	-	-	814	-	865
K8-2017	Storm Damage T-Line KU 2017	-	-	-	-	-	-	-	-	-	-	-	526	175
K8-2018	Storm Damage T-Line KU 2018	-	-	-	-	-	-	-	-	-	-	-	541	-
K9	PRIORITY REPL T-LINES PWO	5,327	4,300	1,979	(345)	(16)	6	(10)	-	-	-	-	-	-
K9-2008	PRIORITY REPL T-LINES PWO 2008	-	-	1,374	692	-	-	-	-	-	-	-	-	-
K9-2009	PRIORITY REPL T-LINES KU 2009	-	-	-	2,278	925	(5)	-	-	-	-	-	-	-
K9-2010	PRIORITY REPL T-LINES KU 2010	-	-	-	-	5,479	205	(39)	(23)	-	0	-	-	-
K9-2011	PRIORITY REPL T-LINES KU 2011	-	-	-	-	-	6,685	331	(14)	(45)	-	-	-	-
K9-2012	PRIORITY REPL T-LINES KU 2012	-	-	-	-	-	-	7,564	1,372	(1,290)	0	-	-	-
K9-2013	PRIORITY REPL T-LINES KU 2013	-	-	-	-	-	-	-	8,749	3,017	297	(1)	-	(534)
K9-2014	PRIORITY REPL T-LINES-KU 2014	-	-	-	-	-	-	-	-	9,503	2,648	245	-	135
K9-2015	PRIORITY REPL T-LINES KU 2015	-	-	-	-	-	-	-	-	-	9,775	1,205	-	831
K9-2016	PRIORITY REPL T-LINES KU 2016	-	-	-	-	-	-	-	-	-	-	7,691	-	4,345
K9-2017	Priority Repl T-Lines KU	-	-	-	-	-	-	-	-	-	-	-	13,836	2,866
K9-2018	Priority Repl T-Lines KU 2018	-	-	-	-	-	-	-	-	-	-	-	17,948	-
KARM-2015	PRIORITY REPL X-ARMS KU 2015	-	-	-	-	-	-	-	-	-	687	248	-	(10)
KARM-2016	Priority Repl X-Arms KU 2016	-	-	-	-	-	-	-	-	-	-	1,849	-	1,872
KARM-2017	Priority Repl X-Arms KU 2017	-	-	-	-	-	-	-	-	-	-	-	3,481	579
KARM-2018	Priority Repl X-Arms KU 2018	-	-	-	-	-	-	-	-	-	-	-	2,676	-
KARREST17	KU Arrester Replacements 2017	-	-	-	-	-	-	-	-	-	-	-	50	-
KBATTRY11	Batteries KU-11	-	-	-	-	-	14	-	(3)	-	-	-	-	-
KBATTRY12	Batteries KU-12	-	-	-	-	-	-	199	6	(1)	-	-	-	-
KBATTRY13	Batteries KU-13	-	-	-	-	-	-	-	155	-	(6)	-	-	-
KBR-10	KU Breaker Replacements-10	-	-	-	-	1,970	(1,740)	-	-	-	-	-	-	-
KBR-11	KU Breaker Replacements-11	-	-	-	-	-	1,692	260	(672)	-	-	-	-	-
KBR-12	KU Breaker Replacements-12	-	-	-	-	-	-	3,963	(176)	(26)	-	(41)	-	-
KBR-13	KU Breaker Replacements-13	-	-	-	-	-	-	-	1,058	97	(15)	-	-	-
KBR-14	KU Breaker Replacements 2014	-	-	-	-	-	-	-	-	396	64	-	-	-
KBRFAIL14	KU-Brkr Fail-2014	-	-	-	-	-	-	-	-	180	(19)	-	-	-
KBRFAIL15	KU-Brkr Fail-2015	-	-	-	-	-	-	-	-	-	350	146	-	65
KBRFAIL16	KU-Brkr Fail-2016	-	-	-	-	-	-	-	-	-	-	301	-	632
KBRFAIL17	KU-Brkr Fail-2017	-	-	-	-	-	-	-	-	-	-	-	717	-
KBRFAIL18	KU-Brkr Fail-2018	-	-	-	-	-	-	-	-	-	-	-	621	-
KCI-12	KU Capacitor Installations12	-	-	-	-	-	-	0	(0)	-	-	-	-	-
KCR-10	KU Carrier Replacements	-	-	-	-	550	127	-	-	-	-	-	-	-

Attachment #1 to Response to KIUC-1 Question No. 48 Page 5 of 26 Bellar

													Base	Test
Project Number	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Period	Period
KCR-11	KU Carrier Add/Replcmnts11	-	-	-	-	-	416	37	-	-	-	-	-	-
KCR-12	KU Carrier Add/Replcmnts12	-	-	-	-	-	-	0	13	-	-	-	-	-
KFENCE-12	KFENCE-12	-	-	-	-	-	-	317	76	-	-	-	-	-
KFENCE-13	KFENCE-13	-	-	-	-	-	-	-	392	20	-	-	-	-
KFIREWL11	KU Transformer Firewalls-11	-	-	-	-	-	3	(3)	-	-	-	-	-	-
KINS-2015	PRIORITY REPL INSLTRS KU 2015	-	-	-	-	-	-	-	-	-	240	35	-	1
KINS-2016	Priority Repl Insltrs KU 2016	-	-	-	-	-	-	-	-	-	-	56	-	98
KINS-2017	Priority Repl Insltrs KU 2017	-	-	-	-	-	-	-	-	-	-	-	544	90
KINS-2018	Priority Repl Insltrs KU 2018	-	-	-	-	-	-	-	-	-	-	-	699	-
KINSTRF11	INSTRMNT XFRMR REPL-KU-11	-	-	-	-	-	224	9	0	-	-	-	-	-
KINSTRF12	INSTRMNT XFRMR REPL-KU-12	-	-	-	-	-	-	223	54	(3)	-	-	-	-
KINSTRF13	INSTRMNT XFRMR REPL-KU-13	-	-	-	-	-	-	-	331	(41)	-	-	-	-
KOTFAIL14	KU-OtherFail-2014	-	-	-	-	-	-	-	-	130	5	(3)	-	(0)
KOTFAIL15	KU-OtherFail-2015	-	-	-	-	-	-	-	-	-	75	31	-	28
KOTFAIL16	KU-OtherFail-2016	-	-	-	-	-	-	-	-	-	-	153	-	226
KOTFAIL17	KU-OtherFail-2017	-	-	-	-	-	-	-	-	-	-	-	717	-
KOTFAIL18	KU-OtherFail-2018	-	-	-	-	-	-	-	-	-	-	-	621	-
KOTH-2016	Priority Repl Other KU 2016	-	-	-	-	-	-	-	-	_	_	2,121	-	1,365
KOTH-2017	Priority Repl Other KU 2017	-	-	-	-	-	-	-	-	_	_		2,203	734
KOTH-2018	Priority Repl Other KU 2018	_	_	_	_	_	_	_	-	-	_	_	3,381	-
K-OTHER14	KU-Other-2014	_	_	_		_	_		-	1,045	(23)	(8)	-	_
K-OTHER15	KU-Other-2015	_	_	_		_	_		_	-	1,316	298	_	212
KOTPR14	KU Other Prot Blank 2014	_	_	_		_	_		_	546	1,510	(16)	_	(25)
KOTPR15	KU Other Prot Blanket 2015	_	_	_	_	_	_	_	_	-	379	119	_	84
KOTPR16	KU Other Prot Blanket 2016										517	384	_	377
KOTPR17	KU Other Prot Blanket 2017	-	-	-	-	-	-	-	-	-	-	504	- 0	511
KOTPR18	KU Other Prot Blanket 2018	-	-	-	-	-	-	-	-	-	-	-	25	-
KOTPRFL14	KU Oth Prot Failures 2014	-	-	-	-	-	-	-	-	- 2	-	-	23	-
KOTPRFL14	KU Oth Prot Failures 2015	-	-	-	-	-	-	-	-	2	- 12	-	-	-
KOTPRFL16	KU Oth Prot Failures 2016	-	-	-	-	-	-	-	-	-	12	- 11	-	- 5
-		-	-	-	-	-	-	-	-	-	-	11		
KOTPRFL17	KU Oth Prot Failures 2017	-	-	-	-	-	-	- 1	-	-	-	-	17	-
KRELAY-11	Relay Replacements-KU-2011	-	-	-	-	-	53	1	(0)	- 7	-	-	-	-
KRELAY-12	Relay Replacements-KU -2012	-	-	-	-	-	-	276	174	7	-	-	-	-
KRELAY-13	Relay Replacement-KU-2013	-	-	-	-	-	-	-	347	64	(5)	-	-	-
KRELAY-14	Relay Replacements-KU-2014	-	-	-	-	-	-	-	-	331	164	(61)	-	(71)
KRELAY-15	Relay Replacements-KU-2015	-	-	-	-	-	-	-	-	-	261	81	-	87
KRELAY-17	Relay Replacements-KU-2017	-	-	-	-	-	-	-	-	-	-		82	83
KREL-FL14	KU Relay Failures-2014	-	-	-	-	-	-	-	-	-	-	3	-	3
	-	-	-	-	-	-	-	-	-	-	-	-	-	29
		-	-	-	-	-	-	-	-	-	-	-	126	-
KREL-FL18	-	-	-	-	-	-	-	-	-	-	-	-	109	-
KRSUB-09	Routine Sub Capital09- KU	-	-	-	659	80	(168)	-	-	-	-	-	-	-
	KU Relay Failures-2016 KU Relay Failures-2017 KU Relay Failures-2018 Routine Sub Capital09- KU	- - -	- - -	- - -				- - -	- - -	- - -	- - -	- - -		126 109

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	Project Number	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Period	Period
	KRSUB-10	KU Routine - Subs-10	-	-	-	-	899	31	8	(41)	18	-	-	-	-
	KRSUB-11	KU Routine - Subs-11	-	-	-	-	-	2,467	468	(53)	17	-	-	-	-
	KRSUB-12	KU Routine - Subs-12	-	-	-	-	-	-	928	279	(30)	(1)	-	-	-
	KRSUB-13	KU Routine - Subs-13	-	-	-	-	-	-	-	911	71	23	(104)	-	(66
	KRTU-10	KU RTU10	-	-	-	-	92	0	-	-	-	-	-	-	-
	KRTU-11	KU RTU11	-	-	-	-	-	84	27	-	-	-	-	-	-
	KRTU-12	KU RTU Replacements-12	-	-	-	-	-	-	228	15	(2)	-	-	-	-
	KRTU-13	KU RTU Replacements-13	-	-	-	-	-	-	-	131	15	-	-	-	-
	KRTU-14	KU RTU Replacements-14	-	-	-	-	-	-	-	-	660	331	1	-	2
	KRTU-15	KU RTU Replacements-15	-	-	-	-	-	-	-	-	-	889	379	-	331
	KRTU-16	KU RTU Replacements-16	-	-	-	-	-	-	-	-	-	-	1,251	-	929
	KRTU-17	KU RTU Replacements-17	-	-	-	-	-	-	-	-	-	-	-	1,597	29
	KRTU-18	KU RTU Replacements-18	-	-	-	-	-	-	-	-	-	-	-	1,698	-
	KRTU-FL15	KU RTU Failures-2015	-	-	-	-	-	-	-	-	-	15	-	-	-
	KRTU-FL17	KU RTU Failures-2017	-	-	-	-	-	-	-	-	-	-	-	6	-
	KSTSVC11	STATION SERV XFMRS KU-11	-	-	-	-	-	224	72	(10)	12	-	-	-	-
	KSTSVC12	STATION SERV XFMRS KU-12	-	-	-	-	-	-	511	21	11	78	6	-	26
	KSTSVC13	STATION SERV XFMRS KU-13	-	-	-	-	-	-	-	5	-	-	-	-	-
	KSURGE-11	Surge Arestors KU-11	-	-	-	-	-	167	(2)	-	-	-	-	-	-
	KSURGE-12	Surge Arestors KU-12	-	-	-	-	-	-	216	(2)	(0)	-	-	-	-
	KSURGE-13	Surge Arestors KU-13	-	-	-	-	-	-	-	140	-	-	-	-	-
	KSWT-2015	PRIORITY REPL SWITCHES KU 2015	-	-	-	-	-	-	-	-	-	840	54	-	29
	KTFFAIL16	KU-Xfrmr Fail-2016	-	-	-	-	-	-	-	-	-	-	-	-	466
	KTFFAIL17	KU-Xfrmr Fail-2017	-	-	-	-	-	-	-	-	-	-	-	190	107
	KTRMUP-10	KU Terminal Upgrades-10	-	-	-	-	143	136	0	-	-	-	-	-	-
	KTSUB-09	Terminal Upgrades09-KU	-	-	-	112	242	-	-	-	-	-	-	-	-
Routine Total		10	6,790	6,868	7,748	22,126	13,063	16,560	20,914	19,369	16,415	20,575	18,196	61,985	18,336
Specific	108418	LOND-PITTS 69KV RELOC.	-	-	7	-	-	-	-	-	-	-	-	-	-
-	109314	RET BAR-MOUND CITY 69KV	35	-	-	-	-	-	-	-	-	-	-	-	-
	111244	BAR - MOUND FOUNDATION REMOVAL	(35)	-	-	-	-	-	-	-	-	-	-	-	-
	111890	Rocky Br-Pocket 69KV Hwy Reloc	(269)	(4)	-	-	-	-	-	-	-	-	-	-	-
	112631	LEX-PAR 69KV HWY RELC PHASE 4	-	6	-	-	-	-	-	-	-	-	-	-	-
	112656	CLK CO-SPEN 69KV HWY RELC	-	-	7	(7)	-	-	-	-	-	-	-	-	-
	112707	North Floyd Switch	(2)	-	-	-	-	-	-	-	-	-	-	-	-
	112742	Relocate Fence Lake Reba Sub	-	8	-	-	-	-	-	-	-	-	-	-	-
								-	_	-	-	-	-	-	-
			-	-	(0)	-									
	112776	West High St. Guy Relocation	- 5	-	(0)	- 2	-	_	-	-	-	_	-	-	-
	112776 112789	West High St. Guy Relocation HWY 52 RELOCATION RICHMOND	- 5 0	-	(0) - -	2	-	-	-	-	-	-	-	-	-
	112776 112789 113314	West High St. Guy Relocation HWY 52 RELOCATION RICHMOND STANDFORD BYPASS U.S. 150			(0) - - -	-	-	- -	-	- -	- -	- -	- -	-	-
	112776 112789 113314 113775	West High St. Guy Relocation HWY 52 RELOCATION RICHMOND STANDFORD BYPASS U.S. 150 Arnld-Drchtr Blk Mtn 161kV		- - - 14	(0) - - -	2 - 73	- - -						- - -		
	112776 112789 113314	West High St. Guy Relocation HWY 52 RELOCATION RICHMOND STANDFORD BYPASS U.S. 150		- - - 14	(0) - - - -	-		-			-	-			

ios in the second se														Base	Test
	Project Number	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Period	Period
	115699	Andover-Dorch 34.5 kv Hwy Relo	-	-	-	-	-	-	-	-	-	-	-	-	-
	115737	ghent-kenton138kv hwy relc	-	-	-	(0)	-	-	-	-	-	-	-	-	-
	115769	Carrollton-Warsaw 69kv	(11)	-	-	0	-	-	-	-	-	-	-	-	-
	115978	Elihu-Somerset North 69KV	(101)	-	-	-	-	-	-	-	-	-	-	-	-
	116505	Walker 69kV Cap Retirement	-	-	-	(4)	-	-	-	-	-	-	-	-	-
	116944	Amer Ave-Haefling69kv	-	-	-	-	-	-	-	-	-	-	-	-	-
	116958	Tyrone - West Frankfort 138kv	-	-	(1)	-	-	-	-	-	-	-	-	-	-
	117016	Cynthiana - Renaker 69 KV P2	-	(0)	-	-	-	-	-	-	-	-	-	-	-
	117143	EKPC Floyd Tap Interconnect	-	-	-	-	-	-	-	-	-	-	-	-	-
	117212	INST CHAR COAL 34.5 TAP	-	-	-	-	-	-	-	-	-	-	-	-	-
	117224	RET 5 MI EAR-BAR 34KV	(0)	-	-	-	-	-	-	-	-	-	-	-	-
	117233	Carr-E.Frkt 138KV P2 Proj	-	(5)	-	-	-	-	-	-	-	-	-	-	-
	117238	Carr-Clifty Crk 138KV P2	-	(0)	-	-	-	-	-	-	-	-	-	-	-
	117243	RELOC GRP-EARN 161 (HWY 431)	0	(1)	-	-	-	-	-	-	-	-	-	-	-
	117244	RELOC GRP-HILLSIDE 69(HWY 431)	0	(1)	-	-	-	-	-	-	-	-	-	-	-
	117271	Amer.AveHaefling 69KV	10	-	-	-	-	-	-	-	-	-	-	-	-
	117287	Winc. Water Works 69KV Sub Tap	34	-	-	-	-	-	-	-	-	-	-	-	-
	117333	Arnold-Evarts 69 kv P1 Pole	-	(0)	-	-	-	-	-	-	-	-	-	-	-
	117421	EKPC E. Bernstadt Sub	7	-	-	-	-	-	-	-	-	-	-	-	-
	117669	RELOC U.S. HWY 60 PROJ	(38)	-	-	(0)	-	-	-	-	-	-	-	-	-
	117693	Toms Creek 69 KV Relo	-	-	-	-	-	-	-	-	-	-	-	-	-
	117889	Brown-Tyrone 138 KV P1 Poles	-	(18)	-	-	-	-	-	-	-	-	-	-	-
	117988	Science Hill Hwy 27 Relo	244	(241)	0	0	0	-	-	-	-	-	-	-	-
	118211	Recon Ohio Co-Rosine	-	26	-	-	-	-	-	-	-	-	-	-	-
	118214	Va City 138/69 120 MVA Xfrmr	-	-	-	-	-	-	-	-	-	-	-	-	-
	118215	Paris 138-69, 150 MVA	831	26	-	-	-	-	-	-	-	-	-	-	-
	118216	Trimble 2 Trans. Projects - KU	2,777	18,960	17,326	11,014	10,152	(132)	274	10	(7)	(3)	-	-	-
	118370	Hardin Co 345kV recv repl	-	-	(0)	-	-	-	-	-	-	-	-	-	-
	118402	0098 SYS PARA RECOND OH - ROS	-	(26)	-	-	-	-	-	-	-	-	-	-	-
	118403	Brown - Tyrone 138kv Line	-	-	(52)	-	-	-	-	-	-	-	-	-	-
	118404	Tyrone - Frankfort 69kv Line	-	-	(30)	-	-	-	-	-	-	-	-	-	-
	118405	Adams - Delaplain Tap 69kv	41	-	-	-	-	-	-	-	-	-	-	-	-
	119654	Frequency Transducers Addition	0	-	-	-	-	-	-	-	-	-	-	-	-
	119885	Loudon Ave road project.	17	19	-	-	-	-	-	-	-	-	-	-	-
	119901	SIMPSONVILLE NEW TRANSFORMER	42	-	-	-	-	-	-	-	-	-	-	-	-
	119952	Adams to Penn 69 P2	19	-	-	-	-	-	-	-	-	-	-	-	-
	120009	Bedford Tap 69kv	-	55	-	-	-	-	-	-	-	-	-	-	-
	120017	LAWRENCEBURG P-2 REBUILD	323	-	-	-	-	-	-	-	-	-	-	-	-
	120023	Higby Mill Breaker Replacement	-	0	-	-	-	-	-	-	-	-	-	-	-
	120024	Fawkes Breaker Replacement	1	-	-	-	-	-	-	-	-	-	-	-	-
	120032	Green River DFR	3	-	-	-	-	-	-	-	-	-	-	-	-
	120073	EKPC tap to Paris substation.	(1)	-	-	-	-	-	-	-	-	-	-	-	-

05														Base	Test
	Project Number	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Period	Period
	120100	Replace NAS 138kV Metering CT	5	-	-	-	-	-	-	-	-	-	-	-	-
	120107	Replace Danville North Bkr 614	-	-	-	-	-	-	-	-	-	-	-	-	-
	120130	P2 RIV. QUEEN-GRAHAM 69KV	99	-	-	-	-	-	-	-	-	-	-	-	-
	120131	P2 RIV. QUEEN-GREENVILLE 69KV	74	-	-	-	-	-	-	-	-	-	-	-	-
	120169	Arnold - Dorchester 161kv	-	-	-	-	-	-	-	-	-	-	-	-	-
	120179	Tyrone Breaker Replacement	0	-	-	-	-	-	-	-	-	-	-	-	-
	120192	FAWKES TO RICHMOND SOUTH	0	-	-	-	-	-	-	-	-	-	-	-	-
	120195	Hwy 27 Relo Pulaski Cnty Ph 2	-	0	-	-	0	-	-	-	-	-	-	-	-
	120216	Liberty Rd Breaker Replacement	1	-	-	-	-	-	-	-	-	-	-	-	-
	120217	Green River Bkr Replacement	1	-	-	-	-	-	-	-	-	-	-	-	-
	120267	Pitsbrg Lanc 69 EBernstadt Sub	(110)	-	-	-	-	-	-	-	-	-	-	-	-
	120287	FAWKES - OKONITE DIST PARAMETE	114	-	-	-	-	-	-	-	-	-	-	-	-
	120288	ETOWN - ETOWN #3 NEW 12KV XFMR	2	48	-	-	-	-	-	-	-	-	-	-	-
	120315	Loudon Ave-T-359 move to BR6	-	(31)	-	-	-	-	-	-	-	-	-	-	-
	120506	Repl Walker-634 Bushings	1	-	-	-	-	-	-	-	-	-	-	-	-
	120752	KENTON - CARNTOWN 69 HWAY	-	-	-	(7)	-	-	-	-	-	-	-	-	-
	120787	LexPlant 604 Replace	(0)	-	-	-	-	-	-	-	-	-	-	-	-
	120795	Black Mtn. tap 69kv	82	-	-	-	-	-	-	-	-	-	-	-	-
	120834	Scott Co Adams 138 kV	3	-	-	-	-	-	-	-	-	-	-	-	-
	120852	Delvinta 824 Carrier Addn.	93	8	-	-	-	-	-	-	-	-	-	-	-
	120853	Arnold 804 Carrier Addn.	76	-	-	-	-	-	-	-	-	-	-	-	-
	121076	Loudon AveLansdowne DC 69 kV	188	3,441	943	1,399	1	6	-	-	-	-	-	-	-
	121098	Brown Plant RTU Replacement	1	0	-	-	-	-	-	-	-	-	-	-	-
	121115	Energy Srvs for Blackwell Sub	67	(66)	8	(12)	-	-	-	-	-	-	-	-	-
	121133	Walker-644 Bushing Repl	1	-	-	-	-	-	-	-	-	-	-	-	-
	121137	Loudon Ave RTU Replacement	0	-	-	-	-	-	-	-	-	-	-	-	-
	121172	Fawkes 138-69kV, 150 MVA	1,168	79	38	7	-	-	-	-	-	-	-	-	-
	121202	Paris - Lexington Plant 69kv	-	-	-	-	-	-	-	-	-	-	-	-	-
	121203	Lake Reba (163) - Waco 69kv	-	-	-	-	-	-	-	-	-	-	-	-	-
	121210	A.O. Smith - Ewington 69kv	-	-	-	-	-	-	-	-	-	-	-	-	-
	121242	Toyota N Relay Replace	1	-	-	-	-	-	-	-	-	-	-	-	-
	121243	Toyota S Relay Replace	2	-	-	-	-	-	-	-	-	-	-	-	-
	121248	Elihu 161kV PT Replacement	-	9	-	-	-	-	-	-	-	-	-	-	-
	121297	Cntrol Ctr Construction - KU	49	4,962	5,811	-	-	-	-	-	-	-	-	-	-
	121303	Fawkes KU - Fawkes EKP 138kv	20	-	-	-	-	-	-	-	-	-	-	-	-
	121331	RIVER QUEEN 638 CARRIER	15	-	-	-	-	-	-	-	-	-	-	-	-
	121334	Brown-Fawkes 138kv	111	217	(0)	-	-	-		-	-	-	-	-	-
	121344	ESTILL COUNTY ENERGY PART	(34)	24	-	-	-	-	67	-	-	-	-	-	-
	121384	Earl N TT Rcvr	10	3	-	-	-	-	-	-	-	-	-	-	-
	121391	Etown-634 Bkr Relpace	77	(0)	0	-	-	-	-	-	-	-	-	-	-
	121392	W.Cliff-604&624 Bkr Replace	136	-	-	-	-	-	-	-	-	-	-	-	-
	121393	LexPlant 644 Replace	44	3	-	-	-	-	-	-	-	-	-	-	-

03														Base	Test
	Project Number	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Period	Period
	121394	LoudonAve 628 Repl	54	16	-	-	-	-	-	-	-	-	-	-	-
	121398	Dorchester TT Rcvr	-	-	-	-	-	-	-	-	-	-	-	-	-
	121411	Ohio Co. Battery Replacement	21	-	0	-	-	-	-	-	-	-	-	-	-
	121412	Wheatcroft Battery Replacement	18	(0)	0	-	-	-	-	-	-	-	-	-	-
	121413	Hardin Co. Battery Replacement	17	2	0	-	-	-	-	-	-	-	-	-	-
	121414	Carrollton Battery Replacement	12	7	0	-	-	-	-	-	-	-	-	-	-
	121438	INST ELK CRK MINE 69 TAP	52	(53)	-	-	-	-	-	-	-	-	-	-	-
	121489	Motorola Radio Console-ku	32	-	-	-	-	-	-	-	-	-	-	-	-
	121501	Lebanon-Lebanon Ind 69kV	-	-	-	-	-	-	567	-	-	-	-	-	-
	121508	Richmond, 604 terminal limits	2	10	0	-	-	-	-	-	-	-	-	-	-
	121533	Replace X bushings on T-356	23	-	-	-	-	-	-	-	-	-	-	-	-
	121540	Arnold-Delvinta AEP Wooten Tap	(0)	-	-	-	-	-	-	-	-	-	-	-	-
	121553	Shelbyville Bypass	60	(73)	-	-	-	-	-	-	-	-	-	-	-
	121558	Waitsboro Tap 69kV Relo	-	21	(3)	(16)	-	-	-	-	-	-	-	-	-
	121569	Dix Dam EMS/Cntrl addtns	14	-	-	-	-	-	-	-	-	-	-	-	-
	121586	West Lex. RTU Replacement	17	0	-	-	-	-	-	-	-	-	-	-	-
	121631	East Franfort RTU Replacement	34	6	-	-	-	-	-	-	-	-	-	-	-
	121632	Replace Bardstown 138kV PTs	27	(0)	-	-	-	-	-	-	-	-	-	-	-
	121659	Pisgah RTU Replacement	19	2	-	-	-	-	-	-	-	-	-	-	-
	121660	Grahamville RTU Replacement	-	26	-	-	-	-	-	-	-	-	-	-	-
	121668	Transmission Test Equipment	7	-	-	-	-	-	-	-	-	-	-	-	-
	121690	Farley Replace Fence	27	1	-	-	-	-	-	-	-	-	-	-	-
	121692	Rear Project Cubes	86	-	-	-	-	-	-	-	-	-	-	-	-
	121693	West Frankfort RTU Replacement	27	2	-	-	-	-	-	-	-	-	-	-	-
	121695	Inst switch @ Buena Vista Sub	-	_	40	149	-	_	-	-	_	_	_	-	-
	121705	Avon Tap 69kv reloc	4	_	-	-	(4)	_	-	-	_	_	_	-	-
	121736	Union Underwear Transformer	-	31	20	-	-	_	-	-	-	-	_	-	-
	121919	Replace Ohio Co. 608 Bushings	8	-	-	-	-	_	-	-	-	-	_	-	-
	121931	BROWN N TT RCVR	11	-	-	-	-	_	-	-	-	-	_	-	-
	121948	Replace Princeton-674 Bushing	7	_	_	_	_	_	-	_	_	_	_	-	_
	121970	Ghent-Kenton 138kV Line	- ,	0	_	_	_	_	-	_	_	_	_	-	_
	121971	Loudon-Winchester 69kV	_	350	_	_	_	_	-	_	_	_	_	-	_
	122049	*UK Underground	-	-	_	(61)	61	0	-	_	_	_	_	-	_
	122050	Ghent-Kenton 138kV Pole Repl	320	437	8	-	-	-	-	_	-	_	_	-	_
	122090	Lancaster Sub - EKP 69kV Tie	31	(31)	-	_	_	_	_	_	_	_	_	_	_
	122091	Lake Reba RTU Replacement	0	35	1	(1)									
	122094	Daviess Co 345kV Tie	15	(15)	0	(1)	-	-	-	-	-	-	-	-	-
	122117	Butler Switches - Ghent/Kenton	13	24	- 0	-	-	-	-	-	-	-	-	-	-
	122125	Millersburg Control Hse Repl	-	24 37	- 121	- 0	- 312	- 184	- (0)	-	-	-	-	-	-
	122177	on TB0664	- 10	57	121	0	312	104	(0)	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-	-
	122196	Etown 614 Upgrade	1	13	-	-	-	-	-	-	-	-	-	-	-
	122206	Inst Fence Loudon Storage Lot	2	49	-	-	-	-	-	-	-	-	-	-	-

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	Project Number	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Period	Period
	122211	Brown CT-Brdstwn P2	1	35	-	2	55	-	-	-	-	-	-	-	-
	122241	Repl West Cliff 624 Brk	-	1	0	-	-	-	-	-	-	-	-	-	-
	122265	Morganfield Fence Repl	49	1	-	-	-	-	-	-	-	-	-	-	-
	122267	Marion Sub Cap Fence Repl	8	(0)	-	-	-	-	-	-	-	-	-	-	-
	122268	Wheatcroft Sub Cap Fence Repl	9	(0)	-	-	-	-	-	-	-	-	-	-	-
	122271	Higby Mill Carrier	10	-	-	-	-	-	-	-	-	-	-	-	-
	122287	EKP Cynthiana Interconnect	0	0	-	-	-	-	-	-	-	-	-	-	-
	122300	NAS 345-138kV,450MVA xfrm	1	2,949	1,276	(61)	(166)	-	-	-	-	-	-	-	-
	122307	Ghent-345kV GCB addition	-	279	305	0	-	-	-	-	-	-	-	-	-
	122449	NAS TAP 345kV Line	3	591	625	(10)	-	-	-	-	-	-	-	-	-
	122498	Reloc Ky Hwy 286	-	1	(0)	-	6	-	-	-	-	-	-	-	-
	122521	Taylor Co. Transformer	-	192	0	-	-	-	-	-	-	-	-	-	-
	122545	Race St-Lex Plt P&G Sect	-	-	-	28	94	-	-	-	-	-	-	-	-
	122554	EKPC Southpnt Interconnect	-	46	-	-	-	-	-	-	-	-	-	-	-
	122555	Wilson-Downing Tap Reconfig	-	91	-	-	-	-	-	-	-	-	-	-	-
	122567	Harlan Y Transformer Replace	-	243	7	-	-	-	-	-	-	-	-	-	-
	122641	Reloc Ring Rd Proj 345kV	-	307	(306)	(1)	-	-	-	-	-	-	-	-	-
	122668	Liberty Road Relocation	-	71	(71)	-	-	-	-	-	-	-	-	-	-
	122675	Hardin Co-Bonvlle 69kV	-	14	20	(34)	(1)	-	1	-	-	-	-	-	-
	122678	Berea Bypass Relocation	-	(28)	6	-	-	-	-	-	-	-	-	-	-
	122679	Duncannon Rd Relocation	-	-	1	(1)	-	-	-	-	-	-	-	-	-
	122703	Brown N-Higby Mill Reloc	-	239	(165)	6	-	-	-	-	-	-	-	-	-
	122707	Dix FEP Expansion	-	74	-	-	-	-	-	-	-	-	-	-	-
	122764	Backup CC Comm LGE/KU	-	72	-	(22)	-	-	-	-	-	-	-	-	-
	122787	Taylor County RTU Replacement	-	22	-	-	-	-	-	-	-	-	-	-	-
	122792	*Hdsbg-Add 69kV bkrs for Cust	-	-	91	(91)	0	-	-	-	-	-	-	-	-
	122795	Bond-St. Paul 69kV	-	-	-	-	-	-	-	-	-	-	-	-	-
	122868	Rpl Failed West Cliff Trans.	-	103	-	-	-	-	-	-	-	-	-	-	-
	122999	Horse Cave Ind Sub	-	-	276	(25)	-	-	-	-	-	-	-	-	-
	123134	Kohl's Relocation	-	-	-	26	-	-	-	-	-	-	-	-	-
	123147	Relo Video Wall from WS	-	10	-	_	-	-	-	-	-	-	-	-	-
	123205	Armstrong Coal 69kV Tap	-	(22)	38	10	(10)	-	-	-	-	-	-	-	-
	123302	UK Med Cntr Hse Relo	-	2	242	95	10	(348)	-	-	-	-	-	-	-
	123351	Lynch-Pocket 69kV Holmes Mill	-	0	443	_	-	-	-	-	-	-	-	-	-
	123372	Lebanon East Sbstn - 427	_	_	223	30	_	-	-	-	-	_	_	-	-
	123576	GARRARD CO HIGH SCHOOL RELO	-	(78)	78	-	-	-	-	-	-	-	-	-	-
	123577	ALEX CREEK EKPC TAP UNIT T-041	-	3	(3)	-	-	-	-	-	-	-	-	-	-
	123625	Louden Ave-Haefling Hwy Relo	-	-	159	(138)	(20)	-	-	-	-	-	-	-	-
	123626	Corning Glass	-	-	(6)	6	-	-	-	-	-	-	-	-	-
	123627	Bardstown Industrial 69kV Tap	-	-	93	7	_	-	-	-	-	-	_	-	-
	123638	Parkers Mill Tap	-	-	204	, 41	-	-	-	-	-	-	-	-	-
	123666	Bryant Rd 69 KV Tap	-	-	40	9	-	-	-	-	-	-	-	-	-
		Dijuni nu oj ni, nup			-10	,									

													Base	Test
Project Number	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Period	Period
123679	RELOC HWY60 BYPASS PROJ	-	-	20	(17)	(11)	-	-	-	-	-	-	-	-
123703	INST RIVER VIEW COAL 69 TAP	-	-	63	2	21	-	-	-	-	-	-	-	-
123741	Cynthiana Bypass HWY Relo	-	-	-	-	-	0	-	-	-	-	-	-	-
123743	Haefling 714-Innovation Dr	-	-	38	66	-	-	-	-	-	-	-	-	-
123749	Innovation Drive 138kV Tap	-	-	256	270	-	-	-	-	-	-	-	-	-
123752	Air Liquide 138kV Addition	-	-	59	(58)	-	-	-	-	-	-	-	-	-
123817	Compliance Docum. Software	-	-	60	-	-	-	-	-	-	-	-	-	-
123818	Install New Analog Backup RTU	-	-	55	-	-	-	-	-	-	-	-	-	-
123830	Bond-St Paul & VACty-ClinchRiv	-	-	21	(49)	-	-	-	-	-	-	-	-	-
124158	*US 27 Highway relocation	-	-	10	(10)	-	-	-	-	-	-	-	-	-
124291	Dow Corn W - Carltn 138kv	-	-	79	571	-	-	-	-	-	-	-	-	-
124349	PVL-161-69kV, 150 MVA tran rpl	-	-	0	1,375	145	31	-	-	-	-	-	-	-
124457	INST ARMSTR DOCK 69 TAP	-	-	75	(71)	(2)	-	-	-	-	-	-	-	-
124460	Fawkes 69kV Brkr Repl	-	-	189	(4)	-	-	-	-	-	-	-	-	-
124461	KBR09-FAWKES	-	-	39	224	68	-	-	-	-	-	-	-	-
124494	*GRPP-604 Armsrtg Doc	-	-	8	(28)	2	-	-	-	-	-	-	-	-
124551	ASPEN SOFTWARE PURCHASE	-	-	46	7	-	-	-	-	-	-	-	-	-
124594	POWER LINE METERS -COMPLIANCE	-	-	9	-	-	-	-	-	-	-	-	-	-
124629	Carrollton- Metal 69kV	-	-	51	106	-	-	-	-	-	-	-	-	-
124754	896-624 Relays	-	-	16	-	-	-	-	-	-	-	-	-	-
124755	196-614 Line Diff Relay	-	-	8	10	-	-	-	-	-	-	-	-	-
124756	896-604 Relays	-	-	12	0	-	-	-	-	-	-	-	-	-
124757	664-604 Line Diff Relay	-	-	8	11	-	-	-	-	-	-	-	-	-
124760	152-704 Line Diff Relay	-	-	9	3	-	-	-	-	-	-	-	-	-
124761	152-784 Line Diff Relay	-	-	9	0	_	_	-	-	-	_	-	-	-
124762	227-704 Line Diff Relay	-	-	9	Õ	_	_	-	-	-	_	-	-	-
124763	227-714 Line Diff Relay	-	-	9	Õ	_	_	-	-	-	_	-	-	-
124764	117-754 Line Diff Relay	_	-	9	Õ	_	_	-	-	_	-	-	-	-
124765	117-764 Line Diff Relay	_	-	9	5	_	_	-	-	_	-	-	-	-
124766	896-634 Relays	-	-	12	0	-	-	-	-	-	-	-	-	-
124779	Shelbyville to Simpsonville	-	-	372	504	-	-	-	-	-	-	-	-	-
124895	Higby Mill- 69kV	-	-	230	143	-	-	-	-	-	-	-	-	-
124910	072-814 Carrier	-	_	-	-	-	_	_	-	_	_	_	_	-
124911	072-804 Carrier	-	_	_	_	-	_	_	-	_	_	_	_	-
124912	071-608 Carrier	_	_	_	_	_	_	_	_	_	_	_	_	_
124912	032-814 Carrier	_	_	10	_	_	_	_	_	_	_	_	_	_
124913	032-804 Carrier	_	-	10	_	_	-	-	-	-	_	-	-	_
124918	UK Med Relay Comm Upgrade	_	-	10	- 2	_	-	-	-	-	_	-	-	_
124919	Amer. Ave Relay Comm Upgrade	_	_	15	0	-	-	_	_	_	_	_	-	_
124919	Higby Mill Relay Comm Upgrade	-	-	13	0	-	-	-	-	-	-	-	-	-
124920	066-684 Relays	-	-	18	3	-	-	-	-	-	-	-	-	-
		-	-	9		- 1	- 1	- 0	-	-	-	-	-	-
124934	RCKY BR-POCKET 69K CAWD STR86	-	-	-	(35)	1	1	0	-	-	-	-	-	-

		_											Base	Test
Project Number	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Period	Period
125028	Brown North - Tyrone 138kV	-	-	-	-	54	2,431	(4)	-	-	-	-	-	-
125044	Delvinta- 600A metering CT	-	-	4	(4)	-	-	-	-	-	-	-	-	-
125045	138kV breaker- Lake Reba Tap	-	-	-	182	(10)	-	-	-	-	-	-	-	-
125051	Install 138kV bkr- Rodburn	-	-	-	173	(0)	-	-	-	-	-	-	-	-
125060	Install 161kV bkr-Pineville Sw	-	-	-	142	66	-	-	-	-	-	-	-	-
125062	Higby Mill 138/69 112 MVA	-	-	-	1,159	548	(3)	-	-	-	-	-	-	-
125068	Replace disk & swtch-Lancaster	-	-	-	-	11	-	-	-	-	-	-	-	-
125070	Etown Switches Replacement	-	-	-	-	59	0	-	-	-	-	-	-	-
125079	DFR Study	-	-	-	388	244	(4)	-	-	-	-	-	-	-
125080	KCA09-Carrier Repl Project	-	-	-	441	2	-	-	-	-	-	-	-	-
125260	Farley replace breaker 628	-	-	-	65	5	-	-	-	-	-	-	-	-
125288	Lexmark 6MVAR Cap Bank- REFUND	-	-	(59)	-	-	-	-	-	-	-	-	-	-
125583	EMS Redund- Telecom Exp- KU	-	-	-	-	349	1	-	-	-	-	-	-	-
125676	AVON North 69 KV Tap	-	-	-	16	270	-	-	-	-	-	-	-	-
125677	*MEREDITH 138 KV TAP	-	-	-	-	-	-	-	2	-	-	-	-	-
125694	Race St Relay Comm Upgrade	-	-	2	1	-	-	-	-	-	-	-	-	-
125698	Lake Reba Tap RTU Install	-	-	6	27	-	-	-	-	-	-	-	-	-
125700	KRT09-FARLEY RTU	-	-	_	56	1	-	-	-	-	-	-	-	-
125725	Artemus RTU Install	-	-	1	45	-	-	-	-	-	-	-	-	-
125729	KRT09-096ElihuRTU	-	-	_	56	_	-	_	-	-	_	_	-	-
125741	Blackboard Application- KU	-	-	10	-	-	-	-	-	_	_	_	-	-
125743	Dix Dam Network UG- KU	-	-	43	-	-	-	-	-	_	-	-	-	-
125744	Lake Reba 163- BGAD 138kV Line	-	-	-	-	0	166	(4)	-	-	-	-	-	-
125746	DOE-Paducah- Replace RTU	-	_	12	1	-	-	-	-	_	-	-	-	_
125747	Duke- Fairview- Replace RTU	_	_	5	0					_			-	_
125748	EKP-Taylor Co REA- Install RTU	_	_	-	0	6	4	_	_	_	_	_	_	_
125789	BrownN 924/934 DCUB-Rx Carrier	_	_	10	- 0	-	-	_	_	_	_	_	_	_
125790	American Ave 704 Carrier Repl			10				_	_					
125791	W Lexington 714 Carrier Repl	-	-	10	-	-	-	-	-	-	-	-	-	-
125805	Replace Ohio Co 69kV DB PTs	-	-	10	25	-	-	-	-	-	-	-	-	-
125806	Replace Harlan Y 161kV PTs	-	-	-	43	-	-	-	-	-	-	-	-	-
125826	RET MAD SOUTH 69 TAP	-	-	-	43	- 25	-	-	-	-	-	-	-	-
125856	Norton 34.5kV	-	-	-	1	23	-	-	-	-	-	-	-	-
125898	Central Hardin 138kV Loop	-	-	-	- 7	- (7)	-	-	-	-	-	-	-	-
	-	-	-	-		(7)	-	-	-	-	-	-	-	-
125934	INST EQUALITY TAP 69	-	-	-	0	-	-	-	-	-	-	-	-	-
125945	KBR09-DowCornWBkr708	-	-	-	110	(51)	-	-	-	-	-	-	-	-
125946	KBR09-DowCornWBkr718	-	-	-	110	1	-	-	-	-	-	-	-	-
125947	KBR09-GrRvrStlBkr724	-	-	-	114	-	-	-	-	-	-	-	-	-
125948	KBR09-GrnRvrBkr788	-	-	-	109	-	-	-	-	-	-	-	-	-
125949	KBR09-TyroneBkr714	-	-	-	111	-	-	-	-	-	-	-	-	-
125950	KBR09-TyroneBkr724	-	-	-	102	-	-	-	-	-	-	-	-	-
125956	KCA09-POCKETRELAYS	-	-	-	-	-	-	-	-	-	-	-	-	-

oos														Base	Test
	Project Number	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Period	Period
	125959	KRT09-223CarntownRTU	-	-	-	66	-	-	-	-	-	-	-	-	-
	125961	KBR09-DowCornWBkr704	-	-	-	114	2	-	-	-	-	-	-	-	-
	125962	KBR09-DowCornWBkr714	-	-	-	101	1	-	-	-	-	-	-	-	-
	125963	KBR09-ReplGhentBkr708	-	-	-	133	-	-	-	-	-	-	-	-	-
	125968	KTU09-BrownNorthReactors	-	-	-	28	416	12	-	-	-	-	-	-	-
	125970	*KTU09-W Garrard 345kV	-	-	-	(0)	-	-	-	-	-	-	-	-	-
	125971	KCA09-B North-Alcalde	-	-	-	113	199	(35)	-	-	-	-	-	-	-
	125988	KR09-S Paducah Control House	-	-	-	732	66	(34)	-	-	-	-	-	-	-
	125992	ARNLD EVRTS 69KV TOTZ TAP	-	-	-	5	459	-	-	-	-	-	-	-	-
	125995	Grahamville-Coleman Rd. 161kV	-	-	-	1,600	212	-	-	-	-	-	-	-	-
	125996	Grahamville-DOE 161kV Line	-	-	-	84	285	2,001	458	-	-	(48)	-	-	-
	126035	KMPA Princeton 161KV Tap	-	-	-	0	-	-	-	-	-	-	-	-	-
	126049	Pad Coleman Rd 161KV Tap	-	-	-	-	(0)	-	-	-	-	-	-	-	-
	126114	KCA09-HZReplacement	-	-	-	200	37	-	-	-	-	-	-	-	-
	126159	KTU09-Pineville69kVUpgrade	-	-	-	53	75	-	-	-	-	-	-	-	-
	126164	KTU09-CenHardin	-	-	-	3	(3)	-	-	-	-	-	-	-	-
	126180	*KMPASubstation	-	-	-	771	1,327	1,251	627	29	(0)	-	-	-	-
	126318	SV FRQ Source	-	-	-	2	-	-	-	-	-	-	-	-	-
	126321	Higby Mill Reconfig	-	-	-	150	572	-	-	-	-	-	-	-	-
	126322	Ghent Sub BKR 944 Replacement	-	-	-	342	6	-	-	-	-	-	-	-	-
	126329	BOONESBORO 12KV	-	-	-	-	186	-	-	-	-	-	-	-	-
	126414	*Kenton-744 Terminal Upgrade	-	-	-	49	9	-	-	-	-	-	-	-	-
	126492	Dix Map Bd & Vid Wall	-	-	-	34	-	-	-	-	-	-	-	-	-
	126569	002-Wofford RTURepl	-	-	-	23	26	17	-	-	-	-	-	-	-
	126570	051-Pittsburg RTURepla	-	-	-	1	33	0	-	-	-	-	-	-	-
	126768	W.Lexington-Bkr Upgrade	-	-	-	-	130	80	-	-	-	-	-	-	-
	126773	West Cliff Rebuild	-	-	-	-	81	2,591	194	5	-	-	-	-	-
	126774	Danville Breakers	-	-	-	-	137	99	-	-	-	-	-	-	-
	126783	Meredith	-	-	-	-	-	-	-	0	1	-	-	-	-
	126784	Central Hardin	-	-	-	-	-	0	(0)	0	(0)	-	-	-	-
	126785	Work Mgmt / FRP software	-	-	-	-	1,655	919	(29)	-	-	-	-	-	-
	126786	SEL Software for event viewing	-	-	-	-	17	-	-	-	-	-	-	-	-
	126788	DGA Oil Analyzer	-	-	-	-	99	-	-	-	-	-	-	-	-
	126790	Higby Mill Brk Replacement	-	-	-	-	814	0	-	-	-	-	-	-	-
	126794	Inst 69kv/54.0MVA Capactr FMC	-	-	-	-	401	15	-	-	-	-	-	-	-
	126795	69k/21.6MVAR Nich City Sub	-	-	-	-	174	145	90	(44)	-	-	-	-	-
	126796	36MVA Capctr-Rogersville 69kV	-	-	-	-	233	47	-	38	-	-	-	-	-
	126797	Replace 600A Bkr Shelbyville	-	-	-	14	11	-	-	-	-	-	-	-	-
	126799	Boonesboro-N 1200A Bkr 213-608	-	-	-	-	-	-	91	6	-	-	-	-	-
	126803	Draw DT/Enhance AutoCAD-KU	-	-	-	-	-	32	129	0	-	_	-	-	-
	127063	Bdstown Ind Thermal Upgrd	-	-	-	-	144	(2)	-	-	(0)	_	-	-	-
	127064	KY-St Hosp-Dville Thrml Upgrd	-	_	-	-	147	-	-	-	-	_	-	-	-
		oppid					1.7								

JOUS														Base	Test
	Project Number	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Period	Period
	127068	Hume Road Tap	-	-	-	-	-	-	-	947	72	16	-	-	-
	127071	Paris-Millersburg Hwy Relo	-	-	-	-	-	-	-	765	473	6	-	-	-
	127072	Lockport - Shadrck P2	-	-	-	-	208	-	-	-	-	-	-	-	-
	127080	Green Rv Plant-Erlngton 69k	-	-	-	-	689	669	-	-	-	-	-	-	-
	127142	Openview.NET- KU	-	-	-	-	-	171	14	-	-	-	-	-	-
	127148	KU 2011	-	-	-	-	-	40	-	-	-	-	-	-	-
	127160	161-161KV XFORMER BKR	-	-	-	25	135	-	-	-	-	-	-	-	-
	127161	161-161KV BUS TIE SWITCH	-	-	-	89	1	147	-	-	-	-	-	-	-
	127162	161-Control House	-	-	-	-	556	55	-	-	-	-	-	-	-
	127234	PV-345-Panels	-	-	-	85	230	(10)	-	-	-	-	-	-	-
	127235	131-LivingCo-Mat	-	-	-	37	23	-	-	-	-	-	-	-	-
	127260	TC2 Temporary Workaround	-	-	-	2,674	3,280	(547)	-	-	-	-	-	-	-
	127281	Tyrone Supv Cont	-	-	-	39	-	-	-	-	-	-	-	-	-
	127286	GHENT BKR 946 IN	-	-	-	53	40	149	-	-	-	-	-	-	-
	127298	RplWFrkT286Xfrmr	-	-	-	(9)	-	-	-	-	-	-	-	-	-
	127350	Open Composite Upgrade KU	-	-	-	-	7	-	-	-	-	-	-	-	-
	127355	PinevilleEqpRM	-	-	-	-	35	-	-	-	-	-	-	-	-
	127372	ADAMS-SCOTT CO 69KV PARAMETERS	-	-	-	-	299	24	-	-	-	-	-	-	-
	127394	KBR10-E-Town69kV	-	-	-	-	226	-	-	-	-	-	-	-	-
	127395	KBR10-GrnRver009	-	-	-	-	281	1	-	-	-	-	-	-	-
	127405	Versailles Bypass Capacitor	-	-	-	-	300	23	-	-	-	-	-	-	-
	127444	ScottCo69kVBrkrs	-	-	-	-	486	(1)	-	-	-	-	-	-	-
	127456	Grahamville Bus Tie Breaker	-	-	-	-	273	(37)	-	-	-	-	-	-	-
	127462	OXFORDSUB#2TAP	-	-	-	-	64	5	-	-	-	-	-	-	-
	127500	NAS - Dow Corning West OPGW	-	-	-	-	426	92	-	-	-	-	-	-	-
	127508	PDS/TEST LAN KU	-	-	-	-	11	-	-	-	-	-	-	-	-
	127512	RICH 2 SUB 4KV TO 12KV	-	-	-	-	-	232	-	-	-	-	-	-	-
	127546	238-RemoteEndsWrk	-	-	-	-	136	43	85	0	-	-	-	-	-
	127549	FALLS Software Purchase	-	-	-	-	48	25	-	-	-	-	-	-	-
	127556	ARNDORCSTR-RODA	-	-	-	-	15	3	-	-	-	-	-	-	-
	127606	Warsaw East Capacitor Bank	-	-	-	-	163	(107)	(55)	-	-	-	-	-	-
	127644	LivingstonCo-KYDam Fiber Upgr	-	-	-	-	410	109	2	-	-	-	-	-	-
	130011	Ghent Switch Replacement	-	-	-	-	330	119	101	-	-	-	-	-	-
	130474	Rineyville Tap 69kV	-	-	-	-	-	34	116	-	-	-	-	-	-
	130619	Toyota South-Toyota North OPGW	-	-	-	-	54	233	116	-	-	-	-	-	-
	130620	Scott County - Adams OPGW	-	-	-	-	276	224	(3)	0	-	-	-	-	-
	130621	Adams - Toyota South OPGW	-	-	-	-	233	18	-	-	-	-	-	-	-
	130631	DAVIESS CO Station Backup	-	-	-	-	26	24	-	-	-	-	-	-	-
	130639	131-StationServiceTransUpgr	-	-	-	-	38	22	-	-	-	-	-	-	-
	130895	Ghent 345kV Brkr Repl	-	-	-	-	7	1,579	2,118	296	136	-	-	-	-
	131144	CLARK CO HIGH RELOCATION	-	-	-	-	(235)	235	-	-	-	-	-	-	-
	131259	Joyland Upgrade	-	-	-	-	-	261	-	-	-	-	-	-	-

Jurisdictional Capital Expenditures \$'000s

003														Base	Test
	Project Number	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Period	Period
	131273	FAWKES-OKONITE 69KV RECON	-	-	-	-	-	479	-	-	-	-	-	-	-
	131274	OHIO CO - MEREDITH 138 KV	-	-	-	-	-	3,364	60	2	-	-	-	-	-
	131279	Elihu-Ferguson South 69kv	-	-	-	-	-	-	416	409	(9)	-	-	-	-
	131306	NESC Upgrades-2011	-	-	-	-	-	100	-	-	-	-	-	-	-
	131308	FMC Sub Fencing	-	-	-	-	-	32	-	-	-	-	-	-	-
	131315	Repl Brkr 192-688 at Pineville	-	-	-	-	-	89	1	-	-	-	-	-	-
	131319	Repl Brkr 178-718 at Hardin Co	-	-	-	-	-	101	76	6	-	-	-	-	-
	131321	Stanford N 19.8 MVAr 69kV Cap	-	-	-	-	-	173	125	32	-	-	-	-	-
	131322	Mt. Vernon Cap Bank	-	-	-	-	-	138	170	85	-	-	-	-	-
	131325	Scott Co 27.0 MVAr 69kV Cap	-	-	-	-	-	236	5	-	-	-	-	-	-
	131327	W. Frankfort 36.0MVAr 69kV Cap	-	-	-	-	-	287	-	-	-	-	-	-	-
	131329	Danville N 42.0MVAr 69kv Cap	-	-	-	-	-	258	6	-	-	-	-	-	-
	131338	Ghent 345kV Control House	-	-	-	-	-	-	-	-	-	550	2,388	176	1,663
	131350	Tyrone Control House	-	-	-	-	-	-	-	-	-	957	1,597	-	986
	131354	Cascade Phase II - KU	-	-	-	-	-	-	123	250	42	-	-	-	-
	131355	Ghent Redesign 138kV Sub	-	-	-	-	-	-	-	-	-	-	212	1,065	502
	131385	225-604 Breaker Replacement	-	-	-	-	72	1	-	-	-	-	-	-	-
	131390	Millersburg BKR Replacements	-	-	-	-	208	314	(0)	-	-	-	-	-	-
	131809	KU-2013	-	-	-	-	-	-	-	483	445	12	(12)	-	(0)
	131859	KU-2015	-	-	-	-	-	-	-	-	-	162	-	-	-
	131861	KU-2016	-	-	-	-	-	-	-	-	-	-	140	-	331
	131864	KU-2017	-	-	-	-	-	-	-	-	-	-	-	599	-
	131865	KU-2018	-	-	-	-	-	-	-	-	-	-	-	539	-
	132086	Farmers 175-608 Rplc	-	-	-	-	59	12	-	-	-	-	-	-	-
	132098	Simpsonville Switch Gear KU	-	-	-	-	94	1	-	-	-	-	-	-	-
	132240	GPS RTK ROVER PURCHASE-KU	-	-	-	-	-	30	-	-	-	-	-	-	-
	132370	Extend the OATI T1 to Dix Dam	-	-	-	-	5	-	-	-	-	-	-	-	-
	132610	PowerBase - KU	-	-	-	-	-	416	-	-	-	-	-	-	-
	132644	HARDIN CO-DAVIESS CO	-	-	-	-	-	226	8	-	-	-	-	-	-
	132674	KU Park Control House	-	-	-	-	-	-	-	-	-	1,541	1,105	-	917
	132732	OAS for EMS KU	-	-	-	-	-	316	(4)	-	-	-	-	-	_
	132859	HARDIN CO-BROWN N.	-	_	_	_	-	242	12	-	-	_	-	-	-
	132865	OXFORD COAL MINE TAP	-	-	-	-	-	177	-	-	-	-	(224)	-	(224)
	132867	KU	-	-	-	-	-	-	202	(77)	-	-	-	-	-
	132879	ADVENT 69KV TAP	-	-	-	-	-	181		-	-	-	-	-	-
	132889	EMS CC Switchover - KU	-	-	-	-	-	1,360	930	23	(13)	-	-	-	-
	132902	Rpl 211-345/138-161kV	-	_	_	_	-	370	48	-	-	_	-	-	-
	133116	UK WEST #2 69KV	-	-	-	-	-	-	180	-	-	-	-	-	-
	133306	NERCALRT-OH CO-GRP	_	-	-	-	-	-	96	445	17	-	-	-	-
	133318	NERCALRT-DWCNW-CRLTN	-	_	_	_	_	_	139	12	(6)	_	_	_	_
	133319	NERCALRT-CRLTN-E FFT	-	_	_	_	_	_	-	-	1,475	603	_	_	_
	133320	NERCALRT-CREIN-EITT NERCALRT-GHNT-W LEX	-	_	_	_	_	-	- 3	- 578	-	-	-	_	-
	155520	MENCALKI-UHIVI-W LEA	-	-	-	-	-	-	5	510	-	-	-	-	-

Attachment #1 to Response to KIUC-1 Question No. 48 Page 16 of 26 Bellar

003														Base	Test
	Project Number	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Period	Period
	133321	NERCALRT-RGRVL-HDNCO	-	-	-	-	-	-	-	69	-	-	-	-	-
	133361	NERCALRT-BNVL-OH CO	-	-	-	-	-	219	1,752	(30)	-	-	-	-	-
	133365	NERCALRT-DNVL N TAP	-	-	-	-	-	91	0	-	-	-	-	-	-
	133377	NERCALRT-FWKS-CLRKCO	-	-	-	-	-	-	113	-	-	-	-	-	-
	133379	NERCALRT-SPCRD-CLRKC	-	-	-	-	-	26	71	36	-	-	-	-	-
	133910	NERCALRT-PNVL-FRLY	-	-	-	-	-	-	2,346	12	-	-	-	-	-
	133917	NERCALRT-ARTMS TAP	-	-	-	-	-	86	26	-	-	-	-	-	-
	133924	NERCALRT-PNVL-HRLN	-	-	-	-	-	2,288	59	-	-	-	-	-	-
	133934	NERCALRT-DRHTR-ARND2	-	-	-	-	-	-	104	-	-	-	-	-	-
	133973	NERCALRT-HRLN-ARNLD	-	-	-	-	-	-	441	-	-	-	-	-	-
	134057	NERCALRT-DLVTA-ARNLD	-	-	-	-	-	-	-	1,743	(1)	-	-	-	-
	134058	NERCALRT-ERLN-LVGSTN	-	-	-	-	-	-	-	1,170	1,898	44	-	-	-
	134060	NERCALRT-DRCSTR-PK N	-	-	-	-	-	-	-	-	-	-	-	-	-
	134061	NERCALRT-DRCSTR-PKN1	-	-	-	-	-	-	-	-	-	-	-	-	-
	134062	NERCALRT-LKRBA-DLVTA	-	-	-	-	-	-	-	-	1,210	153	-	-	-
	134076	58.5MVAr 69kV Cap-EarlingtonN	-	-	-	-	-	-	284	105	2	-	-	-	-
	134080	138/69kV Adams Xfrmr	-	-	-	-	-	377	637	661	(12)	-	-	-	-
	134189	TRI K LNDFL RELO	-	-	-	-	-	-	(0)	0	-	-	-	-	-
	134190	EKP CPR PLT RELO	-	-	-	-	-	-	-	-	-	-	0	-	0
	134213	BLACK BRANCH 345KV	-	-	-	-	-	66	499	(0)	-	-	-	-	-
	134221	NERCALRT-RDBRN-SPRRD	-	-	-	-	-	-	-	167	273	-	-	-	-
	134222	NERCALRT-LBNON-BNVL	-	-	-	-	-	-	-	-	2,571	(13)	-	-	-
	134223	NERCALRT-ADMS-TYRN	-	-	-	-	-	-	-	430	_	-	-	-	-
	134237	DSP LEX AREA MAJOR PROJECTS	-	-	-	-	-	-	-	-	-	91	412	-	369
	134245	DSP STNWL SUB UPGD	-	_	-	-	-	-	-	-	-	_	_	564	-
	134256	DSP VERSAILLES SUB	-	_	-	-	-	-	-	-	-	-	_	1.223	-
	134278	NERCALRT-BWN-LBANON	-	_	-	-	-	-	-	1,057	(12)	-	_	-	-
	134279	NERCALRT-ETWN-BDSTWN	-	_	-	-	-	-	-	-	291	-	_	-	-
	134283	BNDS MILL-FNCHVLLE STAT REPL	-	_	-	-	-	-	-	-	-	977	482	-	177
	134284	SR 2016 Bonds Mill-Finchville	_	-	_	-	_	-	_	-	-	-	1,269	-	876
	134407	REPLACE SIMP VIDEO WALL-KU	-	-	-	-	-	-	-	-	-	483	-	-	-
	134665	Back-up Trans Control Ctr KU	-	-	-	-	-	-	77	25	(102)	-	-	-	-
	135361	REL LEXPLNT-PISGH 69RBLD	-	-	-	-	-	-	-	-	-	-	957	-	2,697
	135429	ETWN-ETWN#4 69	-	-	-	-	-	-	348	(7)	-	-	-	-	_,077
	135431	SHLBYVL-SHLBYVL E 69	_	-	_	-	_	-	278	480	5	_	_	-	_
	135433	TEP-Add 345kV Brkr to W Lex			_		_	-	-	-	-	962	100		1
	135481	River Queen Xfrmr			_			427	207	-	_	-	-		-
	135491	54.0 MVAr 69kV Cap - Green R			_				187	171	2		_		
	135531	13.2 MVAr 69kV Cap - Oreen K	-	-	-	-	-	-	-	5	3	-	-	-	_
	135625	Matanzas Sub Upgrade	_	_	_	_	_	- 5	- 7,099	4,925	38	- 8	(192)	_	(195)
	135626	Matanzas Sub Opgrades	-	-	-	-	-	5	110	4,923	2	0	(192)	-	(195)
	135629	12.0 MVAr 69kV Cap - Uniontown	-	-	-	-	-	-	310	210	2	-	-	-	-
	133029	12.0 MIVAI 09KV Cap - Uniontown	-	-	-	-	-	-	510	210	-	-	-	-	-
JUS														Base	Test
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	Project Number	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Period	Period
	135644	MicroSCADA Generation KU	-	-	-	-	-	13	4	-	-	-	-	-	-
	135784	LIVERMORE 34.5KV TAP	-	-	-	-	-	40	22	10	-	-	-	-	-
	135813	Trans Operator Log Sys-KU	-	-	-	-	-	103	-	-	-	-	-	-	-
	135832	ELIHU-SWLTN STAT REP	-	-	-	-	-	-	2,842	17	-	-	-	-	-
	135920	Corning Sub Upgrade	-	-	-	-	-	-	-	2,053	458	-	-	-	-
	135928	NERCALRT-AMERAV-HFLG	-	-	-	-	-	-	92	-	6	-	-	-	-
	135995	LREBA-WACO69P2	-	-	-	-	-	-	392	-	-	-	-	-	-
	136152	CORNING UPGD-LINES	-	-	-	-	-	-	-	186	302	-	-	-	-
	136172	AP-SADE-KU	-	-	-	-	-	-	101	(0)	-	-	-	-	-
	136531	TransOpLog II - KU	-	-	-	-	-	-	60	27	-	-	-	-	-
	137502	JAD COAL-LAND	-	-	-	-	-	-	1,687	(45)	-	-	-	-	-
	137728	SR 2017 Bonds Mill-West Cliff	-	-	-	-	-	-	-	-	-	-	3	677	-
	137733	JONESVILLE EKP TAP-REIM	-	-	-	-	-	-	-	-	-	(0)	-	-	-
	137735	PAINT LICK HWY-REIM	-	-	-	-	-	-	-	-	-	-	-	-	-
	137737	TOYOTA STRUCTURE IMPROVEMENTS	-	-	-	-	-	-	-	576	-	-	-	-	-
	137738	HWY 641 RELO	-	-	-	-	-	-	-	-	-	-	0	-	0
	137739	REL ONTON 69KV SWITCH	-	-	-	-	-	-	-	-	-	-	-	264	-
	137744	HARDIN CO SMITH 345KV P1	-	-	-	-	-	-	-	595	473	1	-	-	-
	137745	PR HARDIN CO SMITH 345KV P2	-	-	-	-	-	-	-	-	-	1,330	3,589	-	1,996
	137749	DSP SHELBYVILLE E-TRANS	-	-	-	-	-	-	-	-	-	-	263	-	358
	137750	DSP MT VERNON SUB-TRANS	-	-	-	-	-	-	-	-	-	-	-	133	-
	137751	DSP VILEY 2-TRANS	-	-	-	-	-	-	-	-	-	-	-	752	-
	137752	DSP Richmond North 138kV	-	-	-	-	-	-	-	-	-	-	-	886	-
	137754	DSP HUME RD PHASE II TRANSFRMR	-	-	-	-	-	-	-	-	-	-	-	1,002	-
	137773	TRODS - KU	-	-	-	-	-	-	-	32	6	-	-	-	-
	138420	Cane Run 345kV Xfrmr - KU	-	-	-	-	-	-	863	(860)	(5)	-	-	-	-
	138692	TWR LGHTNG-KU	-	-	-	-	-	-	-	329	26	-	-	-	-
	138727	GRST 728 OMU Brkr Rpl	-	-	-	-	-	-	-	108	-	-	-	-	-
	138743	NEWTOWN PK 69KV SW REP	-	-	-	-	-	-	517	(103)	-	-	-	-	-
	138829	Cane Run Control House-KU	-	-	-	-	-	-	1	(1)	-	-	-	-	-
	138842	Grn Rvr Plnt-Hllsd 69kV Relo	-	-	-	-	-	-	-	-	-	-	-	48	-
	138897	PDCAH PRI-CLMN RD-STATIC REPL	-	-	-	-	-	-	124	563	(2)	48	-	-	-
	139002	Linux Identity Manager - KU	-	-	-	-	-	-	5	3	-	-	-	-	-
	139190	PINEVILLE-POCKET N. RECLAIM	-	-	-	-	-	-	-	237	-	-	-	-	-
	139210	Ghent Control House	-	-	-	-	-	-	-	557	263	(2)	-	-	-
	139256	NERCALRT-E.F-W.F 138KV	-	-	-	-	-	-	-	810	1,618	(5)	-	-	-
	139505	Bonds Mill 69kV Brkr Add	-	-	-	-	-	-	-	2	(2)	2	-	-	-
	139549	CARDINAL#2 METER RELO	-	-	-	-	-	-	-	166	8	-	-	-	-
	139557	GRST 714 & 718 Brkr Rpls	-	-	-	-	-	-	-	694	-	-	-	-	-
	139657	Mapboard Upgrade-KU-2013	-	-	-	-	-	-	-	65	2	-	-	-	-
	139696	LEX UNDRGD-PHASE 1	-	-	-	-	-	-	-	-	-	-	-	6,368	-
	139701	NERCALRT-INVTN-ADMS	-	-	-	-	-	-	-	344	935	0	-	-	-

JOS														Base	Test
	Project Number	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Period	Period
	139743	PLN-ELHU-BRNSD69	-	-	-	-	-	-	-	-	67	-	-	-	-
	139744	TEP-RQ-GRNVL-W-TAP69	-	-	-	-	-	-	-	-	487	88	-	-	-
	139748	PLN-MDSNVLGE-MDSNVLW	-	-	-	-	-	-	-	-	25	-	-	-	-
	139751	PLN-VIRG-CTY-STPAUL	-	-	-	-	-	-	-	-	18	-	-	-	-
	139753	PLN-MDSNVL-HSPTL-TAP	-	-	-	-	-	-	-	-	174	-	-	-	-
	139860	PLN-SCOTT-ST-TAP	-	-	-	-	-	-	-	303	128	-	-	-	-
	139906	TEP-Morganfield 161kV Brkr Add	-	-	-	-	-	-	-	-	-	141	126	-	145
	139979	TEP-FARLEY-US STEEL 69kV	-	-	-	-	-	-	-	-	164	1,445	333	-	322
	139996	TEP-ALCLDE-ELHU	-	-	-	-	-	-	-	-	1,532	199	(2)	-	(8)
	140018	Dix Upgrade KU 2014	-	-	-	-	-	-	-	-	187	-	69	-	69
	140278	PLN-NEBO-PRVIDNC-E	-	-	-	-	-	-	-	233	34	-	-	-	-
	140279	RCHMND2-RCHMND	-	-	-	-	-	-	-	-	527	26	-	-	-
	140280	TEP-BOND-VIRGINIACTY	-	-	-	-	-	-	-	-	-	-	-	-	-
	140973	GRST 624 Brkr Rpl	-	-	-	-	-	-	-	323	-	-	-	-	-
	141222	EMS AIRGAP SVRS-2013-KU	-	-	-	-	-	-	-	53	2	-	-	-	-
	141394	Green River 884 Brkr Failure	-	-	-	-	-	-	-	1,018	68	0	1	-	-
	142371	JAD COAL RELOCATION	-	-	-	-	-	-	-	-	278	-	-	-	-
	142401	TEP-CMPGD-EMNUEL-TP	-	-	-	-	-	-	-	-	-	-	77	-	78
	142474	EARL-N-NEBO-69KV	-	-	-	-	-	-	-	603	32	-	-	-	-
	142799	IPS Device for QAS-KU-2013	-	-	-	-	-	-	-	19	-	3	-	-	-
	142935	ONTON-SEBREE	-	-	-	-	-	-	-	-	322	-	-	-	-
	142936	OHIO-CO-HARTFORD	-	-	-	-	-	-	-	-	359	-	-	-	-
	142937	BIMBLE-ARTEMUS	-	-	-	-	-	-	-	-	347	-	-	-	-
	142938	EAST-F-WEST-F-69KV	-	-	-	-	-	-	-	-	289	-	-	-	-
	142945	Load Model Power Sys Stab-KU	-	-	-	-	-	-	-	-	24	-	-	-	-
	142965	WALKER-OAKHILL 69KV-REIM	-	-	-	-	-	-	-	-	0	1	-	-	-
	143027	Sunburst-KU	-	-	-	-	-	-	-	38	0	-	-	-	-
	143174	Replace Ghent 942 Breaker	-	-	-	-	-	-	-	-	382	11	-	-	-
	143175	Replace Brown N 932 Breaker	-	-	-	-	-	-	-	-	252	-	-	-	-
	143336	Green River 5 Engineering	-	-	-	-	-	-	-	-	0	(0)	-	-	-
	143356	US 60-KY 4 INTRCHNG HWY RELO	-	-	-	-	-	-	-	-	0	(0)	-	-	-
	143539	Upgrade DIX V-Wall_2014_KU	-	-	-	-	-	-	-	-	63	-	-	-	-
	143746	Pineville Grounding	-	-	-	-	-	-	-	-	678	29	-	-	-
	144061	REL TUNNELL HILL SWITCH	-	-	-	-	-	-	-	-	-	-	60	-	276
	144112	BACKUP CC V_WALL RPLC-KU-2016	-	-	-	-	-	-	-	-	-	-	38	-	45
	144118	GR 69kV Control House Rpl	-	-	-	-	-	-	-	-	-	-	43	3,464	-
	144129	Rpl Dix Dam 604 & 624 Brkrs	-	-	-	-	-	-	-	-	-	199	8	-	0
	144140	Rpl (3) Leitchfield Brkrs	-	-	-	-	-	-	-	-	-	4	426	-	351
	144141	Rpl (1) 138kV Ohio Co Brkr	-	-	-	-	-	-	-	-	-	190	0	-	3
	144143	Rpl Toyota South 714 Brkr	-	-	-	-	-	-	-	-	-	-	198	-	233
	144150	Rpl Middlesboro Fence	-	-	-	-	-	-	-	-	-	75	3	-	0
	144152	Rpl Green River 69kV Fence	-	-	-	-	-	-	-	-	-	100	8	-	1

Jurisdictional Capital Expenditures \$'000s

JUS														Base	Test
	Project Number	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Period	Period
	144153	Rpl River Queen Fence	-	-	-	-	-	-	-	-	-	73	-	-	-
	144154	Rpl Simmons Fence	-	-	-	-	-	-	-	-	-	47	-	-	-
	144155	Rpl Clinton Fence	-	-	-	-	-	-	-	-	-	71	2	-	-
	144157	Rpl Marion Fence	-	-	-	-	-	-	-	-	-	44	-	-	-
	144158	Rpl East Frankfort Fence	-	-	-	-	-	-	-	-	-	165	(50)	-	(18)
	144310	SCOTT CO-TOYOTA NORTH OPGW	-	-	-	-	-	-	-	-	489	33	-	-	-
	144338	Brown North	-	-	-	-	-	-	-	-	-	-	1,302	-	1,780
	144360	REL-Madisonville 604 Brkr Add	-	-	-	-	-	-	-	-	-	469	(94)	-	(103)
	144364	REL-Parkers Mill 604 Brkr Adds	-	-	-	-	-	-	-	-	-	1,980	(97)	-	6
	144366	REL-Warsaw 604 Brkr Addition	-	-	-	-	-	-	-	-	-	632	19	-	(1)
	144488	TEP-Rodburn 138/69kV Xfrmr	-	-	-	-	-	-	-	-	-	-	-	1,730	-
	144632	REL-Cawood 604 Brkr Addition	-	-	-	-	-	-	-	-	-	-	60	95	96
	144634	REL-FMC 604 Brkr Addition	-	-	-	-	-	-	-	-	-	-	-	108	-
	144636	REL-Stanford 604 Brkr Add	-	-	-	-	-	-	-	-	-	-	42	717	96
	144637	REL-Camargo 604 Brkr Add	-	-	-	-	-	-	-	-	-	-	41	95	96
	144682	TEP-DFR Replace MODs-KU	-	-	-	-	-	-	-	-	-	445	(7)	-	11
	144962	REL-Farley/Artemus/Pine Panels	-	-	-	-	-	-	-	-	-	-	366	-	424
	144964	REL HUME ROAD MOS	-	-	-	-	-	-	-	-	-	56	-	-	-
	144970	REL BARTON MOS	-	-	-	-	-	-	-	-	-	-	35	-	286
	146439	Higby Mill Firewall	-	-	-	-	-	-	-	-	-	34	80	-	73
	146457	Livingston County Reactor	-	-	-	-	-	-	-	-	-	566	(1)	-	-
	146679	LOCKPORT-SHADRACK 138KV	-	-	-	-	-	-	-	-	-	1,220	-	-	-
	146701	NRP CRLTN-CLFTY CRK	-	-	-	-	-	-	-	-	-	295	-	-	-
	146702	NRP FARLEY-ALCALDE	-	-	-	-	-	-	-	-	-	453	125	-	109
	146703	LVNGSTN CO-CRTTNDN P2	-	-	-	-	-	-	-	-	_	852	_	-	_
	146704	NRP LVNGSTN-CRITTDN CO	-	-	-	-	-	-	-	-	_	292	_	-	_
	146705	HARDIN CO-CLOVERPORT P2	-	-	-	-	-	-	-	-	_	2,435	_	-	-
	146706	GRAHAMVILLE-WICKLIFFE P2	-	-	-	-	-	-	-	-	_	727	(1)	-	(1)
	146710	NRP BROWN-FAWKES 138KV	-	-	-	-	-	-	-	-	-	1.091	(2)	-	0
	146731	W. Frankfort 69kV Brk (Reimb)	-	_	_	-	-	-	_	_	_	2	(2)	-	0
	146855	SPIR BROWN NORTH-HIGBY MILL	-	_	_	-	-	-	_	_	_	22	-	-	-
	146856	SPIR WEST CLIFF-BROWN PLANT	-	_	_	-	-	-	_	_	_	9	_	-	_
	146858	SPIR GHENT-NAS	-	_	_	-	-	-	_	_	_	10	(10)	-	_
	146925	Online Mon Equip - W. Lex	-	_	_	-	-	-	_	_	_	127	2	-	20
	146941	LEBANON EAST TRNSFRMR ADD	_	_	_	_	_	_	_	_	_	-	39		38
	146982	PR Ghent-Blackwell 138kV	_	_	_	_	_	_	_	_	_	-	1,194	-	1,492
	146983	NRP GHENT-BLACKWELL 138kV	-	-	-	_	-	-	-	_	_	_	1,194	-	1,492
	146984	NRP BLACKWELL-KENTON 138kV	_	-	-	-	-	-	-	-	-	_	110	_	192
	146997	HIGBY MILL-KY RIVER P2	-	-	-	-	-	-	-	-	-	1,034	37	-	192
	140997	NRP KENTON-RODBURN 138kV	-	-	-	-	-	-	-	-	-	1,034 529	728	-	558
	147130	PR Kenton-Rodburn 138kV	-	-	-	-	-	-	-	-	-	529 388	351	-	558 200
			-	-	-	-	-	-	-	-	-				
	147159	Rpl Danville N 604 & 608 Brkrs	-	-	-	-	-	-	-	-	-	113	98	-	69

Attachment #1 to Response to KIUC-1 Question No. 48 Page 20 of 26 Bellar

													Base	Test
Project Number	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Period	Period
147161	Rpl Taylor County 804 Brkr	-	-	-	-	-	-	-	-	-	55	95	-	104
147162	Rpl Harlan Wye 614 Breaker	-	-	-	-	-	-	-	-	-	152	26	-	23
147217	TEP-W. Cliff-Shakertown Term	-	-	-	-	-	-	-	-	-	-	15	-	35
147218	TEP-Brown Subs Term Eqp	-	-	-	-	-	-	-	-	-	-	57	-	42
147219	TEP-Hardinsburg-B. Branch Term	-	-	-	-	-	-	-	-	-	-	-	228	-
147220	TEP-Bonds MLawrenceburg Term	-	-	-	-	-	-	-	-	-	-	-	21	-
147222	TEP-Elihu 814 Brkr Rpl	-	-	-	-	-	-	-	-	-	-	-	189	-
147225	TEP-Hardinsburg-B.Branch Term2	-	-	-	-	-	-	-	-	-	-	-	143	-
147226	TEP-Boyle Co 604 Disconnects	-	-	-	-	-	-	-	-	-	-	-	38	-
147233	Wheatcroft 614 Brkr Rpl	-	-	-	-	-	-	-	-	-	154	28	-	23
147241	TEP Corydon-Highland Mine 69kV	-	-	-	-	-	-	-	-	-	-	309	-	291
147255	TEP HARDESTY A-PRINCETON	-	-	-	-	-	-	-	-	-	-	-	1,673	-
147286	PR Spencer Road-Clark Co 69kV	-	-	-	-	-	-	-	-	-	-	599	-	721
147307	Delvinta Station Service Rpl	-	-	-	-	-	-	-	-	-	-	-	-	64
147310	E. Frankfort Station Svc Rpl	-	-	-	-	-	-	-	-	-	-	-	-	50
147311	Bond Station Service Rpl	-	-	-	-	-	-	-	-	-	-	-	-	-
147313	PR Bardstown-Elizabethtown	-	-	-	-	-	-	-	-	-	-	2,263	-	2,768
147314	Brown North Surge Arrester Rpl	-	-	-	-	-	-	-	-	-	-	-	-	32
147315	PR Lebanon-Springfield	-	-	-	-	-	-	-	-	-	-	415	-	523
147331	Taylor Co Surge Arrester Rpl	-	-	-	-	-	-	-	-	-	-	-	-	9
147334	PR London-Sweet Hollow 69kV	-	-	-	-	-	-	-	-	-	-	2,626	-	3,328
147335	PR Green Rvr Plnt-Morganfield	-	-	-	-	-	-	-	-	-	-	1,818	-	2,406
147341	Walker Bushings	-	-	-	-	-	-	-	-	-	-	61	-	34
147344	Dorchester Bushings	-	-	-	-	-	-	-	-	-	-	-	-	-
147345	Earlington North Bushings	-	-	-	-	-	-	-	-	-	-	74	-	50
147360	Tyrone Ground Grid	-	-	-	-	-	-	-	-	-	_	303	-	132
147389	NRP Pocket No-Phipps Bend	-	-	-	-	-	-	-	-	-	_	-	-	_
147392	Brown CT Breaker Monitors	-	-	-	-	-	-	-	-	-	_	-	-	85
147450	NRP Brown North-Hardin Co	-	-	-	-	-	-	-	-	-	_	276	-	277
147461	NRP Grn Rvr Plnt-Grn Rvr Steel	_	_	_	_	_	_	_	-	_	_	129	_	129
147463	NRP Grn Rvr Steel-Cloverport	_	_	_	_	_	_	_	-	_	-	286	_	308
147465	NRP Livingston-So Paducah	_	_	_	_	_	_	_	-	_	-	447	_	673
147466	NRP Crittenden-Morganfield	_	_	_	_	_	_	_		_		31	-	19
147467	NRP Grn Rvr Plnt-Erlngton No	_	_	_	_	_	_	_		_		682	_	732
147468	NRP West Lex-Haefling											-	201	-
147472	NRP Paducah Prim-Coleman Rd	-	-	-	-	-	-	-	-	-	-	-	515	-
147473	NRP Cloverport-Hardinsburg	-	-	-	-	-	-	-	-	-	-	230	-	150
147473	NRP Croverport-Hardinsburg NRP Hrdnsburg-Cen Hrdn EKPC	-	-	-	-	-	-	-	-	-	-	230	-	65
147474	NRP GR Plant-Morganfield	-	-	-	-	-	-	-	-	-	-	28 807	-	1,263
147480	REL Esserville Switch	-	-	-	-	-	-	-	-	-	-	007	-	1,203
		-	-	-	-	-	-	-	-	-	-	-	-	-
147481	REL Kenton Switch 91-6	-	-	-	-	-	-	-	-	-	-	-	326	-
147486	REL Dwina Switch	-	-	-	-	-	-	-	-	-	-	-	-	-

													Base	Test
Project Number	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Period	Period
147493	REL Hamblin Tap Switch	-	-	-	-	-	-	-	-	-	-	-	331	-
147534	REL Radcliff Switch	-	-	-	-	-	-	-	-	-	-	197	-	173
147583	EFRNKFRT-WFRNKFRT HWY RELO	-	-	-	-	-	-	-	-	-	-	-	1,027	-
147588	GRAHAMVILLE-DOE RELO 161kV	-	-	-	-	-	-	-	-	-	-	-	466	-
147818	SPIR Projects KU 2016-2025	-	-	-	-	-	-	-	-	-	-	-	773	-
148119	TEP-Haefling Line Riser Rpl	-	-	-	-	-	-	-	-	-	-	-	43	-
148196	Rpl Brown North 912 Breaker	-	-	-	-	-	-	-	-	-	461	(23)	-	0
148370	REL-Hoover 604 Breaker Add	-	-	-	-	-	-	-	-	-	-	128	95	96
148371	REL-Earlington 604 Brkr Add	-	-	-	-	-	-	-	-	-	-	41	717	96
148388	REL Hughes Lane MOS	-	-	-	-	-	-	-	-	-	-	80	-	146
148482	Grahamville DOE Sub Elim	-	-	-	-	-	-	-	-	-	-	-	240	-
148644	Rpl Brown North 924 Breaker	-	-	-	-	-	-	-	-	-	445	(1)	-	1
148990	N.A.S 345 DFR	-	-	-	-	-	-	-	-	-	-	-	79	-
149026	NERCALRT PNVL SW STN-PNVL TVA	-	-	-	-	-	-	-	-	-	-	291	-	374
149027	TEP-KU DFR 2016	-	-	-	-	-	-	-	-	-	-	336	-	462
149050	Rpl (2) Indian Hill 69kV Brkrs	-	-	-	-	-	-	-	-	-	253	8	-	5
149167	Rpl (2) 69kV Ohio Co Brkrs	-	-	-	-	-	-	-	-	-	203	1	-	-
149368	E-Town Cap Bank Rpl	-	-	-	-	-	-	-	-	-	177	114	-	104
149705	TEP-W Lex Reactor Additions	-	-	-	-	-	-	-	-	-	-	251	95	455
149764	NRP Adams-Toyota South	-	-	-	-	-	-	-	-	-	-	-	560	-
149765	NRP Ghent-Scott County	-	-	-	-	-	-	-	-	-	-	-	374	-
149769	NRP Taylor County Tap	-	-	-	-	-	-	-	-	-	-	-	140	-
149783	PR Princeton-Crittenden Co	-	-	-	-	-	-	-	-	-	1,248	15	-	14
149939	Replacment SF6 Camera	-	-	-	-	-	-	-	-	-	120	-	-	-
150114	SIMP CIRCUIT UPDATE-KU-2015	-	-	-	-	-	-	-	-	-	7	-	-	-
150217	Parkers Mill Land Purchase	-	-	-	-	-	-	-	-	-	0	9	-	-
150238	Walker OCB Kit Install	-	-	-	-	-	-	-	-	-	9	-	-	13
150241	River Queen OCB Kit Install	-	-	-	-	-	-	-	-	-	11	(0)	-	13
150242	Danville N OCB Kit Install	-	-	-	-	-	-	-	-	-	11	(0)	-	-
150243	W Irvine OCB Kit Install	-	-	-	-	-	-	-	-	-	28	-	-	-
150244	W Frankfort OCB Kit Install	-	-	-	-	-	-	-	-	-	11	(0)	-	13
150245	Tyrone OCB Kit Install	-	-	-	-	-	-	-	-	-	6	8	-	13
150246	Rodburn OCB Kit Install	-	-	-	-	-	-	-	-	-	10	13	-	13
150247	Middlesboro OCB Kit Install	-	-	-	-	-	-	-	-	-	9	-	-	-
150248	Lebanon OCB Kit Install	-	-	-	-	-	-	-	-	-	11	0	-	1
150249	Boonesboro N OCB Kit Install	-	-	-	-	-	-	-	-	-	11	(0)	-	13
150252	Leitchfield Sw OCB Kit Install	-	-	-	-	-	-	-	-	-	7	-	-	-
150253	Pocket OCB Kit Install	-	-	-	-	-	-	-	-	-	_	-	-	-
150257	Brown CT OCB Kit Install	-	-	-	-	-	-	-	-	-	7	-	-	13
150262	London OCB Kit Install	-	-	-	-	-	-	-	-	-	18	-	-	-
150268	Green River OCB Kit Install	-	-	-	-	-	-	-	-	-	30	-	-	26
150269	Lancaster SW OCB Kit Install	-	_	_	-	_	_	-	-	_	45	_	-	-
200000	Lancaster D tr OCD Int Instan													

													Base	Test
Project Number	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Period	Period
150270	Wheatcroft OCB Kit Install	-	-	-	-	-	-	-	-	-	15	(0)	-	13
150636	Middlesboro (5) Brkr Rpl	-	-	-	-	-	-	-	-	-	-	644	-	739
150642	KU Park Surge Arrestor/PT	-	-	-	-	-	-	-	-	-	-	185	-	191
150644	Ghent Redesign 138kV-P&C	-	-	-	-	-	-	-	-	-	-	314	874	494
150646	PR Livingston-South Paducah	-	-	-	-	-	-	-	-	-	-	691	-	956
150648	PR Green Rvr Steel-Cloverport	-	-	-	-	-	-	-	-	-	-	783	-	782
150652	PR Blackwell-Kenton	-	-	-	-	-	-	-	-	-	-	1,843	-	2,496
150687	PR Pocket-Pennington Gap	-	-	-	-	-	-	-	-	-	-	-	-	-
150729	Lake Reba Tap Surge Arr Rpl	-	-	-	-	-	-	-	-	-	-	-	-	19
150730	Hardin Co Surge Arrester Rpl	-	-	-	-	-	-	-	-	-	-	-	-	16
150731	Hardinsburg 704 Brkr Overhaul	-	-	-	-	-	-	-	-	-	-	20	-	20
150733	Etown Insulator Rpl	-	-	-	-	-	-	-	-	-	-	220	-	399
150741	Fawkes Ground Grid Rpl	-	-	-	-	-	-	-	-	-	-	96	-	246
150743	36DSP West Hickman Expansion	-	-	-	-	-	-	-	-	-	-	284	-	431
150754	Alcalde Station Service	-	-	-	-	-	-	-	-	-	-	48	-	4
150772	Pineville 345kV Brkrs	-	-	-	-	-	-	-	-	-	-	927	-	1,203
150791	NRP Ghent-NAS 345kV Tap	-	-	-	-	-	-	-	-	-	-	121	-	143
150793	PR Adams-Penn 69kV	-	-	-	-	-	-	-	-	-	-	495	-	490
150802	EKP Long Lick Tap	-	-	-	-	-	-	-	-	-	-	1	-	-
150805	OATI Software Change - KU	-	-	-	-	-	-	-	-	-	-	21	-	43
150838	NRP Brown CT-Brown North	-	-	-	-	-	-	-	-	-	-	319	-	328
150841	PR Ghent-Scott County	-	-	-	-	-	-	-	-	-	-	3,335	-	5,693
150842	Princeton-Walker 69kV LTG	-	-	-	-	-	-	-	-	-	-	480	-	679
150844	REL Madisonville Loop MOS	-	-	-	-	-	-	-	-	-	-	222	-	273
150845	REL-Madisonville Loop-Subs	-	-	-	-	-	-	-	-	-	-	3	-	10
150846	REL-Madisonville Loop-P&C	-	-	-	-	-	-	-	-	-	-	125	-	186
150847	Green River Steel Switch	-	-	-	-	-	-	-	-	-	-	163	-	221
150876	Dorchester 602 Brkr CT Rpl	-	-	-	-	-	-	-	-	-	-	-	-	-
150877	Wofford 602 Brkr CT Rpl	-	-	-	-	-	-	-	-	-	-	13	-	24
150878	Elihu 644 Brkr CT Rpl	-	-	-	-	-	-	-	-	-	-	10	-	24
150885	Diverse Comm 117-122	-	-	-	-	-	-	-	-	-	-	(0)	-	12
150930	Pineville OCB Overhaul	-	-	-	-	-	-	-	-	-	-	29	-	45
151112	Kenton Relay Rpl	-	-	-	-	-	-	-	-	-	-	65	-	111
151177	TEP-Hardin Co Xfmr Add	-	-	-	-	-	-	-	-	-	-	499	2,185	258
151197	Dorchester OCB Overhaul	-	-	-	-	-	-	-	-	-	-	-	-	-
151465	Mobile Control House	-	_	-	-	-	-	-	-	-	-	-	17	-
151468	West Cliff Monitor	-	-	-	-	-	-	-	-	-	-	42	-	119
151469	Lake Reba Tap Monitor	-	-	-	-	-	-	-	-	-	_	56	-	123
151474	Hardin Co Xfmr Fan Rpl	-	-	-	-	-	-	-	-	-	_	12	-	13
151554	PR Hardinsburg-C Hardin EKPC	-	_	_	-	-	-	-	-	-	_	993	-	1,169
151599	Rocky Branch 614 Panel Rpl	-	-	-	-	-	-	-	-	-	_	-	-	1,105
151692	ESR Eddyville Tap	_	-	-	-	-	-	-	-	-	_	-	280	-
1010/2	Lore Eddy ville Tup												200	

Jurisdictional Capital Expenditures \$'000s

													Base	Test
Project Number	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Period	Period
151744	REL-Campbellsville 605 Switch	-	-	-	-	-	-	-	-	-	-	-	233	-
151745	REL-Warsaw 615 Switch Motor	-	-	-	-	-	-	-	-	-	-	-	233	-
151746	REL-Hodgenville Switch Motor	-	-	-	-	-	-	-	-	-	-	-	204	-
151748	KU Park-Greasy Env Mods	-	-	-	-	-	-	-	-	-	-	-	31	-
151761	Fawkes Firewall/Cap Bank	-	-	-	-	-	-	-	-	-	-	6	53	285
151771	DSP Corbin US Steel	-	-	-	-	-	-	-	-	-	-	-	95	-
151775	Hillside Control House	-	-	-	-	-	-	-	-	-	-	-	23	-
151777	Finchville Control House	-	-	-	-	-	-	-	-	-	-	-	1,085	95
151792	REL Radcliff MOS	-	-	-	-	-	-	-	-	-	-	-	93	-
151793	REL Esserville MOS	-	-	-	-	-	-	-	-	-	-	-	-	-
151794	REL Elizabethtown Tap MOS	-	-	-	-	-	-	-	-	-	-	-	560	-
151796	REL Joyland 69kV MOS	-	-	-	-	-	-	-	-	-	-	-	-	94
151797	REL Campbellsville Ind MOS	-	-	-	-	-	-	-	-	-	-	-	-	70
151800	REL Elizabethtown 4 MOS	-	-	-	-	-	-	-	-	-	-	-	472	-
151801	REL Dayhoit Tap MOS	-	-	-	-	-	-	-	-	-	-	-	95	-
151802	REL Dayhoit Tap LFI	-	-	-	-	-	-	-	-	-	-	-	24	-
151803	REL Corydon-Calhoun LFI	-	-	-	-	-	-	-	-	-	-	-	9	-
151804	REL Morehead West MOS	-	-	-	-	-	-	-	-	-	-	-	71	-
151809	TEP-Rodburn 138/69kV-P&C	-	-	-	-	-	-	-	-	-	-	-	256	-
151811	REL-Rockwell Motor-Auto	-	-	-	-	-	-	-	-	-	-	-	25	-
151814	REL-Stanford 848-635	-	-	-	-	-	-	-	-	-	-	-	19	-
151815	REL-Somerset N 92-605 Motor	-	-	-	-	-	-	-	-	-	-	-	140	-
151880	ESR Existing Switch Repl	-	-	-	-	-	-	-	-	-	-	-	826	-
151898	West Frankfort Relay Rpl	-	-	-	-	-	-	-	-	-	-	96	-	120
151905	Green River Plant Switch Rpl	-	-	-	-	-	-	-	-	-	-	90	-	44
152134	REL-Radcliff Motor-Auto	-	-	-	-	-	-	-	-	-	-	-	191	-
152135	REL-GE Lamp 615 Motor-Auto	-	-	-	-	-	-	-	-	-	-	-	25	-
152136	REL-Esserville Motor-Auto	-	-	-	-	-	-	-	-	-	-	-	-	-
152138	REL-Irvine Motor-Auto	-	-	-	-	-	-	-	-	-	-	-	25	-
152139	REL-Hughes Lane 660-615 Auto	-	-	-	-	-	-	-	-	-	-	-	191	-
152140	REL-Etown 4 811-615 Motor-Auto	-	-	-	-	-	-	-	-	-	-	-	165	-
152141	PBR-Lynch 69kV Brkr Rpl	-	-	-	-	-	-	-	-	-	-	170	-	-
152143	REL-Corbin 1 844-605 Auto	-	-	-	-	-	-	-	-	-	-	_	165	-
152145	PBR-Salem 69kV Brkr Rpl	-	-	-	-	-	-	-	-	-	-	42	-	-
152146	REL-Mt Sterling 737-615 Auto	-	_	-	-	_	-	_	-	-	_	_	165	_
152147	PBR-Ohio County 69kV Brkr Rpl	-	-	_	-	-	-	-	-	-	-	42	-	-
152148	PBR-Sweet Hollow 69kV Brkr Rpl	-	-	_	-	-	-	-	-	-	-	127	-	-
152151	PBR-West Irvine 69kV Brkr Rpl	-	-	_	-	-	-	-	-	-	-	42	-	-
152225	Brown N 345kV 934 Brkr Rpl	-	-	-	-	-	-	-	-	-	_	208	50	191
152230	PBU-Wickliffe T01 Bush Rpl	_	_	_	_	_	_	_	_	_	_	41	-	46
152231	POR-Shelbyville 69kV PT Rpl	_	_	_	_	_	_	_	_	_	_	144	_	40 62
152237	PAR-W. Frankfort Arrester Rpl	-	_	_	_	_	_	-	_	_	_	144	-	13
104401	The worldinkion Anoster Rep	-	-	-	-	-	-	-	-	-	-	11	-	15

Attachment #1 to Response to KIUC-1 Question No. 48 Page 24 of 26 Bellar

0005														Base	Test
	Project Number	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Period	Period
	152266	SCADA PRIVATE NTWK_KU_2016	-	-	-	-	-	-	-	-	-	-	43	-	35
	152329	N.A.S. Secondary Containment	-	-	-	-	-	-	-	-	-	-	77	-	124
	152358	TEP-Hardin Co Xfmr Add-P&C	-	-	-	-	-	-	-	-	-	-	-	164	158
	152401	Green River C&P/Switch Rpl	-	-	-	-	-	-	-	-	-	-	-	291	267
	152608	TEP-Matanzas-Wilson Riser Rpl	-	-	-	-	-	-	-	-	-	-	29	-	31
	152623	West Lexington #3 Bushing Rpl	-	-	-	-	-	-	-	-	-	-	25	-	19
	152971	Earlington N 634 Brkr Overhaul	-	-	-	-	-	-	-	-	-	-	3	-	29
	152972	PGDP Reconfig GV	-	-	-	-	-	-	-	-	-	-	-	57	-
	152983	Bonds Mill Relay Rpl	-	-	-	-	-	-	-	-	-	-	32	-	76
	153026	Green River SPCC	-	-	-	-	-	-	-	-	-	-	59	-	239
	153030	REL Line Mod-In Line Breakers	-	-	-	-	-	-	-	-	-	-	-	161	-
	153036	Brown Campus Sonet Loop	-	-	-	-	-	-	-	-	-	-	-	-	115
	153068	REL Lebanon S Motor Add	-	-	-	-	-	-	-	-	-	-	-	96	-
	153073	REL Cynthiana S MOS 569-605	-	-	-	-	-	-	-	-	-	-	-	72	-
	153076	REL Girdler MOS Add	-	-	-	-	-	-	-	-	-	-	-	96	-
	153116	POR-Pisgah PT Rpl	-	-	-	-	-	-	-	-	-	-	5	-	16
	153205	American Ave 614 Brkr CT Rpl	-	-	-	-	-	-	-	-	-	-	25	-	30
	153212	PIN-Grahamville 834 Switch Rpl	-	-	-	-	-	-	-	-	-	-	99	-	107
	153230	POR-Lansdowne Brkr CT Rpl	-	-	-	-	-	-	-	-	-	-	59	-	30
	153232	POR-Loudon 644 Brkr CT Rpl	-	-	-	-	-	-	-	-	-	-	10	-	30
	153256	PBU-Haefling 718-4 Bushing Rpl	-	-	-	-	-	-	-	-	-	-	25	-	18
	153284	ROR-London Bird Deterrent	-	-	-	-	-	-	-	-	-	-	3	-	7
	153338	POR-Elihu Winding Gauge Rpl	-	-	-	-	-	-	-	-	-	-	22	-	-
	153347	PR Clinton-South Paducah	-	-	-	-	-	-	-	-	-	-	5	-	-
	153349	PR Leitchfield-Stephensburg	-	-	-	-	-	-	-	-	-	-	347	-	-
	153351	PR Adams-Millersburg	-	-	-	-	-	-	-	-	-	-	46	-	-
	153363	PR Indian Hill-Ohio County	-	-	-	-	-	-	-	-	-	-	273	-	-
	153420	RFN-Adams Fence Rpl	-	-	-	-	-	-	-	-	-	-	125	-	-
	153496	KU	-	-	-	-	-	-	-	-	-	-	87	-	-
	153535	PAR-Shelbyville Arrester Rpl	-	-	-	-	-	-	-	-	-	-	57	-	-
	153559	FBR-Ghent 926 Brkr Rpl	-	-	-	-	-	-	-	-	-	-	39	-	-
	153563	PFN-Wickliffe Xfmr Fan Rpl	-	-	-	-	-	-	-	-	-	-	7	-	-
	153668	PBR-Bardstown Sw 69kV Brkr Rpl	-	-	-	-	-	-	-	-	-	-	23	-	-
	153706	FTR-Earlington N Xfmr Rpl	-	-	-	-	-	-	-	-	-	-	369	-	-
	153727	KU	-	-	-	-	-	-	-	-	-	-	32	-	-
	153729	KU	-	-	-	-	-	-	-	-	-	-	20	-	-
	153785	FTR Loudon Spare Xfmr- BG T01	-	-	-	-	-	-	-	-	-	-	(1,069)	-	-
	22537	KENTON 708 & 718 BKR CHG	(0)	-	-	-	-	-	-	-	-	-	-	-	-
	24014	WINCHESTER RD HWY RELOC	-	6	-	-	-	-	-	-	-	-	-	-	-
	25180	HIG-LEX 69KV LINE RELOC	-	8	-	-	-	-	-	-	-	-	-	-	-
	25195	LEX-PARIS 69 KV HWY 25	-	-	36	-	-	-	-	-	-	-	-	-	-
	25765	LEITCHFIELD LINE TO WRECC	-	(0)	-	-	-	-	-	-	-	-	-	-	-

Jurisdictional Capital Expenditures \$'000s

Base Test

	Project Number	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Period	Period
Specific Total			8,274	33,950	29,777	26,538	29,744	25,952	29,207	24,858	19,811	28,112	45,986	38,595	54,394
Grand Total			15,065	40,818	37,525	48,664	42,807	42,512	50,121	44,227	36,226	48,686	64,182	100,580	72,731

Туре	Project #	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Base Period	Test Period
Routine	111446	KT Misc Capital Expenditures	11	565	941	(138)	-	-	-	-	-	-	-	-
	111446-08	KT Misc CapEx 2008	-	-	338	333	(22)	-	-	-	-	-	-	-
	117319	SPCC Mods - KU Transmission	102	358	1,011	544	25	-	-	-	-	-	-	-
	119657	EMS Consolidation - KU	129	-	-	-	-	-	-	-	-	-	-	-
	119953	2005 computer purchases - KU	3	-	-	-	-	-	-	-	-	-	-	-
	120849	2005 KU RTU purchases	-	-	-	(18)	-	-	-	-	-	-	-	-
	121428	2006 Computer Purchase KU	16	-	-	-	-	-	-	-	-	-	-	-
	121488	Firewalls for EMS-KU	31	-	-	-	-	-	-	-	-	-	-	-
	121494	Monarch Lite - KU	56	(16)	-	-	-	-	-	-	-	-	-	-
	122221	Replace Dix Dam Roof	142	-	-	-	-	-	-	-	-	-	-	-
	122524	Breaker Replacements-KU	-	-	-	-	2	(2)	-	-	-	-	-	-
	122527	2007 RTU Purchases-KU	-	115	6	-	-	-	-	-	-	-	-	-
	122556	OSI EMS Wrkstn Upgrade	6	-	-	-	-	-	-	-	-	-	-	-
	122651	Battery Replacement 2007	-	73	21	-	-	-	-	-	-	-	-	-
	122752	Open Java Server	-	9	-	-	-	-	-	-	-	-	-	-
	122753	Install OSI Upgrade-KU 2007	-	55	-	-	-	-	-	-	-	-	-	-
	123410	Purchase PC Substation	-	3	0	-	-	-	-	-	-	-	-	-
	123650	Routine EMS - KU	-	-	11	14	-	-	-	-	-	-	-	-
	123654	Critical Spare 161/69 Xfrmr	-	-	20	887	42	-	-	-	-	-	-	-
	123655	Critical Spare 138/69 Xfrmr	-	-	368	525	79	-	-	-	-	-	-	-
	123799	OpenFEP Database Expansion	-	-	14	-	-	-	-	-	-	-	-	-
	124455	Spare Breakers	-	-	114	-	-	-	-	-	-	-	-	-
	124580	Comp-related equip- KU 2011	-	-	17	13	43	8	(6)	-	-	-	-	-
	125577	09 EMS Database Expansion- KU	-	-	127	-	-	-	-	-	-	-	-	-
	125596	08 EMS Servers & Oracle UG- KU	-	-	21	31	-	-	-	-	-	-	-	-
	125597	10 EMS Servers & Oracle UG- KU	-	-	-	-	176	87	-	-	-	-	-	-
	125837	Spare PTs- KU	-	-	-	62	12	-	-	-	-	-	-	-
	125955	KR09-Surge-Arrest-Rep	-	-	-	115	2	-	-	-	-	-	-	-
	126000	KR09-BATTERIES	-	-	-	71	16	-	-	-	-	-	-	-
	126033	Instrument Purchase	-	-	-	20	-	-	-	-	-	-	-	-
	126038	Cntrl Ctr. Add. Office Space	-	-	-	2	-	-	-	-	-	-	-	-
	126555	EMS Wkstation & Monitors KU 20	-	-	-	63	-	-	-	-	-	-	-	-
	126776	Relay Replacements-2010	-	-	-	-	649	2	-	-	-	-	-	-
	126779	Surge Arrestors - KU-2011	-	-	-	-	112	(1)	-	-	-	-	-	-
	126780	Batteries - KU-2010	-	-	-	-	98	13	-	-	-	-	-	-
	126781	Station Srvce Transfrmr-2010	-	-	-	-	173	17	-	-	-	-	-	-
	126782	Instrument Xfrmr Rplment-2010	-	-	-	-	129	0	-	-	-	-	-	-
	126787	Test Bench	-	-	-	-	24	13	-	-	-	-	-	-
	127140	High Spd Historic Arch- KU	-	-	-	-	-	-	-	146	-	-	-	-
	127255	EMS Software Upgrade- KU	-	-	-	4	-	-	-	-	-	-	-	-

Туре	Project #	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Base Period	Test Period
• •	127342	Ops Engineering Wrkstation- KU	-	-	-	-	5	-	-	-	-	-	-	-
	127350	Open Composite Upgrade KU	-	-	-	-	7	-	-	-	-	-	-	-
	127463	SV Conf. Table- KU	-	-	-	-	7	-	-	-	-	-	-	-
	127564	Simpsonville Ofc Furniture KU	-	-	-	-	2	-	-	-	-	-	-	-
	127568	Domain Controller - KU	-	-	-	-	4	-	-	-	-	-	-	-
	127571	DMZ Servers - KU	-	-	-	-	21	-	-	-	-	-	-	-
	130064	SV Bookcases KU	-	-	-	-	3	-	-	-	-	-	-	-
	130604	2010 Workstation Upgrade	-	-	-	-	114	-	-	-	-	-	-	-
	131336	500kV Brkr Replacements-2011	-	-	-	-	-	974	3	-	-	-	-	-
	131757	500kV Brkr Replacements-2012	-	-	-	-	-	-	639	1,351	1	-	-	-
	131785	Comp-related equip-KU 2012	-	-	-	-	-	-	60	(0)	-	-	-	-
	131786	Comp-related equip-KU 2013	-	-	-	-	-	-	-	27	4	-	-	-
	131790	Fiber Upgrades 2013	-	-	-	-	-	-	-	260	2	-	-	-
	131791	161/138kV Spare Xfrmr 2013	-	-	-	-	-	-	386	1,185	(106)	0	-	-
	131964	Tools - 2011	-	-	-	-	-	149	-	-	-	-	-	-
	131965	KU Test Equipment - 2013	-	-	-	-	-	-	-	55	50	-	-	-
	132213	-DIX DAM GENERATOR	-	-	-	-	123	12	-	-	-	-	-	-
	132217	Digital Commun Channels EMS KU	-	-	-	-	77	-	-	-	-	-	-	-
	132302	EMS Firewalls KU	-	-	-	-	30	-	-	-	-	-	-	-
	132372	138/69kV Spare Xfrmr-2011	-	-	-	-	-	1,214	5	-	-	-	-	-
	132489	Dix Dam AC Replacement	-	-	-	-	-	4	-	-	-	-	-	-
	132615	COMP-2011	-	-	-	-	-	48	7	-	-	-	-	-
	132681	Dix Dam Boiler	-	-	-	-	-	7	4	-	-	-	-	-
	132697	Dix Ctrl Console Expansion KU	-	-	-	-	-	11	-	-	-	-	-	-
	132871	138/69kV Spare Xfrmr-2012	-	-	-	-	-	693	586	-	-	-	-	-
	132885	Spare 345/138-161kV Xfrmr	-	-	-	-	-	1,415	1,517	241	0	-	-	-
	133175	3rd Floor Remodel KU	-	-	-	-	-	33	-	-	-	-	-	-
	133509	Sville Remodel - KU	-	-	-	-	-	48	2	-	-	-	-	-
	134197	KU Test Equipment - 2012	-	-	-	-	-	-	58	(5)	-	-	-	-
	134211	138/69kV Spare Xfrmr-2013	-	-	-	-	-	-	340	920	(1,239)	-	-	-
	134285	COMP-RELATED EQUIP-KU 2014	-	-	-	-	-	-	-	-	54	2	-	-
	134286	COMP-RELATED EQUIP-KU 2015	-	-	-	-	-	-	-	-	-	77	-	-
	134380	161/69kV Spare Xfrmr	-	-	-	-	-	-	-	409	1,051	6	-	-
	134412	UPGRADE EMS SOFTWARE KU	-	-	-	-	-	-	51	81	-	-	-	-
	134751	8 New EMS Workstations KU	-	-	-	-	-	39	1	0	-	-	-	-
	134797	Tools - 2015	-	-	-	-	-	-	-	-	-	3	-	-
	134888	SV Drainage Issue KU	-	-	-	-	-	95	(4)	-	-	-	-	-
	135286	EMS Laptops KU	-	-	-	-	-	3	4	-	-	-	-	-
	135288	EMS Satellite Servers KU	-	-	-	-	-	31	3	-	-	-	-	-
	135855	EMS Backup Hware/Sware KU	-	-	-	-	-	23	93	-	-	-	-	-

Туре	Project #	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Base Period	Test Period
J F	136120	Computers-Reliability/Perf KU	-	-	-	-	-	-	8	-	-	-	-	-
	136196	EMS Workstations 2012 KU	-	-	-	-	-	-	36	(0)	-	-	-	-
	136310	System Operations Room 154 KU	-	-	-	-	-	-	8	(0)	-	-	-	-
	136528	Sville Videoconferencing KU	-	-	-	-	-	-	21	-	-	-	-	-
	137531	Fiber/Telecomm Upgrades - 2017	-	-	-	-	-	-	-	-	-	-	-	280
	137532	Fiber/Telecomm Upgrades - 2018	-	-	-	-	-	-	-	-	-	-	-	243
	137537	Tools - 2017	-	-	-	-	-	-	-	-	-	-	-	19
	137571	ROUTINE EMS-KU 2017	-	-	-	-	-	-	-	-	-	-	-	15
	137730	COMP-RELATED EQUIP-KU 2017	-	-	-	-	-	-	-	-	-	-	13	39
	137731	COMP-RELATED EQUIP-KU 2018	-	-	-	-	-	-	-	-	-	-	-	39
	138785	BOC Remodel - KU	-	-	-	-	-	-	5	-	-	-	-	-
	138853	Control Center Chairs - KU	-	-	-	-	-	-	12	-	-	-	-	-
	138962	TranServ License Fees-KU	-	-	-	-	-	-	-	80	-	-	-	-
	139022	EMS Operator Monitor-KU-2012	-	-	-	-	-	-	15	6	-	-	-	-
	139158	2013 DIX Battery Replace-KU	-	-	-	-	-	-	-	6	-	-	-	-
	139486	Oce Plotwave Printer-KU	-	-	-	-	-	-	-	4	1	-	-	-
	139627	Test Lab Equipment-2015-KU	-	-	-	-	-	-	-	-	-	14	-	-
	139628	Test Lab Equipment-2016-KU	-	-	-	-	-	-	-	-	-	-	127	-
	139629	Test Lab Equipment-2017-KU	-	-	-	-	-	-	-	-	-	-	-	120
	139630	Test Lab Equipment-2018-KU	-	-	-	-	-	-	-	-	-	-	-	104
	140059	EMS DBASE EXPANSION-KU-2018	-	-	-	-	-	-	-	-	-	-	-	196
	140070	DIGITAL EMS COM CHNLS-KU-2017	-	-	-	-	-	-	-	-	-	-	-	76
	140081	Upgrade EMS Software-KU-2014	-	-	-	-	-	-	-	-	332	(3)	-	-
	140092	EMS App Enhancements-KU-2015	-	-	-	-	-	-	-	-	-	17	-	-
	140098	EMS OPERATOR MONITORS-KU-2016	-	-	-	-	-	-	-	-	-	-	22	-
	140225	FULL UPGRD EMS SWARE-KU-2018	-	-	-	-	-	-	-	-	-	-	-	306
	142636	2013_EMS_Dbase_Expansion_KU	-	-	-	-	-	-	-	35	-	-	-	-
	142760	Rplce EMS Wkstations-KU-2013	-	-	-	-	-	-	-	121	53	-	12	-
	142762	ICCP Domain Cntrlrs-KU-2013	-	-	-	-	-	-	-	5	8	2	-	-
	142853	LOAD User Licenses-KU	-	-	-	-	-	-	-	29	-	-	-	-
	146072	Spare 138/69kV Xfrmr - 2014	-	-	-	-	-	-	-	-	304	719	-	-
	146105	Simpsonville Renovation-KU	-	-	-	-	-	-	-	-	16	-	-	-
	146993	OSI Database Expansion-KU	-	-	-	-	-	-	-	-	-	89	-	-
	147754	EMS DBASE EXPANSION-KU-2017	-	-	-	-	-	-	-	-	-	-	-	72
	147786	EMS APP ENHANCEMENTS-KU-2017	-	-	-	-	-	-	-	-	-	-	-	42
	148498	EMS CHNL EXPANSION-KU-2015	-	-	-	-	-	-	-	-	-	19	0	-
	149752	Simpsonville Guard Station-KU	-	-	-	-	-	-	-	-	-	13	-	-
	150095	FUL UPGRD EMS SWARE-KU-2016	-	-	-	-	-	-	-	-	-	64	178	-
	150131	Drafting Printer-KU	-	-	-	-	-	-	-	-	-	15	-	-
	150133	KUGO 3rd Floor Room 367	-	-	-	-	-	-	-	-	-	-	49	-

Туре	Project #	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Base Period	Test Period
51	150305	BW Drafting Printer - KU	-	-	-	-	-	-	-	-	-	14	-	-
	150468	Comp-related Equip KU 2016	-	-	-	-	-	-	-	-	-	-	25	-
	150932	TL 2006 UTV Asset Retirement	-	-	-	-	-	-	-	-	-	-	(1)	-
	151104	KU Spare Relay Clocks-2016	-	-	-	-	-	-	-	-	-	-	8	-
	151754	KU Breaker Replacements	-	-	-	-	-	-	-	-	-	-	274	1,325
	151763	KU Coupling Capacitor Rpl	-	-	-	-	-	-	-	-	-	-	29	53
	151764	KU Fence Replacements	-	-	-	-	-	-	-	-	-	-	137	210
	151766	KU SST Additions	-	-	-	-	-	-	-	-	-	-	-	747
	151767	KU Transformer Bushing Rpl	-	-	-	-	-	-	-	-	-	-	-	118
	151897	Danville Drafting Plotter-KU	-	-	-	-	-	-	-	-	-	-	9	-
	152288	Capacitor Bank Test Set	-	-	-	-	-	-	-	-	-	-	11	-
	152613	KU Station Grounding	-	-	-	-	-	-	-	-	-	-	-	123
	152616	2017 Spare 345 Brk-KU	-	-	-	-	-	-	-	-	-	-	-	600
	152619	KU Spare Misc Equip	-	-	-	-	-	-	-	-	-	-	62	109
	152630	KU Cap and Pin Rpl	-	-	-	-	-	-	-	-	-	-	-	2,587
	152638	KU Online Monitoring Equipment	-	-	-	-	-	-	-	-	-	-	-	66
	153188	Etown Trans Sub Storeroom	-	-	-	-	-	-	-	-	-	-	300	-
	153279	ROR-KU SPARE CCVT-2016	-	-	-	-	-	-	-	-	-	-	34	-
	153370	Battery Replacements - KU	-	-	-	-	-	-	-	-	-	-	-	554
	153371	DFR Installations - KU	-	-	-	-	-	-	-	-	-	-	-	531
	153372	PLC Replacements - KU	-	-	-	-	-	-	-	-	-	-	-	964
	K5	RELOCATIONS TRANS LINES	159	470	(253)	7	4	-	-	-	-	-	-	-
	K5-2008	RELOCATIONS TRANS LINES 2008	-	-	(15)	91	(61)	-	-	-	-	-	-	-
	K5-2009	RELOCATIONS T LINES KU 2009	-	-	-	158	14	(4)	-	-	-	(0)	-	-
	K5-2010	RELOCATIONS T LINES KU 2010	-	-	-	-	33	(24)	(3)	-	-	-	-	-
	K5-2011	RELOCATIONS T LINES KU 2011	-	-	-	-	-	174	37	-	-	-	-	-
	K5-2012	RELOCATION T-LINES KU 2012	-	-	-	-	-	-	46	20	(0)	-	-	-
	K5-2013	RELOCATIONS T LINES KU	-	-	-	-	-	-	-	(2)	16	-	-	-
	K5-2014	Relocations T Lines-KU	-	-	-	-	-	-	-	-	-	6	-	-
	K5-2015	Relocations Trans Lines KU	-	-	-	-	-	-	-	-	-	(95)	-	-
	K5-2016	Relocations T Lines KU-	-	-	-	-	-	-	-	-	-	-	50	-
	K5-2017	Relocations T Lines KU 2017	-	-	-	-	-	-	-	-	-	-	5	32
	K5-2018	Relocations T Lines KU 2018	-	-	-	-	-	-	-	-	-	-	-	17
	K6	NEW FACILITIES TRANS LINE PWO	120	272	5	(75)	-	-	-	-	-	-	-	-
	K6-2008	NEW FACILITIES T-LINE PWO 2008	-	-	165	125	108	-	-	-	-	-	-	-
	K6-2009	NEW FACILITIES T-LINE KU 2009	-	-	-	654	(9)	(31)	-	-	-	-	-	-
	K6-2010	NEW FACILITIES T-LINE KU 2010	-	-	-	-	243	(129)	0	-	-	-	-	-
	K6-2011	NEW FACILITIES T-LINE KU 2011	-	-	-	-	-	122	(27)	(0)	-	-	-	-
	K6-2012	NEW FACILITIES T-LINES KU 2012	-	-	-	-	-	-	345	151	-	-	-	-
	K6-2013	NEW FACILITIES T-LINE KU 2013	-	-	-	-	-	-	-	136	(1)	-	-	-

													Base	Test
Туре	Project #	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Period	Period
	K7	PARAMETER UPGRADE T LINE PWO	77	325	81	(200)	(18)	-	-	-	-	-	-	-
	K7-2008	PARAM UPGRADE T LINE PWO 2008	-	-	313	(161)	(21)	-	-	-	-	-	-	-
	K7-2009	PARAM UPGRADE T LINE KU 2009	-	-	-	68	(1)	-	-	-	-	-	-	-
	K7-2011	PARAM UPGRADE T LINE KU 2011	-	-	-	-	-	254	(2)	-	-	-	-	-
	K8	STORM DAMAGE T-LINE PWO	707	510	1,074	77	(1)	-	-	-	-	-	-	-
	K8-2008	STORM DAMAGE T-LINE PWO-2008	-	-	395	16	-	-	-	-	-	-	-	-
	K8-2009	STORM DAMAGE T-LINE KU 2009	-	-	-	17,079	218	-	-	-	-	-	-	-
	K8-2010	STORM DAMAGE T-LINE KU 2010	-	-	-	-	591	(7)	-	-	-	(0)	-	-
	K8-2011	STORM DAMAGE T-LINE KU 2011	-	-	-	-	-	1,219	(18)	-	-	-	-	-
	K8-2012	STORM DAMAGE T-LINE KU 2012	-	-	-	-	-	-	1,602	45	(8)	-	-	-
	K8-2013	STORM DAMAGE T-LINE KU 2013	-	-	-	-	-	-	-	1,281	212	4	-	-
	K8-2014	STORM DAMAGE T-LINE-KU 2014	-	-	-	-	-	-	-	-	1,074	86	(4)	-
	K8-2015	STORM DAMAGE T-LINE KU 2015	-	-	-	-	-	-	-	-	-	1,124	1	-
	K8-2016	STORM DAMAGE T-LINE KU 2016	-	-	-	-	-	-	-	-	-	-	905	-
	K8-2017	Storm Damage T-Line KU 2017	-	-	-	-	-	-	-	-	-	-	183	550
	K8-2018	Storm Damage T-Line KU 2018	-	-	-	-	-	-	-	-	-	-	-	566
	K9	PRIORITY REPL T-LINES PWO	5,858	4,635	2,202	(353)	(17)	6	(10)	-	-	-	-	-
	K9-2008	PRIORITY REPL T-LINES PWO 2008	-	-	1,506	727	-	-	-	-	-	-	-	-
	K9-2009	PRIORITY REPL T-LINES KU 2009	-	-	-	2,753	975	(6)	-	-	-	-	-	-
	K9-2010	PRIORITY REPL T-LINES KU 2010	-	-	-	-	6,084	160	(42)	(24)	(1)	0	-	-
	K9-2011	PRIORITY REPL T-LINES KU 2011	-	-	-	-	-	7,381	288	(19)	(47)	-	-	-
	K9-2012	PRIORITY REPL T-LINES KU 2012	-	-	-	-	-	-	8,506	1,332	(1, 440)	0	-	-
	K9-2013	PRIORITY REPL T-LINES KU 2013	-	-	-	-	-	-	-	9,465	3,413	330	(559)	-
	K9-2014	PRIORITY REPL T-LINES-KU 2014	-	-	-	-	-	-	-	-	10,237	2,778	142	-
	K9-2015	PRIORITY REPL T-LINES KU 2015	-	-	-	-	-	-	-	-	-	10,696	870	-
	K9-2016	PRIORITY REPL T-LINES KU 2016	-	-	-	-	-	-	-	-	-	-	4,546	-
	K9-2017	Priority Repl T-Lines KU	-	-	-	-	-	-	-	-	-	-	2,999	14,475
	K9-2018	Priority Repl T-Lines KU 2018	-	-	-	-	-	-	-	-	-	-	-	18,778
	KARM-2015	PRIORITY REPL X-ARMS KU 2015	-	-	-	-	-	-	-	-	-	721	(11)	-
	KARM-2016	Priority Repl X-Arms KU 2016	-	-	-	-	-	-	-	-	-	-	1,959	-
	KARM-2017	Priority Repl X-Arms KU 2017	-	-	-	-	-	-	-	-	-	-	606	3,642
	KARM-2018	Priority Repl X-Arms KU 2018	-	-	-	-	-	-	-	-	-	-	-	2,800
		KU Arrester Replacements 2017	-	-	-	-	-	-	-	-	-	-	-	52
	KBATTRY1	Batteries KU-11	-	-	-	-	-	16	-	(5)	-	-	-	-
	KBATTRY12	2 Batteries KU-12	-	-	-	-	-	-	253	6	(1)	-	-	-
		3 Batteries KU-13	-	-	-	-	-	-	-	163	-	(7)	-	-
	KBR-10	KU Breaker Replacements-10	-	-	-	-	2,079	(1,840)	-	-	-	-	-	-
	KBR-11	KU Breaker Replacements-11	-	-	-	-	-	1,905	274	(707)	-	-	-	-
	KBR-12	KU Breaker Replacements-12	-	-	-	-	-	-	4,542	(164)	(27)	-	-	-
		1	-	-	-	-	-	-	-	. ,	102	(6)	-	-
	KBR-13	KU Breaker Replacements-13	-	-	-	-	-	-	-	1,382		(6)	-	

Туре	Project #	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Base Period	Test Period
•••	KBR-14	KU Breaker Replacements 2014	-	-	-	-	-	-	-	-	416	68	-	-
	KBRFAIL14	KU-Brkr Fail-2014	-	-	-	-	-	-	-	-	189	(19)	-	-
	KBRFAIL15	KU-Brkr Fail-2015	-	-	-	-	-	-	-	-	-	368	68	-
		KU-Brkr Fail-2016	-	-	-	-	-	-	-	-	-	_	661	-
	KBRFAIL17	KU-Brkr Fail-2017	-	-	-	-	-	-	-	-	-	-	-	750
	KBRFAIL18	KU-Brkr Fail-2018	-	-	-	-	-	-	-	-	-	-	-	650
	KCI-12	KU Capacitor Installations12	-	-	-	-	-	-	0	(0)	-	-	-	-
	KCR-10	KU Carrier Replacements	-	-	-	-	580	134	-	-	-	-	-	-
	KCR-11	KU Carrier Add/Replcmnts11	-	-	-	-	-	440	38	-	-	-	-	-
	KCR-12	KU Carrier Add/Replcmnts12	-	-	-	-	-	-	11	20	(18)	-	-	-
	KFENCE-12	KFENCE-12	-	-	-	-	-	-	334	80	- 1	-	-	-
	KFENCE-13	KFENCE-13	-	-	-	-	-	-	-	412	21	-	-	-
		KU Transformer Firewalls-11	-	-	-	-	-	3	(3)	-	-	-	-	-
	KINS-2015	PRIORITY REPL INSLTRS KU 2015	-	-	-	-	-	-	-	-	-	251	1	-
	KINS-2016	Priority Repl Insltrs KU 2016	-	-	-	-	-	-	-	-	-	-	103	-
	KINS-2017	Priority Repl Insltrs KU 2017	-	-	-	-	-	-	-	-	-	-	95	569
	KINS-2018	Priority Repl Insltrs KU 2018	-	-	-	-	-	-	-	-	-	-	-	731
	KINSTRF11	INSTRMNT XFRMR REPL-KU-11	-	-	-	-	-	236	9	0	-	-	-	-
	KINSTRF12	INSTRMNT XFRMR REPL-KU-12	-	-	-	-	-	-	235	57	(3)	-	-	-
	KINSTRF13	INSTRMNT XFRMR REPL-KU-13	-	-	-	-	-	-	-	349	(43)	-	-	-
	KOTFAIL14	KU-OtherFail-2014	-	-	-	-	-	-	-	-	143	5	(0)	-
	KOTFAIL15	KU-OtherFail-2015	-	-	-	-	-	-	-	-	-	100	30	-
	KOTFAIL16	KU-OtherFail-2016	-	-	-	-	-	-	-	-	-	-	236	-
	KOTFAIL17	KU-OtherFail-2017	-	-	-	-	-	-	-	-	-	-	-	750
	KOTFAIL18	KU-OtherFail-2018	-	-	-	-	-	-	-	-	-	-	-	650
	KOTH-2016	Priority Repl Other KU 2016	-	-	-	-	-	-	-	-	-	-	1,429	-
	KOTH-2017	Priority Repl Other KU 2017	-	-	-	-	-	-	-	-	-	-	768	2,304
	KOTH-2018	Priority Repl Other KU 2018	-	-	-	-	-	-	-	-	-	-	-	3,537
	K-OTHER14	KU-Other-2014	-	-	-	-	-	-	-	-	1,316	(24)	-	-
	K-OTHER15	KU-Other-2015	-	-	-	-	-	-	-	-	-	1,414	222	-
	KOTPR14	KU Other Prot Blank 2014	-	-	-	-	-	-	-	-	573	143	(27)	-
	KOTPR15	KU Other Prot Blanket 2015	-	-	-	-	-	-	-	-	-	424	88	-
	KOTPR16	KU Other Prot Blanket 2016	-	-	-	-	-	-	-	-	-	-	394	-
	KOTPR18	KU Other Prot Blanket 2018	-	-	-	-	-	-	-	-	-	-	-	26
	KOTPRFL14	KU Oth Prot Failures 2014	-	-	-	-	-	-	-	-	2	-	-	-
	KOTPRFL15	KU Oth Prot Failures 2015	-	-	-	-	-	-	-	-	-	26	-	-
	KOTPRFL16	KU Oth Prot Failures 2016	-	-	-	-	-	-	-	-	-	-	5	-
	KOTPRFL17	KU Oth Prot Failures 2017	-	-	-	-	-	-	-	-	-	-	-	18
	KRELAY-11	Relay Replacements-KU-2011	-	-	-	-	-	72	3	(0)	-	-	-	-
	KRELAY-12	Relay Replacements-KU -2012	-	-	-	-	-	-	291	183	7	-	-	-

Туре	Project #	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Base Period	Test Period
	KRELAY-13	Relay Replacement-KU-2013	-	-	-	-	-	-	-	365	67	(6)	-	-
		Relay Replacements-KU-2014	-	-	-	-	-	-	-	-	515	161	(74)	-
		Relay Replacements-KU-2015	-	-	-	-	-	-	-	-	-	325	91	-
		Relay Replacements-KU-2017	-	-	-	-	-	-	-	-	-	-	86	85
		KU Relay Failures-2014	-	-	-	-	-	-	-	-	-	-	3	-
	KREL-FL16	KU Relay Failures-2016	-	-	-	-	-	-	-	-	-	-	30	-
		KU Relay Failures-2017	-	-	-	-	-	-	-	-	-	-	-	132
		KU Relay Failures-2018	-	-	-	-	-	-	-	-	-	-	-	114
	KRSUB-09	Routine Sub Capital09- KU	-	-	-	724	84	(178)	-	-	-	-	-	-
	KRSUB-10	KU Routine - Subs-10	-	-	-	-	948	32	8	(43)	19	-	-	-
	KRSUB-11	KU Routine - Subs-11	-	-	-	-	-	2,619	494	(55)	17	-	-	-
	KRSUB-12	KU Routine - Subs-12	-	-	-	-	-		997	295	(29)	(1)	-	-
	KRSUB-13	KU Routine - Subs-13	-	-	-	-	-	-	-	983	85	24	(69)	-
	KRTU-10	KU RTU10	-	-	-	-	97	0	-	-	-	-	-	-
	KRTU-11	KU RTU11	-	-	-	-	-	89	28	-	-	-	-	-
	KRTU-12	KU RTU Replacements-12	-	-	-	-	-	-	240	16	(2)	-	-	-
	KRTU-13	KU RTU Replacements-13	-	-	-	-	-	-	_	138	16	-	-	-
	KRTU-14	KU RTU Replacements-14	-	-	-	-	-	-	-	-	781	351	2	-
	KRTU-15	KU RTU Replacements-15	-	-	-	-	-	-	-	-	_	947	346	-
	KRTU-16	KU RTU Replacements-16	-	-	-	-	-	-	-	-	-	-	971	-
	KRTU-17	KU RTU Replacements-17	-	-	-	-	-	-	_	-	-	-	30	1,671
	KRTU-18	KU RTU Replacements-18	-	-	-	-	-	-	-	-	-	-	-	1,777
		KU RTU Failures-2015	-	-	-	-	-	-	-	-	-	16	-	-
		KU RTU Failures-2017	-	-	-	-	-	-	-	-	-	-	-	7
	KSTSVC11	STATION SERV XFMRS KU-11	-	-	-	-	-	237	76	(11)	12	-	-	-
	KSTSVC12	STATION SERV XFMRS KU-12	-	-	-	-	-	-	539	22	12	82	28	-
	KSTSVC13	STATION SERV XFMRS KU-13	-	-	-	-	-	-	-	5	-	-	-	-
		Surge Arestors KU-11	_	-	-	_	_	177	(3)	-	_	_	-	_
		Surge Arestors KU-12	-	-	-	-	-	-	228	(3)	(0)	-	-	-
		Surge Arestors KU-13	-	-	-	-	-	-	-	188	3	-	-	-
		PRIORITY REPL SWITCHES KU 2015	-	-	-	-	-	-	-	-	-	881	31	-
		KU-Xfrmr Fail-2016	-	-	-	-	-	-	-	-	-	-	488	-
		KU-Xfrmr Fail-2017	-	-	-	-	-	-	-	-	-	-	112	199
		KU Terminal Upgrades-10	-	-	-	-	151	156	0	-	-	-	-	-
	KTSUB-09	Terminal Upgrades09-KU	_	_	_	118	255	-	-	_	_	_	-	_
Routine Tot			7,570	7,732	8,468	24,318	14,058	18,056	23,353	21,160	18,164	22,227	18,772	64,421
Specific 100	108418	LOND-PITTS 69KV RELOC.	-	-	0, 4 00 7		-	-	-	-	-		-	
Speenie	109314	RET BAR-MOUND CITY 69KV	37	_	- '	_	_	_	_	-	_	_	_	_
	111244	BAR - MOUND FOUNDATION REMOVAL	(37)	_	_	_	_	_	_	_	_	_	_	_
	111244	Rocky Br-Pocket 69KV Hwy Reloc	(285)	(5)	-	-	-	-	-	-	-	-	-	-

Туре	Project #	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Base Period	Test Period
J F	112631	LEX-PAR 69KV HWY RELC PHASE 4		7	-	-	-	_	-	-	-	-	-	-
	112656	CLK CO-SPEN 69KV HWY RELC	-	-	7	(7)	-	-	-	-	-	-	-	-
	112707	North Floyd Switch	(2)	-	-	-	-	-	-	-	-	-	-	-
	112742	Relocate Fence Lake Reba Sub	-	8	-	-	-	-	-	-	-	-	-	-
	112789	HWY 52 RELOCATION RICHMOND	5	-	-	3	-	-	-	-	-	-	-	-
	113775	Arnld-Drchtr Blk Mtn 161kV	_	-	-	77	-	-	-	-	-	-	-	-
	114220	Clark Co Trans Sub Prop Sale	-	15	-	-	-	-	-	-	-	-	-	-
	115693	Paris 138-69kv, 150 MVA	912	323	-	-	-	-	-	-	-	-	-	-
	115769	Carrollton-Warsaw 69kv	(11)	-	-	0	-	-	-	-	-	-	-	-
	115978	Elihu-Somerset North 69KV	(107)	-	-	-	-	-	-	-	-	-	-	-
	116505	Walker 69kV Cap Retirement	-	-	-	(4)	-	-	-	-	-	-	-	-
	116958	Tyrone - West Frankfort 138kv	-	-	(1)	-	-	-	-	-	-	-	-	-
	117233	Carr-E.Frkt 138KV P2 Proj	-	(6)	-	-	-	-	-	-	-	-	-	-
	117243	RELOC GRP-EARN 161 (HWY 431)	0	(1)	-	-	-	-	-	-	-	-	-	-
	117244	RELOC GRP-HILLSIDE 69(HWY 431)	0	(1)	-	-	-	-	-	-	-	-	-	-
	117271	Amer.AveHaefling 69KV	11		-	-	-	-	-	-	-	-	-	-
	117287	Winc. Water Works 69KV Sub Tap	36	-	-	-	-	-	-	-	-	-	-	-
	117421	EKPC E. Bernstadt Sub	7	-	-	-	-	-	-	-	-	-	-	-
	117669	RELOC U.S. HWY 60 PROJ	(40)	-	-	(0)	-	-	-	-	-	-	-	-
	117693	Toms Creek 69 KV Relo	-	-	(7)	-	-	-	-	-	-	-	-	-
	117889	Brown-Tyrone 138 KV P1 Poles	-	(19)	-	-	-	-	-	-	-	-	-	-
	117988	Science Hill Hwy 27 Relo	259	(255)	0	0	0	-	-	-	-	-	-	-
	118211	Recon Ohio Co-Rosine	-	27	-	-	-	-	-	-	-	-	-	-
	118213	Va City-AEP Clinch River	393	3,022	1,627	(18)	2	1	-	-	-	-	101	-
	118214	Va City 138/69 120 MVA Xfrmr	252	1,252	653	27	-	-	-	-	-	-	-	-
	118215	Paris 138-69, 150 MVA	879	27	-	-	-	-	-	-	-	-	-	-
	118216	Trimble 2 Trans. Projects - KU	2,938	20,029	18,506	12,034	10,878	(140)	289	11	(7)	(3)	-	-
	118402	0098 SYS PARA RECOND OH - ROS	-	(27)	-	-	-	-	-	-	-	-	-	-
	118403	Brown - Tyrone 138kv Line	-	-	(55)	-	-	-	-	-	-	-	-	-
	118404	Tyrone - Frankfort 69kv Line	-	-	(31)	-	-	-	-	-	-	-	-	-
	118405	Adams - Delaplain Tap 69kv	43	-	-	-	-	-	-	-	-	-	-	-
	119885	Loudon Ave road project.	18	20	-	-	-	-	-	-	-	-	-	-
	119901	SIMPSONVILLE NEW TRANSFORMER	44	-	-	-	-	-	-	-	-	-	-	-
	119952	Adams to Penn 69 P2	20	-	-	-	-	-	-	-	-	-	-	-
	120009	Bedford Tap 69kv	-	59	-	-	-	-	-	-	-	-	-	-
	120017	LAWRENCEBURG P-2 REBUILD	342	-	-	-	-	-	-	-	-	-	-	-
	120024	Fawkes Breaker Replacement	1	-	-	-	-	-	-	-	-	-	-	-
	120032	Green River DFR	4	-	-	-	-	-	-	-	-	-	-	-
	120073	EKPC tap to Paris substation.	(1)	-	-	-	-	-	-	-	-	-	-	-
	120100	Replace NAS 138kV Metering CT	5	-	-	-	-	-	-	-	-	-	-	-

Туре	Project #	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Base Period	Test Period
-51	120130	P2 RIV. QUEEN-GRAHAM 69KV	105	-	-	-	-				-		-	
	120131	P2 RIV. QUEEN-GREENVILLE 69KV	78	-	-	-	-	-	-	-	-	-	-	-
	120169	Arnold - Dorchester 161kv	797	(14)	-	-	-	-	-	-	-	-	-	-
	120216	Liberty Rd Breaker Replacement	1	-	-	-	-	-	-	-	-	-	-	-
	120217	Green River Bkr Replacement	1	-	-	-	-	-	-	-	-	-	-	-
	120267	Pitsbrg Lanc 69 EBernstadt Sub	(117)	-	-	-	-	-	-	-	-	-	-	-
	120287	FAWKES - OKONITE DIST PARAMETE	120	-	-	-	-	-	-	-	-	-	-	-
	120288	ETOWN - ETOWN #3 NEW 12KV XFMR	2	51	-	-	-	-	-	-	-	-	-	-
	120315	Loudon Ave-T-359 move to BR6	-	(33)	-	-	-	-	-	-	-	-	-	-
	120506	Repl Walker-634 Bushings	1	-	-	-	-	-	-	-	-	-	-	-
	120752	KENTON - CARNTOWN 69 HWAY	-	-	-	(8)	-	-	-	-	-	-	-	-
	120795	Black Mtn. tap 69kv	87	-	-	-	-	-	-	-	-	-	-	-
	120834	Scott Co Adams 138 kV	3	-	-	-	-	-	-	-	-	-	-	-
	120852	Delvinta 824 Carrier Addn.	99	9	-	-	-	-	-	-	-	-	-	-
	120853	Arnold 804 Carrier Addn.	81	-	-	-	-	-	-	-	-	-	-	-
	121076	Loudon AveLansdowne DC 69 kV	199	3,635	1,023	1,488	1	7	-	-	-	-	-	-
	121098	Brown Plant RTU Replacement	1	0	-	-	-	-	-	-	-	-	-	-
	121115	Energy Srvs for Blackwell Sub	71	(69)	8	(13)	-	-	-	-	-	-	-	-
	121133	Walker-644 Bushing Repl	1	-	-	-	-	-	-	-	-	-	-	-
	121172	Fawkes 138-69kV, 150 MVA	1,236	84	41	7	-	-	-	-	-	-	-	-
	121202	Paris - Lexington Plant 69kv	16	169	0	-	-	-	-	-	-	-	-	-
	121203	Lake Reba (163) - Waco 69kv	15	-	-	-	(15)	-	-	-	-	-	-	-
	121210	A.O. Smith - Ewington 69kv	22	-	-	(22)	-	-	-	-	-	-	-	-
	121242	Toyota N Relay Replace	1	-	-	-	-	-	-	-	-	-	-	-
	121243	Toyota S Relay Replace	2	-	-	-	-	-	-	-	-	-	-	-
	121248	Elihu 161kV PT Replacement	-	9	-	-	-	-	-	-	-	-	-	-
	121297	Cntrol Ctr Construction - KU	52	5,242	6,149	-	-	-	-	-	-	-	-	-
	121303	Fawkes KU - Fawkes EKP 138kv	21	-	-	-	-	-	-	-	-	-	-	-
	121331	RIVER QUEEN 638 CARRIER	16	-	-	-	-	-	-	-	-	-	-	-
	121334	Brown-Fawkes 138kv	118	229	(0)	-	-	-	-	-	-	-	-	-
	121344	ESTILL COUNTY ENERGY PART	(36)	26	-	-	-	-	71	-	-	-	-	-
	121384	Earl N TT Rcvr	10	3	-	-	-	-	-	-	-	-	-	-
	121391	Etown-634 Bkr Relpace	82	(0)	0	-	-	-	-	-	-	-	-	-
	121392	W.Cliff-604&624 Bkr Replace	144	-	-	-	-	-	-	-	-	-	-	-
	121393	LexPlant 644 Replace	47	4	-	-	-	-	-	-	-	-	-	-
	121394	LoudonAve 628 Repl	58	17	-	-	-	-	-	-	-	-	-	-
	121398	Dorchester TT Rcvr	15	(3)	-	-	-	-	-	-	-	-	-	-
	121411	Ohio Co. Battery Replacement	22	-	0	-	-	-	-	-	-	-	-	-
	121412	Wheatcroft Battery Replacement	19	(0)	0	-	-	-	-	-	-	-	-	-
	121413	Hardin Co. Battery Replacement	18	2	0	-	-	-	-	-	-	-	-	-

Туре	Project #	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Base Period	Test Period
	121414	Carrollton Battery Replacement	13	7	0	-	-	-	-	-	-	-	-	-
	121438	INST ELK CRK MINE 69 TAP	56	(56)	-	-	-	-	-	-	-	-	-	-
	121489	Motorola Radio Console-ku	34	-	-	-	-	-	-	-	-	-	-	-
	121501	Lebanon-Lebanon Ind 69kV	-	-	-	-	-	-	597	-	-	-	-	-
	121508	Richmond, 604 terminal limits	2	11	0	-	-	-	-	-	-	-	-	-
	121533	Replace X bushings on T-356	24	-	-	-	-	-	-	-	-	-	-	-
	121540	Arnold-Delvinta AEP Wooten Tap	(0)	-	-	-	-	-	-	-	-	-	-	-
	121553	Shelbyville Bypass	63	(77)	-	-	-	-	-	-	-	-	-	-
	121558	Waitsboro Tap 69kV Relo	-	22	(3)	(17)	-	-	-	-	-	-	-	-
	121569	Dix Dam EMS/Cntrl addtns	14	-	-	-	-	-	-	-	-	-	-	-
	121586	West Lex. RTU Replacement	18	0	-	-	-	-	-	-	-	-	-	-
	121631	East Franfort RTU Replacement	35	6	-	-	-	-	-	-	-	-	-	-
	121632	Replace Bardstown 138kV PTs	28	(0)	-	-	-	-	-	-	-	-	-	-
	121659	Pisgah RTU Replacement	20	2	-	-	-	-	-	-	-	-	-	-
	121660	Grahamville RTU Replacement	-	27	-	-	-	-	-	-	-	-	-	-
	121668	Transmission Test Equipment	8	-	-	-	-	-	-	-	-	-	-	-
	121690	Farley Replace Fence	28	1	-	-	-	-	-	-	-	-	-	-
	121692	Rear Project Cubes	91	-	-	-	-	-	-	-	-	-	-	-
	121693	West Frankfort RTU Replacement	29	2	-	-	-	-	-	-	-	-	-	-
	121695	Inst switch @ Buena Vista Sub	-	-	42	158	-	-	-	-	-	-	-	-
	121705	Avon Tap 69kv reloc	4	-	-	-	(4)	-	-	-	-	-	-	-
	121736	Union Underwear Transformer	-	33	21	-	-	-	-	-	-	-	-	-
	121919	Replace Ohio Co. 608 Bushings	8	-	-	-	-	-	-	-	-	-	-	-
	121931	BROWN N TT RCVR	11	-	-	-	-	-	-	-	-	-	-	-
	121948	Replace Princeton-674 Bushing	7	-	-	-	-	-	-	-	-	-	-	-
	121971	Loudon-Winchester 69kV	-	369	-	-	-	-	-	-	-	-	-	-
	122049	*UK Underground	-	-	-	(65)	65	0	-	-	-	-	-	-
	122050	Ghent-Kenton 138kV Pole Repl	338	461	8	-	-	-	-	-	-	-	-	-
	122091	Lancaster Sub - EKP 69kV Tie	33	(33)	-	-	-	-	-	-	-	-	-	-
	122094	Lake Reba RTU Replacement	1	37	1	(1)	-	-	-	-	-	-	-	-
	122117	Daviess Co 345kV Tie	16	(16)	0	-	-	-	-	-	-	-	-	-
	122125	Butler Switches - Ghent/Kenton	156	25	-	-	-	-	-	-	-	-	-	-
	122177	Millersburg Control Hse Repl	-	39	128	0	330	194	(0)	-	-	-	-	-
	122191	on TB0664	10	1	-	-	-	-	-	-	-	-	-	-
	122196	Etown 614 Upgrade	1	14	-	-	-	-	-	-	-	-	-	-
	122206	Inst Fence Loudon Storage Lot	2	51	-	-	-	-	-	-	-	-	-	-
	122211	Brown CT-Brdstwn P2	1	37	-	2	58	-	-	-	-	-	-	-
	122241	Repl West Cliff 624 Brk	-	1	0	-	-	-	-	-	-	-	-	-
	122265	Morganfield Fence Repl	52	1	-	-	-	-	-	-	-	-	-	-
	122267	Marion Sub Cap Fence Repl	9	(0)	-	-	-	-	-	-	-	-	-	-

122268Wheatcrift Sub Cap Fence Repl9 (0) \cdot	Туре	Project #	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Base Period	Test Period
112271 Higby Mill Carrier 10 1. 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 <t< td=""><td>• •</td><td>122268</td><td></td><td>9</td><td>(0)</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></t<>	• •	122268		9	(0)	-	-	-	-	-	-	-	-	-	-
12300 NA S 345-138kV A50MVA xfrm 1 3,115 1,327 (65) (175) - - - 122307 Ghen:-345kV CB addition - 294 332 0 -		122271		10		-	-	-	-	-	-	-	-	-	-
12307 Ghent-345kV GCB addition - 294 323 0 - - - - - 1 122449 NAS TAP 345kV Line 3 624 660 (11) - <t< td=""><td></td><td></td><td></td><td>1</td><td>3,115</td><td>1,357</td><td>(65)</td><td>(175)</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></t<>				1	3,115	1,357	(65)	(175)	-	-	-	-	-	-	-
122498 Reloc Ky Hwy 286 - 1 (0) - 6 - - - 122541 Taylor Co. Transformer - 203 0 -		122307		-	294	323	. ,	-	-	-	-	-	-	-	-
122498 Reloc Ky Hwy 286 - 1 (0) - 6 - - - 122541 Taylor Co. Transformer - 203 0 -		122449	NAS TAP 345kV Line	3	624	660	(11)	-	-	-	-	-	-	-	-
122521 Taylor Co. Transformer - 203 0 - <t< td=""><td></td><td>122498</td><td>Reloc Ky Hwy 286</td><td>-</td><td>1</td><td>(0)</td><td></td><td>6</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></t<>		122498	Reloc Ky Hwy 286	-	1	(0)		6	-	-	-	-	-	-	-
122554 EKPC Southput Interconnect - 48 -		122521		-	203	0	-	-	-	-	-	-	-	-	-
122555 Wilson-Downing Tap Reconfig - 96 -		122545	Race St-Lex Plt P&G Sect	-	-	-	30	100	-	-	-	-	-	-	-
122567 Harlan Y Transformer Replace - 257 8 -		122554	EKPC Southpnt Interconnect	-	48	-	-	-	-	-	-	-	-	-	-
122567 Harlan Y Transformer Replace - 257 8 -		122555		-	96	-	-	-	-	-	-	-	-	-	-
122668 Liberty Road Relocation - 75 (75) - - - - - - 1 - - - 1 - - 1 - - 1 - - 1 - - 1 - - 1 - - - 1 - - - - - 1 - - - - 1 -		122567		-	257	8	-	-	-	-	-	-	-	-	-
122668 Liberty Road Relocation - 75 (75) - - - - - - - 1 - - - 1 - - 1 - - - 1 - - - 1 - - - 1 - - - - 1 - - - - - - 1 -		122641	Reloc Ring Rd Proj 345kV	-	324	(323)	(1)	-	-	-	-	-	-	-	-
122678 Berea Bypass Relocation - (30) 7 -		122668		-	75	(75)		-	-	-	-	-	-	-	-
122679 Ducanno Rd Relocation - 1 (1) - - - - 122703 Brown N-Higby Mill Reloc - 253 (175) 6 - - - - 122707 Dix FEP Expansion - 78 - - - - - - 122764 Backup CC Comm LGE/KU - 76 - (23) - - - - - 122787 Taylor County RTU Replacement - 24 -		122675	Hardin Co-Bonvlle 69kV	-	15	21	(35)	(1)	-	1	-	-	-	-	-
122703 Brown N-Higby Mill Reloc - 253 (175) 6 -		122678	Berea Bypass Relocation	-	(30)	7	-	-	-	-	-	-	-	-	-
122707 Dix FEP Expansion - 78 - <td></td> <td>122679</td> <td>Duncannon Rd Relocation</td> <td>-</td> <td>-</td> <td>1</td> <td>(1)</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td>		122679	Duncannon Rd Relocation	-	-	1	(1)	-	-	-	-	-	-	-	-
122764 Backup CC Comm LGE/KU - 76 - (23) - <		122703	Brown N-Higby Mill Reloc	-	253	(175)	6	-	-	-	-	-	-	-	-
122787 Taylor County RTU Replacement - 24 -		122707	Dix FEP Expansion	-	78	-	-	-	-	-	-	-	-	-	-
122792 *Hdsbg-Add 69kV bkrs for Cust - - 96 (96) 0 - - - - 122795 Bond-St. Paul 69kV - - 72 2 - - - - 122868 Rpl Failed West Cliff Trans. - 109 -		122764	Backup CC Comm LGE/KU	-	76	-	(23)	-	-	-	-	-	-	-	-
122795 Bond-St. Paul 69kV - - 72 2 - </td <td></td> <td>122787</td> <td>Taylor County RTU Replacement</td> <td>-</td> <td>24</td> <td>-</td>		122787	Taylor County RTU Replacement	-	24	-	-	-	-	-	-	-	-	-	-
122868Rpl Failed West Cliff Trans109		122792	*Hdsbg-Add 69kV bkrs for Cust	-	-	96	(96)	0	-	-	-	-	-	-	-
122999Horse Cave Ind Sub291(26) </td <td></td> <td>122795</td> <td>Bond-St. Paul 69kV</td> <td>-</td> <td>-</td> <td>72</td> <td>2</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td>		122795	Bond-St. Paul 69kV	-	-	72	2	-	-	-	-	-	-	-	-
123134Kohl's Relocation28123147Relo Video Wall from WS-10123205Armstrong Coal 69kV Tap-(23)4011(11)123302UK Med Cntr Hse Relo-225610011(368)123351Lynch-Pocket 69kV Holmes Mill-1468123372Lebanon East Sbstn - 42723532123576GARRARD CO HIGH SCHOOL RELO-(82)82<		122868	Rpl Failed West Cliff Trans.	-	109	-	-	-	-	-	-	-	-	-	-
123147 Relo Video Wall from WS - 10 - <t< td=""><td></td><td>122999</td><td>Horse Cave Ind Sub</td><td>-</td><td>-</td><td>291</td><td>(26)</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></t<>		122999	Horse Cave Ind Sub	-	-	291	(26)	-	-	-	-	-	-	-	-
123205 Armstrong Coal 69kV Tap - (23) 40 11 (11) - - - - 123302 UK Med Cntr Hse Relo - 2 256 100 11 (368) - - - 123351 Lynch-Pocket 69kV Holmes Mill - 1 468 - <td></td> <td></td> <td>Kohl's Relocation</td> <td>-</td> <td>-</td> <td>-</td> <td>28</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td>			Kohl's Relocation	-	-	-	28	-	-	-	-	-	-	-	-
123302 UK Med Cntr Hse Relo - 2 256 100 11 (368) - - - - 123351 Lynch-Pocket 69kV Holmes Mill - 1 468 -				-		-	-	-	-	-	-	-	-	-	-
123351 Lynch-Pocket 69kV Holmes Mill - 1 468 -		123205	Armstrong Coal 69kV Tap	-	(23)	40	11	(11)	-	-	-	-	-	-	-
123372 Lebanon East Sbstn - 427 - - 235 32 -		123302	UK Med Cntr Hse Relo	-	2	256	100	11	(368)	-	-	-	-	-	-
123576 GARRARD CO HIGH SCHOOL RELO - (82) 82 -		123351	Lynch-Pocket 69kV Holmes Mill	-	1	468	-	-	-	-	-	-	-	-	-
123577 ALEX CREEK EKPC TAP UNIT T-041 - 3 (3) -		123372	Lebanon East Sbstn - 427	-	-	235	32	-	-	-	-	-	-	-	-
123625 Louden Ave-Haefling Hwy Relo - - 168 (146) (22) - - - 123626 Corning Glass - - (7) 7 - - - - 123627 Bardstown Industrial 69kV Tap - - 99 7 - - - - 123638 Parkers Mill Tap - - 216 44 - - - -		123576	GARRARD CO HIGH SCHOOL RELO	-	(82)		-	-	-	-	-	-	-	-	-
123626 Corning Glass - - (7) 7 -			ALEX CREEK EKPC TAP UNIT T-041	-	3	(3)	-	-	-	-	-	-	-	-	-
123627 Bardstown Industrial 69kV Tap - - 99 7 - - - - 123638 Parkers Mill Tap - - 216 44 - - - -				-	-		(146)	(22)	-	-	-	-	-	-	-
123638 Parkers Mill Tap 216 44		123626	Corning Glass	-	-	(7)	7	-	-	-	-	-	-	-	-
I		123627	Bardstown Industrial 69kV Tap	-	-	99	7	-	-	-	-	-	-	-	-
			•	-	-			-	-	-	-	-	-	-	-
		123666	Bryant Rd 69 KV Tap	-	-	42	10	-	-	-	-	-	-	-	-
123679 RELOC HWY60 BYPASS PROJ 21 (18) (12)		123679	RELOC HWY60 BYPASS PROJ	-	-	21	. ,		-	-	-	-	-	-	-
123703 INST RIVER VIEW COAL 69 TAP 67 2 22				-	-			22	-	-	-	-	-	-	-
123743 Haefling 714-Innovation Dr 40 70		123743	Haefling 714-Innovation Dr	-	-	40	70	-	-	-	-	-	-	-	-

Туре	Project #	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Base Period	Test Period
J I -	123749	Innovation Drive 138kV Tap	-	-	270	286	-	-	-	-	-	-	-	-
	123752	Air Liquide 138kV Addition	-	-	62	(62)	-	-	-	-	-	-	-	-
	123817	Compliance Docum. Software	-	-	63	-	-	-	-	-	-	-	-	-
	123818	Install New Analog Backup RTU	-	-	58	-	-	-	-	-	-	-	-	-
	123830	Bond-St Paul & VACty-ClinchRiv	-	-	52	(52)	-	-	-	-	-	-	-	-
	124158	*US 27 Highway relocation	-	-	11	(11)	-	-	-	-	-	-	-	-
	124291	Dow Corn W - Carltn 138kv	-	-	84	605	-	-	-	-	-	-	-	-
	124349	PVL-161-69kV, 150 MVA tran rpl	-	-	0	1,456	155	33	-	-	-	-	-	-
	124457	INST ARMSTR DOCK 69 TAP	-	-	79	(76)	(2)	-	-	-	-	-	-	-
	124460	Fawkes 69kV Brkr Repl	-	-	200	(5)	-	-	-	-	-	-	-	-
	124461	KBR09-FAWKES	-	-	41	237	71	-	-	-	-	-	-	-
	124494	*GRPP-604 Armsrtg Doc	-	-	9	(30)	2	-	-	-	-	-	-	-
	124551	Aspen Software Purchase	-	-	48	8	-	-	-	-	-	-	-	-
	124594	POWER LINE METERS -COMPLIANCE	-	-	9	-	-	-	-	-	-	-	-	-
	124629	Carrollton- Metal 69kV	-	-	54	113	-	-	-	-	-	-	-	-
	124754	896-624 Relays	-	-	17	-	-	-	-	-	-	-	-	-
	124755	196-614 Line Diff Relay	-	-	8	10	-	-	-	-	-	-	-	-
	124756	896-604 Relays	-	-	13	0	-	-	-	-	-	-	-	-
	124757	664-604 Line Diff Relay	-	-	8	12	-	-	-	-	-	-	-	-
	124760	152-704 Line Diff Relay	-	-	9	3	-	-	-	-	-	-	-	-
	124761	152-784 Line Diff Relay	-	-	9	0	-	-	-	-	-	-	-	-
	124762	227-704 Line Diff Relay	-	-	9	0	-	-	-	-	-	-	-	-
	124763	227-714 Line Diff Relay	-	-	9	0	-	-	-	-	-	-	-	-
	124764	117-754 Line Diff Relay	-	-	9	0	-	-	-	-	-	-	-	-
	124765	117-764 Line Diff Relay	-	-	9	5	-	-	-	-	-	-	-	-
	124766	896-634 Relays	-	-	13	0	-	-	-	-	-	-	-	-
	124779	Shelbyville to Simpsonville	-	-	393	535	-	-	-	-	-	-	-	-
	124895	Higby Mill- 69kV	-	-	243	152	-	-	-	-	-	-	-	-
	124910	072-814 Carrier	-	-	10	-	-	-	-	-	-	-	-	-
	124911	072-804 Carrier	-	-	10	-	-	-	-	-	-	-	-	-
	124912	071-608 Carrier	-	-	6	-	-	-	-	-	-	-	-	-
	124913	032-814 Carrier	-	-	10	-	-	-	-	-	-	-	-	-
	124914	032-804 Carrier	-	-	10	-	-	-	-	-	-	-	-	-
	124918	UK Med Relay Comm Upgrade	-	-	19	3	-	-	-	-	-	-	-	-
	124919	Amer. Ave Relay Comm Upgrade	-	-	16	0	-	-	-	-	-	-	-	-
	124920	Higby Mill Relay Comm Upgrade	-	-	19	0	-	-	-	-	-	-	-	-
	124921	066-684 Relays	-	-	9	3	-	-	-	-	-	-	-	-
	124934	RCKY BR-POCKET 69K CAWD STR86	-	-	-	(37)	1	1	0	-	-	-	-	-
	125028	Brown North - Tyrone 138kV	-	-	-	-	57	2,571	(4)	-	-	-	-	-
	125044	Delvinta- 600A metering CT	-	-	4	(4)	-	-	-	-	-	-	-	-

Туре	Project #	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Base Period	Test Period
••	125045	138kV breaker- Lake Reba Tap	-	-	-	193	(11)	-	-	-	-	-	-	-
	125051	Install 138kV bkr- Rodburn	-	-	-	183	(0)	-	-	-	-	-	-	-
	125060	Install 161kV bkr-Pineville Sw	-	-	-	151	70	-	-	-	-	-	-	-
	125062	Higby Mill 138/69 112 MVA	-	-	-	1,227	581	(3)	-	-	-	-	-	-
	125068	Replace disk & swtch-Lancaster	-	-	-	-	12	-	-	-	-	-	-	-
	125070	Etown Switches Replacement	-	-	-	-	62	0	-	-	-	-	-	-
	125079	DFR Study	-	-	-	410	257	(4)	-	-	-	-	-	-
	125080	KCA09-Carrier Repl Project	-	-	-	493	2	-	-	-	-	-	-	-
	125260	Farley replace breaker 628	-	-	-	68	5	-	-	-	-	-	-	-
	125288	Lexmark 6MVAR Cap Bank- REFUND	-	-	(63)	-	-	-	-	-	-	-	-	-
	125583	EMS Redund- Telecom Exp- KU	-	-	-	-	368	1	-	-	-	-	-	-
	125676	AVON North 69 KV Tap	-	-	-	16	285	-	-	-	-	-	-	-
	125677	*MEREDITH 138 KV TAP	-	-	-	-	-	-	-	2	-	-	-	-
	125694	Race St Relay Comm Upgrade	-	-	2	1	-	-	-	-	-	-	-	-
	125698	Lake Reba Tap RTU Install	-	-	7	29	-	-	-	-	-	-	-	-
	125700	KRT09-FARLEY RTU	-	-	-	59	1	-	-	-	-	-	-	-
	125725	Artemus RTU Install	-	-	1	48	-	-	-	-	-	-	-	-
	125729	KRT09-096ElihuRTU	-	-	-	59	-	-	-	-	-	-	-	-
	125741	Blackboard Application- KU	-	-	10	-	-	-	-	-	-	-	-	-
	125743	Dix Dam Network UG- KU	-	-	46	-	-	-	-	-	-	-	-	-
	125744	Lake Reba 163- BGAD 138kV Line	-	-	-	-	0	176	(4)	-	-	-	-	-
	125746	DOE-Paducah- Replace RTU	-	-	13	1	-	-	-	-	-	-	-	-
	125747	Duke- Fairview- Replace RTU	-	-	5	0	-	-	-	-	-	-	-	-
	125748	EKP-Taylor Co REA- Install RTU	-	-	-	0	6	4	-	-	-	-	-	-
	125789	BrownN 924/934 DCUB-Rx Carrier	-	-	10	-	-	-	-	-	-	-	-	-
	125790	American Ave 704 Carrier Repl	-	-	10	-	-	-	-	-	-	-	-	-
	125791	W Lexington 714 Carrier Repl	-	-	11	-	-	-	-	-	-	-	-	-
	125805	Replace Ohio Co 69kV DB PTs	-	-	-	27	-	-	-	-	-	-	-	-
	125806	Replace Harlan Y 161kV PTs	-	-	-	46	-	-	-	-	-	-	-	-
	125826	RET MAD SOUTH 69 TAP	-	-	-	1	26	-	-	-	-	-	-	-
	125856	Norton 34.5kV	-	-	-	200	(4)	(1)	-	-	-	-	-	-
	125898	Central Hardin 138kV Loop	-	-	-	7	(7)	-	-	-	-	-	-	-
	125945	KBR09-DowCornWBkr708	-	-	-	116	(54)	-	-	-	-	-	-	-
	125946	KBR09-DowCornWBkr718	-	-	-	116	1	-	-	-	-	-	-	-
	125947	KBR09-GrRvrStlBkr724	-	-	-	120	-	-	-	-	-	-	-	-
	125948	KBR09-GrnRvrBkr788	-	-	-	116	-	-	-	-	-	-	-	-
	125949	KBR09-TyroneBkr714	-	-	-	118	-	-	-	-	-	-	-	-
	125950	KBR09-TyroneBkr724	-	-	-	107	-	-	-	-	-	-	-	-
	125956	KCA09-POCKETRELAYS	-	-	-	176	143	(1)	-	-	-	-	-	-
	125959	KRT09-223CarntownRTU	-	-	-	70	-	-	-	-	-	-	-	-

Туре	Project #	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Base Period	Test Period
	125961	KBR09-DowCornWBkr704	-	-	-	120	2	-	-	-	-	-	-	-
	125962	KBR09-DowCornWBkr714	-	-	-	107	1	-	-	-	-	-	-	-
	125963	KBR09-ReplGhentBkr708	-	-	-	141	-	-	-	-	-	-	-	-
	125968	KTU09-BrownNorthReactors	-	-	-	30	439	13	-	-	-	-	-	-
	125971	KCA09-B North-Alcalde	-	-	-	119	210	(37)	-	-	-	-	-	-
	125988	KR09-S Paducah Control House	-	-	-	776	70	(35)	-	-	-	-	-	-
	125992	ARNLD EVRTS 69KV TOTZ TAP	-	-	-	5	484	-	-	-	-	-	-	-
	125995	Grahamville-Coleman Rd. 161kV	-	-	-	1,694	223	-	-	-	-	-	-	-
	125996	Grahamville-DOE 161kV Line	-	-	-	89	301	2,116	483	-	-	(50)	-	-
	126114	KCA09-HZReplacement	-	-	-	212	39	-	-	-	-	-	-	-
	126159	KTU09-Pineville69kVUpgrade	-	-	-	57	79	-	-	-	-	-	-	-
	126164	KTU09-CenHardin	-	-	-	3	(3)	-	-	-	-	-	-	-
	126180	*KMPASubstation	-	-	-	816	1,400	1,322	661	30	(0)	-	-	-
	126318	SV FRQ Source	-	-	-	2	-	-	-	-	-	-	-	-
	126321	Higby Mill Reconfig	-	-	-	159	604	-	-	-	-	-	-	-
	126322	Ghent Sub BKR 944 Replacement	-	-	-	363	7	-	-	-	-	-	-	-
	126329	BOONESBORO 12KV	-	-	-	-	196	-	-	-	-	-	-	-
	126414	*Kenton-744 Terminal Upgrade	-	-	-	52	10	-	-	-	-	-	-	-
	126492	Dix Map Bd & Vid Wall	-	-	-	36	-	-	-	-	-	-	-	-
	126569	002-Wofford RTURepl	-	-	-	24	28	18	-	-	-	-	-	-
	126570	051-Pittsburg RTURepla	-	-	-	1	34	0	-	-	-	-	-	-
	126768	W.Lexington-Bkr Upgrade	-	-	-	-	138	85	-	-	-	-	-	-
	126773	West Cliff Rebuild	-	-	-	-	85	2,740	205	5	-	-	-	-
	126774	Danville Breakers	-	-	-	-	145	104	-	-	-	-	-	-
	126783	Meredith	-	-	-	-	-	-	-	0	1	-	-	-
	126785	Work Mgmt / FRP software	-	-	-	-	1,746	971	(30)	-	-	-	-	-
	126786	SEL Software for event viewing	-	-	-	-	17	-	-	-	-	-	-	-
	126788	DGA Oil Analyzer	-	-	-	-	104	-	-	-	-	-	-	-
	126790	Higby Mill Brk Replacement	-	-	-	-	859	0	-	-	-	-	-	-
	126794	Inst 69kv/54.0MVA Capactr FMC	-	-	-	-	424	15	-	-	-	-	-	-
	126795	69k/21.6MVAR Nich City Sub	-	-	-	-	184	153	95	(46)	-	-	-	-
	126796	36MVA Capctr-Rogersville 69kV	-	-	-	-	246	50	-	40	-	-	-	-
	126797	Replace 600A Bkr Shelbyville	-	-	-	15	12	-	-	-	-	-	-	-
	126799	Boonesboro-N 1200A Bkr 213-608	-	-	-	-	-	-	96	6	-	-	-	-
	126803	Draw DT/Enhance AutoCAD-KU	-	-	-	-	-	33	136	0	-	-	-	-
	127063	Bdstown Ind Thermal Upgrd	-	-	-	-	152	(2)	-	-	(0)	-	-	-
	127064	KY-St Hosp-Dville Thrml Upgrd	-	-	-	-	155	-	-	-	-	-	-	-
	127068	Hume Road Tap	-	-	-	-	-	-	-	996	76	17	-	-
	127071	Paris-Millersburg Hwy Relo	-	-	-	-	-	-	-	805	496	6	-	-
	127072	Lockport - Shadrck P2	-	-	-	-	219	-	-	-	-	-	-	-

Туре	Project #	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Base Period	Test Period
	127080	Green Rv Plant-Erlngton 69k	-	-	-	-	727	707	-	-	-	-	-	-
	127142	Openview.NET- KU	-	-	-	-	-	181	15	-	-	-	-	-
	127148	KU 2011	-	-	-	-	-	42	-	-	-	-	-	-
	127160	161-161KV XFORMER BKR	-	-	-	26	143	-	-	-	-	-	-	-
	127161	161-161KV BUS TIE SWITCH	-	-	-	94	1	155	-	-	-	-	-	-
	127162	161-Control House	-	-	-	-	586	58	-	-	-	-	-	-
	127234	PV-345-Panels	-	-	-	90	243	(10)	-	-	-	-	-	-
	127235	131-LivingCo-Mat	-	-	-	39	25	-	-	-	-	-	-	-
	127260	TC2 Temporary Workaround	-	-	-	2,831	3,461	(579)	-	-	-	-	-	-
	127281	Tyrone Supv Cont	-	-	-	41	-	-	-	-	-	-	-	-
	127286	GHENT BKR 946 IN	-	-	-	56	43	158	-	-	-	-	-	-
	127298	RplWFrkT286Xfrmr	-	-	-	(10)	-	-	-	-	-	-	-	-
	127355	PinevilleEqpRM	-	-	-	-	37	-	-	-	-	-	-	-
	127372	ADAMS-SCOTT CO 69KV PARAMETERS	-	-	-	-	315	26	-	-	-	-	-	-
	127394	KBR10-E-Town69kV	-	-	-	-	238	-	-	-	-	-	-	-
	127395	KBR10-GrnRver009	-	-	-	-	296	1	-	-	-	-	-	-
	127405	Versailles Bypass Capacitor	-	-	-	-	317	25	-	-	-	-	-	-
	127444	ScottCo69kVBrkrs	-	-	-	-	513	(2)	-	-	-	-	-	-
	127456	Grahamville Bus Tie Breaker	-	-	-	-	288	(39)	-	-	-	-	-	-
	127462	OXFORDSUB#2TAP	-	-	-	-	67	5	-	-	-	-	-	-
	127463	SV Conf. Table- KU	-	-	-	-	7	-	-	-	-	-	-	-
	127500	NAS - Dow Corning West OPGW	-	-	-	-	450	97	-	-	-	-	-	-
	127508	PDS/TEST LAN KU	-	-	-	-	12	-	-	-	-	-	-	-
	127512	RICH 2 SUB 4KV TO 12KV	-	-	-	-	-	245	-	-	-	-	-	-
	127546	238-RemoteEndsWrk	-	-	-	-	144	45	89	0	-	-	-	-
	127549	FALLS Software Purchase	-	-	-	-	50	26	-	-	-	-	-	-
	127556	ARNDORCSTR-RODA	-	-	-	-	510	382	-	-	-	-	-	-
	127606	Warsaw East Capacitor Bank	-	-	-	-	172	(113)	(58)	-	-	-	-	-
	127644	LivingstonCo-KYDam Fiber Upgr	-	-	-	-	432	115	2	-	-	-	-	-
	130011	Ghent Switch Replacement	-	-	-	-	348	126	106	-	-	-	-	-
	130474	Rineyville Tap 69kV	-	-	-	-	-	36	122	-	-	-	-	-
	130619	Toyota South-Toyota North OPGW	-	-	-	-	57	246	122	-	-	-	-	-
	130620	Scott County - Adams OPGW	-	-	-	-	291	237	(3)	0	-	-	-	-
	130621	Adams - Toyota South OPGW	-	-	-	-	246	19	-	-	-	-	-	-
	130631	DAVIESS CO Station Backup	-	-	-	-	27	26	-	-	-	-	-	-
	130639	131-StationServiceTransUpgr	-	-	-	-	40	23	-	-	-	-	-	-
	130895	Ghent 345kV Brkr Repl	-	-	-	-	7	1,670	2,233	312	142	-	-	-
	131144	CLARK CO HIGH RELOCATION	-	-	-	-	(248)	248	-	-	-	-	-	-
	131259	Joyland Upgrade	-	-	-	-	-	276	-	-	-	-	-	-
	131273	FAWKES-OKONITE 69KV RECON	-	-	-	-	-	506	-	-	-	-	-	-

Туре	Project #	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Base Period	Test Period
••	131274	OHIO CO - MEREDITH 138 KV	-	-	-	-	-	3,557	63	2	-	-	-	-
	131279	Elihu-Ferguson South 69kv	-	-	-	-	-	-	439	431	(10)	-	-	-
	131306	NESC Upgrades-2011	-	-	-	-	-	105	-	-	-	-	-	-
	131308	FMC Sub Fencing	-	-	-	-	-	34	-	-	-	-	-	-
	131315	Repl Brkr 192-688 at Pineville	-	-	-	-	-	95	1	-	-	-	-	-
	131319	Repl Brkr 178-718 at Hardin Co	-	-	-	-	-	106	80	6	-	-	-	-
	131321	Stanford N 19.8 MVAr 69kV Cap	-	-	-	-	-	184	131	34	-	-	-	-
	131322	Mt. Vernon Cap Bank	-	-	-	-	-	146	180	89	-	-	-	-
	131325	Scott Co 27.0 MVAr 69kV Cap	-	-	-	-	-	250	5	-	-	-	-	-
	131327	W. Frankfort 36.0MVAr 69kV Cap	-	-	-	-	-	304	-	-	-	-	-	-
	131329	Danville N 42.0MVAr 69kv Cap	-	-	-	-	-	274	7	-	-	-	-	-
	131338	Ghent 345kV Control House	-	-	-	-	-	-	-	-	-	577	1,740	184
	131350	Tyrone Control House	-	-	-	-	-	-	-	-	-	1,004	1,032	-
	131354	Cascade Phase II - KU	-	-	-	-	-	-	130	263	44	-	-	-
	131355	Ghent Redesign 138kV Sub	-	-	-	-	-	-	-	-	-	-	525	1,114
	131385	225-604 Breaker Replacement	-	-	-	-	76	1	-	-	-	-	-	-
	131390	Millersburg BKR Replacements	-	-	-	-	220	332	(0)	-	-	-	-	-
	131809	KU-2013	-	-	-	-	-	-	-	508	467	12	(0)	-
	131859	KU-2015	-	-	-	-	-	-	-	-	-	239	-	-
	131861	KU-2016	-	-	-	-	-	-	-	-	-	-	346	-
	131864	KU-2017	-	-	-	-	-	-	-	-	-	-	-	627
	131865	KU-2018	-	-	-	-	-	-	-	-	-	-	-	564
	132086	Farmers 175-608 Rplc	-	-	-	-	63	13	-	-	-	-	-	-
	132098	Simpsonville Switch Gear KU	-	-	-	-	99	1	-	-	-	-	-	-
	132240	GPS RTK ROVER PURCHASE-KU	-	-	-	-	-	32	-	-	-	-	-	-
	132370	Extend the OATI T1 to Dix Dam	-	-	-	-	5	-	-	-	-	-	-	-
	132610	PowerBase - KU	-	-	-	-	-	440	-	-	-	-	-	-
	132644	HARDIN CO-DAVIESS CO	-	-	-	-	-	239	8	-	-	-	-	-
	132674	KU Park Control House	-	-	-	-	-	-	-	-	-	1,617	960	-
	132732	QAS for EMS KU	-	-	-	-	-	334	(4)	-	-	-	-	-
	132859	HARDIN CO-BROWN N.	-	-	-	-	-	256	13	-	-	-	-	-
	132865	OXFORD COAL MINE TAP	-	-	-	-	-	187	-	-	-	-	(235)	-
	132867	KU	-	-	-	-	-	-	213	(81)	-	-	-	-
	132879	ADVENT 69KV TAP	-	-	-	-	-	191	-	-	-	-	-	-
	132889	EMS CC Switchover - KU	-	-	-	-	-	1,438	981	24	(14)	-	-	-
	132902	Rpl 211-345/138-161kV	-	-	-	-	-	391	50	-	-	-	-	-
	133116	UK WEST #2 69KV	-	-	-	-	-	-	190	-	-	-	-	-
	133306	NERCALRT-OH CO-GRP	-	-	-	-	-	-	101	468	17	-	-	-
	133318	NERCALRT-DWCNW-CRLTN	-	-	-	-	-	-	147	12	(6)	-	-	-
	133319	NERCALRT-CRLTN-E FFT	-	-	-	-	-	-	-	-	1,548	632	-	-

Туре	Project #	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Base Period	Test Period
J I *	133320	NERCALRT-GHNT-W LEX	-	-	-	-	-	-	3	608	-	-	-	-
	133321	NERCALRT-RGRVL-HDNCO	-	-	-	-	-	-	_	73	-	-	-	-
	133361	NERCALRT-BNVL-OH CO	-	_	-	-	-	232	1,847	(32)	-	-	-	-
	133365	NERCALRT-DNVL N TAP	-	-	-	-	-	97	0	-	-	-	-	-
	133377	NERCALRT-FWKS-CLRKCO	-	-	-	-	-	-	119	-	-	-	-	-
	133379	NERCALRT-SPCRD-CLRKC	-	-	-	-	-	27	75	38	-	-	-	-
	133910	NERCALRT-PNVL-FRLY	-	-	-	-	-	-	2,474	13	-	-	-	-
	133917	NERCALRT-ARTMS TAP	-	-	-	-	-	91	27	-	-	-	-	-
	133924	NERCALRT-PNVL-HRLN	-	-	-	-	-	2,419	62	-	-	-	-	-
	133934	NERCALRT-DRHTR-ARND2	-	-	-	-	-	-	110	-	-	-	-	-
	133973	NERCALRT-HRLN-ARNLD	-	-	-	-	-	-	465	-	-	-	-	-
	134057	NERCALRT-DLVTA-ARNLD	-	-	-	-	-	-	-	1,834	(1)	-	-	-
	134058	NERCALRT-ERLN-LVGSTN	-	-	-	-	-	-	-	1,231	1,991	46	-	-
	134060	NERCALRT-DRCSTR-PK N	-	-	-	-	-	-	-	266	9	-	-	-
	134061	NERCALRT-DRCSTR-PKN1	-	-	-	-	-	-	-	375	143	-	-	-
	134062	NERCALRT-LKRBA-DLVTA	-	-	-	-	-	-	-	-	1,270	160	-	-
	134076	58.5MVAr 69kV Cap-EarlingtonN	-	-	-	-	-	-	300	111	2	-	-	-
	134080	138/69kV Adams Xfrmr	-	-	-	-	-	398	672	695	(13)	-	-	-
	134213	BLACK BRANCH 345KV	-	-	-	-	-	70	527	(0)	-	-	-	-
	134221	NERCALRT-RDBRN-SPRRD	-	-	-	-	-	-	-	175	286	-	-	-
	134222	NERCALRT-LBNON-BNVL	-	-	-	-	-	-	-	-	2,698	(13)	-	-
	134223	NERCALRT-ADMS-TYRN	-	-	-	-	-	-	-	453	-	-	-	-
	134237	DSP LEX AREA MAJOR PROJECTS	-	-	-	-	-	-	-	-	-	95	386	-
	134245	DSP STNWL SUB UPGD	-	-	-	-	-	-	-	-	-	-	-	590
	134256	DSP VERSAILLES SUB	-	-	-	-	-	-	-	-	-	-	-	1,280
	134278	NERCALRT-BWN-LBANON	-	-	-	-	-	-	-	1,112	(13)	-	-	-
	134279	NERCALRT-ETWN-BDSTWN	-	-	-	-	-	-	-	-	305	-	-	-
	134283	BNDS MILL-FNCHVLLE STAT REPL	-	-	-	-	-	-	-	-	-	1,025	185	-
	134284	SR 2016 Bonds Mill-Finchville	-	-	-	-	-	-	-	-	-	-	916	-
	134407	REPLACE SIMP VIDEO WALL-KU	-	-	-	-	-	-	-	-	-	507	-	-
	134665	Back-up Trans Control Ctr KU	-	-	-	-	-	-	81	26	(107)	-	-	-
	135361	REL LEXPLNT-PISGH 69RBLD	-	-	-	-	-	-	-	-	-	-	2,822	-
	135429	ETWN-ETWN#4 69	-	-	-	-	-	-	367	(7)	-	-	-	-
	135431	SHLBYVL-SHLBYVL E 69	-	-	-	-	-	-	294	505	5	-	-	-
	135433	TEP-Add 345kV Brkr to W Lex	-	-	-	-	-	-	-	-	-	1,009	1	-
	135481	River Queen Xfrmr	-	-	-	-	-	452	218	-	-	-	-	-
	135491	54.0 MVAr 69kV Cap - Green R	-	-	-	-	-	-	197	180	2	-	-	-
	135531	13.2 MVAr 69kV Cap - Newtown	-	-	-	-	-	-	248	144	(6)	-	-	-
	135625	Matanzas Sub Upgrade	-	-	-	-	-	5	7,486	5,182	40	9	(204)	-
	135626	Matanzas Line Upgrades	-	-	-	-	-	-	116	390	2	-	-	-

Туре	Project #	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Base Period	Test Period
•••	135629	12.0 MVAr 69kV Cap - Uniontown	-	-	-	-	-	-	326	221	-	-	-	-
	135644	MicroSCADA Generation KU	-	-	-	-	-	14	4	-	-	-	-	-
	135784	LIVERMORE 34.5KV TAP	-	-	-	-	-	42	23	10	-	-	-	-
	135813	Trans Operator Log Sys-KU	-	-	-	-	-	108	-	-	-	-	-	-
	135832	ELIHU-SWLTN STAT REP	-	-	-	-	-	-	2,999	18	-	-	-	-
	135920	Corning Sub Upgrade	-	-	-	-	-	-	-	2,160	481	-	-	-
	135928	NERCALRT-AMERAV-HFLG	-	-	-	-	-	-	97	-	7	-	-	-
	135995	LREBA-WACO69P2	-	-	-	-	-	-	414	-	-	-	-	-
	136152	CORNING UPGD-LINES	-	-	-	-	-	-	-	195	317	-	-	-
	136172	AP-SADE-KU	-	-	-	-	-	-	107	(0)	-	-	-	-
	136531	TransOpLog II - KU	-	-	-	-	-	-	63	29	-	-	-	-
	137502	JAD COAL-LAND	-	-	-	-	-	-	1,779	(47)	-	-	-	-
	137728	SR 2017 Bonds Mill-West Cliff	-	-	-	-	-	-	-	-	-	-	-	708
	137737	TOYOTA STRUCTURE IMPROVEMENTS	-	-	-	-	-	-	-	606	-	-	-	-
	137739	REL ONTON 69KV SWITCH	-	-	-	-	-	-	-	-	-	-	-	276
	137744	HARDIN CO SMITH 345KV P1	-	-	-	-	-	-	-	625	496	1	-	-
	137745	PR HARDIN CO SMITH 345KV P2	-	-	-	-	-	-	-	-	-	1,396	2,089	-
	137749	DSP SHELBYVILLE E-TRANS	-	-	-	-	-	-	-	-	-	-	375	-
	137750	DSP MT VERNON SUB-TRANS	-	-	-	-	-	-	-	-	-	-	-	140
	137751	DSP VILEY 2-TRANS	-	-	-	-	-	-	-	-	-	-	-	786
	137752	DSP Richmond North 138kV	-	-	-	-	-	-	-	-	-	-	-	927
	137754	DSP HUME RD PHASE II TRANSFRMR	-	-	-	-	-	-	-	-	-	-	-	1,049
	137773	TRODS - KU	-	-	-	-	-	-	-	34	6	-	-	-
	138420	Cane Run 345kV Xfrmr - KU	-	-	-	-	-	-	910	(905)	(5)	-	-	-
	138692	TWR LGHTNG-KU	-	-	-	-	-	-	-	347	27	-	-	-
	138727	GRST 728 OMU Brkr Rpl	-	-	-	-	-	-	-	114	-	-	-	-
	138743	NEWTOWN PK 69KV SW REP	-	-	-	-	-	-	545	(108)	-	-	-	-
	138829	Cane Run Control House-KU	-	-	-	-	-	-	1	(1)	-	-	-	-
	138842	Grn Rvr Plnt-Hllsd 69kV Relo	-	-	-	-	-	-	-	-	-	-	-	50
	138897	PDCAH PRI-CLMN RD-STATIC REPL	-	-	-	-	-	-	130	592	(2)	50	-	-
	139002	Linux Identity Manager - KU	-	-	-	-	-	-	5	3	-	-	-	-
	139190	PINEVILLE-POCKET N. RECLAIM	-	-	-	-	-	-	-	250	-	-	-	-
	139210	Ghent Control House	-	-	-	-	-	-	-	586	276	(2)	-	-
	139256	NERCALRT-E.F-W.F 138KV	-	-	-	-	-	-	-	852	1,700	(6)	-	-
	139505	Bonds Mill 69kV Brkr Add	-	-	-	-	-	-	-	2	(2)	2	-	-
	139549	CARDINAL#2 METER RELO	-	-	-	-	-	-	-	174	8	-	-	-
	139557	GRST 714 & 718 Brkr Rpls	-	-	-	-	-	-	-	730	-	-	-	-
	139657	Mapboard Upgrade-KU-2013	-	-	-	-	-	-	-	69	2	-	-	-
	139696	LEX UNDRGD-PHASE 1	-	-	-	-	-	-	-	-	-	-	-	6,663
	139701	NERCALRT-INVTN-ADMS	-	-	-	-	-	-	-	362	981	0	-	-

Type Project # Project Name 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 139743 PLN-ELHU-BRNSD69 - - - - - - 71 - 139744 TEP-RQ-GRNVL-W-TAP69 - - - - - 511 92 139748 PLN-MDSNVLGE-MDSNVLW - - - - - 26 - 139751 PLN-VIRG-CTY-STPAUL - - - - 499 1,088 - 120752 PLN-WIRSCHT TAP - - - - - 1499 1	- - - 152 337	Period - - - - - - - - - - - -
139744TEP-RQ-GRNVL-W-TAP6951192139748PLN-MDSNVLGE-MDSNVLW26-139751PLN-VIRG-CTY-STPAUL4991,088-	- - - 152 337	
139748 PLN-MDSNVLGE-MDSNVLW - - - - - - 26 - 139751 PLN-VIRG-CTY-STPAUL - - - - 499 1,088 -	- - - 152 337	- - - -
139751 PLN-VIRG-CTY-STPAUL 499 1,088 -	337	- - - -
	337	- - -
139753 PLN-MDSNVL-HSPTL-TAP 182 -	337	- - -
139860 PLN-SCOTT-ST-TAP 318 135 -	337	-
139906 TEP-Morganfield 161kV Brkr Add 147		-
139979 TEP-FARLEY-US STEEL 69kV 172 1,516	(8)	
139996 TEP-ALCLDE-ELHU 1,609 209	(0)	-
140018 Dix Upgrade KU 2014 196 -	72	-
140278 PLN-NEBO-PRVIDNC-E 245 35 -	-	-
140279 RCHMND2-RCHMND 553 27	-	-
140280 TEP-BOND-VIRGINIACTY 992	-	-
140973 GRST 624 Brkr Rpl 340	-	-
141222 EMS AIRGAP SVRS-2013-KU 56 2 -	-	-
141394 Green River 884 Brkr Failure 1,071 72 0	-	-
142371 JAD COAL RELOCATION 292 -	-	-
142401 TEP-CMPGD-EMNUEL-TP	82	-
142474 EARL-N-NEBO-69KV 634 33 -	-	-
142799 IPS Device for QAS-KU-2013 20 - 4	-	-
142935 ONTON-SEBREE 337 -	-	-
142936 OHIO-CO-HARTFORD 377 -	-	-
142937 BIMBLE-ARTEMUS 364 -	-	-
142938 EAST-F-WEST-F-69KV 304 -	-	-
142945 Load Model Power Sys Stab-KU - - - - 25 -	-	-
142965 WALKER-OAKHILL 69KV-REIM 0 1	-	-
143027 Sunburst-KU 40 1 -	-	-
143174 Replace Ghent 942 Breaker - - - - - 401 11	-	-
143175 Replace Brown N 932 Breaker - - - - - 264 -	-	-
143539 Upgrade DIX V-Wall_2014_KU 66 -	-	-
143746 Pineville Grounding 711 31	-	-
144061 REL TUNNELL HILL SWITCH	289	-
144112 BACKUP CC V_WALL RPLC-KU-2016	48	-
144118 GR 69kV Control House Rpl - <th< td=""><td>-</td><td>3,625</td></th<>	-	3,625
144129 Rpl Dix Dam 604 & 624 Brkrs 209	0	-
144140 Rpl (3) Leitchfield Brkrs 4	367	-
144141 Rpl (1) 138kV Ohio Co Brkr 200	4	-
144143 Rpl Toyota South 714 Brkr	244	-
144150 Rpl Middlesboro Fence 79		-
144152 Rpl Green River 69kV Fence - - - - 105	1	-

Туре	Project #	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Base Period	Test Period
51	144153	Rpl River Queen Fence	-	-	-	-	-	-	-	-	-	76	-	-
	144154	Rpl Simmons Fence	-	-	-	-	-	-	-	-	-	49	-	-
	144155	Rpl Clinton Fence	-	-	-	-	-	-	-	-	-	74	-	-
	144157	Rpl Marion Fence	-	-	-	-	-	-	-	-	-	46	-	-
	144158	Rpl East Frankfort Fence	-	-	-	-	-	-	-	-	-	173	(19)	-
	144310	SCOTT CO-TOYOTA NORTH OPGW	-	-	-	-	-	-	-	-	514	35	-	-
	144338	Brown North	-	-	-	-	-	-	-	-	-	-	1,862	-
	144360	REL-Madisonville 604 Brkr Add	-	-	-	-	-	-	-	-	-	492	(108)	-
	144364	REL-Parkers Mill 604 Brkr Adds	-	-	-	-	-	-	-	-	-	2,077	6	-
	144366	REL-Warsaw 604 Brkr Addition	-	-	-	-	-	-	-	-	-	662	(1)	-
	144488	TEP-Rodburn 138/69kV Xfrmr	-	-	-	-	-	-	-	-	-	-	-	1,810
	144632	REL-Cawood 604 Brkr Addition	-	-	-	-	-	-	-	-	-	-	100	100
	144634	REL-FMC 604 Brkr Addition	-	-	-	-	-	-	-	-	-	-	-	113
	144636	REL-Stanford 604 Brkr Add	-	-	-	-	-	-	-	-	-	-	100	750
	144637	REL-Camargo 604 Brkr Add	-	-	-	-	-	-	-	-	-	-	100	100
	144682	TEP-DFR Replace MODs-KU	-	-	-	-	-	-	-	-	-	467	11	-
	144962	REL-Farley/Artemus/Pine Panels	-	-	-	-	-	-	-	-	-	-	444	-
	144964	REL HUME ROAD MOS	-	-	-	-	-	-	-	-	-	59	-	-
	144970	REL BARTON MOS	-	-	-	-	-	-	-	-	-	-	299	-
	146439	Higby Mill Firewall	-	-	-	-	-	-	-	-	-	36	77	-
	146457	Livingston County Reactor	-	-	-	-	-	-	-	-	-	594	-	-
	146679	LOCKPORT-SHADRACK 138KV	-	-	-	-	-	-	-	-	-	1,280	-	-
	146701	NRP CRLTN-CLFTY CRK	-	-	-	-	-	-	-	-	-	310	-	-
	146702	NRP FARLEY-ALCALDE	-	-	-	-	-	-	-	-	-	475	114	-
	146703	LVNGSTN CO-CRTTNDN P2	-	-	-	-	-	-	-	-	-	894	-	-
	146704	NRP LVNGSTN-CRITTDN CO	-	-	-	-	-	-	-	-	-	306	-	-
	146705	HARDIN CO-CLOVERPORT P2	-	-	-	-	-	-	-	-	-	2,555	-	-
	146706	GRAHAMVILLE-WICKLIFFE P2	-	-	-	-	-	-	-	-	-	762	(1)	-
	146710	NRP BROWN-FAWKES 138KV	-	-	-	-	-	-	-	-	-	1,144	0	-
	146731	W. Frankfort 69kV Brk (Reimb)	-	-	-	-	-	-	-	-	-	2	0	-
	146855	SPIR BROWN NORTH-HIGBY MILL	-	-	-	-	-	-	-	-	-	23	-	-
	146856	SPIR WEST CLIFF-BROWN PLANT	-	-	-	-	-	-	-	-	-	10	-	-
	146858	SPIR GHENT-NAS	-	-	-	-	-	-	-	-	-	11	-	-
	146925	Online Mon Equip - W. Lex	-	-	-	-	-	-	-	-	-	133	21	-
	146941	LEBANON EAST TRNSFRMR ADD	-	-	-	-	-	-	-	-	-	-	40	-
	146982	PR Ghent-Blackwell 138kV	-	-	-	-	-	-	-	-	-	-	1,561	-
	146983	NRP GHENT-BLACKWELL 138kV	-	-	-	-	-	-	-	-	-	-	157	-
	146984	NRP BLACKWELL-KENTON 138kV	-	-	-	-	-	-	-	-	-	-	201	-
	146997	HIGBY MILL-KY RIVER P2	-	-	-	-	-	-	-	-	-	1,085	10	-
	147130	NRP KENTON-RODBURN 138kV	-	-	-	-	-	-	-	-	-	555	584	-

Туре	Project #	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Base Period	Test Period
51	147131	PR Kenton-Rodburn 138kV		-	-	-	-	-	-	-	-	407	209	-
	147159	Rpl Danville N 604 & 608 Brkrs	-	-	-	-	-	-	-	-	-	119	72	-
	147161	Rpl Taylor County 804 Brkr	-	-	-	-	-	-	-	-	-	57	109	-
	147162	Rpl Harlan Wye 614 Breaker	-	-	-	-	-	-	-	-	-	160	24	-
	147217	TEP-W. Cliff-Shakertown Term	-	-	-	-	-	-	-	-	-	-	37	-
	147218	TEP-Brown Subs Term Eqp	-	-	-	-	-	-	-	-	-	-	44	-
	147219	TEP-Hardinsburg-B. Branch Term	-	-	-	-	-	-	-	-	-	-	-	239
	147220	TEP-Bonds MLawrenceburg Term	-	-	-	-	-	-	-	-	-	-	-	22
	147222	TEP-Elihu 814 Brkr Rpl	-	-	-	-	-	-	-	-	-	-	-	198
	147225	TEP-Hardinsburg-B.Branch Term2	-	-	-	-	-	-	-	-	-	-	-	150
	147226	TEP-Boyle Co 604 Disconnects	-	-	-	-	-	-	-	-	-	-	-	40
	147233	Wheatcroft 614 Brkr Rpl	-	-	-	-	-	-	-	-	-	162	24	-
	147241	TEP Corydon-Highland Mine 69kV	-	-	-	-	-	-	-	-	-	-	304	-
	147255	TEP HARDESTY A-PRINCETON	-	-	-	-	-	-	-	-	-	-	-	1,750
	147286	PR Spencer Road-Clark Co 69kV	-	-	-	-	-	-	-	-	-	-	755	-
	147307	Delvinta Station Service Rpl	-	-	-	-	-	-	-	-	-	-	67	-
	147310	E. Frankfort Station Svc Rpl	-	-	-	-	-	-	-	-	-	-	52	-
	147311	Bond Station Service Rpl	-	-	-	-	-	-	-	-	-	-	33	-
	147313	PR Bardstown-Elizabethtown	-	-	-	-	-	-	-	-	-	-	2,896	-
	147314	Brown North Surge Arrester Rpl	-	-	-	-	-	-	-	-	-	-	33	-
	147315	PR Lebanon-Springfield	-	-	-	-	-	-	-	-	-	-	547	-
	147331	Taylor Co Surge Arrester Rpl	-	-	-	-	-	-	-	-	-	-	9	-
	147334	PR London-Sweet Hollow 69kV	-	-	-	-	-	-	-	-	-	-	3,481	-
	147335	PR Green Rvr Plnt-Morganfield	-	-	-	-	-	-	-	-	-	-	2,517	-
	147341	Walker Bushings	-	-	-	-	-	-	-	-	-	-	35	-
	147344	Dorchester Bushings	-	-	-	-	-	-	-	-	-	-	48	-
	147345	Earlington North Bushings	-	-	-	-	-	-	-	-	-	-	52	-
	147360	Tyrone Ground Grid	-	-	-	-	-	-	-	-	-	-	138	-
	147389	NRP Pocket No-Phipps Bend	-	-	-	-	-	-	-	-	-	-	-	465
	147392	Brown CT Breaker Monitors	-	-	-	-	-	-	-	-	-	-	89	-
	147450	NRP Brown North-Hardin Co	-	-	-	-	-	-	-	-	-	-	290	-
	147461	NRP Grn Rvr Plnt-Grn Rvr Steel	-	-	-	-	-	-	-	-	-	-	135	-
	147463	NRP Grn Rvr Steel-Cloverport	-	-	-	-	-	-	-	-	-	-	322	-
	147465	NRP Livingston-So Paducah	-	-	-	-	-	-	-	-	-	-	704	-
	147466	NRP Crittenden-Morganfield	-	-	-	-	-	-	-	-	-	-	19	-
	147467	NRP Grn Rvr Plnt-Erlngton No	-	-	-	-	-	-	-	-	-	-	766	-
	147468	NRP West Lex-Haefling	-	-	-	-	-	-	-	-	-	-	-	210
	147472	NRP Paducah Prim-Coleman Rd	-	-	-	-	-	-	-	-	-	-	-	539
	147473	NRP Cloverport-Hardinsburg	-	-	-	-	-	-	-	-	-	-	156	-
	147474	NRP Hrdnsburg-Cen Hrdn EKPC	-	-	-	-	-	-	-	-	-	-	68	-

Type Project # Project Name 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 147478 NRP GR Plant-Morganfield - <th>1,322 486 - - - 180 -</th> <th>Period - - 341 346 346 -</th>	1,322 486 - - - 180 -	Period - - 341 346 346 -
147480 REL Esserville Switch -	- - 180	346
	- - 180	346
	- 180	
147486 REL Dwina Switch	180	346
147493 REL Hamblin Tap Switch		-
147534 REL Radcliff Switch	-	
147583 EFRNKFRT-WFRNKFRT HWY RELO		1,074
147588 GRAHAMVILLE-DOE RELO 161kV	-	487
147818 SPIR Projects KU 2016-2025	-	809
148119 TEP-Haefling Line Riser Rpl	-	45
148196 Rpl Brown North 912 Breaker 484	0	-
148370 REL-Hoover 604 Breaker Add	100	100
148371 REL-Earlington 604 Brkr Add	100	750
148388 REL Hughes Lane MOS	153	-
148482 Grahamville DOE Sub Elim -	-	251
148644 Rpl Brown North 924 Breaker 467	1	-
148990 N.A.S 345 DFR	-	82
149026 NERCALRT PNVL SW STN-PNVL TVA	391	-
149027 TEP-KU DFR 2016	484	-
149050 Rpl (2) Indian Hill 69kV Brkrs 266	5	-
149167 Rpl (2) 69kV Ohio Co Brkrs 213	-	-
149368 E-Town Cap Bank Rpl 186	109	-
149705 TEP-W Lex Reactor Additions	476	100
149764 NRP Adams-Toyota South	-	586
149765 NRP Ghent-Scott County	-	391
149769 NRP Taylor County Tap	-	146
149783 PR Princeton-Crittenden Co 1,310	14	-
149939 Replacment SF6 Camera - - - - 126	-	-
150114 SIMP CIRCUIT UPDATE-KU-2015 8	-	-
150238 Walker OCB Kit Install 9	14	-
150241 River Queen OCB Kit Install 11	14	-
150242 Danville N OCB Kit Install - - - - 11	-	-
150243 W Irvine OCB Kit Install 29	-	-
150244 W Frankfort OCB Kit Install 11	14	-
150245 Tyrone OCB Kit Install 6	14	-
150246 Rodburn OCB Kit Install - - - - 11	14	-
150247 Middlesboro OCB Kit Install 9	-	-
150248 Lebanon OCB Kit Install 11	1	-
150249 Boonesboro N OCB Kit Install 11	14	-
150252 Leitchfield Sw OCB Kit Install 7	-	-

Туре	Project #	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Base Period	Test Period
-58-	150253	Pocket OCB Kit Install		-							-	12	-	
	150257	Brown CT OCB Kit Install	-	-	-	-	-	-	-	-	-	8	14	-
	150262	London OCB Kit Install	-	-	-	-	-	-	-	-	-	18	-	-
	150268	Green River OCB Kit Install	-	-	-	-	-	-	-	-	-	31	27	-
	150269	Lancaster SW OCB Kit Install	-	-	-	-	-	-	-	-	-	47	-	-
	150270	Wheatcroft OCB Kit Install	-	-	-	-	-	-	-	-	-	16	14	-
	150636	Middlesboro (5) Brkr Rpl	-	-	-	-	-	-	-	-	-	-	773	-
	150642	KU Park Surge Arrestor/PT	-	-	-	-	-	-	-	-	-	_	200	-
	150644	Ghent Redesign 138kV-P&C	-	-	-	-	-	-	-	-	-	_	517	915
	150646	PR Livingston-South Paducah	-	-	-	-	-	-	-	-	-	-	1,000	-
	150648	PR Green Rvr Steel-Cloverport	-	-	-	-	-	-	-	-	-	-	818	-
	150652	PR Blackwell-Kenton	-	-	-	-	-	-	-	-	-	_	2,611	-
	150687	PR Pocket-Pennington Gap	-	-	-	-	-	-	-	-	-	-	1,542	-
	150729	Lake Reba Tap Surge Arr Rpl	-	-	-	-	-	-	-	-	-	_	20	-
	150730	Hardin Co Surge Arrester Rpl	-	-	-	-	-	-	-	-	-	_	16	-
	150731	Hardinsburg 704 Brkr Overhaul	-	-	-	-	-	-	-	-	-	_	20	-
	150733	Etown Insulator Rpl	-	-	-	-	-	-	-	-	-	_	417	-
	150741	Fawkes Ground Grid Rpl	-	-	-	-	-	-	-	-	-	-	257	-
	150743	36DSP West Hickman Expansion	-	-	-	-	-	-	-	-	-	-	451	-
	150754	Alcalde Station Service	-	-	-	-	-	-	-	-	-	-	4	-
	150772	Pineville 345kV Brkrs	-	-	-	-	-	-	-	-	-	-	1,259	-
	150791	NRP Ghent-NAS 345kV Tap	-	-	-	-	-	-	-	-	-	-	150	-
	150793	PR Adams-Penn 69kV	-	-	-	-	-	-	-	-	-	-	513	-
	150805	OATI Software Change - KU	-	-	-	-	-	-	-	-	-	-	45	-
	150838	NRP Brown CT-Brown North	-	-	-	-	-	-	-	-	-	-	343	-
	150841	PR Ghent-Scott County	-	-	-	-	-	-	-	-	-	-	5,956	-
	150842	Princeton-Walker 69kV LTG	-	-	-	-	-	-	-	-	-	-	710	-
	150844	REL Madisonville Loop MOS	-	-	-	-	-	-	-	-	-	-	286	-
	150845	REL-Madisonville Loop-Subs	-	-	-	-	-	-	-	-	-	-	11	-
	150846	REL-Madisonville Loop-P&C	-	-	-	-	-	-	-	-	-	-	195	-
	150847	Green River Steel Switch	-	-	-	-	-	-	-	-	-	-	231	-
	150876	Dorchester 602 Brkr CT Rpl	-	-	-	-	-	-	-	-	-	-	25	-
	150877	Wofford 602 Brkr CT Rpl	-	-	-	-	-	-	-	-	-	-	25	-
	150878	Elihu 644 Brkr CT Rpl	-	-	-	-	-	-	-	-	-	-	25	-
	150885	Diverse Comm 117-122	-	-	-	-	-	-	-	-	-	-	12	-
	150930	Pineville OCB Overhaul	-	-	-	-	-	-	-	-	-	-	47	-
	151112	Kenton Relay Rpl	-	-	-	-	-	-	-	-	-	-	117	-
	151177	TEP-Hardin Co Xfmr Add	-	-	-	-	-	-	-	-	-	-	270	2,286
	151197	Dorchester OCB Overhaul	-	-	-	-	-	-	-	-	-	-	24	-
	151465	Mobile Control House	-	-	-	-	-	-	-	-	-	-	-	18

Туре	Project #	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Base Period	Test Period
Type	151468	West Cliff Monitor	-			-	-	-	-	-	-	-	125	-
	151469	Lake Reba Tap Monitor	-	-	_	-	-	-	-	-	-	-	128	-
	151474	Hardin Co Xfmr Fan Rpl	-	-	_	-	-	-	-	-	-	-	14	-
	151554	PR Hardinsburg-C Hardin EKPC	-	-	_	-	-	-	-	-	-	-	1,223	-
	151599	Rocky Branch 614 Panel Rpl	-	-	-	-	-	-	-	-	-	-	150	-
	151692	ESR Eddyville Tap	-	-	-	-	-	-	-	-	-	-	-	293
	151744	REL-Campbellsville 605 Switch	-	-	-	-	-	-	-	-	-	-	-	244
	151745	REL-Warsaw 615 Switch Motor	-	-	-	-	-	-	-	-	-	-	-	244
	151746	REL-Hodgenville Switch Motor	-	-	-	-	-	-	-	-	-	-	-	214
	151748	KU Park-Greasy Env Mods	-	-	-	-	-	-	-	-	-	-	-	32
	151761	Fawkes Firewall/Cap Bank	-	-	-	-	-	-	-	-	-	-	298	56
	151765	KU	-	-	-	-	-	-	-	-	-	-	55	429
	151771	DSP Corbin US Steel	-	-	-	-	-	-	-	-	-	-	-	99
	151775	Hillside Control House	-	-	-	-	-	-	-	-	-	-	-	24
	151777	Finchville Control House	-	-	-	-	-	-	-	-	-	-	100	1,136
	151792	REL Radcliff MOS	-	-	-	-	-	-	-	-	-	-	-	98
	151793	REL Esserville MOS	-	-	-	-	-	-	-	-	-	-	-	98
	151794	REL Elizabethtown Tap MOS	-	-	-	-	-	-	-	-	-	-	-	586
	151796	REL Joyland 69kV MOS	-	-	-	-	-	-	-	-	-	-	98	-
	151797	REL Campbellsville Ind MOS	-	-	-	-	-	-	-	-	-	-	73	-
	151800	REL Elizabethtown 4 MOS	-	-	-	-	-	-	-	-	-	-	-	494
	151801	REL Dayhoit Tap MOS	-	-	-	-	-	-	-	-	-	-	-	99
	151802	REL Dayhoit Tap LFI	-	-	-	-	-	-	-	-	-	-	-	25
	151803	REL Corydon-Calhoun LFI	-	-	-	-	-	-	-	-	-	-	-	10
	151804	REL Morehead West MOS	-	-	-	-	-	-	-	-	-	-	-	74
	151809	TEP-Rodburn 138/69kV-P&C	-	-	-	-	-	-	-	-	-	-	-	268
	151811	REL-Rockwell Motor-Auto	-	-	-	-	-	-	-	-	-	-	-	26
	151814	REL-Stanford 848-635	-	-	-	-	-	-	-	-	-	-	-	19
	151815	REL-Somerset N 92-605 Motor	-	-	-	-	-	-	-	-	-	-	-	146
	151880	ESR Existing Switch Repl	-	-	-	-	-	-	-	-	-	-	-	864
	151898	West Frankfort Relay Rpl	-	-	-	-	-	-	-	-	-	-	125	-
	151905	Green River Plant Switch Rpl	-	-	-	-	-	-	-	-	-	-	46	-
	152134	REL-Radcliff Motor-Auto	-	-	-	-	-	-	-	-	-	-	-	200
	152135	REL-GE Lamp 615 Motor-Auto	-	-	-	-	-	-	-	-	-	-	-	27
	152136	REL-Esserville Motor-Auto	-	-	-	-	-	-	-	-	-	-	-	200
	152138	REL-Irvine Motor-Auto	-	-	-	-	-	-	-	-	-	-	-	27
	152139	REL-Hughes Lane 660-615 Auto	-	-	-	-	-	-	-	-	-	-	-	200
	152140	REL-Etown 4 811-615 Motor-Auto	-	-	-	-	-	-	-	-	-	-	-	172
	152143	REL-Corbin 1 844-605 Auto	-	-	-	-	-	-	-	-	-	-	-	172
	152146	REL-Mt Sterling 737-615 Auto	-	-	-	-	-	-	-	-	-	-	-	172

KU Total

Туре	Project #	Project Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Base Period	Test Period
Type	152225	Brown N 345kV 934 Brkr Rpl	-	-	-	-	-	-	-	-	-	-	200	52
	152230	PBU-Wickliffe T01 Bush Rpl	-	-	-	-	-	-	-	-	-	-	48	-
	152231	POR-Shelbyville 69kV PT Rpl	-	-	-	-	-	-	-	-	-	-	65	-
	152237	PAR-W. Frankfort Arrester Rpl	-	-	-	-	-	-	-	-	-	-	14	-
	152266	SCADA PRIVATE NTWK_KU_2016	-	-	-	-	-	-	-	-	-	-	36	-
	152329	N.A.S. Secondary Containment	-	-	-	-	-	-	-	-	-	-	130	-
	152358	TEP-Hardin Co Xfmr Add-P&C	-	-	-	-	-	-	-	-	-	-	165	172
	152401	Green River C&P/Switch Rpl	-	-	-	-	-	-	-	-	-	-	279	304
	152608	TEP-Matanzas-Wilson Riser Rpl	-	-	-	-	-	-	-	-	-	-	32	-
	152623	West Lexington #3 Bushing Rpl	-	-	-	-	-	-	-	-	-	-	19	-
	152971	Earlington N 634 Brkr Overhaul	-	-	-	-	-	-	-	-	-	-	31	-
	152972	PGDP Reconfig GV	-	-	-	-	-	-	-	-	-	-	-	60
	152983	Bonds Mill Relay Rpl	-	-	-	-	-	-	-	-	-	-	80	-
	153026	Green River SPCC	-	-	-	-	-	-	-	-	-	-	250	-
	153030	REL Line Mod-In Line Breakers	-	-	-	-	-	-	-	-	-	-	-	168
	153036	Brown Campus Sonet Loop	-	-	-	-	-	-	-	-	-	-	120	-
	153068	REL Lebanon S Motor Add	-	-	-	-	-	-	-	-	-	-	-	100
	153073	REL Cynthiana S MOS 569-605	-	-	-	-	-	-	-	-	-	-	-	75
	153076	REL Girdler MOS Add	-	-	-	-	-	-	-	-	-	-	-	100
	153116	POR-Pisgah PT Rpl	-	-	-	-	-	-	-	-	-	-	17	-
	153205	American Ave 614 Brkr CT Rpl	-	-	-	-	-	-	-	-	-	-	32	-
	153212	PIN-Grahamville 834 Switch Rpl	-	-	-	-	-	-	-	-	-	-	112	-
	153230	POR-Lansdowne Brkr CT Rpl	-	-	-	-	-	-	-	-	-	-	32	-
	153232	POR-Loudon 644 Brkr CT Rpl	-	-	-	-	-	-	-	-	-	-	32	-
	153256	PBU-Haefling 718-4 Bushing Rpl	-	-	-	-	-	-	-	-	-	-	19	-
	153284	ROR-London Bird Deterrent	-	-	-	-	-	-	-	-	-	-	8	-
	24014	WINCHESTER RD HWY RELOC	-	7	-	-	-	-	-	-	-	-	-	-
	25180	HIG-LEX 69KV LINE RELOC	-	9	-	-	-	-	-	-	-	-	-	-
	25195	LEX-PARIS 69 KV HWY 25	-	-	37	-	-	-	-	-	-	-	-	-
Specific To	otal		10,408	40,302	34,127	28,885	32,510	28,118	31,227	27,544	21,990	30,600	59,578	41,918
			17,978	48,034	42,596	53,203	46,567	46,174	54,581	48,704	40,154	52,827	78,350	106,339

Kentucky Utilities

Closings to Plant-in service - Base Period ended 2/28/2017 (\$'000s)

Row Labels	State	Project	Project Description	Total Company	KY Jurisdictional
Routine	Kentucky	134286	COMP-RELATED EQUIP-KU 2015	77	74
		134797	Tools - 2015	3	3
		139627	Test Lab Equipment-2015-KU	14	14
		139628	Test Lab Equipment-2016-KU	127	122
		140098	EMS OPERATOR MONITORS-KU-2016	22	21
		142760	Rplce EMS Wkstations-KU-2013	12	11
		148498	EMS CHNL EXPANSION-KU-2015	25	24
		149752	Simpsonville Guard Station-KU	12	12
		150095	FUL UPGRD EMS SWARE-KU-2016	242	231
		150131	Drafting Printer-KU	15	14
		150133	KUGO 3rd Floor Room 367	50	48
		150468	Comp-related Equip KU 2016	44	42
		151104	KU Spare Relay Clocks-2016	8	8
		151897	Danville Drafting Plotter-KU	9	8
		152288	Capacitor Bank Test Set	11	11
		153188	Etown Trans Sub Storeroom	300	287
		153279	ROR-KU SPARE CCVT-2016	34	32
		K5-2016	Relocations T Lines KU-	50	48
		K5-2017	Relocations T Lines KU 2017	5	5
		K8-2014	STORM DAMAGE T-LINE-KU 2014	(2,663)	(2,545)
		K8-2015	STORM DAMAGE T-LINE KU 2015	30	29
		K8-2016	STORM DAMAGE T-LINE KU 2016	836	799
		K8-2017	Storm Damage T-Line KU 2017	144	137
		K9-2013	PRIORITY REPL T-LINES KU 2013	679	649
		K9-2014	PRIORITY REPL T-LINES-KU 2014	2,623	2,507
		K9-2015	PRIORITY REPL T-LINES KU 2015	5,204	4,974
		K9-2016	PRIORITY REPL T-LINES KU 2016	5,478	5,236
		K9-2017	Priority Repl T-Lines KU	2,999	2,866
			PRIORITY REPL X-ARMS KU 2015	419	400
			Priority Repl X-Arms KU 2016	2,184	2,088
			Priority Repl X-Arms KU 2017	606	579
			Batteries KU-13	(4,537)	
		KBR-12	KU Breaker Replacements-12	(43,080)	
		KBRFAIL15	KU-Brkr Fail-2015	415	397
		KBRFAIL16	KU-Brkr Fail-2016	703	672
		KINS-2015	PRIORITY REPL INSLTRS KU 2015	199	191
		KINS-2016	Priority Repl Insltrs KU 2016	114	109
		KINS-2017	Priority Repl Insltrs KU 2017	95	90
			KU-OtherFail-2014	18	17
			KU-OtherFail-2015	105	100
			KU-OtherFail-2016	247	236
			Priority Repl Other KU 2016	1,347	1,288
			Priority Repl Other KU 2017	768	734
			KU-Other-2014	(81,574)	
		K-OTHER15	KU-Other-2015	1,372	1,312
		KOTPR14	KU Other Prot Blank 2014	(26,620)	
		KOTPR15	KU Other Prot Blanket 2015	400	382
		KOTPR16	KU Other Prot Blanket 2016	376	360
			KU Oth Prot Failures 2016	9	9
			Relay Replacement-KU-2013	(24)	(23)
			Relay Replacements-KU-2014	350	335
			Relay Replacements-KU-2015	366	349
			Relay Replacements-KU-2017	86	83
			KU Relay Failures-2014	1	1
			KU Relay Failures-2016	30	29
		KRSUB-13	KU Routine - Subs-13	(50,573)	

Closings to Plant-in service - Base Period ended 2/28/2017 (\$'000s)

State	Project	Project Description	Total Company K	
		-		685
	KRTU-15	-	1,368	1,307
	KRTU-16	-	997	953
	KRTU-17	KU RTU Replacements-17	30	29
	KSTSVC12	STATION SERV XFMRS KU-12	207	198
	KSWT-2015	PRIORITY REPL SWITCHES KU 2015	247	236
	KTFFAIL16	KU-Xfrmr Fail-2016	488	466
	KTFFAIL17	KU-Xfrmr Fail-2017	112	107
Kentucky Total			33,222	31,755
			33,222	31,755
Kentucky	131350	Tyrone Control House	2,380	2,275
	131809	KU-2013	(158)	(151)
	131861	KU-2016	313	299
	132674	KU Park Control House	2,776	2,654
	132865	OXFORD COAL MINE TAP	(234,830)	(224,455)
	134190	EKP CPR PLT RELO	0	0
	134237	DSP LEX AREA MAJOR PROJECTS	519	496
	134283	BNDS MILL-FNCHVLLE STAT REPL		1,155
	134284	SR 2016 Bonds Mill-Finchville		1,023
				484
				1
				11,872
				0
				4,393
				334
				296
		-		1,605
				(7,849)
				(7,849)
				77
				0
				256
				45
		-		0
				484
				5
				200
		•		0
		-	-	1
		-		(17,786)
	144338			1,776
	144360	REL-Madisonville 604 Brkr Add	385	368
	144364	REL-Parkers Mill 604 Brkr Adds	6	6
	144366	REL-Warsaw 604 Brkr Addition	1	1
	144682	TEP-DFR Replace MODs-KU	11	11
	144962	REL-Farley/Artemus/Pine Panels	418	400
	144970	REL BARTON MOS	299	286
	146439	Higby Mill Firewall	120	114
	146702	NRP FARLEY-ALCALDE	101	97
	146706	GRAHAMVILLE-WICKLIFFE P2	(672)	(642)
	146710	NRP BROWN-FAWKES 138KV		1,016
			0	0
				153
				38
	146982	PR Ghent-Blackwell 138kV	1,558	1,490
	Kentucky Total	KRTU-14 KRTU-15 KRTU-16 KRTU-17 KSTSVC12 KSWT-2015 KTFFAIL16 KTFFAIL17Kentucky Total131350Kentucky Total131861 132674 132865 134190 134237 134283 134284 134407 135433 135625 137738 137745 137749 139906 139979 139996 140018 142401 143049 144061 144112 144129 144161 144121 144152 144150 144152 144150 144152 144152 144150 144152 144152 144152 144152 144152 144152 144161 144152 144152 144161 144152 144152 144150 144152 144161 144152 144161 144152 144161 144152 144162 144162 144163 144366 144364 144366 144366 1446702 146702 146702 146702 146701 146731 146925 146941	KRTU-14 KU RTU Replacements-14 KRTU-15 KU RTU Replacements-15 KRTU-16 KU RTU Replacements-16 KKTU-17 KU RTU Replacements-16 KKTU-17 KU RTU Replacements-17 KSTSVC12 STATION SERV XFMRS KU-12 KSWT-2015 PRIORITY REPL SWITCHES KU 2015 KTFFALL16 KU-Xfrmr Fail-2016 KTFFAL117 KU-Xfrmr Fail-2017 Kentucky 13130 Tyrone Control House 131809 KU-2013 13181 KU-2016 132865 OXFORD COAL MINE TAP 134190 EKP CPR PLT RELO 134233 BNDS MILL-FNCHVLLE STAT REPL 134243 BNDS MILL-FNCHVLLE STAT REPL 134234 SR 2016 Bonds Mill-Finchville 134407 REPLACE SIMP VIDEO WALL-KU 135625 Matanzas Sub Upgrade 137738 HWY 641 RELO 137749 DSP SHELB YVILLE E-TRANS 139906 TEP-ALCDDE-EHU 140018 Dix Upgrade KU 2014 142401 TEP-CMPGD-EMNUEL-TP 143049 MILLER	KRTU-14 KU RTU Replacements-14 717 KRTU-15 KU RTU Replacements-15 1,368 KRTU-16 KU RTU Replacements-16 997 KRTU-17 KU RTU Replacements-17 30 KSTSVC12 STATION SERV KPRK KU-12 207 KSWT-2015 PRIORITY REPL SWITCHES KU 2015 247 KTFFAIL.16 KU-Xirmr Fail-2016 488 KTFFAIL.17 KU-Xirmr Fail-2016 488 Kentucky Total 33,222 33,222 Kentucky 131350 Tyrone Control House 2,380 131809 KU-2013 (158) 131801 KU-2016 313 132674 KU Park Control House 2,776 132865 OKPORD COAL MINE TAP (234,830) 134190 EKP CPR PLT RELO 0 134237 DSP LEX AREA MAJOR PROJECTS 519 134284 SR 2016 Bonds Mill-Finchville 1,070 134430 REPLACE SIMP VIDEO WALL-KU 507 13745 DSP SHELBY VILE CO 0 13747 DSP SHELBY VILE E-TRA
Kentucky Utilities

Closings to Plant-in service - Base Period ended 2/28/2017 (\$'000s)

Row Labels	State	Project	Project Description		KY Jurisdictional
		146984	NRP BLACKWELL-KENTON 138kV	201	192
		146997	HIGBY MILL-KY RIVER P2	10	10
		147130	NRP KENTON-RODBURN 138kV	1,246	1,191
		147131	PR Kenton-Rodburn 138kV	746	713
		147159	Rpl Danville N 604 & 608 Brkrs	205	196
		147161	Rpl Taylor County 804 Brkr	159	152
		147162	Rpl Harlan Wye 614 Breaker	24	23
		147217	TEP-W. Cliff-Shakertown Term	37	35
		147218	TEP-Brown Subs Term Eqp	47	45
		147233	Wheatcroft 614 Brkr Rpl	24	23
		147241	TEP Corydon-Highland Mine 69kV	306	293
		147286	PR Spencer Road-Clark Co 69kV	697	667
		147307	Delvinta Station Service Rpl	67	64
		147310	E. Frankfort Station Svc Rpl	52	50
		147313	PR Bardstown-Elizabethtown	2,261	2,161
		147314	Brown North Surge Arrester Rpl	33	32
		147315	PR Lebanon-Springfield	505	483
		147331	Taylor Co Surge Arrester Rpl	9	9
		147334	PR London-Sweet Hollow 69kV	3,225	3,083
		147335	PR Green Rvr Plnt-Morganfield	2,175	2,079
		147341	Walker Bushings	32	30
		147345	Earlington North Bushings	48	46
		147360	Tyrone Ground Grid	149	143
		147392	Brown CT Breaker Monitors	89	85
		147450	NRP Brown North-Hardin Co	271	259
		147461	NRP Grn Rvr Plnt-Grn Rvr Steel	131	125
		147463	NRP Grn Rvr Steel-Cloverport	302	289
		147465	NRP Livingston-So Paducah	665	635
		147466	NRP Crittenden-Morganfield	18	17
		147467	NRP Grn Rvr Plnt-Erlngton No	705	674
		147473	NRP Cloverport-Hardinsburg	122	116
		147474	NRP Hrdnsburg-Cen Hrdn EKPC	58	56
		147478	NRP GR Plant-Morganfield	1,099	1,050
		147534	REL Radcliff Switch	173	165
		148196	Rpl Brown North 912 Breaker	0	0
		148388	REL Hughes Lane MOS	153	146
		148644	Rpl Brown North 924 Breaker	155	1
		149026	NERCALRT PNVL SW STN-PNVL TVA	424	405
		149020	TEP-KU DFR 2016	484	462
		149027	Rpl (2) Indian Hill 69kV Brkrs	484	402
		149050	E-Town Cap Bank Rpl	298	285
		149308	PR Princeton-Crittenden Co	298	283
		150217	Parkers Mill Land Purchase	0	0
		150217	Walker OCB Kit Install	23	22
		150238	River Queen OCB Kit Install	25	22
		150241	Danville N OCB Kit Install	11	
					11
		150243	W Irvine OCB Kit Install	29 25	28
		150244	W Frankfort OCB Kit Install	25	24
		150245	Tyrone OCB Kit Install	20	19
		150246	Rodburn OCB Kit Install	25	24
		150247	Middlesboro OCB Kit Install	9	9
		150248	Lebanon OCB Kit Install	13	13
		150249	Boonesboro N OCB Kit Install	25	24
		150252	Leitchfield Sw OCB Kit Install	7	7
		150257	Brown CT OCB Kit Install	22	21
		150257 150262	London OCB Kit Install	18	18

Closings to Plant-in service - Base Period ended 2/28/2017 (\$'000s)

Row Labels	State	Project	Project Description		KY Jurisdictional
		150268	Green River OCB Kit Install	59	56
		150269	Lancaster SW OCB Kit Install	47	45
		150270	Wheatcroft OCB Kit Install	30	28
		150636	Middlesboro (5) Brkr Rpl	687	657
		150642	KU Park Surge Arrestor/PT	194	185
		150646	PR Livingston-South Paducah	902	862
		150648	PR Green Rvr Steel-Cloverport	775	740
		150652	PR Blackwell-Kenton	2,611	2,496
		150729	Lake Reba Tap Surge Arr Rpl	20	19
		150730	Hardin Co Surge Arrester Rpl	16	16
		150731	Hardinsburg 704 Brkr Overhaul	20	20
		150733	Etown Insulator Rpl	399	381
		150741	Fawkes Ground Grid Rpl	257	246
		150754	Alcalde Station Service	53	51
		150772	Pineville 345kV Brkrs	1,246	1,191
		150791	NRP Ghent-NAS 345kV Tap	150	143
		150793	PR Adams-Penn 69kV	494	472
		150805	OATI Software Change - KU	45	43
		150838	NRP Brown CT-Brown North	329	315
		150842	Princeton-Walker 69kV LTG	608	581
		150844	REL Madisonville Loop MOS	286	273
		150845	REL-Madisonville Loop-Subs	11	10
		150846	REL-Madisonville Loop-P&C	195	186
		150847	Green River Steel Switch	219	209
		150877	Wofford 602 Brkr CT Rpl	24	23
		150878	Elihu 644 Brkr CT Rpl	24	23
		150885	Diverse Comm 117-122	12	12
		150930	Pineville OCB Overhaul	47	45
		150550	Kenton Relay Rpl	108	103
		151468	West Cliff Monitor	108	119
		151469	Lake Reba Tap Monitor	125	113
		151474	Hardin Co Xfmr Fan Rpl	120	123
		151599	Rocky Branch 614 Panel Rpl	12	135
		151796	REL Joyland 69kV MOS	98	94
			-	73	
		151797	REL Campbellsville Ind MOS	123	70
		151898	West Frankfort Relay Rpl	42	118
		151905	Green River Plant Switch Rpl		40
		152230	PBU-Wickliffe T01 Bush Rpl	43	41
		152231	POR-Shelbyville 69kV PT Rpl	62	59
		152237	PAR-W. Frankfort Arrester Rpl	12	12
		152266	SCADA PRIVATE NTWK_KU_2016	36	35
		152329	N.A.S. Secondary Containment	130	124
		152608	TEP-Matanzas-Wilson Riser Rpl	32	31
		152623	West Lexington #3 Bushing Rpl	19	19
		152971	Earlington N 634 Brkr Overhaul	31	29
		153026	Green River SPCC	230	220
		153036	Brown Campus Sonet Loop	120	115
		153116	POR-Pisgah PT Rpl	12	11
		153205	American Ave 614 Brkr CT Rpl	25	24
		153212	PIN-Grahamville 834 Switch Rpl	101	97
		153230	POR-Lansdowne Brkr CT Rpl	25	24
		153232	POR-Loudon 644 Brkr CT Rpl	25	24
		153256	PBU-Haefling 718-4 Bushing Rpl	13	13
		153284	ROR-London Bird Deterrent	8	7
	Kentucky Total			64,243	61,405
		118213	Va City-AEP Clinch River		

Kentucky Utilities

Closings to Plant-in service - Base Period ended 2/28/2017 (\$'000s)

Row Labels	State	Project	Project Description	Total Company K	XY Jurisdictional
Specific	Virginia	147311	Bond Station Service Rpl	33	-
		147344	Dorchester Bushings	45	-
		147480	REL Esserville Switch	472	-
		150253	Pocket OCB Kit Install	12	-
		150687	PR Pocket-Pennington Gap	1,105	-
		150876	Dorchester 602 Brkr CT Rpl	24	-
		151197	Dorchester OCB Overhaul	24	-
	Virginia Total			1,816	-
Specific Total	l			66,059	61,405
Grand Total				99,281	93,159

Closings to Plant-in service - Test Period ended 6/30/2018 \$'000s

Row Labels	State	project	Project Description	Total Company	KY Jurisdictional
Routine	Kentucky	137531	Fiber/Telecomm Upgrades - 2017	280	268
	-	137537	Tools - 2017	140	134
		137571	ROUTINE EMS-KU 2017	15	14
		137730	COMP-RELATED EQUIP-KU 2017	79	75
		139629	Test Lab Equipment-2017-KU	120	115
		140070	DIGITAL EMS COM CHNLS-KU-2017	76	72
		140225	FULL UPGRD EMS SWARE-KU-2018	306	292
		147754	EMS DBASE EXPANSION-KU-2017	72	68
		147786	EMS APP ENHANCEMENTS-KU-2017	42	40
		152616	2017 Spare 345 Brk-KU	600	573
		152619	KU Spare Misc Equip	660	631
		K5-2017	Relocations T Lines KU 2017	32	31
		K5-2017 K5-2018	Relocations T Lines KU 2017 Relocations T Lines KU 2018	17	16
		K8-2017	Storm Damage T-Line KU 2017	431	412
		K8-2018	Storm Damage T-Line KU 2018	443	423
		K9-2017	Priority Repl T-Lines KU	14,475	13,836
		K9-2018	Priority Repl T-Lines KU 2018	18,778	17,948
			Priority Repl X-Arms KU 2017	3,642	3,481
			Priority Repl X-Arms KU 2018	2,800	2,676
			KU Arrester Replacements 2017	52	50
		KBRFAIL17	KU-Brkr Fail-2017	750	717
		KBRFAIL18	KU-Brkr Fail-2018	650	621
		KINS-2017	Priority Repl Insltrs KU 2017	569	544
		KINS-2018	Priority Repl Insltrs KU 2018	731	699
		KOTFAIL17	KU-OtherFail-2017	750	717
		KOTFAIL18	KU-OtherFail-2018	650	621
			Priority Repl Other KU 2017	2,304	2,203
			Priority Repl Other KU 2018	3,537	3,381
		KOTPR17	KU Other Prot Blanket 2017	0	0
		KOTPR18	KU Other Prot Blanket 2018	26	25
			KU Oth Prot Failures 2017	18	17
				85	82
			Relay Replacements-KU-2017		
			KU Relay Failures-2017	132	126
			KU Relay Failures-2018	114	109
		KRTU-17	KU RTU Replacements-17	1,671	1,597
		KRTU-18	KU RTU Replacements-18	1,777	1,698
			KU RTU Failures-2017	7	6
		KTFFAIL17	KU-Xfrmr Fail-2017	199	190
	Kentucky Total			57,031	54,511
Routine Total				57,031	54,511
Specific	Kentucky	131338	Ghent 345kV Control House	2,697	2,578
		131355	Ghent Redesign 138kV Sub	2,211	2,114
		131864	KU-2017	655	626
		134245	DSP STNWL SUB UPGD	590	564
		137728	SR 2017 Bonds Mill-West Cliff	2,142	2,048
		137739	REL ONTON 69KV SWITCH	276	264
		137750	DSP MT VERNON SUB-TRANS	140	133
		137751	DSP VILEY 2-TRANS	786	752
		137752	DSP Richmond North 138kV	927	886
		137754	DSP HUME RD PHASE II TRANSFRME		1,002
		144632	REL-Cawood 604 Brkr Addition	850	812
		144632	REL-FMC 604 Brkr Addition	850	812
			REL-FINC 604 Brkr Addition REL-Stanford 604 Brkr Add	850 850	812
				0.05	012
		144636			012
		144637	REL-Camargo 604 Brkr Add	850	812
					812 1 228

Closings to Plant-in service - Test Period ended 6/30/2018 \$'000s

Row Labels	State	project	Project Description	Total Company	KY Jurisdictional
		147220	TEP-Bonds MLawrenceburg Term	165	157
		147222	TEP-Elihu 814 Brkr Rpl	198	189
		147226	TEP-Boyle Co 604 Disconnects	40	38
		147255	TEP HARDESTY A-PRINCETON	1,533	1,466
		147389	NRP Pocket No-Phipps Bend	585	559
		147468	NRP West Lex-Haefling	292	279
		147472	NRP Paducah Prim-Coleman Rd	723	691
		147481	REL Kenton Switch 91-6	341	326
		147493	REL Hamblin Tap Switch	346	331
		147583	EFRNKFRT-WFRNKFRT HWY RELO	1,074	1,027
		147588	GRAHAMVILLE-DOE RELO 161kV	487	466
		148370	REL-Hoover 604 Breaker Add	850	812
		148371	REL-Earlington 604 Brkr Add	850	812
		148482	Grahamville DOE Sub Elim	321	306
		148990	N.A.S 345 DFR	147	141
		148990	TEP-W Lex Reactor Additions	1,178	1,126
				586	
		149764	NRP Adams-Toyota South		560
		149765	NRP Ghent-Scott County	391	374
		149769	NRP Taylor County Tap	146	140
		150644	Ghent Redesign 138kV-P&C	1,999	1,911
		151177	TEP-Hardin Co Xfmr Add	3,154	3,014
		151692	ESR Eddyville Tap	293	280
		151744	REL-Campbellsville 605 Switch	244	233
		151745	REL-Warsaw 615 Switch Motor	244	233
		151748	KU Park-Greasy Env Mods	244	233
		151761	Fawkes Firewall/Cap Bank	641	613
		151771	DSP Corbin US Steel	450	430
		151792	REL Radcliff MOS	98	93
		151794	REL Elizabethtown Tap MOS	586	560
		151800	REL Elizabethtown 4 MOS	494	472
		151801	REL Dayhoit Tap MOS	99	95
		151802	REL Dayhoit Tap LFI	25	24
		151803	REL Corydon-Calhoun LFI	10	9
		151804	REL Morehead West MOS	74	71
		151801	REL-Rockwell Motor-Auto	200	191
		151814	REL-Stanford 848-635	146	140
		151815	REL-Somerset N 92-605 Motor	146	140
		152134	REL-Radcliff Motor-Auto	200	140
		152134		200	191
			REL-GE Lamp 615 Motor-Auto		
		152138	REL-Irvine Motor-Auto	200	191
		152139	REL-Hughes Lane 660-615 Auto	200	191
		152225	Brown N 345kV 934 Brkr Rpl	550	526
		152358	TEP-Hardin Co Xfmr Add-P&C	404	386
		152401	Green River C&P/Switch Rpl	734	702
		152972	PGDP Reconfig GV	259	248
		153030	REL Line Mod-In Line Breakers	250	239
		153068	REL Lebanon S Motor Add	100	96
		153073	REL Cynthiana S MOS 569-605	75	72
		153076	REL Girdler MOS Add	100	96
	Kentucky Total			37,785	36,116
	Virginia	147486	REL Dwina Switch	346	-
	8	151793	REL Esserville MOS	98	-
		152136	REL-Esserville Motor-Auto	200	-
	Virginia Total	102100		644	-
	, in Sinna 1 Oral				
pecific Total				38,429	36,116

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 49

Responding Witness: David S. Sinclair / William S. Seelye / John P. Malloy / Robert M. Conroy / Counsel

- Q.1-49. Referring to the proposed Curtailable Service Rider:
 - a. Please provide in native format all workpapers, studies, analyses, and documents (all Excel worksheets with working formulas and intact links) supporting and/or underlying the development of the proposed rider.
 - b. Provide all studies and/or analyses that Kentucky Utilities Company (KU) conducted concerning expected customer acceptance of and willingness to receive service under the proposed rider.
 - c. Identify and provide all documents provided to and correspondence with existing interruptible customers related to the development, implementation, and operation of the proposed CSR rider.
 - d. Provide all documents relating to any customer comments and/or feedback that KU received regarding the proposed reductions in rate credits under the CSR rider prior to KU's deciding to include the reduced credits in the proposed CSR rider.
 - e. Identify and provide all alternative rate credits for the CSR rider that KU considered but rejected, and describe in detail the reasons for rejecting the considered alternative(s).
- A.1-49.
- a. See attached. Responsive documents subject to attorney-client privilege or attorney work product protection are not being produced, and are noted in the Company's privilege log being filed in this proceeding. Also see the response to PSC 1-54.
- b. The Company performed no surveys, analysis or studies concerning expected customer acceptance of or willingness to receive service under the proposed rider.

c. Beginning November 1, 2016 and thereafter, following the press release issued by the Company of a rate adjustment filing, Major Accounts Representatives communicated by email and/or telephone to inform their assigned customers of the filing. This proactive outreach is part of the role these employees serve with the company's key and largest customers. Then on November 16, 2016 and thereafter, the Major Accounts Representatives communicated with customers that the proposed rates had been filed. Numerous communications between Major Accounts Representatives and their assigned customers have occurred since then and continue to occur. If requested by the customer, in-person meetings are being scheduled to discuss the proposed rates are being provided. Attached is a template email document used to communicate with customers including those served under the Curtailable Service Rider.

Across the Companies, two customers being served under Curtailable Service Rider requested and were provided a rate comparison used during an in-person meeting to discuss the proposed rates. Those rate comparisons are being provided with all customer-identifying information replaced with generic identifiers.

- d. There are no such documents.
- e. See the Company's objection filed on January 20, 2017.

Sebourn, Michael

From:	Sauer, Bruce
Sent:	Tuesday, October 11, 2016 4:25 PM
То:	Sebourn, Michael
Subject:	Comparison of Henry Hub, TGT Mainline, and Dominion South gas prices
Attachments:	Comparison of Henry Hub_TGT_Mainline_Dominion_South_Gas_Prices_10_11_16 _MSebourn.xlsx

Mike,

The attached workbook summarizes the comparison between Henry Hub, TGT Mainline, and Dominion South daily average prices. There is relatively little difference between Henry Hub and TGT Mainline, with TGT Mainline averaging \$0.07/mmBtu lower than Henry Hub. Dominion South is considerably weaker, averaging \$1.06/mmBtu lower than the Henry Hub. I've asked PIRA for an explanation.

For the last 12 months, the average prices are as follows:

Henry Hub	\$2.25/mmBtu
TGT Mainline	\$2.18/mmBtu
Dominion South	\$1.29/mmBtu

Bruce

Attachment 2 is being provided in a separate file in Excel format.

Rate Case to be Submitted Initial Communication

Good morning.

As you may have seen or heard earlier this morning, Kentucky Utilities Company and Louisville Gas and Electric Company announced today that they are investing \$2.2 billion in their electric and natural gas system to improve safety, reduce outage times and enhance service to customers. To recover some of the costs associated with these investments, Kentucky Utilities and Louisville Gas and Electric plan to request approval from the Kentucky Public Service Commission to adjust customer rates accordingly.

A press release was made this morning at 7am, and I have attached it for your reference. You will see there is some mention of the cost increases for the residential rate class. At this time, I do not have the respective information on the increases for Commercial or Industrial customer classes.

Next steps

As the filings are made public they will be posted to our website (<u>https://lge-ku.com/our-company/regulatory</u>), and I plan to forward you a copy at that time. I would be happy to meet with you and your management team in November and December to discuss the specific impacts to your business operations. The filing will request that the rate adjustments be effective in July 2017.

Please discuss this information within your organization and let me know if you have any questions or concerns.

Thanks,

Rate Case to be Submitted Follow-up Communication

Kentucky Utilities Company and Louisville Gas and Electric Company published paperwork with the Kentucky Public Service Commission for base rate adjustments. They are KPSC case numbers 2016-00370 and 2016-00371, respectively.

Additionally, the following legal notices will begin appearing in customer's bills and various newspapers around the state:

<u>KU Current and Proposed Electric Rates</u> <u>LG&E Current and Proposed Electric & Gas Rates</u>

In these links you will find the proposed rate changes. Because every commercial and industrial customer has a different load factor, the impact to your facility will vary. The filing will request that the rate adjustments be effective in July 2017.

I would be happy to meet with you and look at a "side by side" comparison of current and proposed rates based upon the historical usage of your facility. Furthermore, if you have any questions or concerns about the proposed increases, please give me a call.

In the meantime, I hope you have a happy thanksgiving with your friends and family.

Kind regards,

LG&E RTS Comparison of Current and Proposed Rates

CA: XXXXXXX Customer Name: Customer 1	Basic Service Charge Energy Charge		Basic Service Charge:	\$ 1.400
Customer Name: Customer 1	Energy Charge			φ 1,400
	Energy Charge	: \$ 0.03711 /kWh	Energy Charge:	\$ 0.03711 /kWh
Service Address: 138kV Service	Peak Demand Charge	: \$ 4.85 /kVA	Peak Demand Charge:	\$ 6.98 /kVA
	Interm. Demand Charge	: \$ 3.30 /kVA	Interm. Demand Charge:	\$ 5.12 /kVA
Contract Capacity: 46,000 k	A Base Demand Charge	: \$ 3.05 /kVA	Base Demand Charge:	\$ 1.52 /kVA
CSR Firm: 4,500 k	A CSR Credit	: \$ (6.40) /kVA	CSR Credit:	\$ (3.56) /kVA

	24 Month Hi	storical Informa	ation				Existing Rate	S			Proposed Rates						
Test Month Bill Date	Energy kWH	Measured On Peak kVA Demand	Measured Interm. kVA Demand	Measured Base kVA Demand	 stomer harge	Energy Charge	Demand Charge	CSR Credit		Total		ustomer Charge	Energy Charge	Demand Charge	CSR Credit		Total
11/29/2016	20,866,200	39,457.90	39,457.90	39,457.90	\$ 1,000	\$ 774,345	\$ 441,928	\$ (223,73	1) \$	993,543	\$	1,400	\$ 774,345	\$ 547,361	\$ (124,450)	\$	1,198,655
10/27/2016	22,695,658	37,574.50	37,574.50	37,574.50	\$ 1,000	\$ 842,236	\$ 420,834	\$ (211,67	7)\$	1,052,393	\$	1,400	\$ 842,236	\$ 524,571	\$ (117,745)	\$	1,250,462
09/28/2016	10,167,500	30,283.90	30,283.90	30,283.90	\$ 1,000	\$ 377,316	\$ 352,039	\$ (165,01	7) \$	565,338	\$	1,400	\$ 377,316	\$ 436,355	\$ (91,791)	\$	723,280
08/30/2016	19,653,427	29,916.20	30,118.00	31,046.20	\$ 1,000	\$ 729,339	\$ 349,708	\$ (163,95	5) \$	916,091	\$	1,400	\$ 729,339	\$ 432,939	\$ (91,200)	\$	1,072,478
07/28/2016	19,701,487	30,145.20	30,297.90	30,693.30	\$ 1,000	\$ 731,122	\$ 351,412	\$ (165,10	7) \$	918,428	\$	1,400	\$ 731,122	\$ 435,459	\$ (91,841)	\$	1,076,140
06/29/2016	19,121,954	30,257.00	30,257.00	30,344.00	\$ 1,000	\$ 709,616	\$ 351,820	\$ (164,84	5) \$	897,590	\$	1,400	\$ 709,616	\$ 436,030	\$ (91,695)	\$	1,055,350
05/27/2016	20,231,205	29,911.80	30,132.70	30,759.60	\$ 1,000	\$ 750,780	\$ 349,735	\$ (164,04	9) \$	937,466	\$	1,400	\$ 750,780	\$ 432,984	\$ (91,252)	\$	1,093,911
04/28/2016	19,894,530	32,525.80	33,303.40	33,935.40	\$ 1,000	\$ 738,286	\$ 372,876	\$ (184,34	2) \$	927,821	\$	1,400	\$ 738,286	\$ 467,463	\$ (102,540)	\$	1,104,609
03/30/2016	23,418,925	37,498.80	37,498.80	37,498.80	\$ 1,000	\$ 869,076	\$ 419,987	\$ (211,19	2) \$	1,078,871	\$	1,400	\$ 869,076	\$ 523,655	\$ (117,476)	\$	1,276,656
02/29/2016	19,315,577	33,520.80	33,879.60	34,198.10	\$ 1,000		\$ 379,604		9) \$	909,375	\$	1,400	\$ 716,801				1,090,968
01/29/2016	17,920,385	30,421.80	31,006.60	31,079.60	\$ 1,000	\$ 665,025	\$ 364,212	\$ (169,64	2) \$	860,595	\$	1,400	\$ 665,025	\$ 447,078	\$ (94,363)	\$	1,019,140
12/30/2015	17,342,125	30,586.80	31,197.30	31,197.30	\$ 1,000	\$ 643,566	\$ 365,641	\$ (170,86	3) \$	839,345	\$	1,400	\$ 643,566	\$ 449,206	\$ (95,042)	\$	999,130
11/30/2015	17,293,286	32,056.10	32,056.10	32,056.10					\$	10,896,856						\$	12,960,781
10/28/2015	23,563,889	38,390.90	38,390.90	38,390.90											Change:	\$	2,063,925
09/29/2015	20,333,344	38,030.50	38,030.50	38,070.30													18.9%
08/28/2015	17,870,039	30,456.90	30,456.90	30,694.80													
07/28/2015	14,837,000	30,550.80	30,694.80	30,694.80													
06/29/2015	19,702,763	33,361.30	34,833.60	34,833.60													

40,645.60

42,030.70

40,141.30

46,192.60

40,222.30

40,167.40

23,808,903

23,519,560

25,060,943

25,449,855

24,244,068

22,798,615

05/28/2015

04/29/2015

03/30/2015

02/27/2015

01/29/2015

12/30/2014

40,645.60

42,659.60

40,141.30

46,192.60

40,512.90

40,472.70

42,453.10

42,744.50

40,141.30

49,986.60

46,175.80

40,472.70

LG&E RTS Comparison of Current and Proposed Rates

		Existing Tariff		Proposed Tariff
CA: XX	XXXXX	Basic Service Charge: \$	1,000	Basic Service Charge: \$ 1,400
Customer Name: Cus	stomer 1	Energy Charge: \$	0.03711 /kWh	Energy Charge: \$ 0.03711 /kWh
Service Address: 138	3kV Service	Peak Demand Charge: \$	4.85 /kVA	Peak Demand Charge: \$ 6.98 /kVA
		Interm. Demand Charge: \$	3.30 /kVA	Interm. Demand Charge: \$ 5.12 /kVA
Contract Capacity:	46,000 kVA	Base Demand Charge: \$	3.05 /kVA	Base Demand Charge: \$ 1.52 /kVA
CSR Firm:	4,500 kVA	CSR Credit: \$	- /kVA	CSR Credit: \$ - /kVA

	24 Month Hi	storical Informa	ition		E			Existing Rate	Rates				Proposed Rates					
Test Month		Measured On Peak kVA	Measured Interm. kVA	Measured Base kVA	Custo	omer							Customer					
Bill Date	Energy kWH	Demand	Demand	Demand	Cha	rge	Energy Charge	Demand Charge	CSR Credit		Total		Charge	Energy Charge	Demand Charge	CSR Credit		Total
11/29/2016	20,866,200	39,457.90	39,457.90	39,457.90	\$	1,000	\$ 774,345	\$ 441,928	\$ -	\$	1,217,273	\$	1,400	\$ 774,345	\$ 547,361	\$-	\$	1,323,105
10/27/2016	22,695,658	37,574.50	37,574.50	37,574.50	\$	1,000	\$ 842,236	\$ 420,834	\$-	\$	1,264,070	\$	1,400	\$ 842,236	\$ 524,571	\$-	\$	1,368,207
09/28/2016	10,167,500	30,283.90	30,283.90	30,283.90	\$	1,000	\$ 377,316	\$ 352,039	\$-	\$	730,355	\$	1,400	\$ 377,316	\$ 436,355	\$-	\$	815,071
08/30/2016	19,653,427	29,916.20	30,118.00	31,046.20	\$	1,000	\$ 729,339	\$ 349,708	\$-	\$	1,080,047	\$	1,400	\$ 729,339	\$ 432,939	\$-	\$	1,163,678
07/28/2016	19,701,487	30,145.20	30,297.90	30,693.30	\$	1,000	\$ 731,122	\$ 351,412	\$-	\$	1,083,534	\$	1,400	\$ 731,122	\$ 435,459	\$-	\$	1,167,981
06/29/2016	19,121,954	30,257.00	30,257.00	30,344.00	\$	1,000	\$ 709,616	\$ 351,820	\$ -	\$	1,062,435	\$	1,400	\$ 709,616	\$ 436,030	\$-	\$	1,147,045
05/27/2016	20,231,205	29,911.80	30,132.70	30,759.60	\$	1,000	\$ 750,780	\$ 349,735	\$-	\$	1,101,515	\$	1,400	\$ 750,780	\$ 432,984	\$-	\$	1,185,164
04/28/2016	19,894,530	32,525.80	33,303.40	33,935.40	\$	1,000	\$ 738,286	\$ 372,876	\$ -	\$	1,112,162	\$	1,400	\$ 738,286	\$ 467,463	\$-	\$	1,207,150
03/30/2016	23,418,925	37,498.80	37,498.80	37,498.80	\$	1,000	\$ 869,076	\$ 419,987	\$-	\$	1,290,063	\$	1,400	\$ 869,076	\$ 523,655	\$-	\$	1,394,132
02/29/2016	19,315,577	33,520.80	33,879.60	34,198.10	\$	1,000	\$ 716,801	\$ 379,604	\$-	\$	1,097,405	\$	1,400	\$ 716,801	\$ 477,359	\$-	\$	1,195,560
01/29/2016	17,920,385	30,421.80	31,006.60	31,079.60	\$	1,000	\$ 665,025	\$ 364,212	\$ -	\$	1,030,237	\$	1,400	\$ 665,025	\$ 447,078	\$-	\$	1,113,503
12/30/2015	17,342,125	30,586.80	31,197.30	31,197.30	\$	1,000	\$ 643,566	\$ 365,641	\$-	\$	1,010,208	\$	1,400	\$ 643,566	\$ 449,206	\$-	\$	1,094,172
11/30/2015	17,293,286	32,056.10	32,056.10	32,056.10						\$	13,079,305						\$	14,174,768
10/28/2015	23,563,889	38,390.90	38,390.90	38,390.90												Change	: \$	1,095,463
09/29/2015	20,333,344	38,030.50	38,030.50	38,070.30														8.4%
08/28/2015	17,870,039	30,456.90	30,456.90	30,694.80														
07/28/2015	14,837,000	30,550.80	30,694.80	30,694.80														
06/29/2015	19,702,763	33,361.30	34,833.60	34,833.60														

05/28/2015

04/29/2015

03/30/2015

02/27/2015

01/29/2015

12/30/2014

40,645.60

42,030.70

40,141.30

46,192.60

40,222.30

40,167.40

23,808,903

23,519,560

25,060,943

25,449,855

24,244,068

22,798,615

40,645.60

42,659.60

40,141.30

46,192.60

40,512.90

40,472.70

42,453.10

42,744.50

40,141.30

49,986.60

46,175.80

40,472.70

KU TODP Comparison of Current and Proposed Rates

CA:	XXXXXX
Customer Name:	Customer 2
Service Address:	XXXXXXX

Contract Capacity:	10,722 kVA
CSR Firm:	4,000 kVA

Test Month

Existing Tariff	
Basic Service Charge:	\$ 300
Energy Charge:	\$ 0.03432 /kWh
Peak Demand Charge:	\$ 5.89 /kVA
Interm. Demand Charge:	\$ 4.39 /kVA
Base Demand Charge:	\$ 3.34 /kVA
CSR Credit:	\$ (6.50) /kVA

Proposed Tariff		
Basic Service Charge:	\$ 330	
Energy Charge:	\$ 0.03433	/kWh
Peak Demand Charge:	\$ 6.83	/kVA
Interm. Demand Charge:	\$ 5.34	/kVA
Base Demand Charge:	2.92	/kVA
CSR Credit:	\$ (3.67)	/kVA

24 Month Historical Information			Existing Rates								Proposed Rates											
	measured On	weasured	weasured		0								1 [. .								
	Peak kVA	Interm. kVA	Base kVA		Customer									Custo								
Energy kWH	Demand	Demand	Demand		Charge	Energy Charge	Dem	nand Charge		CSR Credit		Total		Char	ge	Energy Charge	Der	mand Charge	CSR Credi	t		Total
5,092,800	10,014.60	10,025.80	10,025.80	\$	300	\$ 174,785	\$	136,485	\$	(39,168)	\$	272,403	11	\$	330	\$ 174,836	\$	154,558	\$ (22,	115)	\$	307,609
5,721,600	11,171.40	11,171.40	11,171.40	\$	300	\$ 196,365	\$	152,154	\$	(46,614)	\$	302,206	11	\$	330	\$ 196,423	\$	168,576	\$ (26,	319)	\$	339,010
5,596,800	10,643.00	10,643.00	10,643.00	\$	300	\$ 192,082	\$	144,958	\$	(43,180)	\$	294,160	11	\$	330	\$ 192,138	\$	160,834	\$ (24,3	380)	\$	328,922
5,798,400	10,483.40	10,483.40	10,483.40	\$	300	\$ 199,001	\$	142,784	\$	(42,142)	\$	299,943	1 [\$	330	\$ 199,059	\$	158,891	\$ (23,	794)	\$	334,486
6,110,400	10,471.00	10,705.30	10,705.30	\$	300	\$ 209,709	\$	144,426	\$	(43,584)	\$	310,851	11	\$	330	\$ 209,770	\$	159,991	\$ (24,	608)	\$	345,483
4,435,200	9,876.60	9,898.60	9,984.40	\$	300	\$ 152,216	\$	134,976	\$	(38,341)	\$	249,151	1 [\$	330	\$ 152,260	\$	151,624	\$ (21,	648)	\$	282,566
5,198,400	9,372.90	9,419.00	9,609.60	\$	300	\$ 178,409	\$	128,652	\$	(35,224)	\$	272,137	1 [\$	330	\$ 178,461	\$	145,623	\$ (19,	388)	\$	304,526
4,752,000	8,816.50	8,964.60	8,964.60	\$	300	\$ 163,089	\$	121,226	\$	(32,270)	\$	252,344] [\$	330	· · · · ·		139,396		220)		284,642
5,347,200	10,256.90	10,337.40	10,337.40	\$	300	\$ 183,516	\$	140,321	\$	(41,193)	\$	282,944		\$	330	\$ 183,569	\$	156,565	\$ (23,2	258)	\$	317,206
5,059,200	10,091.70	10,091.70	10,091.70	\$	300		\$	137,449	\$	(39,596)		271,785] [\$	330	· · · · ·	\$	154,124	\$ (22,3			305,780
5,078,400	9,899.40	10,099.30	10,259.10	\$	300	\$ 174,291	\$	136,909	\$	(39,645)	\$	271,854		\$	330	· · · · · ·	\$	152,851	\$ (22,3			305,138
5,424,000	9,551.20	10,059.90	10,059.90	\$	300	\$ 186,152	\$	134,020	\$	(39,389)	\$	281,082] [\$	330	\$ 186,206	\$	150,263	\$ (22,2	240)	\$	314,559
5,361,600	9,649.60	9,649.60	9,906.80								\$	3,360,860	1								\$	3,769,928
5,203,200	10,377.40	10,469.50	10,533.50										-						Cha	nge:	\$	409,068
5,318,400	10,461.10	10,555.10	10,704.60																			12.2%

Bill Date	Energy kWH	Demand	Demand	Demand
12/21/2016	5,092,800	10,014.60	10,025.80	10,025.80
11/21/2016	5,721,600	11,171.40	11,171.40	11,171.40
10/21/2016	5,596,800	10,643.00	10,643.00	10,643.00
09/22/2016	5,798,400	10,483.40	10,483.40	10,483.40
08/23/2016	6,110,400	10,471.00	10,705.30	10,705.30
07/22/2016	4,435,200	9,876.60	9,898.60	9,984.40
06/22/2016	5,198,400	9,372.90	9,419.00	9,609.60
05/20/2016	4,752,000	8,816.50	8,964.60	8,964.60
04/21/2016	5,347,200	10,256.90	10,337.40	10,337.40
03/22/2016	5,059,200	10,091.70	10,091.70	10,091.70
02/23/2016	5,078,400	9,899.40	10,099.30	10,259.10
01/25/2016	5,424,000	9,551.20	10,059.90	10,059.90
12/22/2015	5,361,600	9,649.60	9,649.60	9,906.80
11/20/2015	5,203,200	10,377.40	10,469.50	10,533.50
10/22/2015	5,318,400	10,461.10	10,555.10	10,704.60
09/23/2015	6,028,800	10,678.60	10,678.60	10,678.60
08/21/2015	6,326,400	10,336.60	10,336.60	10,683.90
07/22/2015	4,833,600	9,848.70	9,873.80	9,873.80
06/23/2015	5,784,000	9,747.90	9,780.60	9,780.60
05/21/2015	4,848,000	9,395.60	9,455.70	9,575.80
04/23/2015	5,668,800	9,934.20	9,934.20	10,049.50
03/24/2015	5,179,200	9,786.10	9,805.40	9,805.40
02/23/2015	5,462,400	9,834.20	9,834.20	9,834.20
01/23/2015	5,212,800	9,522.00	9,881.30	9,881.30

KU TODP Comparison of Current and Proposed Rates

Customer Name: Customer 2
Service Address: XXXXXXX

Contract Capacity:	10,722	kVA
CSR Firm:	4,000	kVA

24 Month Historical Information										
		measured On	weasured	weasured						
Test Month		Peak kVA	Interm. kVA	Base kVA						
Bill Date	Energy kWH	Demand	Demand	Demand						
12/21/2016	5,092,800	10,014.60	10,025.80	10,025.80						
11/21/2016	5,721,600	11,171.40	11,171.40	11,171.40						
10/21/2016	5,596,800	10,643.00	10,643.00	10,643.00						
09/22/2016	5,798,400	10,483.40	10,483.40	10,483.40						
08/23/2016	6,110,400	10,471.00	10,705.30	10,705.30						
07/22/2016	4,435,200	9,876.60	9,898.60	9,984.40						
06/22/2016	5,198,400	9,372.90	9,419.00	9,609.60						
05/20/2016	4,752,000	8,816.50	8,964.60	8,964.60						
04/21/2016	5,347,200	10,256.90	10,337.40	10,337.40						
03/22/2016	5,059,200	10,091.70	10,091.70	10,091.70						
02/23/2016	5,078,400	9,899.40	10,099.30	10,259.10						
01/25/2016	5,424,000	9,551.20	10,059.90	10,059.90						
12/22/2015	5,361,600	9,649.60	9,649.60	9,906.80						
11/20/2015	5,203,200	10,377.40	10,469.50	10,533.50						
10/22/2015	5,318,400	10,461.10	10,555.10	10,704.60						
09/23/2015	6,028,800	10,678.60	10,678.60	10,678.60						
08/21/2015	6,326,400	10,336.60	10,336.60	10,683.90						
07/22/2015	4,833,600	9,848.70	9,873.80	9,873.80						
06/23/2015	5,784,000	9,747.90	9,780.60	9,780.60						
05/21/2015	4,848,000	9,395.60	9,455.70	9,575.80						
04/23/2015	5,668,800	9,934.20	9,934.20	10,049.50						
03/24/2015	5,179,200	9,786.10	9,805.40	9,805.40						
02/23/2015	5,462,400	9,834.20	9,834.20	9,834.20						
01/23/2015	5,212,800	9,522.00	9,881.30	9,881.30						

\$ 300	
\$ 0.03432	/kWh
\$ 5.89	/kVA
\$ 4.39	/kVA
\$ 3.34	/kVA
\$ -	/kVA
\$ \$ \$ \$ \$ \$ \$ \$	\$ 0.03432 \$ 5.89 \$ 4.39 \$ 3.34

Proposed Tariff		
Basic Service Charge:	\$ 330	
Energy Charge:	\$ 0.03433	/kWh
Peak Demand Charge:	\$ 6.83	/kVA
Interm. Demand Charge:	\$ 5.34	/kVA
Base Demand Charge:	2.92	/kVA
CSR Credit:	\$ -	/kVA

Existing Rates										Proposed Rate	S			
	tomer arge	Energy Charge	Demand Charge	CSR Credit		Total	Customer Charge	Er	nergy Charge	Demand Charge	С	SR Credit		Total
\$	300	\$ 174,785	\$ 136,485	\$-	\$	311,570	\$ 330	\$	174,836	\$ 154,558	\$	-	\$	329,724
\$	300	\$ 196,365	\$ 152,154	\$-	\$	348,820	\$ 330	\$	196,423	\$ 168,576	\$	-	\$	365,329
\$	300	\$ 192,082	\$ 144,958	\$-	\$	337,340	\$ 330	\$	192,138	\$ 160,834	\$	-	\$	353,302
\$	300	\$ 199,001	\$ 142,784	\$-	\$	342,085	\$ 330	\$	199,059	\$ 158,891	\$	-	\$	358,280
\$	300	\$ 209,709	\$ 144,426	\$-	\$	354,435	\$ 330	\$	209,770	\$ 159,991	\$	-	\$	370,092
\$	300	\$ 152,216	\$ 134,976	\$-	\$	287,492	\$ 330	\$	152,260	\$ 151,624	\$	-	\$	304,214
\$	300	\$ 178,409	\$ 128,652	\$-	\$	307,361	\$ 330	\$	178,461	\$ 145,623	\$	-	\$	324,414
\$	300	\$ 163,089	\$ 121,226	\$-	\$	284,614	\$ 330	\$	163,136	• • • • • • • • •	\$	-	\$	302,862
\$	300	\$ 183,516	\$ 140,321	\$-	\$	324,137	\$ 330	\$	183,569	\$ 156,565	\$	-	\$	340,464
\$	300	\$ 173,632	\$ 137,449	\$-	\$	311,381	\$ 330	\$	173,682	\$ 154,124	\$	-	\$	328,137
\$	300	\$ 174,291	\$ 136,909	\$-	\$	311,499	\$ 330	\$	174,341	\$ 152,851	\$	-	\$	327,523
\$	300	\$ 186,152	\$ 134,020	\$-	\$	320,471	\$ 330	\$	186,206	\$ 150,263	\$	-	\$	336,799
					\$	3,841,206		•					\$	4,041,138
					-							Change:	S	199 933

Change: \$ 199,933

5.2%

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 50

Responding Witness: William S. Seelye / David S. Sinclair

- Q.1-50. Identify and provide all workpapers, studies, analyses, and documents related to any analyses conducted by or on behalf of KU concerning the potential customer-specific and service-area economic impacts of reducing the existing CSR credits.
- A.1-50. There are no workpapers, studies, analyses, and documents related to any analyses conducted by or on behalf of KU concerning the potential customer-specific and service-area economic impacts of reducing the existing CSR credits.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 51

Responding Witness: Christopher M. Garrett

- Q.1-51. For each existing CSR customer (identified only by reference number), please provide the estimated annual dollar impact of KU's proposed reductions in the CSR credit. Provide all workpapers supporting the estimated annual dollar impacts.
- A.1-51. No such estimate was made. The Company does not forecast the annual dollar impact of the proposed reductions in the CSR credit by customer; therefore, the requested information is not available. Refer to Tab 66 of the Filing Requirements for present and proposed rates.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 52

Responding Witness: David S. Sinclair

- Q.1-52. Referring to existing Rider CSR:
 - a. For each customer (identified only by reference number) served under the rider, identify the total MW of curtailable/interruptible load under contract. Please indicate if the requested information is the same as information provided in the direct testimony of witness David S. Sinclair at 24: Table 6. This instruction applies to each subpart of this request.
 - b. State the number of months in which each customer in subpart (a) above has been continuously served under the existing rider or its predecessor.
 - c. For each customer identified in the subpart (a) above, provide the customer's firm contract demand if applicable under Option A.
 - d. For each customer identified in the subpart (a) above, provide the customer's Designated Curtailable Load if applicable under Option 3.

A.1-52.

- a. See attached.
- b. See the response to part a.
- c. See the response to part a.
- d. See the response to part a.

Utility	Company	CSR Date	Units	Contract Capacity	Reducible To (Firm Contract Demand Option A)	Contract Capacity Minus Firm Load	Continuous Months Served
КU	4	4-Jul	kVA	195,000	2,000	193,000	150
KU	5	14-May	kVA	9,000	3,500	5,500	32
KU	6	13-Jan	kVA	7,000	3,000	4,000	48
KU	7	14-Jan	kVA	10,722	4,000	6,722	36
KU	8	14-Jun	kVA	12,000	6,500	5,500	31
KU	9	16-Jul	kVA	31,600	9,000	22,600	6
KU	10	16-Jul	kVA	9,950	2,250	7,700	6
KU	11	16-Jul	kVA	12,750	3,500	9,250	6
KU	12	16-Jul	kVA	15,450	10,500	4,950	6

Attachment to Response to KIUC-1 Question No. 52 Page 1 of 1 Sinclair

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 53

Responding Witness: David S. Sinclair

- Q.1-53. Referring to existing Rider CSR and its predecessors:
 - a. For each customer (identified only by reference number) served under the rider, identify the date, time, and duration of each curtailment called by KU in the past 60 months?
 - b. For each curtailment referenced in the response to subpart (a) above, specify whether the curtailment was a system reliability event or a buy-through event, identify the MW of load curtailment requested, and identify the MW of load that failed to comply with the curtailment request.
 - c. For each buy-through curtailment identified in the response to subpart (b) above, specify whether the customer bought through the curtailment, the amount of buy-through energy purchased, the price paid for such buy-through energy, and the source (system supply or market) of the buy-through price.

Customer	Start Date/Time	End Date/Time	Hours	Туре	Contract/CSR Firm or CSR Reduction	Load Not Compliant (kVA)
3	10/17/2012 08:55	10/17/2012 09:25	0.50	Physical Curtailment	150 MVA contract; 4,000 kW firm	0
3	01/06/2014 18:30	01/06/2014 19:41	1.18	Physical Curtailment	150 MVA contract; 4,000 kW firm	0
3	01/07/2014 07:14	01/07/2014 10:00	2.77	Physical Curtailment	150 MVA contract; 4,000 kW firm	0
4	01/07/2014 07:20	01/07/2014 10:00	2.67	Physical Curtailment	5,000 kVA contract; 3,500 kW firm	5,129.8
5	01/07/2014 07:40	01/07/2014 10:00	2.33	Physical Curtailment	2,000 kVA reduction	0
3	01/30/2014 07:36	01/30/2014 08:06	0.50	Physical Curtailment	150 MVA contract; 4,000 kW firm	39,184.8
4	01/30/2014 07:37	01/30/2014 08:07	0.50	Physical Curtailment	5,000 kVA contract; 3,500 kW firm	5,157.5

A.1-53. a. CSR Curtailments 01/01/2012 through 01/13/2017:

- b. See the response to part a.
- c. No curtailments were buy-through curtailments.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 54

Responding Witness: David S. Sinclair

- Q.1-54. Please provide a timeline for the last 10 years showing by year each curtailable/interruptible rate or rider offered by KU, the number of customers served under each rate/rider, and the total MW of interruptible or curtailable load served under each curtailable/interruptible rate/rider.
- A.1-54. See attached.

Attachment to Response to KIUC-1 Question No. 54 Page 1 of 1											
				20	R Offer	be					Sinclair
	2007	2008	2009		2011		2013	2014	2015	2016	
CSR1	x	x	2005 Х	2010	2011	2012	2015	2014	2015	2010	
CSR2	x	x	x								
CSR3	x	x	x								
CSR10	^	^	^	х	х	x	x	х			
CSR30				x	x	x	x	x			
CSR				^	^	^	^	^	x	x	
CSI									^	^	
			Cu	istome	rs on ea	ach ride	ər				
	2007	2008			2011			2014	2015	2016	
CSR1											
CSR2											
CSR3	1	1	1								
CSR10	-	-	-	1	2	2	2	2			
CSR30				-	-	-	- 1	- 3			
CSR							-	5	5	9	
con									0	5	
Maximum Curtailable(MW)											
					2014	2015	2016				
CSR10		153.8									
CSR30				2.0	14.5						

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 55

Responding Witness: David S. Sinclair / John P. Malloy

- Q.1-55. Please identify all reports, studies, and/or analyses conducted by on behalf of KU or its parent company in the past 5 years related in total or in part to retail interruptible or curtailable electric service in Kentucky.
- A.1-55. Each year, the Companies estimate the hourly integrated load reduction associated with curtailable customers that are treated as a capacity resource. The table below shows forecasted curtailable capacity for both LG&E and KU in MW by year, up to the current year, from the previous ten business plans.

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	Plan									
2008	121									
2009	121	93								
2010	121	93	93							
2011	121	93	93	93						
2012	121	93	93	93	93					
2013	121	93	93	93	98	119				
2014	121	93	93	93	100	122	122			
2015	121	93	93	93	102	125	125	133		
2016	121	93	93	93	102	125	125	133	136	
2017	121	93	93	93	102	125	125	133	136	130

Hourly Integrated Curtailable Capacity

Also, see the Companies' Industrial DSM Potential Assessment filed with the Commission in Case No. 2014-00003, particularly the section concerning load control beginning at page 59. The assessment is available at: http://psc.ky.gov/pscecf/2014-00003/rick.lovekamp@lge-ku.com/05262016071923/Closed/LGE_KU_Ind_DSM_Potential_Study_2014-00003_05-26-16.pdf

Response to Question No. 56 Page 1 of 2 Sinclair

KENTUCKY UTILITIES COMPANY

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 56

Responding Witness: David S. Sinclair

- Q.1-56. Please explain in detail how KU (acting alone or in conjunction with affiliates) treats interruptible/curtailable load in:
 - a. Developing its long-run load forecast.
 - b. Determining its long-run need for future supply-side resources.
 - c. Determining its need for operating reserve capacity.
 - d. Providing ancillary services.
 - e. Determining whether such load qualifies as spinning reserve.
- A.1-56.
- a. The Company considers interruptible/curtailable load as a capacity resource.
- b. See response to (a). The Company considers CSR as a capacity resource available to meet planning reserve margin requirements in resource planning decisions. CSR capacity is assumed to remain at the current level through the analysis period.
- c. CSR capacity does not affect operating reserves, which consist of spinning reserves and non-spinning (supplemental) reserves. Both spinning and supplemental reserves must be available to serve load within a 15 minute period. For curtailable load to qualify as operating reserves, the curtailable load must be fully removable from system load within a 15 minute period. The execution of a CSR event requires a 60 minute notice. Therefore, CSR does not qualify as an operating reserve and is not considered when determining the need for operating reserve capacity.
- d. As noted in part c., CSR capacity cannot be used for spinning and supplemental operating reserves. Similar limitations also exist for

considering CSR capacity for contingency and regulating reserves. Contingency reserves must be available within 15 minutes and regulating reserves must be immediately reactive to Automatic Generation Control to provide normal regulating margin.

e. See the response to part c.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 57

Responding Witness: Robert M. Conroy

- Q.1-57. Given existing laws and regulations in Kentucky, please identify and describe in detail each non-KU market option and/or mechanism under which an existing CSR customer could have its curtailable load served.
- A.1-57. KU is not aware of any such market option or mechanism.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 58

Responding Witness: Robert M. Conroy

- Q.1-58. Given existing laws and regulations in Kentucky, please identify and describe in detail each non-KU market option and/or mechanism through which an existing CSR customer could sell its interruptible load as a demand response resource.
- A.1-58. KU is not aware of any such market option or mechanism.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 59

Responding Witness: Christopher M. Garrett

- Q.1-59. Please explain in detail how KU treats curtailment buy-though revenues in setting base rates and/or modifying its Fuel Adjustment Clause.
- A.1-59. The last time KU had curtailment buy-through revenues was in September 2011 and there are no curtailable buy-through revenues included in this case. If a curtailment buy-through would occur, the buy-through revenues (fuel cost) would be deducted from the power purchase fuel cost for the month in the Fuel Adjustment Clause calculation.

Total FAC recoverable fuel cost = generation fuel + (power purchase fuel – curtailment buy-through revenues/fuel) – off system sales fuel.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 60

Responding Witness: William S. Seelye

- Q.1-60. Please identify and explain in detail how KU treats test-year curtailment buythough revenue in the electric cost-of-service study filed in this case. This request refers to the methodology that KU would use even if it received no test-year CSR buy-through revenue.
- A.1-60. There are no buy-through revenues included in the test-year.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 61

Responding Witness: William S. Seelye

- Q.1-61. Please identify and explain in detail how KU treats test-year curtailment credits paid to CSR customers in the electric cost-of-service study filed in this case. This request refers to the methodology used by KU, and not to any specific amount of test-year CSR credits.
- A.1-61. CSR credits are treated as miscellaneous credits. In the cost of service study, as with other miscellaneous revenues and credits, CSR credits are allocated to all customer classes.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 62

Responding Witness: David S. Sinclair

- Q.1-62. Please identify and explain in detail all situations other than a system reliability event in which KU would need or want to physically curtail load under the CSR rider.
- A.1-62. With no restriction requiring all generating units to be committed prior to curtailing load under the CSR rider, the CSR reduction would be used as an economic resource to save fuel costs up to the amount of hours specified in the tariff.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 63

Responding Witness: David S. Sinclair

- Q.1-63. Referring to the direct testimony of David S. Sinclair at 24:11 25:3:
 - a. Confirm that the key condition discussed at 24:16-18 refers only to physical curtailments under Rider CSR.
 - b. Since Rider CSR (or its predecessors) was first approved by the Commission, please identify each instance in which KU would have issued a physical curtailment request but was prevented from doing so by the key condition restriction discussed at 24:16-18.
- A.1-63. a. The key condition referenced in Mr. Sinclair's testimony that requires all system generating units be dispatched or in the process of being dispatched before curtailments applies to physical curtailment events.
 - b. Prior to August 1, 2010, the Rider CSR did not require that all generating units be dispatched before issuing a curtailment request. While the Company is not able to identify the specific hours for additional physical curtailment, it is likely that CSR would be implemented consistent with the response in Question 62 in the absence of the key condition restriction.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 64

Responding Witness: David S. Sinclair

Q.1-64. Referring to the direct testimony of David S. Sinclair at 25:4-9:

- a. Please provide the Annual Generation Forecast.
- b. For each of the eight forecast CSR curtailment events, identify and explain in detail the underlying load and system conditions driving KU's expected need for physical curtailment.
- A.1-64.
- a. See "Section 7 Generation Forecast" on pages 20-22 of Mr. Sinclair's testimony and the "2017 Business Plan Generation & OSS Forecast" attached at Tab 16, Section 16(7)(c), Item H of the Companies' Applications.
- b. Of the eight forecasted curtailment events, two pertained only to a curtailable customer served in the Old Dominion Power service territory in Virginia, which is governed by different rules with regard to curtailment. The Companies' underlying load and system conditions for the peak hour of each of the remaining six events are summarized in the table below. Also see the response to PSC 2-55.

Curtailment Event Date	Event Time	Total Generation Capacity (MW)	Peak Hourly Load During Event (MW)	Generation Unavailable – Planned Outage (MW)	Generation Unavailable – Other (MW)	Spinning Reserves (MW)	Purchases (MW)
7/18/2017	Hours 13-15	8,136	6,406	6	1,317	406	0
7/19/2017	Hours 13-16	8,136	6,411	6	1,039	679	0
8/9/2017	Hours 14-16	8,136	6,807	6	1,628	232	538
3/12/2018	Hour 8	8,261	4,025	1,498	2,286	452	0
3/14/2018	Hour 7-8	8,261	4,095	1,498	2,330	338	0
3/15/2018	Hour 10	8,261	4,030	1,498	2,436	297	0

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 65

Responding Witness: John P. Malloy

- Q.1-65. Please identify each existing DSM and/or energy efficiency program that KU proposes to either close to new customers or limit incremental program participation by existing participants during the Forecasted Test Period.
- A.1-65. In the Forecasted Test Period, the Companies are not planning to end any of the current DSM programs or limit incremental program participation. The Companies' current DSM programs are approved through December 2018. The Companies will complete their re-evaluation of the programs by the end of 2017.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 66

Responding Witness: David S. Sinclair

- Q.1-66. Referring to the direct testimony of David S. Sinclair at 26:5 27:3:
 - a. Please define primary' as used in the phrase prima,) combustion turbines.
 - b. Please define (and if possible, quantify) meaningful as used in the phrase meaningful annual load growth.
 - c. For each of the past 10 years, please provide KU's annual load growth.
 - d. Please provide KU's forecast of annual load growth for each of the next 10 years.

A.1-66.

- a. See the response to PSC 2-56(a).
- b. Meaningful load growth in this context is load growth that would require resource additions in the next three to five years, and would therefore require actions in the near term to begin developing these resources.
- c. See attached.
- d. See attached.

66c

000	Actual		WN			
	Volumes (GWh)	Actual Sales Growth*	Volumes (GWh)	WN Sales Growth	Peak Hour (MW)	Peak Growth
2007	21,643	4.69%	21,439	2.35%	4,344	3.26%
2008	21,191	-2.09%	21,079	-1.68%	4,476	3.04%
2009	20,260	-4.39%	20,398	-3.23%	4,640	3.66%
2010	21,938	8.28%	21,234	4.10%	4,517	-2.65%
2011	21,163	-3.53%	21,133	-0.48%	4,292	-4.98%
2012	20,955	-0.98%	21,216	0.39%	4,138	-3.59%
2013	21,269	1.50%	21,262	0.22%	4,193	1.33%
2014	21,610	1.60%	21,253	-0.04%	5,068	20.87%
2015	20,902	-3.28%	20,792	-2.17%	5,112	0.87%
2016	20,757	-0.69%	20,603	-0.91%	4,415	-13.63%

*relative to prior year

66d

	Forecasted	Forecasted	Forecasted	Forecasted		
	Volumes	Sales	Volumes	WN Sales	Peak Hour	Peak
	(GWh)	Growth**	(GWh)	Growth	(MW)	Growth
2017	20,160	-2.88%	20,160	-2.15%	4,337	-1.77%
2018	20,167	0.04%	20,167	0.04%	4,333	-0.09%
2019	19,238	-4.61%	19,238	-4.61%	4,319	-0.32%
2020	18,763	-2.47%	18,763	-2.47%	4,155	-3.81%
2021	18,772	0.05%	18,772	0.05%	4,135	-0.48%
2022	18,780	0.04%	18,780	0.04%	4,145	0.24%
2023	18,801	0.11%	18,801	0.11%	4,148	0.09%
2024	18,826	0.13%	18,826	0.13%	4,160	0.29%
2025	18,826	0.00%	18,826	0.00%	4,167	0.16%
2026	18,819	-0.04%	18,819	-0.04%	4,167	-0.01%

**2017 compared to both 2016 actual and 2016 WN; others relative to prior year

Attachment to Response to KIUC-1 Question No. 66(c-d)
CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 67

Responding Witness: David S. Sinclair

- Q.1-67. Please provide KU's current estimated cost in current dollars of an installed combustion turbine. Provide all workpapers, studies, analyses, and documents supporting and/or underlying this estimate.
- A.1-67. The Companies' current estimated combustion turbine capital cost is \$624/kW in 2016 dollars. See the Companies' 2014 Integrated Resource Plan ("IRP"), Volume III, "2014 Reserve Margin Study" and "2014 Resource Assessment" reports. The Companies' estimated cost data for a simple-cycle combustion turbine in 2013 dollars can be found in Section 4.4.1, Table 5, on page 15 of the "2014 Reserve Margin Study." The 2014 IRP value in 2013 dollars was escalated at 2 percent per year to 2016 dollars.

See also the response to AG 1-279.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 68

- Q.1-68. Please provide a levelized fixed charge rate for a new combustion turbine using KU's cost of capital and tax rates. Provide all workpapers, studies, analyses, and documents supporting and/or underlying this response.
- A.1-68. The levelized fixed charge rate for a new combustion turbine is 8.13%. See attached.

Revenue Requirement Model For Fixed Charge Rate & Levelized Cost Factor

Book Basis	\$100	F	Fixed Char	ge Rate	0.0813					
Tax Basis	\$100			•						
Book Life - Years	30	L	evelized	Cost Facto	0.73					
Tax Life - Years	15	<u> </u>								
Months in First Year	12									
Base Property Tax Rate	0.150%									
Property Tax Rate Escalation	0.00%									
O&M Escalation Rate	2.000%	C	CAPITAL	STRUCT	JRE					
O&M Base	\$1		Debt	47.00%	4.13%					
Discount Rate	10.62%									
Cost of Capital	6.49%	C	Common	53.00%	10.0%					
Income Tax Rate	38.900%									
Insurance Rate	0.085%									
Insurance Escalation Rate	0.00%									
Tax Equivalent Rate	0.00%									
Tax Depreciation Schedule	macrs									
	maers	1	1	1	1	1	1	1	1	1
	Year	1	2	3	4	5	6	7	8	9
	Months	12	12	12	12	12	12	12	12	12
Deferred Taxes										
Tax Depreciation		5.00	9.50	8.55	7.70	6.93	6.23	5.90	5.90	5.90
Book Depreciation		1.67	3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33
Deferred Tax		1.30	2.40	2.03	1.70	1.40	1.13	1.00	1.00	1.00
Rate Base	Constr Period									
Beginning Balance	100	100	97	91	86	81	76	72	67	63
Less: Book Depreciation		(1.67)	(3.33)	(3.33)	(3.33)	(3.33)	(3.33)	(3.33)	(3.33)	(3.33
Less: Deferred Taxes	-	(1.30)	(2.40)	(2.03)	(1.70)	(1.40)	(1.13)	(1.00)	(1.00)	(1.00
Ending Balance	100	97	91	86	81	76	72	67	63	59
EndYear Rate Base		97	91	86	81	76	72	67	63	59
Debt Return (Interest)		1.88	1.77	1.67	1.57	1.48	1.39	1.31	1.22	1.14
Preferred Stock Return		-	-	-	-	-	-	-	-	-
Common Equity Return		5.14	4.84	4.55	4.29	4.04	3.80	3.57	3.34	3.11
Property Tax		0.075	0.148	0.143	0.138	0.133	0.128	0.123	0.118	0.113
A&G		0.042	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085
Revenue Requirements (non-equity)		3.67	5.34	5.23	5.13	5.03	4.94	4.85	4.76	4.67
Revenue Requirements (equity)		8.42	7.92	7.45	7.02	6.61	6.22	5.85	5.47	5.09
Discount Rate		1.00	0.94	0.88	0.83	0.78	0.73	0.69	0.64	0.60
Present Value Fixed Charge Rate	\$128.00	12.08 8.13%	12.45	11.19	10.06	9.05	8.15	7.33	6.59	5.91
0&M		1	1	1	1	1	1	1	1	1
Present Value		0.90 0.73	0.83	0.77	0.71	0.65	0.60	0.56	0.51	0.47
Levelized Cost Factor		0.75								
Levelized Cost Factor		\$8.13	\$8.13	\$8.13	\$8.13	\$8.13	\$8.13	\$8.13	\$8.13	\$8.13

Revenue Requirement Model For Fixed Charge Rate & Levelized Cost Factor

Assumptions

	¢100
Book Basis	\$100
Tax Basis	\$100
Book Life - Years	30
Tax Life - Years	15
Months in First Year	12
Base Property Tax Rate	0.150%
Property Tax Rate Escalation	0.00%
O&M Escalation Rate	2.000%
O&M Base	\$1
Discount Rate	10.62%
Cost of Capital	6.49%
Income Tax Rate	38.900%
Insurance Rate	0.085%
Insurance Escalation Rate	0.00%
Tax Equivalent Rate	0.00%

Tax Depreciation Schedule

Tax Depreciation Schedule	macis									
	-	1	1	1	1	1	1	1	1	1
	Year	10	11	12	13	14	15	16	17	18
	Months	12	12	12	12	12	12	12	12	12
Deferred Taxes										
Tax Depreciation		5.90	5.90	5.90	5.90	5.90	5.90	2.95	-	-
Book Depreciation		3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33
Deferred Tax		1.00	1.00	1.00	1.00	1.00	1.00	(0.15)	(1.30)	(1.30)
Rate Base	Constr Period									
Beginning Balance	100	59	54	50	46	41	37	33	30	28
Less: Book Depreciation		(3.33)	(3.33)	(3.33)	(3.33)	(3.33)	(3.33)	(3.33)	(3.33)	(3.33)
Less: Deferred Taxes	-	(1.00)	(1.00)	(1.00)	(1.00)	(1.00)	(1.00)	0.15	1.30	1.30
Ending Balance	100	54	50	46	41	37	33	30	28	25
EndYear Rate Base		54	50	46	41	37	33	30	28	25
Debt Return (Interest)		1.06	0.97	0.89	0.80	0.72	0.64	0.57	1	0
Preferred Stock Return		-	-	-	-	-	-	-	-	-
Common Equity Return		2.88	2.65	2.42	2.19	1.96	1.73	1.57	1.46	1.35
Property Tax		0.108	0.103	0.098	0.093	0.088	0.083	0.078	0.073	0.068
A&G		0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085
Revenue Requirements (non-equity)		4.58	4.49	4.40	4.31	4.22	4.14	4.07	4.02	3.98
Revenue Requirements (equity)		4.72	4.34	3.97	3.59	3.21	2.84	2.56	2.39	2.21
Discount Rate		0.57	0.53	0.50	0.47	0.44	0.41	0.39	0.37	0.34
Present Value Fixed Charge Rate	\$128.00	5.28	4.71	4.19	3.72	3.29	2.89	2.58	2.35	2.13
O&M		1	1	1	1	1	1	1	1	1
Present Value Levelized Cost Factor		0.44	0.40	0.37	0.34	0.32	0.29	0.27	0.25	0.23
		\$8.13	\$8.13	\$8.13	\$8.13	\$8.13	\$8.13	\$8.13	\$8.13	\$8.13
	\$128.00	\$4.62	\$4.33	\$4.07	\$3.82	\$3.59	\$3.37	\$3.17	\$2.97	\$2.79

macrs

Revenue Requirement Model For Fixed Charge Rate & Levelized Cost Factor

Assumptions

Book Basis	\$100
Tax Basis	\$100
Book Life - Years	30
Tax Life - Years	15
Months in First Year	12
Base Property Tax Rate	0.150%
Property Tax Rate Escalation	0.00%
O&M Escalation Rate	2.000%
O&M Base	\$1
Discount Rate	10.62%
Cost of Capital	6.49%
Income Tax Rate	38.900%
Insurance Rate	0.085%
Insurance Escalation Rate	0.00%
Tax Equivalent Rate	0.00%

Tax Depreciation Schedule	macrs									
	-	1	1	1	1	1	1	1	1	1
	Year	19	20	21	22	23	24	25	26	27
	Months	12	12	12	12	12	12	12	12	12
Deferred Taxes										
Tax Depreciation		-	-	-	-	-	-	-	-	-
Book Depreciation		3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33
Deferred Tax		(1.30)	(1.30)	(1.30)	(1.30)	(1.30)	(1.30)	(1.30)	(1.30)	(1.30)
Rate Base	Constr Period									
Beginning Balance	100	25	23	21	19	17	15	13	11	9
Less: Book Depreciation Less: Deferred Taxes Ending Balance		(3.33)	(3.33)	(3.33)	(3.33)	(3.33)	(3.33)	(3.33)	(3.33)	(3.33)
	-	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
	100	23	21	19	17	15	13	11	9	7
EndYear Rate Base		23	21	19	17	15	13	11	9	7
Debt Return (Interest)		0	0	0	0	0	0	0	0	0
Preferred Stock Return		-	- 0	-	- 0	-	-	-	-	- 0
Common Equity Return		1.24	1.13	1.03	0.92	0.81	0.70	0.59	0.49	0
			1110	1100	0.72	0.01	0170	0.07	0.17	0
Property Tax		0.063	0.058	0.053	0.048	0.043	0.038	0.033	0.028	0.023
A&G		0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085
Revenue Requirements (non-equity)		3.94	3.89	3.85	3.80	3.76	3.71	3.67	3.62	3.58
Revenue Requirements (equity)		2.03	1.86	1.68	1.50	1.33	1.15	0.97	0.80	0.62
Discount Rate		0.32	0.30	0.28	0.27	0.25	0.24	0.22	0.21	0.20
Present Value	\$128.00	1.93	1.74	1.57	1.42	1.28	1.15	1.03	0.92	0.82
Fixed Charge Rate										
O&M		1	1	1	2	2	2	2	2	2
Present Value		0.21	0.19	0.18	0.16	0.15	0.14	0.13	0.12	0.11
Levelized Cost Factor										
		\$8.13	\$8.13	\$8.13	\$8.13	\$8.13	\$8.13	\$8.13	\$8.13	\$8.13
	\$128.00	\$2.62	\$2.46	\$2.31	\$2.17	\$2.04	\$1.91	\$1.80	\$1.69	\$1.59

Revenue Requirement Model For Fixed Charge Rate & Levelized Cost Factor

Assumptions

Book Basis	\$100
Tax Basis	\$100
Book Life - Years	30
Tax Life - Years	15
Months in First Year	12
Base Property Tax Rate	0.150%
Property Tax Rate Escalation	0.00%
O&M Escalation Rate	2.000%
O&M Base	\$1
Discount Rate	10.62%
Cost of Capital	6.49%
Income Tax Rate	38.900%
Insurance Rate	0.085%
Insurance Escalation Rate	0.00%
Tax Equivalent Rate	0.00%

Tax Depreciation Schedule	macrs				
	_	1	1	1	0
	Year	28	29	30	31
	Months	12	12	12	12
Deferred Taxes					
Tax Depreciation		-	-	-	-
Book Depreciation		3.33	3.33	3.33	1.67
Deferred Tax		(1.30)	(1.30)	(1.30)	(0.65)
Rate Base	Constr Period				
Beginning Balance	100	7	5	3	1
Less: Book Depreciation		(3.33)	(3.33)	(3.33)	(1.67)
Less: Deferred Taxes	-	1.30	1.30	1.30	0.65
Ending Balance	100	5	3	1	0
EndYear Rate Base		5	3	1	0
Debt Return (Interest)		0	0	0	0
Preferred Stock Return		-	-	-	-
Common Equity Return		0	0	0	0
Property Tax		0.018	0.013	0.008	0.000
A&G		0.085	0.085	0.085	0.042
Revenue Requirements (non-equity)		3.53	3.49	3.45	1.71
Revenue Requirements (equity)		0.44	0.27	0.09	0.00
Discount Rate		0.18	0.17	0.16	0.15
Present Value Fixed Charge Rate	\$128.00	0.73	0.65	0.57	0.26
O&M		2	2	2	2
O&M Present Value		2 0.10	2 0.09	2 0.09	2 0.08
Levelized Cost Factor		0.10	0.09	0.09	0.08
		\$8.13	\$8.13	\$8.13	\$8.13
	\$128.00	\$1.49	\$1.40	\$1.31	\$1.23

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 69

- Q.1-69. Please provide the estimated fixed O&M for a new combustion turbine in current dollars. Provide all workpapers, studies, analyses, and documents supporting and/or underlying this response.
- A.1-69. The Companies' current estimated combustion turbine fixed O&M cost is \$29.7/kW-yr in 2016 dollars, which comprises \$21.9/kW-yr for firm gas transport and \$7.7/kW-yr for other fixed O&M. See the response to Question No. 67. The 2014 IRP values in 2013 dollars were escalated at 2 percent per year to 2016 dollars.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 70

- Q.1-70. Please provide KU's required reserve margin for capacity planning. Provide all workpapers, studies, analyses, and documents supporting and/or underlying this response.
- A.1-70. The Companies target a 16% minimum planning reserve margin. See the Companies' 2014 Integrated Resource Plan ("IRP"), Volume III, "2014 Reserve Margin Study." See also the response to AG 1-279.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 71

Responding Witness: Robert M. Conroy

- Q.1-71. Please provide a copy of KU's most recent integrated resource plan.
- A.1-71. See the response to AG 1-279.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 72

- Q.1-72. Please provide all workpapers, studies, analyses, and documents underlying and supporting KU's proposed change in the natural gas price index used to determine the automatic buy-through price in Rider CSR.
- A.1-72. See the response to Question No. 49(a).

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 73

Responding Witness: Robert M. Conroy

- Q.1-73. Referring to the direct testimony of Robert M. Conroy at 16:20-24:
 - a. Explain in detail the conditions under which KU would no longer "continue to allow the current customers under the CSR service schedule to remain CSR customers for an indefinite period of time...."
 - b. Explain in detail why "the Company is not proposing to remove CSR from its tariff at this time."

A.1-73.

- a. KU has not established such a set of conditions.
- b. KU is not proposing the remove CSR from its tariff at this time because existing CSR customers' curtailable load is included as a resource in existing plans and could help KU meet its reserve margin requirements in the future.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 74

Responding Witness: Robert M. Conroy / William S. Seelye

- Q.1-74. Referring to the direct testimony of Robert M. Conroy at 17:2-4, explain in detail KU's rationale for maintaining the \$16 per kVA non-compliance charge in the proposed Rider CSR while reducing the CSR credits by more than 40 percent.
- A.1-74. The purpose of the non-compliance charge is to encourage customers to curtail service when called upon to interrupt their load. The \$16 per kVA non-compliance charge was first introduced in Case No. 2003-00433 for LG&E and Case No. 2003-00434 for KU. The \$16 per kVA non-compliance charge has not changed since it was first introduced in the 2003 rate cases. The \$16 non-compliance charge was based on approximately four months of the CSR credit, which was approximately \$4/kW at the time. (See Direct Testimony of William Steven Seelye filed in Case Nos. 2003-00433 and 2003-00434). However, as the CSR credit increased over time, there was no corresponding increase in the non-compliance charge. The current level of the CSR credit for LG&E and KU is \$6.40 to \$6.50, depending on the service voltage. Four months of the current credit would have resulted in a non-compliance charge of around \$26. At the proposed CSR credit in this proceeding, four months of the credit would result in a non-compliance charge of \$13 to \$14.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 75

Responding Witness: William S. Seelye

- Q.1-75. Provide in native format all workpapers, studies, analyses, and documents supporting and/or underlying the \$16 per kW Non-Compliance Charge in the proposed CSR rider.
- A.1-75. See the response to KIUC 1-74.

CASE NO. 2016-00370

Response to First Set of Data Requests of Kentucky Industrial Utility Customers, Inc. Dated January 11, 2017

Question No. 76

Responding Witness: William S. Seelye

- Q.1-76. Referring to the direct testimony of William Steven Seelye at Exhibit WSS-3:
 - a. Please provide the exhibit in Excel format with working formulas and all links intact.
 - b. Please provide all workpapers, studies, analyses, and documents supporting and/or underlying the exhibit.
 - c. Please identify and provide the specific information and data source for each row item in the column labeled Description in the exhibit.
- A.1-76.
- a. See the Att_KU_PSC_1-54_KUCSR.xlsx spreadsheet provided in response to PSC 1-54.
- b. See attached.
- c. The costs (plant, accumulated depreciation, accumulated deferred income taxes, depreciation expenses, operation and maintenance expenses, property taxes) shown on Exhibit WSS-3 are from the Company's financial forecast for the test-year. The rate of return is based on the weighted cost of capital proposed in this proceeding. Income taxes are based on the composite income tax rate used to determine revenue requirements in this proceeding. The loss factors are those used in the Cost of Service Studies.

KU - CTs (\$)

	Location	6/30/2017	7/31/2017	8/31/2017	9/30/2017	10/31/2017	11/30/2017
Plant	Brown	273,398,524.47	273,398,524.47	273,631,524.47	273,631,524.47	274,528,382.23	279,437,382.31
Accumulated Depreciation	Brown	(149,753,344.06)	(150,845,184.00)	(151,947,484.12)	(153,050,244.41)	(154,124,776.00)	(155,052,099.17)
CWIP	Brown	2,653,837.63	2,653,837.63	7,553,837.63	7,553,837.63	15,266,999.87	8,942,000.00
RWIP	Brown	-	-	-	-	400,000.00	-
Total	Brown	126,299,018.04	125,207,178.10	129,237,877.98	128,135,117.69	136,070,606.10	133,327,283.14
Depreciation Expense	Brown		1,101,839.94	1,102,300.12	1,102,760.29	1,104,531.59	1,115,323.17
Plant	Trimble	242,342,638.40	242,342,638.40	242,642,638.40	242,642,638.40	246,545,595.89	246,545,595.89
Accumulated Depreciation	Trimble	(100,547,493.42)	(101,424,843.47)	(102,302,769.78)	(103,181,272.33)	(104,066,344.86)	(104,957,987.37)
CWIP	Trimble	6,661,519.78	6,732,519.78	6,793,519.78	7,115,769.78	1,281,735.01	1,281,735.01
RWIP	Trimble	-	-	-	-	-	-
Total	Trimble	148,456,664.76	147,650,314.71	147,133,388.40	146,577,135.85	143,760,986.04	142,869,343.53
Depreciation Expense	Trimble		877,350.05	877,926.30	878,502.55	885,072.53	891,642.51
Plant	Paddys 13	39,430,626.05	39,430,626.05	39,430,626.05	39,430,626.05	39,430,626.05	39,642,126.05
Accumulated Depreciation	Paddys 13	(13,639,868.55)	(13,796,621.05)	(13,953,373.54)	(14,110,126.04)	(14,266,878.54)	(14,423,981.87)
CWIP	Paddys 13	-	-	-	-	50,000.00	-
RWIP	Paddys 13	-	-	-	-	-	-
Total	Paddys 13	25,790,757.50	25,634,005.00	25,477,252.51	25,320,500.01	25,213,747.51	25,218,144.18
Depreciation Expense	Paddys 13		156,752.50	156,752.50	156,752.50	156,752.50	157,103.33
Note:							
Plant balances above include lar	nd from Plant Account	134020 - Land					
	Paddys 13	6,285.59	6,285.59	6,285.59	6,285.59	6,285.59	6,285.59
	Trimble	26,173.89	26,173.89	26,173.89	26,173.89	26,173.89	26,173.89
	Total	32,459.48	32,459.48	32,459.48	32,459.48	32,459.48	32,459.48

12/31/2017	1/31/2018	2/28/2018	3/31/2018	4/30/2018	5/31/2018	6/30/2018	13 mos average
279,437,382.31	279,437,382.31	279,437,382.31	279,437,382.31	279,437,382.31	279,437,382.31	279,437,382.31	277,237,502.97
(156,176,442.63)	(157,300,786.08)	(158,425,129.54)	(159,549,472.99)	(160,673,816.45)	(161,798,159.91)	(162,922,503.36)	(156,278,418.67)
8,942,000.00	8,942,000.00	8,942,000.00	8,942,000.00	8,942,000.00	8,942,000.00	8,942,000.00	8,247,565.41
-	-	-	-	-	-	-	30,769.23
132,202,939.68	131,078,596.23	129,954,252.77	128,829,909.32	127,705,565.86	126,581,222.40	125,456,878.95	129,237,418.94
1,124,343.46	1,124,343.46	1,124,343.46	1,124,343.46	1,124,343.46	1,124,343.46	1,124,343.46	13,397,159.30
247,010,933.49	247,010,933.49	247,010,933.49	247,010,933.49	247,010,933.49	247,010,933.49	247,010,933.49	245,549,098.45
(105,850,500.44)	(106,743,884.09)	(107,637,267.74)	(108,530,651.38)	(109,424,035.03)	(110,317,418.68)	(111,210,802.32)	(105,861,174.68)
367,518.70	367,518.70	367,518.70	367,518.70	367,518.70	1,201,644.69	1,201,644.69	2,623,667.85
- 141,527,951.75	- 140,634,568.10	- 139,741,184.45	- 138,847,800.81	- 137,954,417.16	- 137,895,159.50	- 137,001,775.86	- 142,311,591.61
892,513.08	893,383.65	893,383.65	893,383.65	893,383.65	893,383.65	893,383.65	10,663,308.90
39,642,126.05	39,642,126.05	39,642,126.05	39,642,126.05	39,642,126.05	39,689,126.05	39,689,126.05	39,568,010.67
(14,581,436.03)	(14,738,890.20)	(14,896,344.37)	(15,053,798.54)	(15,211,252.70)	(15,368,788.34)	(15,526,405.44)	(14,582,135.78)
-	-	-	-	30,000.00	-	-	6,153.85
-	-	-	-	-	-	-	-
25,060,690.02	24,903,235.85	24,745,781.68	24,588,327.51	24,460,873.35	24,320,337.71	24,162,720.61	24,992,028.73
157,454.17	157,454.17	157,454.17	157,454.17	157,454.17	157,535.63	157,617.10	1,886,536.89
6,285.59	6,285.59	6,285.59	6,285.59	6,285.59	6,285.59	6,285.59	6,285.59
26,173.89	26,173.89	26,173.89	26,173.89	26,173.89	26,173.89	26,173.89	26,173.89
32,459.48	32,459.48	32,459.48	32,459.48	32,459.48	32,459.48	32,459.48	32,459.48
52,459.48	52,439.48	52,433.48	52,433.48	52,433.48	52,433.48	52,459.48	52,439.48

KENTUCKY UTILITIES COMPANY ELECTRIC Accumulated Deferred Taxes on Income As of June 30, 2018 Brown Combustion Turbines <u>Reg 1.167(I)-(h)(6)ii</u> (Dollars)

Line <u>No.</u>					<u>Amount</u>
1	Projected Accumulated Deferred Taxes at June 30, 2017				\$ 40,900,045
2	Projected Accumulated Deferred Taxes at June 30, 2018				 37,916,634
3	Decrease in Accumulated Deferred Taxes for the forward y	ear			\$ (2,983,411)
4	Balance June 30, 2017		Monthly Decrease	<u>Proration</u>	\$ 40,900,045
5	July 1-31, 2017	\$	(190,716)	335/365	(175,040)
6	August 1-31, 2017		(190,895)	304/365	(158,992)
7	September 1-30, 2017		(191,074)	274/365	(143,436)
8	October 1-31, 2017		(191,763)	243/365	(127,667)
9	November 1-30, 2017		(195,961)	213/365	(114,355)
10	December 1-31, 2017		(199,469)	182/365	(99,462)
11	January 1-31, 2018		(303,922)	151/365	(125,732)
12	February 1-28, 2018		(303,922)	123/365	(102,418)
13	March 1-31, 2018		(303,922)	92/365	(76,605)
14	April 1-30, 2018		(303,922)	62/365	(51,625)
15	May 1-31, 2018		(303,922)	31/365	(25,813)
16	June 1-30, 2018		(303,922)	1/365	 (833)
17	Balance June 30, 2017 plus pro rata portion of monthly dec	reases	3		\$ 39,698,067

KENTUCKY UTILITIES COMPANY ELECTRIC Accumulated Deferred Taxes on Income As of June 30, 2018 Paddy's Run Combustion Turbines <u>Reg 1.167(I)-(h)(6)ii</u> (Dollars)

Line <u>No.</u>					<u>Amount</u>
1	Projected Accumulated Deferred Taxes at June 30, 2017				\$ 8,681,054
2	Projected Accumulated Deferred Taxes at June 30, 2018				 8,170,625
3	Decrease in Accumulated Deferred Taxes for the forward y	ear			\$ (510,429)
4	Balance June 30, 2017		Monthly Decrease	<u>Proration</u>	\$ 8,681,054
5	July 1-31, 2017	\$	(40,607)	335/365	(37,269)
6	August 1-31, 2017		(40,607)	304/365	(33,820)
7	September 1-30, 2017		(40,607)	274/365	(30,483)
8	October 1-31, 2017		(40,607)	243/365	(27,034)
9	November 1-30, 2017		(40,743)	213/365	(23,776)
10	December 1-31, 2017		(40,880)	182/365	(20,384)
11	January 1-31, 2018		(44,381)	151/365	(18,360)
12	February 1-28, 2018		(44,381)	123/365	(14,956)
13	March 1-31, 2018		(44,381)	92/365	(11,186)
14	April 1-30, 2018		(44,381)	62/365	(7,539)
15	May 1-31, 2018		(44,413)	31/365	(3,772)
16	June 1-30, 2018		(44,444)	1/365	 (122)
17	Balance June 30, 2017 plus pro rata portion of monthly dec	rease	S		\$ 8,452,353

KENTUCKY UTILITIES COMPANY ELECTRIC Accumulated Deferred Taxes on Income As of June 30, 2018 Trimble Combustion Turbines <u>Reg 1.167(I)-(h)(6)ii</u> (Dollars)

Line <u>No.</u>					<u>Amount</u>
1	Projected Accumulated Deferred Taxes at June 30, 2017				\$ 44,905,370
2	Projected Accumulated Deferred Taxes at June 30, 2018				 45,143,182
3	Increase in Accumulated Deferred Taxes for the forward year	ar			\$ 237,812
4	Balance June 30, 2017	Monthly Incre	ase/Decrease	<u>Proration</u>	\$ 44,905,370
5	July 1-31, 2017	\$	109,764	335/365	100,743
6	August 1-31, 2017		109,540	304/365	91,233
7	September 1-30, 2017		109,316	274/365	82,062
8	October 1-31, 2017		106,760	243/365	71,076
9	November 1-30, 2017		104,204	213/365	60,810
10	December 1-31, 2017		103,866	182/365	51,791
11	January 1-31, 2018		(67,606)	151/365	(27,969)
12	February 1-28, 2018		(67,606)	123/365	(22,782)
13	March 1-31, 2018		(67,606)	92/365	(17,041)
14	April 1-30, 2018		(67,606)	62/365	(11,484)
15	May 1-31, 2018		(67,606)	31/365	(5,742)
16	June 1-30, 2018		(67,606)	1/365	 (185)
17	Balance June 30, 2017 plus pro rata portion of monthly incre	eases/decreases			\$ 45,277,882

Large Frame CT Labor Costs

n of Total w Labels	Column Labels 0100	0110	Grand Tota
42715: TOTAL PR13	368,350	487,655	856,00
408106	(16,797)	•	050,00
PLBB: LABOR BURDENS NON-RETIREMENT BENEFITS	(16,797)	-	(
549100	175,162	121,895	297,05
PLBB: LABOR BURDENS NON-RETIREMENT BENEFITS	22,104	19,599	41,70
PLMS: TOTAL MISCELLANEOUS LABOR	5,628	10,000	5,62
PLNB: NON BURDENABLE LABOR	(84,062)	84,062	5,02
PLOT: TOTAL OVERTIME LABOR	27,869	01,002	27,86
PLST: TOTAL STRAIGHT TIME LABOR	168,332		168,33
PNMA: ADJUSTING ENTRIES	(18,234)	18,234	100,55
PNOC: TOTAL CONTRACTOR	26,359	10,234	26,35
PNOR: TOTAL RESIDENTIAL CONTRACTORS	21,918		20,93
PNPO: PURCHASED MATERIALS - OTHERS	5,248		5,24
550100	5,706	5,058	10,76
PNMA: ADJUSTING ENTRIES	(5,058)	-	10,70
PNMA: ADJOSTING ENTITIES PNML: LEASE-RENTAL	5,514	3,038	5,51
PNML: LEASE-NEW FAL PNPV: PURCHASED VARIABLE MATERIALS	5,250		5,25
552100	25,426	22,546	5,25 47,97
PNMA: ADJUSTING ENTRIES	(22,546)	-	47,57
PNMA. ADJOSTING ENTRIES PNOC: TOTAL CONTRACTOR		22,540	
PNOC: TOTAL CONTRACTOR PNPO: PURCHASED MATERIALS - OTHERS	25,286		25,28
553010	22,686	130 765	22,68 299,54
	170,784	128,765	-
PLST: TOTAL STRAIGHT TIME LABOR PNMA: ADJUSTING ENTRIES	25,583	120 705	25,58
	(128,765)	128,765	
PNMI: INFORMATION TECHNOLOGY	80,656		80,65
	187,690		187,69
PNPO: PURCHASED MATERIALS - OTHERS	5,620	110 451	5,62
554100	81,212	119,451	200,66
PLBB: LABOR BURDENS NON-RETIREMENT BENEFITS	22,104	19,599	41,70
PLMS: TOTAL MISCELLANEOUS LABOR	5,628		5,62
PLNB: NON BURDENABLE LABOR	(84,062)	84,062	27.00
PLOT: TOTAL OVERTIME LABOR	27,869		27,86
PLST: TOTAL STRAIGHT TIME LABOR	96,812		96,81
PNMA: ADJUSTING ENTRIES	(15,790)	15,790	
PNOC: TOTAL CONTRACTOR	10,404		10,40
PNPO: PURCHASED MATERIALS - OTHERS	18,247		18,24
925002	(2,343)	-	
PLBB: LABOR BURDENS NON-RETIREMENT BENEFITS	(2,343)	2,343	
926019	(70,800)		
PLBB: LABOR BURDENS NON-RETIREMENT BENEFITS	(70,800)		
42735: TOTAL TRIMBLE COUNTY CTS	701,998	1,999,627	
408106	(59,060)		
PLBB: LABOR BURDENS NON-RETIREMENT BENEFITS	(59,060)		
548010	192,706	376,827	
PLBB: LABOR BURDENS NON-RETIREMENT BENEFITS	32,371	61,440	93,81
PLNB: NON BURDENABLE LABOR	(314,428)	314,428	
PLOT: TOTAL OVERTIME LABOR	185,648		185,64
PLST: TOTAL STRAIGHT TIME LABOR	290,074		290,07
PNMA: ADJUSTING ENTRIES	(959)	959	
553010	825,555	1,306,537	
PLBB: LABOR BURDENS NON-RETIREMENT BENEFITS	32,107	61,439	93,54
PLNB: NON BURDENABLE LABOR	(278,718)	276,720	(1,99
PLOT: TOTAL OVERTIME LABOR	112,878		112,87
PLST: TOTAL STRAIGHT TIME LABOR	313,439		313,43
PNMA: ADJUSTING ENTRIES	(968,378)	968,378	
PNOC: TOTAL CONTRACTOR	316,342		316,34
PNPO: PURCHASED MATERIALS - OTHERS	1,297,425		1,297,42
	460		46

925002	(8,244)	8,244	C
PLBB: LABOR BURDENS NON-RETIREMENT BENEFITS	(8,244)	8,244	C
926019	(248,959)	248,959	0
PLBB: LABOR BURDENS NON-RETIREMENT BENEFITS	(248,959)	248,959	C
42765: TOTAL BROWN CTS	1,162,571	3,527,449	4,690,020
408106	25,013	(25,013)	C
PLBB: LABOR BURDENS NON-RETIREMENT BENEFITS	25,013	(25,013)	C
546100	87,980	324,884	412,864
PLBB: LABOR BURDENS NON-RETIREMENT BENEFITS	16,169	64,511	80,680
PLNB: NON BURDENABLE LABOR	63,387	(63,387)	C
PLOT: TOTAL OVERTIME LABOR		47,506	47,506
PLST: TOTAL STRAIGHT TIME LABOR		268,790	268,790
PNMA: ADJUSTING ENTRIES	8,424	(8,424)	(
PNOC: TOTAL CONTRACTOR		4,884	4,884
PNPO: PURCHASED MATERIALS - OTHERS		11,004	11,004
548010		10,506	10,506
PNOC: TOTAL CONTRACTOR		10,506	10,506
549002		64,044	64,044
PNOC: TOTAL CONTRACTOR		64,044	64,044
549100	69,384	212,814	282,198
PNMA: ADJUSTING ENTRIES	69,384	(69,384)	(
PNME: EDUCATION AND TRAINING		6,582	6,582
PNMO: OTHER MISCELLANEOUS EXPENSES		26,682	26,682
PNMX: TRAVEL		6,582	6,582
PNOC: TOTAL CONTRACTOR		44,298	44,298
PNPO: PURCHASED MATERIALS - OTHERS		182,796	182,79
PNPV: PURCHASED VARIABLE MATERIALS		15,258	15,258
551100	9,506	134,412	143,918
PLBB: LABOR BURDENS NON-RETIREMENT BENEFITS	1,848	27,198	29,046
PLNB: NON BURDENABLE LABOR	7,244	(7,244)	,
PLOT: TOTAL OVERTIME LABOR	,	17,103	17,103
PLST: TOTAL STRAIGHT TIME LABOR		96,762	96,762
PNMA: ADJUSTING ENTRIES	414	(1,549)	(1,13
PNOC: TOTAL CONTRACTOR		(1)0.07	(1)100
PNPO: PURCHASED MATERIALS - OTHERS		2,142	2,142
552100	3,575	15,398	18,973
PNMA: ADJUSTING ENTRIES	3,575	(2,440)	1,13
PNOC: TOTAL CONTRACTOR	5,575	17,838	17,838
553010	809,943	1,743,309	2,553,252
PLBB: LABOR BURDENS NON-RETIREMENT BENEFITS	52,997	(52,997)	2,333,232
PLNB: NON BURDENABLE LABOR		(108,348)	(
PNMA: ADJUSTING ENTRIES	648,598	(648,598)	(59,076
PNMO: OTHER MISCELLANEOUS EXPENSES		59,076	-
PNOC: TOTAL CONTRACTOR		1,998,174	1,998,174
PNOR: TOTAL RESIDENTIAL CONTRACTORS		66,354	66,354
PNPO: PURCHASED MATERIALS - OTHERS		429,648	429,648
553100		992,756	992,756
PLBB: LABOR BURDENS NON-RETIREMENT BENEFITS		200,739	200,739
PLOT: TOTAL OVERTIME LABOR		125,417	125,41
PLST: TOTAL STRAIGHT TIME LABOR		666,600	666,600
PNOC: TOTAL CONTRACTOR		0	
554100	53,114	158,395	211,50
PNMA: ADJUSTING ENTRIES	53,114	(53,114)	
PNMW: FEES AND PERMITS		14,236	14,23
PNOC: TOTAL CONTRACTOR		118,955	118,95
PNPO: PURCHASED MATERIALS - OTHERS		78,318	78,31
925002	3,032	(3,032)	(
PLBB: LABOR BURDENS NON-RETIREMENT BENEFITS	3,032	(3,032)	(
	101,024	(101,024)	(
926019			
926019 PLBB: LABOR BURDENS NON-RETIREMENT BENEFITS	101,024	(101,024)	(

CT'S

Prop Tax Expense (in dollars \$)

Kentucky Utilities Company

	1/2 Year	1/2 Year	r 2017						
	2017	2018	July	August	September	October	November	December	
Brown	98,596	99,152	16,433	16,433	16,433	16,433	16,433	16,433	
Trimble	110,171	106,146	18,362	18,362	18,362	18,362	18,362	18,362	
Paddys 13	19,931	18,796	3,322	3,322	3,322	3,322	3,322	3,322	

Louisville Gas and Electric Company

	1/2 Year	1/2 Year			201	7		
	2017	2018	July	August	September	October	November	December
Brown	31,280	36,755	5,213	5,213	5,213	5,213	5,213	5,213
Trimble	58,272	55,531	9,712	9,712	9,712	9,712	9,712	9,712
Paddys 13	22,266	20,953	3,711	3,711	3,711	3,711	3,711	3,711

		2018	3			
January	February	March	April	May	June	Total
16,525	16,525	16,525	16,525	16,525	16,525	197,748
17,691	17,691	17,691	17,691	17,691	17,691	216,317
3,133	3,133	3,133	3,133	3,133	3,133	38,727

2018						
January	February	March	April	May	June	Total
6,126	6,126	6,126	6,126	6,126	6,126	68,035
9,255	9,255	9,255	9,255	9,255	9,255	113,803
3,492	3,492	3,492	3,492	3,492	3,492	43,219