


A Touchstone Energy Cooperative 

April 14, 2005

Ms. Beth A. O'Donnell  
Executive Director  
Kentucky Public Service Commission  
211 Sower Boulevard  
P.O. Box 615  
Frankfort, KY 40602-0615

APR 14 2005  
COMMUNICATIONS  
DIVISION

RE: Administrative Case No. 2005-00090

Dear Ms. O'Donnell:

Clark Energy is submitting our response to the Commission's March 10<sup>th</sup> data request per the Commission's March 29<sup>th</sup> order in the above referenced case. This letter and our response to the Commission's data request is being submitted by electronic mail in addition to a traditional filing of one original and ten copies to be delivered to the Commission on April 14. This letter and Clark Energy's response to the Commission's data request submitted by electronic mail in connection with Case No. 2005-00090 is a true, accurate, and complete representation of the original document.

Please contact me ([smesser@clarkenergy.com](mailto:smesser@clarkenergy.com)) at Clark Energy should you have any questions or need additional information.

Respectfully,

A handwritten signature in black ink, appearing to read "Shannon D. Messer".

Shannon D. Messer  
System Engineer

COMMONWEALTH OF KENTUCKY  
BEFORE THE  
KENTUCKY PUBLIC SERVICE COMMISSION

REC'D

APR 14 2005

PUBLIC SERVICE  
COMMISSION

IN THE MATTER OF:

THE RESPONSE OF CLARK ENERGY COOPERATIVE, INC. OF )  
WINCHESTER, KENTUCKY, TO THE COMMISSION'S )  
ADMINISTRATIVE CASE ORDER ON THE ASSESSMENT OF )  
KENTUCKY'S ELECTRIC GENERATION, TRANSMISSION, AND )  
DISTRIBUTION NEEDS )

CASE NO. 2005-00090

**RESPONSE TO DATA REQUEST OF COMMISSION STAFF DATED MARCH 10, 2005**

Clark Energy Cooperative, Inc. of Winchester, Kentucky, hereinafter referred to as "Clark", respectfully submits the following responses to the Commission's information request of March 10, 2005:

Question 1: Provide a summary description of your utility's resource planning process. This should include discussion of generation, transmission, demand-side, and distribution resource planning.

Answer: Clark Energy, an electric distribution cooperative, routinely develops distribution plans to reliably serve the needs of a growing membership. We first anticipate long-term distribution needs by preparing long range plans. Construction work plans are periodically prepared as short-term action plans to implement long range plan goals and recommendations. RUS traditionally requires cooperative borrowers develop twenty (20) year long range plans as a supporting foundation study or road map for specific system improvement projects recommended within a construction work plan. Clark Energy, however, believes planning horizons of twenty or more years are impractical for prioritizing today's business challenges except where large costs such as substation and transmission versus distribution investment are being considered for evaluation. A five-year planning horizon offers Clark Energy a better management tool to more frequently assess anticipated present and long-term distribution system needs. RUS requires long range plans and construction work plans be based on a current load forecast study or Power Requirements Study (PRS) to anticipate future member needs and growth. Clark Energy management and staff participate with East Kentucky Power Cooperative (EKP) staff to regularly revise the PRS. Clark Energy's current 2008 Long Range Plan (LRP) and 2003-2005 Construction Work Plan (CWP) are based on the 2002 PRS, the most recently available PRS when the LRP and CWP were prepared. Clark Energy's 2008 LRP and 2003-2005 CWP were filed in support of an Application for a Certificate of Convenience and Necessity in Case No. 2003-00016, which was granted by the Commission's order of December 18, 2003.

Clark Energy's current 2008 LRP identifies long-term distribution system needs, routine plant changes and proposed substations over a five-year planning horizon through 2008. Similarly, Clark Energy's 2003-2005 CWP, which is part of the same planning document, is the initial action plan to begin implementing LRP recommendations and anticipates system improvements required to serve a forecast short-term design load. Other short-term needs and equipment are also included within the CWP to improve power factor, regulation and sectionalization. A majority of CWP costs involves routine activities such as new service construction, service upgrades, pole and primary conductor replacements, meters, transformers and security lights. New substations are evaluated over a longer twenty year period to ensure that the best least cost alternatives are selected. Future CWPs based on a LRP revised every five years and a regularly prepared PRS allows load growth trends be more closely monitored and member needs be addressed more frequently using better quality information.

All distribution improvement projects, programs and activities recommended within the LRP, CWP and substation studies are consistent with design criteria necessary to plan for an orderly expansion of the electric system. Similarly, these planning criteria are used to identify needs so that the distribution system is not over-built or under-built, i.e. projects are built on-time to meet forecast load growth. Specifically, proposed system improvements and substations are investigated from an analysis developed to review the adequacy of the electric system at summer and winter design loads. Data needed for LRP, CWP and substation studies is obtained from billing systems, mapping models, system peak demand history and the PRS. So, preparation of all LRP, CWP and substation recommendations are based on the adequacy of the electric system to serve members' needs at design load that meet all design criteria. Planning or design criteria used within development of all LRP, CWP and substation evaluation studies include a variety of voltage, circuit loading, sectionalizing, reliability and economic criteria.

Additional details of Clark Energy's resource planning process and planning criteria are referenced as follows within the 2008 LRP and 2003-2005 CWP on file with the Commission:

- Section 1 Executive Summary (pp 1-2).
- Section 3 Review of 2002 Power Requirements Study (pp 9-11).
- Section 4 Preparation of LRP, CWP and Substation Evaluation Design (pp 12-20).

Respondent: Shannon D. Messer, Clark Energy

Question 2: Are new technologies for improving reliability, efficiency and safety investigated and considered for implementation in your power generation, transmission and distribution system?

- a) If yes, discuss the new technologies that were considered in the last 5 years and indicate which, if any, were implemented.
- b) In no, explain in detail why new technologies are not considered.

Answer: Clark Energy has adopted a variety of new technologies to improve distribution operations. The Hunt Turtle™ automated meter reading (AMR) system now provides frequent reads of customer power usage in addition to a variety of other information about customer end-use patterns and the distribution system. Power Delivery Associates' (PDA) OriginGIS™ mapping system has replaced the former Gentry GenMap™ system and now provides all automated mapping needs based on an ESRI™ software technology platform. Similarly, data from mapping, customer information and billing systems are exported to Milsoft WindMil™ software to model the distribution system. The OriginGIS and WindMil software platforms and existing customer information system data also provide the foundation for Milsoft's DisSPatch™ outage management system (OMS), which was installed in December 2003. The new OMS improves the ability of Clark Energy staff to manage outages, better allocate resources during outages and improve post-outage reporting.

Additional information about new technologies and processes are referenced as follows within the 2008 LRP and 2003-2005 CWP on file with the Commission:

- Section 2.2 Operations and Maintenance Survey.

Respondent: Shannon D. Messer, Clark Energy

Question 3: Is your utility researching any renewable fuels for generating electricity?

- a) If so, what fuels are being researched?
- b) What obstacles need to be overcome to implement the new fuels?

Answer: Clark Energy is an electric distribution cooperative and the question is not applicable.

Respondent: Shannon D. Messer, Clark Energy

Question 4: Provide actual and weather-normalized annual native load energy sales for calendar years 2000 through 2004. Provide actual annual off-system energy sales for this period disaggregated into full requirements sales, firm capacity sales, and non-firm or economy energy sales. Off-system sales should be further disaggregated to show separately those sales in which your utility acts as a reseller, or transporter, in a power transaction between two or more other parties

Answer: Clark Energy is an electric distribution cooperative and the question is not applicable.

Respondent: Shannon D. Messer, Clark Energy

Question 5: Provide actual and weather-normalized annual coincident peak demands for calendar years 2000 through 2004 disaggregated into (a) native load demand, firm and non-firm; and (b) off-system demand, firm and non-firm.

Answer: All Clark Energy load is native, firm load distribution demand of end-use customers. A summary of actual and weather-normalized coincident peak demands for the requested period is provided within the table below.

Actual and Weather-Normalized Annual Coincident Peak Demands					
Annual Peak	Actual Peak Demand (MW)	Weather Response Function (MW / Degree)	Actual Peak Day Temperature (Degrees F)	Normal Peak Day Temperature (Degrees F)	Weather Normalized Peak Demand (MW)
Dec-00	94.1	-1.02	1	-3	98.2
Jan-01	95.5	-1.11	5	-3	104.4
Mar-02	88.9	-1.11	11	-3	104.5
Jan-03	106.6	-1.11	-7	-3	102.1
Jan-04	107.5	-1.12	6	-3	117.5
<i>Based on Lexington KY Weather Station Data and Clark Energy Hourly Load Data</i>					

Additional information about historical or actual peak demands are referenced as follows within the 2008 LRP and 2003-2005 CWP on file with the Commission:

- Section 3 Review of 2002 Power Requirements Study (pp 9-11).
- Section 4.2 Substation Demand Allocations (pp 12-14).

Historical demand data is also provided within the Monthly Peaks and Output section (Ref page 17) of all Clark Energy Annual Reports to the Public Service Commission.

Respondent: Shannon D. Messer, Clark Energy and Jim Lamb, East Kentucky Power Cooperative

Question 6: Provide a summary of monthly power purchases for calendar years 2000 through 2004 disaggregated into firm capacity purchases required to serve native load, economy energy purchases, and purchases in which your utility acts as a reseller, or transporter, in a power transaction between two or more other parties. Include the average cost per megawatt-hour for each purchase category.

Answer: Clark Energy is an electric distribution cooperative and the question is not applicable.

Respondent: Shannon D. Messer, Clark Energy

Question 7: Provide the most current base case and high case demand and energy forecasts for the period 2005 through 2025, if available. If the current forecast does not extend to 2025, provide forecast data for the longest forecast period available. The information should be disaggregated into (a) native load, firm and non-firm demand; and (b) off-system load, both firm and non-firm demand.

Answer: Clark Energy is an electric distribution cooperative and the question is not applicable.

Respondent: Shannon D. Messer, Clark Energy

Question 8: Provide the target reserve margin currently used for planning purposes, stated as a percentage of demand, and a summary of your utility's most recent reserve margin study. If this target reserve margin has changed since 2002, provide the prior target reserve margin and explain the reasons for the change. If the target reserve margin is expected to be reevaluated in the next 3 years, explain the reasons for the reevaluation.

Answer: Clark Energy is an electric distribution cooperative and the question is not applicable.

Respondent: Shannon D. Messer, Clark Energy

Question 9: For the period 2005 through 2025, provide projected reserve margins stated in megawatts ("MW") and as a percentage of demand. Identify projected deficits and current plans for addressing these deficits.

Answer: Clark Energy is an electric distribution cooperative and the question is not applicable.

Respondent: Shannon D. Messer, Clark Energy

Question 10: Provide the following information for every generation station operated in Kentucky.

- a) Name:
- b) Location (including county).
- c) Number of units.
- d) Date in service for each unit.
- e) Type of fuel for each unit
- f) Net rating (MW) for each unit.
- g) Emission control equipment in service (list by type).
- h) Date emission control in service.

Answer: Clark Energy is an electric distribution cooperative and the question is not applicable.

Respondent: Shannon D. Messer, Clark Energy

Question 11: Provide a summary of any planned base load or peaking capacity additions to meet native load requirements in the years 2005 through 2025. Include capacity additions by the utility, and those by affiliates, if constructed in Kentucky or intended to meet load in Kentucky.

Answer: Clark Energy is an electric distribution cooperative and the question is not applicable.

Respondent: Shannon D. Messer, Clark Energy

Question 12: What is the estimated capital cost per KW and energy cost per kWh for new generation by technology?

Answer: Clark Energy is an electric distribution cooperative and the question is not applicable.

Respondent: Shannon D. Messer, Clark Energy

Question 13: If current plans for addressing projected capacity deficits include the addition of gas-fired generation, describe the extent to which fluctuations in natural gas prices have been incorporated into these plans. Explain how fluctuations in natural gas prices may have altered the results of previous plans.

Answer: Clark Energy is an electric distribution cooperative and the question is not applicable.

Respondent: Shannon D. Messer, Clark Energy

Question 14: Provide a summary of any permanent reductions in utilization of generation capacity due to Clean Air Act compliance from 2000 through 2004. Identify and describe and forecasted reductions during 2005 through 2025 period.

Answer: Clark Energy is an electric distribution cooperative and the question is not applicable.

Respondent: Shannon D. Messer, Clark Energy

Question 15: Provide a summary of all forced outages and generation capacity retirements occurring during the years 2000 through 2004.

Answer: Clark Energy is an electric distribution cooperative and the question is not applicable.

Respondent: Shannon D. Messer, Clark Energy

Question 16: Provide a summary of the utility's plan for the retirement of existing generating capacity during the 2005 through 2025 period.

Answer: Clark Energy is an electric distribution cooperative and the question is not applicable.

Respondent: Shannon D. Messer, Clark Energy

Question 17: Provide a summary description of your utility's existing demand-side management ("DSM") programs, which includes:

- a) Annual DSM budget,
- b) Demand and energy impacts.
- c) The currently scheduled termination dates for the programs.

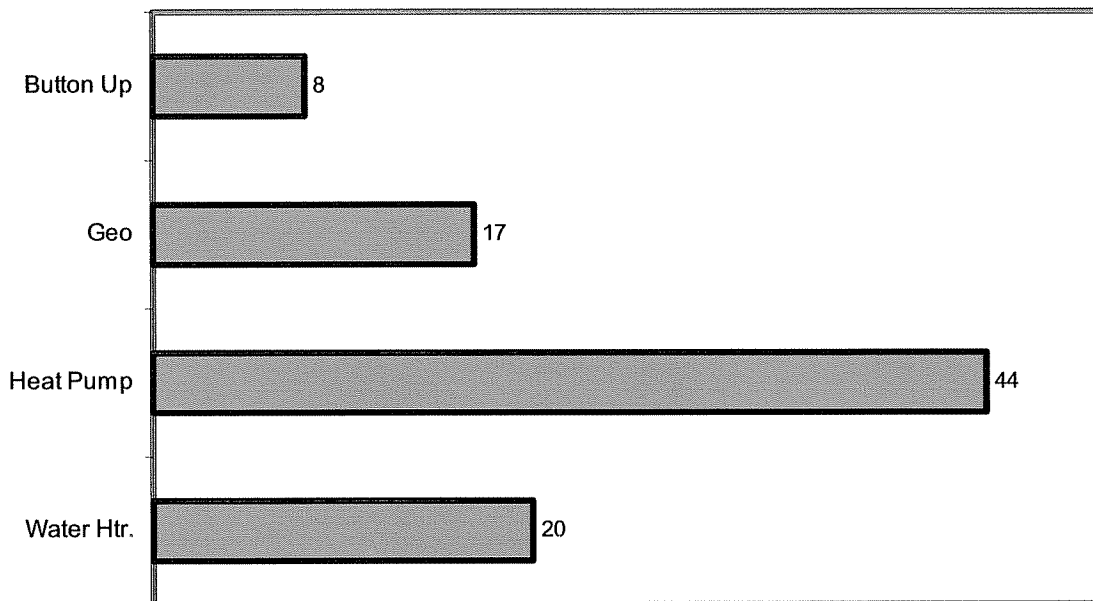
Answer: Clark Energy and East Kentucky Power Cooperative (EKP) staffs participate in jointly developing a variety of DSM programs. DSM programs are exclusively residential and almost always involve improving the efficiency of water heating and HVAC systems. These programs are generally implemented by Clark Energy with support provided by EKP.

DSM programs currently in place are as follows:

- 1. Air-Source Heat Pump Incentive
- 2. Button Up Weatherization
- 3. Electric Water Heater Incentive
- 4. Geothermal Heating and Cooling

The number of customers participating in Clark Energy and EKP DSM programs during 2004 is illustrated within the following graph.

**DSM Program Participation During 2004**





A brief description of these DSM programs are as follows:

Button Up Weatherization Program

The weatherization program requires the installation of insulation materials or the use of other weatherization techniques to reduce heat loss in the home. Any retail member living in a stick-built or manufactured home that is at least two years old and uses electric as the primary source of heat is eligible.

Air-Source Heat Pump Incentive

The heat pump program promotes efficient air-source heat pumps. The primary targets for this program are retail members building new homes in areas where natural gas heat is an option. An important secondary target is the HVAC retrofit market by offering incentives to retail members to replace electric furnaces and gas or propane heat with high-efficiency electric heat pumps.

Electric Water Heater Incentive

The electric water heater incentive is designed to encourage residential customers engaged in new construction to choose a high-efficiency electric water heater over other available options. The incentive is also designed to encourage conversion from a fossil-fuel water heater to a high-efficiency electric water heater.

Geothermal Heating and Cooling

Traditional air-source heat pumps remove heat from the air. Geothermal heating is a heat pump that removes heat from the ground. Geothermal appliances provide very efficient heating and cooling. EKP and its member systems pioneered the development and implementation of geothermal heating and cooling during the 1980s and 1990s.

**Annual Budget and Program Impacts on Demand & Energy per Installation**

	Energy Impact (kWh)	Impact On Winter Peak (kW)	Impact On Summer Peak (kW)
Button Up	(2,700)	(2.7)	(1.0)
Geothermal	(6,000)	(3.5)	(1.5)
Efficient Heat Pump In New Construction	(925)	2.5**	(1.0)
Efficient Water Heater	700**	0.2**	0.1**

\*\* Impacts are positive due to customers who normally would have chosen natural gas

Annual budgets are a function of administrative cost and incentive payments. EKP administrative costs and typical administrative costs and incentive payments provided by EKP member systems are illustrated within the table below.

	EKP Admin Costs	Dist Coop Admin Costs*	Incentive Payment
Button Up	\$32	\$163	Up to \$600
Geothermal Energy Home	\$17	\$254	\$900
Efficient Heat Pump In New Construction	\$13	\$182	\$300
Efficient Water Heater	\$8	\$61	\$200

\*Costs are averages of all participating member distribution cooperatives, which vary by cooperative.

Additional information about DSM programs is provided within Appendix II of EKP's current Integrated Resource Plan (IRP) dated April 21, 2003, submitted to the Commission in Case No. 2003-00051.

Respondent: Shannon D. Messer, Clark Energy and Jim Lamb, East Kentucky Power Cooperative

Question 18: Provide your utility's definition of "transmission" and "distribution."

Answer: Clark Energy's definition of "distribution" coincides with IEEE Guide for Electric Power Distribution Reliability Indices (IEEE Standard 1366-2003), i.e. Clark Energy defines "distribution" as all facilities outside the substation fence to the end-use customer's delivery point. Alternately, all other facilities owned by East Kentucky Power Cooperative inside the distribution substation fence to the generating source are considered "transmission".

Respondent: Shannon D. Messer, Clark Energy

Question 19: Identify all utilities with which your utility is interconnected and the transmission capacity at all points of interconnection.

Answer: Clark Energy is an electric distribution cooperative and the question is not applicable.

Respondent: Shannon D. Messer, Clark Energy

Question 20: Provide the peak hourly MW transfers into and out of each interconnection for each month of the last 5 years. Provide the date and time of each peak.

Answer: Clark Energy is an electric distribution cooperative and the question is not applicable.

Respondent: Shannon D. Messer, Clark Energy

Question 21: Identify any areas on your utility's system where capacity constraints, bottlenecks, or other transmission problems have been experienced from January 1, 2003 until the present date. Identify all incidents of transmission problems by date and hour, with a brief narrative description of the nature of the problem. Provide the MW transfers for each of your utility's interconnections for these times.

Answer: Clark Energy is an electric distribution cooperative and the question is not applicable.

Respondent: Shannon D. Messer, Clark Energy

Question 22: Provide details of any planned transmission capacity additions for the 2005 through 2025 period. If the transmission capacity additions are for existing or expected constrains, bottlenecks, or other transmission problems, identify the problem the addition is intended to address.

Answer: Clark Energy is an electric distribution cooperative and the question is not applicable.

Respondent: Shannon D. Messer, Clark Energy

Question 23: Is your utility researching or considering methods of increasing transmission capacity of existing transmission routes? If yes, discuss those methods.

Answer: Clark Energy is an electric distribution cooperative and the question is not applicable.

Respondent: Shannon D. Messer, Clark Energy

Question 24: Provide copies of any reports prepared by your utility or for your utility that analyze the capabilities of the transmission system to meet present and future needs for import and export of capacity.

Answer: Clark Energy is an electric distribution cooperative and the question is not applicable.

Respondent: Shannon D. Messer, Clark Energy

Question 25: Provide the following transmission energy data forecast for the years 2005 through 2025.

- a) Total energy received from all interconnections and generation sources connected to your transmission system.
- b) Total energy delivered to all interconnections on your transmission system.
- c) Peak demand for summer and winter seasons on your transmission system.

Answer: Clark Energy is an electric distribution cooperative and the question is not applicable.

Respondent: Shannon D. Messer, Clark Energy

Question 26: Provide the yearly System Average Interruption Duration Index ("SAIDI") and the System Average Interruption Frequency Index ("SAIFI"), excluding major outages, by feeder for each distribution substation on your system for the last 5 years.

Answer: Clark Energy did not record outage data by substation and feeder prior to the installation of an outage management system (OMS) in December 2003. IEEE Guide for Electric Power Distribution Reliability Indices (IEEE Standard 1366-2003) provides a methodology for analysis of daily SAIDI data to determine a threshold for identifying major outages or major event days (MED) in lieu of using an arbitrary definition of "major outages". Based on the first 15-months (i.e. January 2004-March 2005) of outage data tracked by Clark Energy's OMS, the threshold ( $T_{MED}$ ) value to identify major event days is presently 12-minutes. Any daily SAIDI greater than 12-minutes over this 15-month period is currently classified by Clark Energy as a major event day (MED) as defined by IEEE Standard 1366-2003. Only one MED occurred over this period, i.e. on May 27, 2004 because of widespread thunderstorm activity, which is less than the Commission's definition of "reportable" outages. Outage data is regularly reviewed and a new  $T_{MED}$  threshold value used to identify major event days is calculated monthly based on daily outage history available from the OMS. Monthly revision of the  $T_{MED}$  value will eventually be based on the most recent 60-months of available OMS data as recommended by IEEE Standard 1366-2003.

Outage data (minutes) for calendar year 2004, excluding major event days (MED) as defined by IEEE Standard 1366-2003 is provided on page 12 of this response. A traditional system-wide outage summary (hours), with and without "major storms", for years prior to 2004 is provided on page 14 of this response.

Respondent: Shannon D. Messer, Clark Energy

Question 27: Provide the yearly SAIDI and SAIFI, including major outages, by feeder for each distribution substation on your system for the last 5 years. Explain how you define major outages.

Answer: Refer to Clark Energy's answer to Question No. 26 above of this response.

Outage data (minutes) for calendar year 2004, including major event days (MED) as defined by IEEE Standard 1366-2003 is provided on page 13 of this response. A traditional system-wide outage summary (hours), with and without "major storms", for years prior to 2004 is provided on page 14 of this response.

Respondent: Shannon D. Messer, Clark Energy

iYear	2004
> TMED	No-Major Event Day

		Feeder2					
Substation	Data	1	2	3	4	SUB	Grand Total
FRENCHBURG	Sum of SAIDI	6.73	1.56	2.44	11.41	7.65	29.79
	Sum of SAIFI	0.04	0.02	0.02	0.22	0.34	0.64
	Sum of CAIDI	150.96	97.97	121.34	51.50	22.77	46.69
HUNT	Sum of SAIDI	7.51	0.81	10.64	7.07		26.03
	Sum of SAIFI	0.11	0.01	0.11	0.08		0.31
	Sum of CAIDI	67.13	110.46	97.14	87.79		84.16
BOWEN	Sum of SAIDI	2.46	0.15	11.38			13.99
	Sum of SAIFI	0.01	0.00	0.06			0.08
	Sum of CAIDI	194.04	80.51	179.34			179.33
CLAY CITY	Sum of SAIDI	2.19	5.18		0.63	3.33	11.34
	Sum of SAIFI	0.02	0.10		0.01	0.11	0.25
	Sum of CAIDI	98.40	50.35		115.55	29.00	46.20
JEFFERSONVILLE	Sum of SAIDI	2.11	1.62			6.65	10.38
	Sum of SAIFI	0.03	0.01			0.11	0.15
	Sum of CAIDI	83.01	120.23			60.98	70.18
SIDEVIEW	Sum of SAIDI	3.23	1.62	1.08	4.08		10.01
	Sum of SAIFI	0.06	0.02	0.03	0.07		0.17
	Sum of CAIDI	56.22	79.93	38.60	61.34		58.14
BLEVINS VALLEY	Sum of SAIDI	2.31	5.79	0.67			8.77
	Sum of SAIFI	0.04	0.08	0.01			0.12
	Sum of CAIDI	62.15	74.37	78.73			71.00
UNION CITY	Sum of SAIDI	1.41	4.40	0.33	0.15	1.82	8.11
	Sum of SAIFI	0.01	0.05	0.00	0.00	0.05	0.11
	Sum of CAIDI	102.45	95.34	124.91	52.82	40.00	73.16
HOPE	Sum of SAIDI	0.78	1.71	3.40			5.90
	Sum of SAIFI	0.01	0.02	0.06			0.09
	Sum of CAIDI	81.79	107.17	55.68			68.05
REID VILLAGE	Sum of SAIDI	4.65	0.58				5.23
	Sum of SAIFI	0.05	0.01				0.06
	Sum of CAIDI	88.13	83.24				87.56
STANTON	Sum of SAIDI	1.73	0.06	2.01	0.71		4.51
	Sum of SAIFI	0.03	0.00	0.02	0.02		0.06
	Sum of CAIDI	66.44	33.88	122.39	43.20		74.36
MARIBA	Sum of SAIDI	0.09	0.33	0.85	0.84	1.48	3.59
	Sum of SAIFI	0.00	0.00	0.01	0.01	0.06	0.09
	Sum of CAIDI	37.69	87.37	78.82	81.72	23.50	39.72
TRAPP	Sum of SAIDI	0.35	0.50	1.63		0.84	3.31
	Sum of SAIFI	0.00	0.01	0.01		0.03	0.05
	Sum of CAIDI	70.55	88.81	176.84		29.00	68.08
HIGH ROCK	Sum of SAIDI	3.10					3.10
	Sum of SAIFI	0.03					0.03
	Sum of CAIDI	104.60					104.60
THREE FORKS	Sum of SAIDI	1.09	1.16	0.38			2.62
	Sum of SAIFI	0.01	0.03	0.00			0.04
	Sum of CAIDI	107.19	44.41	132.58			67.14
HINKSTON	Sum of SAIDI	0.42				2.04	2.46
	Sum of SAIFI	0.01				0.02	0.02
	Sum of CAIDI	57.87				128.00	106.13
MT. STERLING	Sum of SAIDI	0.07	0.92	1.45			2.45
	Sum of SAIFI	0.00	0.01	0.01			0.02
	Sum of CAIDI	51.46	105.06	98.23			97.99
CAVE RUN	Sum of SAIDI	1.98	0.02			0.37	2.36
	Sum of SAIFI	0.02	0.00			0.01	0.03
	Sum of CAIDI	122.25	48.91			31.00	83.26
VAN METER	Sum of SAIDI	0.07	0.04	1.33			1.44
	Sum of SAIFI	0.00	0.00	0.01			0.01
	Sum of CAIDI	72.08	57.33	110.88			105.31
TREEHAVEN	Sum of SAIDI		0.17	0.08	0.28		0.53
	Sum of SAIFI		0.00	0.00	0.00		0.01
	Sum of CAIDI		35.08	87.00	104.86		63.35
Total Sum of SAIDI							155.94
Total Sum of SAIFI							2.34
Total Sum of CAIDI							66.68

iYear	2004
> TMED	(All)

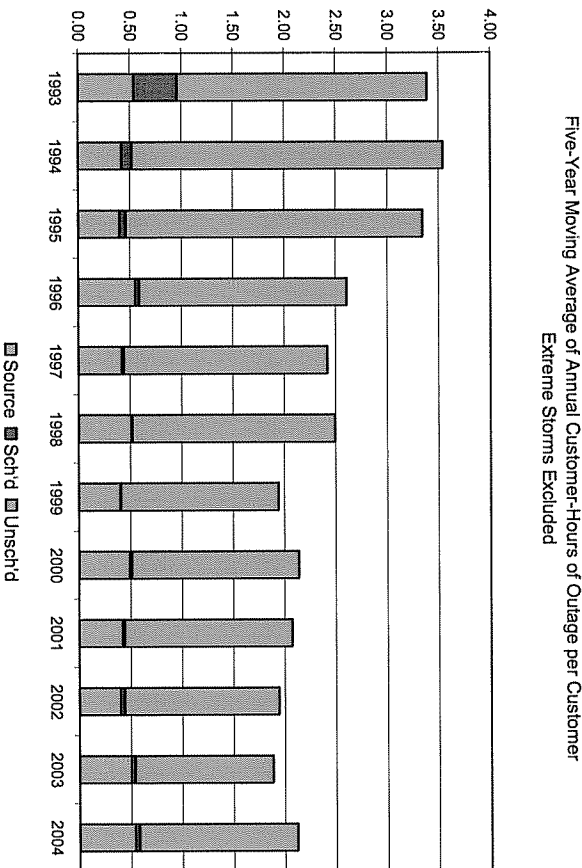
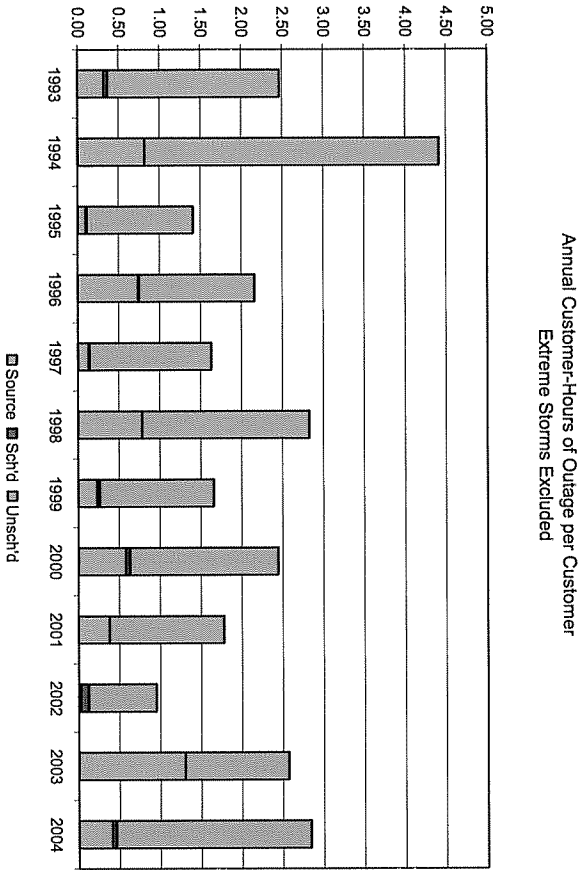
		Feeder2						
Substation	Data	1	2	3	4	SUB	Grand Total	
FRENCHBURG	Sum of SAIDI	6.73	1.56	2.44	11.41	7.65	29.79	
	Sum of SAIFI	0.04	0.02	0.02	0.22	0.34	0.64	
	Sum of CAIDI	150.96	97.97	121.34	51.50	22.77	46.69	
HUNT	Sum of SAIDI	7.71	0.81	10.64	7.10		26.26	
	Sum of SAIFI	0.11	0.01	0.11	0.08		0.31	
	Sum of CAIDI	68.49	110.46	97.14	88.01		84.68	
BOWEN	Sum of SAIDI	3.47	0.43	12.40			16.31	
	Sum of SAIFI	0.02	0.00	0.06			0.08	
	Sum of CAIDI	223.09	162.98	192.59			197.38	
CLAY CITY	Sum of SAIDI	4.45	6.19		0.63	3.33	14.60	
	Sum of SAIFI	0.03	0.11		0.01	0.11	0.26	
	Sum of CAIDI	141.54	58.49		115.55	29.00	56.72	
JEFFERSONVILLE	Sum of SAIDI	2.14	4.56			6.65	13.35	
	Sum of SAIFI	0.03	0.03			0.11	0.17	
	Sum of CAIDI	82.97	134.98			60.98	79.16	
SIDEVIEW	Sum of SAIDI	3.23	1.65	1.14	4.11		10.13	
	Sum of SAIFI	0.06	0.02	0.03	0.07		0.17	
	Sum of CAIDI	56.22	80.32	39.13	61.48		58.23	
UNION CITY	Sum of SAIDI	1.41	5.53	0.33	0.15	1.82	9.24	
	Sum of SAIFI	0.01	0.05	0.00	0.00	0.05	0.12	
	Sum of CAIDI	102.45	109.20	124.91	52.82	40.00	80.10	
BLEVINS VALLEY	Sum of SAIDI	2.31	5.79	0.67			8.77	
	Sum of SAIFI	0.04	0.08	0.01			0.12	
	Sum of CAIDI	62.15	74.37	78.73			71.00	
STANTON	Sum of SAIDI	1.73	0.06	2.21	3.86		7.86	
	Sum of SAIFI	0.03	0.00	0.02	0.04		0.08	
	Sum of CAIDI	66.44	33.88	128.85	100.26		94.24	
HOPE	Sum of SAIDI	0.78	1.71	3.54			6.03	
	Sum of SAIFI	0.01	0.02	0.06			0.09	
	Sum of CAIDI	81.79	107.17	57.63			69.39	
REID VILLAGE	Sum of SAIDI	4.65	0.58				5.24	
	Sum of SAIFI	0.05	0.01				0.06	
	Sum of CAIDI	88.23	83.24				87.65	
TRAPP	Sum of SAIDI	0.71	0.82	1.63		0.84	3.99	
	Sum of SAIFI	0.01	0.01	0.01		0.03	0.05	
	Sum of CAIDI	104.18	123.04	176.84		29.00	77.46	
MARIBA	Sum of SAIDI	0.23	0.33	0.85	0.84	1.48	3.73	
	Sum of SAIFI	0.01	0.00	0.01	0.01	0.06	0.10	
	Sum of CAIDI	31.23	87.37	78.82	81.72	23.50	39.11	
HIGH ROCK	Sum of SAIDI	3.27					3.27	
	Sum of SAIFI	0.03					0.03	
	Sum of CAIDI	109.44					109.44	
THREE FORKS	Sum of SAIDI	1.09	1.16	0.38			2.62	
	Sum of SAIFI	0.01	0.03	0.00			0.04	
	Sum of CAIDI	107.19	44.41	132.58			67.14	
HINKSTON	Sum of SAIDI	0.42				2.04	2.46	
	Sum of SAIFI	0.01				0.02	0.02	
	Sum of CAIDI	57.87				128.00	106.13	
MT. STERLING	Sum of SAIDI	0.07	0.92	1.45			2.45	
	Sum of SAIFI	0.00	0.01	0.01			0.02	
	Sum of CAIDI	51.46	105.06	98.23			97.99	
CAVE RUN	Sum of SAIDI	1.98	0.02			0.37	2.36	
	Sum of SAIFI	0.02	0.00			0.01	0.03	
	Sum of CAIDI	122.25	48.91			31.00	83.26	
VAN METER	Sum of SAIDI	0.07	0.04	1.33			1.44	
	Sum of SAIFI	0.00	0.00	0.01			0.01	
	Sum of CAIDI	72.08	57.33	110.88			105.31	
TREEHAVEN	Sum of SAIDI		0.17	0.08	0.28		0.53	
	Sum of SAIFI		0.00	0.00	0.00		0.01	
	Sum of CAIDI		35.08	87.00	104.86		63.35	
Total Sum of SAIDI								170.43
Total Sum of SAIFI								2.41
Total Sum of CAIDI								70.60

Service Interruptions - Annual Customer-Hours Per Customer									
Year	Avg No. of Customers	EKP Outages	Scheduled Outages	Unscheduled Outages	Extreme Storms	Total w/ Storms	Total w/o Storms	Extreme Storms	Total w/o Storms
1992	17810	0.77	0.11	1.72	0.00	2.60	2.60	0.00	2.60
1993	18403	0.32	0.05	2.10	0.00	2.47	2.47	0.00	2.47
1994	19014	0.82	0.00	3.59	27.17	31.58	4.41	27.17	4.41
1995	19745	0.10	0.23	1.30	0.23	1.64	1.41	0.23	1.64
1996	20363	0.74	0.01	1.41	0.00	2.16	2.16	0.00	2.16
1997	21138	0.13	0.01	1.49	0.00	1.63	1.63	0.00	1.63
1998	21901	0.78	0.00	2.05	12.69	15.52	2.83	12.69	2.83
1999	22464	0.23	0.03	1.40	0.00	1.66	1.66	0.00	1.66
2000	22916	0.58	0.05	1.81	0.00	2.44	2.44	0.00	2.44
2001	23427	0.38	0.00	1.40	0.00	1.78	1.78	0.00	1.78
2002	23977	0.02	0.10	0.83	0.00	0.95	0.95	0.00	0.95
2003	24376	1.30	0.00	1.27	9.06	11.63	2.57	9.06	2.57
2004	24796	0.41	0.05	2.38	0.00	2.84	2.84	0.00	2.84

Service Interruptions - Moving Five-Year Average of Annual Customer-Hours Per Customer									
Year	Avg No. of Customers	EKP Outages	Scheduled Outages	Unscheduled Outages	Extreme Storms	Total w/ Storms	Total w/o Storms	Extreme Storms	Total w/o Storms
1992	16895	0.70	0.42	2.39	0.00	3.51	3.51	0.00	3.51
1993	17359	0.54	0.42	2.43	0.00	3.39	3.39	0.00	3.39
1994	17864	0.42	0.10	3.02	5.43	8.97	3.54	5.43	8.97
1995	18438	0.40	0.06	2.88	5.48	8.82	3.34	5.48	8.82
1996	19067	0.55	0.04	2.02	5.48	8.09	2.61	5.48	8.09
1997	19733	0.42	0.02	1.98	5.48	7.90	2.42	5.48	7.90
1998	20432	0.51	0.01	1.97	8.02	10.51	2.49	8.02	10.51
1999	21122	0.40	0.01	1.53	2.58	4.52	1.94	2.58	4.52
2000	21756	0.49	0.02	1.63	2.54	4.68	2.14	2.54	4.68
2001	22369	0.42	0.02	1.63	2.54	4.61	2.07	2.54	4.61
2002	22937	0.40	0.04	1.50	2.54	4.48	1.94	2.54	4.48
2003	23432	0.50	0.04	1.34	1.81	3.69	1.88	1.81	3.69
2004	23898	0.54	0.04	1.54	1.81	3.93	2.12	1.81	3.93

Notes: Extreme storms not reported before 1994, 1994, 1998, and 2003 storm totals are attributed to three ice storms (Feb-Mar 1994, Feb 2003) and a March 1998 snowstorm.

Notes: Extreme storms not reported before 1994, 1994, 1998, and 2003 storm totals are attributed to three ice storms (Feb-Mar 1994, Feb 2003) and a March 1998 snowstorm.



Notes: Milsoft DisSPatch™ outage management system deployed in December 2003, First full year of OMS operation was 2004. Increase in 2004 outages attributed to improved accuracy of outage information.

Question 28: What is an acceptable value for SAIDI and SAIFI? Explain how it was derived?

Answer: Refer to Clark Energy's answer to Question No. 26 above of this response.

RUS has traditionally regarded an annual SAIDI of five-hours per customer to be an acceptable indicator of good reliability. An annual SAIDI value of three-hours per customer without major storms is an arbitrary reliability goal appearing within Clark Energy's 2008 LRP and 2003-2005 CWP. Clark Energy now measures reliability indices consistent with IEEE Standard 1366-2003.

Additional information about reliability is referenced as follows within the 2008 LRP and 2003-2005 CWP on file with the Commission:

- Section 2.2 Operations and Maintenance Survey (pp 3-5).

Respondent: Shannon D. Messer, Clark Energy

Question 29: Provide the yearly Customer Average Interruption Duration Index ("CAIDI") and the Customer Average Interruption Frequency Index ("CAIFI"), including and excluding major outages, on your system for the last five years. What is an acceptable value for CAIDI and CAIFI? Explain how it was derived.

Answer: Refer to Clark Energy's answers to Questions No. 26, 27 and 28 above of this response. Clark Energy's outage management system (OMS) only tracks SAIDI, SAIFI, and CAIDI for outage events. The OMS does not track outage statistics for CAIFI.

Respondent: Shannon D. Messer, Clark Energy

Question 30: Identify and describe all reportable distribution outages from January 1, 2003 until the present date. Categorize the causes and provide the frequency of occurrence for each cause category.

Answer: A "reportable" distribution outage is defined by the Commission within 807 KAR 5:006 (General Rules, Section 26(1)(c)). The Commission defines "reportable" outages to be an interruption of service for four or more hours to ten-percent or 500 or more customers, whichever is less. Clark Energy's only "reportable" distribution outage over the period requested by the Commission occurred during the February 2003 ice storm. A report on Clark Energy's response to the February 2003 ice storm was filed with the Commission on May 15, 2003.

Respondent: Shannon D. Messer, Clark Energy



Question 31: Does your utility have a distribution and/or transmission reliability improvement program?

- a) How does your utility measure reliability?
- b) How is the program monitored?
- c) What are the results of the system?
- d) How are proposed improvements for reliability approved and implemented?

Answer: Clark Energy's reliability improvement program consists of a variety of complementary tasks and activities involving O&M, right-of-way, pole inspection and treatment, sectionalization, and system improvements including new substations. Reliability improvements cannot be specifically attributed to any one task or activity, but their combined impact on total distribution reliability is believed by Clark Energy management and staff to be greater than the sum of the individual tasks or activities. Similarly, Clark Energy management and staff believe outages in recent years may have been more frequent or of longer duration without these proactive and complementary activities. A brief overview of these activities is provided below:

- O&M activities are regularly scheduled to inspect distribution facilities. An annual inspection survey of half the distribution system searches for acute problems not easily detected between long-term inspections scheduled on a rotating basis across the system over several years. Similarly, inspection, testing and maintenance are conducted on distribution equipment such as reclosers and regulators.
- Right-of-way trimming and clearing is scheduled on a four to five-year system rotation. Similarly, a herbicide application program complements trimming and clearing efforts to improve vegetation management within distribution rights-of-ways.
- Pole inspection and treatment is annually scheduled on about ten percent of poles to extend their service life and identify recommended replacements. The entire distribution system is scheduled on a ten-year rotation.
- Protective coordination and sectionalizing schemes are regularly assessed as load growth continues. Proper coordination and sectionalizing limits outages that occur on distribution feeders to relatively small areas while maintaining service to the greatest number of members.
- Preparation of the LRP, CWP and evaluation of proposed substations is based on the development and application of a variety of uniform planning and design criteria. A variety of operational, sectionalizing, loading, reliability and economic criteria are considered to develop and evaluate LRP recommendations, CWP system improvements and other needs, and new substations.

Additional details of Clark Energy's reliability improvement programs are referenced as follows within the 2008 LRP and 2003-2005 CWP on file with the Commission:

- Section 2.2 Operations and Maintenance Survey (pp 3-5).
- Section 4 Preparation of LRP, CWP and Substation Evaluation Design (pp 12-20).

- a) Clark Energy measures the reliability indices of SAIDI, SAIFI, and CAIDI consistent with IEEE Guide for Electric Power Distribution Reliability Indices (IEEE Standard 1366-2003), which provides a methodology for measuring and comparing reliability.
- b) A new outage management system (Milsoft DisSPatch™) was installed in December 2003 to assist with Clark Energy's management of outages, better allocate resources and improve post-outage reporting. Clark Energy's OMS tracks all outages so that the reliability indices of SAIDI, SAIFI and CAIDI are monitored at the system-wide, substation, feeder and protective device levels.
- c) Outage indices adjusted for major event days may be used to monitor reliability improvements. Outage indices for calendar-year 2004 were earlier provided within Questions No. 26 and 27 of this response. Reliability improvements cannot be specifically attributed to any one task or activity, but their combined impact on total distribution reliability is believed by Clark Energy management and staff to be greater than the sum of the individual tasks or activities. Similarly, Clark Energy management and staff believe outages in recent years may have been more frequent or of longer duration without proactive and complementary activities to improve reliability.
- d) Additional details of Clark Energy's approval, implementation and operation of all reliability improvement programs are referenced as follows within the 2008 LRP and 2003-2005 CWP on file with the Commission:
  - Section 1 Executive Summary (pp 1-2)
  - Section 2.2 Operations and Maintenance Survey (pp 3-5).
  - Section 4 Preparation of LRP, CWP and Substation Evaluation Design (pp 12-20).

Respondent: Shannon D. Messer, Clark Energy

Question 32: Provide a summary description of your utility's:

- a) Right-of-way management program. Provide the budget for the last 5 years
- b) Vegetation management program. Provide the budget for the last 5 years.
- c) Transmission and distribution inspection program. Provide the budget for the last 5 years.

Answer: a) Clark Energy's right-of-way maintenance program to remove trees and brush from distribution line right-of-ways is an integral part of providing reliable electric service. Right-of-way clearing and trimming is performed on a four to five-year system rotation using a combination of mechanized equipment and traditional ground and bucket crews. Use of mechanized equipment at Clark Energy is increasingly an important part of right-of-way maintenance activities to improve productivity and reduce costs. For example, Clark Energy's use of an all-terrain, wheel-based vehicle equipped with a large cutting head mounted at the end of a retractable fiberglass boom (referred to in the industry as a "Jaraff") provides greater productivity at less cost than traditional ground crews. A summary of all right-of-way expenses for the past five years is provided within the following table.

Year	2000	2001	2002	2003	2004
Total Cost	\$609,426	\$886,442	\$863,970	\$999,999	\$1,120,684

b) Clark Energy's vegetation management complements our right-of-way maintenance through application of herbicides to control growth within distribution line right-of-ways. Licensed contract personnel equipped with backpacks of herbicide apply a combination of low-volume foliar and basal spray to control woody plants while retaining shrubs and bushes that do not grow into distribution lines. A summary of all vegetation or herbicide related expenses for the past five years is provided within the following table.

Year	2000	2001	2002	2003	2004
Total Cost	\$24,446	\$28,076	\$37,423	\$36,716	\$94,777

c) Clark Energy's distribution inspection program consists of a variety of activities including traditional ground-based patrols, aerial surveys, and pole inspection and treatment. Aerial surveys and ground-based patrols search for acute problems requiring maintenance not easily detected between longer-term pole inspections, which are scheduled on a rotating basis across the system over several years. A summary of all distribution inspection related expenses for the past five years is provided within the following tables.

Year	2000	2001	2002	2003	2004
Total Cost	\$108,743	\$134,959	\$111,968	\$117,672	\$122,967

Additional details of Clark Energy's distribution inspection program are referenced as follows within the 2008 LRP and 2003-2005 CWP on file with the Commission:

- Section 2.2 Operations and Maintenance Survey (pp 3-5).

Respondent: Scott Sidwell, Clark Energy

Question 33: Explain the criteria your utility uses to determine if pole and conductor replacement is necessary. Provide costs/budgets for transmission and distribution facilities replacement for the years 2000 through 2025.

Answer: The objective of Clark Energy's pole inspection and treatment program is to extend the service life of pole plant and identify replacements. A contractor annually provides all pole inspection and treatment services. Contractor services include a visual inspection, ground line excavation and treatment, and sounding and boring of poles in search of decay to assess mechanical strength and remaining pole life. A fumigant or insecticide is injected into poles as needed to arrest fungal or insect activity. Pole inspection and treatment is conducted on about ten-percent of plant each year with the entire system scheduled on a ten-year rotation. About 2-5 percent of the nearly 5,500 poles inspected annually require replacement. Clark Energy is 70-percent through the third rotation of pole inspection and treatment across the distribution system.

Similarly, one objective of Clark Energy's line inspection program is to identify aging circuit conductors for replacement. Distribution conductors deteriorate over time because of wind vibration, wind-induced ice galloping, tree contracts, lightning, occasional heavy ice and high winds, over-tensioning, age and corrosion. Bare overhead conductors cannot be maintained (e.g. the galvanizing on steel core wires cannot be restored),

but they can be repaired when broken. A definitive end-of-life date is not known, but older conductor may or may not be less reliable depending on their environment and history of operating conditions. Experience shows that replacing old and aging conductor, however, leads to improved and better reliability than repairing broken wires. So, a design criterion for replacing aging copper conductor will depend on outage frequency attributed to conductor failure, numbers of members served, cost, convenience and future growth. Specifically, a distribution circuit consisting of aging conductor where improvements are required to improve voltage and/or capacity will be a candidate for feeder reconstruction in lieu of 25 kV conversion. Clark Energy's 2008 LRP and 2003-2005 CWP design criteria includes a review or consideration of aging conductor and plans for eventual replacement.

Clark Energy's 2008 LRP anticipates replacing about 62-miles of aging overhead conductor. Almost 11-miles of this total consist of old copper conductor scheduled within the 2003-2005 CWP as part of system improvement projects. Similarly, almost 27-miles of #4 ACSR conductor will be replaced as part of proposed CWP conversion projects. A forecast of anticipated pole and conductor replacements from the 2008 LRP and 2003-2005 CWP is provided on page 20 of this response. Additional details of Clark Energy's anticipated replacements are referenced as follows within the 2008 LRP and 2003-2005 CWP:

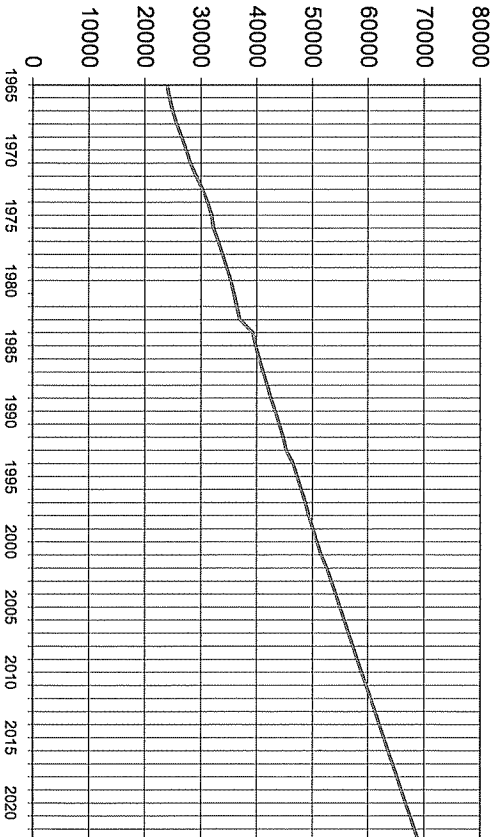
- Section 2.2 Operations and Maintenance Survey (pp 3-5).
- Section 4.7 Reliability Centered Maintenance (p 18).
- Section 7 Proposed 2003-2005 CWP Program (pp 40-48)
- Section 8 Proposed 2008 LRP Program (pp 49-57)

Respondent: Shannon D. Messer, Clark Energy

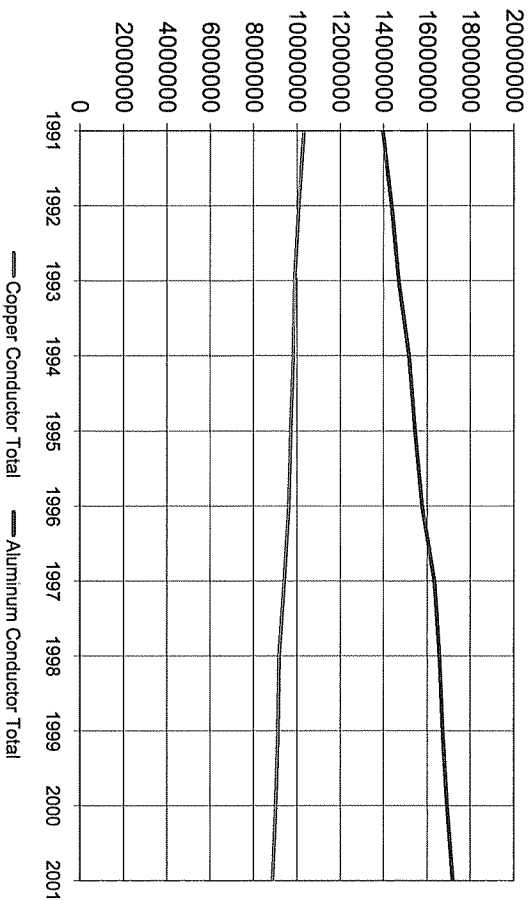
Projected Pole and Overhead Copper Conductor Costs

Item Description and Costs	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Projected No. of Distribution Poles	54288	55044	55829	56814	57400	58185	58970	59755	60541	61326	62111	62896	63682	64467	65252	66038	66823	67608	68393	69179
Projected No. of Pole Replacements	624	1032	1072	958	717	282	694	744	780	770	608	464	528	2379	505	630	705	728	671	763
Current Replacement Capital Cost @ 2.35%	\$785,272	\$993,498	\$1,021,176	\$912,974	\$893,301	\$249,682	\$831,992	\$709,032	\$743,740	\$733,870	\$979,424	\$442,192	\$903,184	\$2,267,187	\$481,265	\$800,390	\$871,885	\$893,784	\$839,483	\$727,139
Projected Replacement Capital Cost @ 2.35%	\$785,272	\$1,006,411	\$1,039,778	\$978,289	\$948,245	\$280,182	\$978,289	\$853,080	\$893,740	\$902,839	\$729,502	\$569,697	\$953,390	\$2,058,623	\$594,594	\$948,161	\$971,287	\$1,028,301	\$976,995	\$1,126,592
Cumulative Replacement Capital Cost @ 16.59%	\$785,272	\$1,781,683	\$2,861,461	\$3,539,751	\$4,588,996	\$4,869,158	\$5,847,404	\$6,680,484	\$8,477,424	\$8,477,084	\$9,208,585	\$9,776,282	\$10,439,649	\$13,498,289	\$14,162,850	\$15,010,820	\$15,982,087	\$17,008,388	\$17,997,384	\$19,102,705
Pole Replacement System Cost Rate @	\$130,198	\$297,051	\$474,430	\$559,531	\$760,856	\$807,306	\$969,500	\$1,107,524	\$1,285,808	\$1,405,497	\$1,528,448	\$1,620,904	\$1,730,893	\$2,239,072	\$2,348,169	\$2,488,794	\$2,649,827	\$2,819,987	\$2,980,479	\$3,167,229
Annual Pole Replacement Cost	\$130,198	\$297,051	\$474,430	\$559,531	\$760,856	\$807,306	\$969,500	\$1,107,524	\$1,285,808	\$1,405,497	\$1,528,448	\$1,620,904	\$1,730,893	\$2,239,072	\$2,348,169	\$2,488,794	\$2,649,827	\$2,819,987	\$2,980,479	\$3,167,229
Projected Footage of Copper OH Conductor	946376	832582	8187628	8049580	7911484	7773428	7635383	7497297	7359231	7221165	7083099	6945033	6806967	6668901	6530835	6392770	6254704	6116638	5978572	5840506
Projected Footage of Copper Replacements	139066	138066	138066	138066	138066	138066	138066	138066	138066	138066	138066	138066	138066	138066	138066	138066	138066	138066	138066	138066
Current Replacement Capital Cost @ 2.35%	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344
Projected Replacement Capital Cost @ 2.35%	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344	\$173,344
Cumulative Replacement Capital Cost @ 16.59%	\$58,072	\$58,821	\$59,264	\$59,416	\$59,293	\$59,194	\$59,1294	\$59,2452	\$59,407	\$59,23175	\$59,777	\$59,7232	\$45,580	\$47,4780	\$514,974	\$559,984	\$599,010	\$641,016	\$685,023	\$730,057
Annual OH Copper Replacement Cost	\$58,072	\$58,821	\$59,264	\$59,416	\$59,293	\$59,194	\$59,1294	\$59,2452	\$59,407	\$59,23175	\$59,777	\$59,7232	\$45,580	\$47,4780	\$514,974	\$559,984	\$599,010	\$641,016	\$685,023	\$730,057
Annual Pole Replacement Cost	\$130,198	\$297,051	\$474,430	\$559,531	\$760,856	\$807,306	\$969,500	\$1,107,524	\$1,285,808	\$1,405,497	\$1,528,448	\$1,620,904	\$1,730,893	\$2,239,072	\$2,348,169	\$2,488,794	\$2,649,827	\$2,819,987	\$2,980,479	\$3,167,229
Annual OH Copper Replacement Cost	\$58,072	\$58,821	\$59,264	\$59,416	\$59,293	\$59,194	\$59,1294	\$59,2452	\$59,407	\$59,23175	\$59,777	\$59,7232	\$45,580	\$47,4780	\$514,974	\$559,984	\$599,010	\$641,016	\$685,023	\$730,057
Total Annual Replacement Cost	\$169,270	\$355,883	\$533,694	\$618,947	\$820,149	\$866,500	\$1,028,624	\$1,166,726	\$1,345,231	\$1,478,991	\$1,588,225	\$1,710,626	\$1,776,473	\$2,286,152	\$2,365,143	\$2,548,788	\$2,717,854	\$2,889,973	\$3,065,502	\$3,897,285
PV Annual Total Replacement Cost @ 7.30%	\$159,270	\$331,671	\$488,603	\$612,807	\$812,807	\$867,605	\$1,017,794	\$1,154,213	\$1,325,808	\$1,438,831	\$1,528,448	\$1,620,904	\$1,730,893	\$2,239,072	\$2,348,169	\$2,488,794	\$2,649,827	\$2,819,987	\$2,980,479	\$3,167,229
Cumulative PV Replacement Cost	\$16,537,107	\$159,270	\$490,544	\$1,593,380	\$2,282,229	\$2,979,834	\$3,758,126	\$4,588,879	\$5,469,845	\$6,393,831	\$7,316,218	\$8,245,941	\$9,176,090	\$10,261,566	\$11,329,238	\$12,387,419	\$13,438,377	\$14,494,114	\$15,515,309	\$16,537,107

Distribution Pole Plant



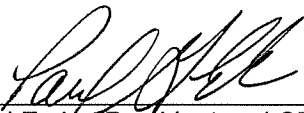
Total Conductor in Plant (ft)



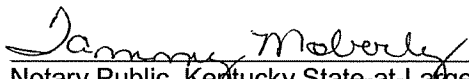
COMMONWEALTH OF KENTUCKY  
COUNTY OF CLARK, SCT

Paul Embs, after first being duly sworn, deposes and says: That he is the President and Chief Executive Officer of Clark Energy Cooperative, Inc., a rural electric cooperative corporation, duly organized and doing business under the Rural Electric Cooperative Corporation Act of the Commonwealth of Kentucky: That he has read the foregoing Application and knows the contents thereof: That the same is true of his own knowledge except as to such matters as are therein stated on information or belief, and as to those matters he believes it to be true.

This 14<sup>th</sup> day of April 2005.

  
\_\_\_\_\_  
Paul Embs, President and CEO  
Clark Energy Cooperative, Inc.

Subscribed and sworn to before me by Paul Embs, this 14<sup>th</sup> day of April 2005.

  
\_\_\_\_\_  
Notary Public, Kentucky State-at-Large  
**MY COMMISSION EXPIRES JULY 7, 2006.**  
My Commission Expires: \_\_\_\_\_

Legal Counsel:

Grant, Rose & Pumphrey  
51 South Main Street  
Winchester, Kentucky 40391