COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

APPLICATION OF SOUTH KENTUCKY RURAL ELECTRIC COOPERATIVE CORPORATION FOR DEVIATION FROM ITS TESTING OF METERS OCCASIONED BY IMPLEMENTATION OF ITS ADVANCED METERING INFRASTRUCTURE SYSTEM	))))))	CASE NO. 2010-00291

FIRST INFORMATION REQUEST OF COMMISSION STAFF TO SOUTH KENTUCKY RURAL ELECTRIC COOPERATIVE CORPORATION

South Kentucky Rural Electric Cooperative Corporation ("South Kentucky"), pursuant to 807 KAR 5:001, is to file with the Commission the original and six copies of the following information, with a copy to all parties of record. The information requested herein is due no later than August 13, 2010. Responses to requests for information shall be appropriately bound, tabbed and indexed. Each response shall include the name of the witness responsible for responding to the questions related to the information provided.

Each response shall be answered under oath or, for representatives of a public or private corporation or a partnership or association or a governmental agency, be accompanied by a signed certification of the preparer or the person supervising the preparation of the response on behalf of the entity that the response is true and accurate to the best of that person's knowledge, information, and belief formed after a reasonable inquiry.

South Kentucky shall make timely amendment to any prior response if it obtains information which indicates that the response was incorrect when made or, though

correct when made, is now incorrect in any material respect. For any request to which South Kentucky fails or refuses to furnish all or part of the requested information, it shall provide a written explanation of the specific grounds for its failure to completely and precisely respond.

Careful attention shall be given to copied material to ensure that it is legible. When the requested information has been previously provided in this proceeding in the requested format, reference may be made to the specific location of that information in responding to this request. When applicable, the requested information shall be separately provided for total company operations and jurisdictional operations.

1. Refer to page 2 of South Kentucky's Application. South Kentucky states that the cost for testing its meters is $3.00 per meter tested.

a. Explain in detail the basis for the $3.00-per-meter tested amount.

b. Explain in detail whether South Kentucky does its own meter testing or if it employs an outside meter-testing facility to conduct its meter testing.

2. Refer to page 1 of the Application, in which South Kentucky references the Commission's approval of South Kentucky's request to install an Advanced Metering Infrastructure ("AMI") system in Case No. 2009-00489.[1]

a. Explain in detail whether South Kentucky has begun the installation of AMI meters under the program approved by the Commission in Case No. 2009-00489.

(1) If yes, how many AMI meters have been installed to date?

[1] Case No. 2009-00489, Application of South Kentucky Rural Electric Cooperative Corporation for a Certificate of Convenience and Necessity to Install an Advanced Metering Infrastructure System (AMI) (Ky. PSC Jan. 19, 2010).

(2) If yes, what is South Kentucky currently doing with the old meters that have been replaced by AMI meters?

(3) If yes, has South Kentucky tested any of the old meters or the AMI meters? Explain.

b. What is South Kentucky's current schedule for completing the installation of its AMI system, including the 69,300 AMI meters referenced in the Application?

3. Refer to pages 2-3 of the Application, in which South Kentucky proposes to implement a sample meter-testing program whereby it would store the meters that it replaces with AMI meters for a period of two years. Explain in detail how South Kentucky proposes to implement the storage of old meters until they would be tested under the proposal advanced in the Application.

4. Refer to pages 2-3 of the Application, in which South Kentucky proposes to test only those replaced meters "with a 2% deviation from the AMI meters."

a. Explain in detail the basis for the proposal to test only those meters with a 2 percent deviation from the new AMI meters.

b. What time interval is South Kentucky proposing to use as a comparison between the readings from an old meter with the readings from a new AMI meter, e.g., is the comparison on a year-to-year basis, month-to-month basis, etc.?

c. Would the 2 percent deviation be based on actual usage, or would the readings be adjusted to account for weather variances from time period to time period?

d. How many meters does South Kentucky estimate it would have to test under the proposed program?

5. In Case No. 2010-00034,[2] the Commission approved a request by Kenergy Corp. for authority to adopt a scientific sample meter-testing plan for single-phase meters in accordance with the American National Standard ANSI/ASQC Z1.9-2003. A copy of the Commission's May 14, 2010 final Order in Case No. 2010-00034 is attached hereto. Explain in detail whether it would be feasible for South Kentucky to adopt a scientific sample meter-testing plan for its single-phase meters in accordance with the American National Standard ANSI/ASQC Z1.9-2003, as opposed to the meter-testing plan proposed in its Application.

6. Refer to page 2 of the Application, in which South Kentucky states that "[i]f South Kentucky's meter testing program is suspended for five (5) years, a cost savings of $207,900.00 results by 69,300 meters x $3.00 per meter." Explain in detail the statement that South Kentucky will save $207,900 when, under South Kentucky's current meter-testing program, it is only required to test a certain percentage of its newly installed meters.

Jeff Derouen
Executive Director
Public Service Commission
P.O. Box 615
Frankfort, KY 40602

DATED: AUG - 2 2010

cc: Parties of Record

[2] Case No. 2010-00034, Application of Kenergy Corp. for Approval of Sample Meter Testing Plan (Ky. PSC May 14, 2010).

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

APPLICATION OF KENERGY CORP. FOR APPROVAL OF SAMPLE METER TESTING PLAN	)))	CASE NO. 2010-00034

ORDER

On January 26, 2010, Kenergy Corp. ("Kenergy") applied for authority to adopt a scientific sample meter testing plan for single-phase meters in accordance with the American National Standard ANSI/ASQC Z1.9-2003. On March 5, 2010, Kenergy participated in an informal conference with Commission Staff to discuss certain issues relating to the proposed sample meter testing plan. As a result of the informal conference, Kenergy filed an amended application to its meter testing plan on April 9, 2010. Commission Staff issued a data request on April 23, 2010 to clarify issues in the amended application and, on May 4, 2010, Kenergy filed a second amended application based on its response to the data request. The matter now stands submitted for a decision on the evidentiary record.

The proposed Statistical Sampling Plan provides for the division of residential watt-hour meters into homogenous groups. Kenergy states that the meter lot composition will be based on manufacturer and type. Kenergy proposes to replace or test all meters in a failed test group within 18 months of the annual report to the Commission.

In support of its application, Kenergy states that the proposed testing plan will achieve an annual cost reduction of approximately $138,600.

Based on the evidence of record, the Commission finds that the proposed sample meter plan is reasonable and should be approved.

IT IS THEREFORE ORDERED that:

1. Kenergy's Application to implement a sample meter testing program for its single-phase meters as described in its second amended Application is approved.

2. The Appendix attached hereto and incorporated herein contains the proposed sample meter testing plan for Kenergy's single-phase meters.

By the Commission

ENTERED
MAY 14 2010
KENTUCKY PUBLIC
SERVICE COMMISSION

ATTEST:

Executive Director

APPENDIX

APPENDIX TO AN ORDER OF THE KENTUCKY PUBLIC SERVICE COMMISSION IN CASE NO. 2010-00034 DATED MAY 14 2010

PROPOSED SAMPLE METER TESTING PLAN FOR KENERGY CORP.'S SINGLE-PHASE CLASS 200 & 320 METERS

KENERGY CORP.
Henderson, Kentucky

Prepared by
Robert Hayden
Kenergy Corp.
&
Distribution System Solutions, Inc.

Revised
May 3, 2010

PROPOSAL FOR SINGLE-PHASE SAMPLE METER TESTING

INTRODUCTION

Kenergy Corp is an electric distribution cooperative located in western Kentucky. Kenergy is presently on schedule with its eight-year meter testing program. By adopting a sample meter testing program, Kenergy will take a significant step towards maximizing efficiency in the single-phase meter testing area of its operation. It is the purpose of this proposal to demonstrate the methods used and the cost savings achieved in sample testing.

RULES AND REGULATIONS

Kentucky Public Service Commission (PSC) rules and regulations outline the required method and techniques of sample meter testing. Kenergy will implement the sample meter testing plan as submitted in this application.

PROCEDURE

The statistical meter sample testing will follow ***American National Standard Institute ANSI/ASQC Z1.9-2003 (Sampling Procedures and Tables for Inspection).***
Each test group will be randomly sampled by a computerized process. The Kenergy billing computer system will be used for this process.

The **Acceptance Quality Level** (AQL) is defined as the quality level that is the worst tolerable product average when a continuing series of lots is submitted for acceptance sampling.

Due to the ±2% limits, the sample groups shall be tested using an AQL of **2.5**. This value can be found in **Table A-1**. The upper and lower 2% limits require the use of the *Double Specification Limit* method as outlined in this ANSI Standard.

PROCEDURE continued on next page.

PROCEDURE (cont.)

As shown in the table below, meters will be divided into separate homogeneous groups based upon manufacturer and type. Similar meters may be further divided by serial number break points. Newly purchased and/or installed meters will be added to the proper group and will be eligible for sample testing the following year. **Table A-2** provides the Sample Size Code Letters that are then to be referenced in **Table B-3**. The "Normal Inspection" portion of the **Table B-3** is then used to determine the sample size for each test group.

METER TEST GROUPS

Group	Manufacturer	Type	Population*	Sample
1	A.B.B./Elster	AB1	2,800	50
2	A.B.B./Elster	AB1	2,800	50
3	A.B.B./Elster	AB1	2,800	50
4	A.B.B./Elster	AB1	959	35
5	A.B.B.	AB1R	761	35
6	Sangamo/Siemens	ALALT	93	10
7	Landis & Gyr	ALF	241	15
8	Sangamo/Itron	C1S	1,345	50
9	A.B.B./Westinghouse	D4S	2,800	50
10	A.B.B./Westinghouse	D4S	2,076	50
11	A.B.B./Westinghouse	D5S	2,800	50
12	A.B.B./Westinghouse	D5S	660	35
13	Sangamo/Sensus	ISA1	98	10
14	Sangamo	I60S	422	25
15	G.E.	I70S	2,800	50
16	G.E.	I70S	2,800	50
17	G.E.	I70S	2,800	50
18	G.E.	I70S	422	25
19	Sangamo	J4ES	65	7
20	Sangamo	J4S	2,800	50
21	Sangamo	J4S	951	35
22	Sangamo/Schlumberger	J5S	2,800	50
23	Sangamo/Schlumberger	J5S	2,800	50
24	Sangamo/Schlumberger	J5S	2,800	50
25	Sangamo/Schlumberger	J5S	510	35
26	Landis & Gyr/Duncan	MQS	1,309	50
27	Landis & Gyr/Duncan	MS	2,800	50
28	Landis & Gyr/Duncan	MS	1,365	50
29	Landis & Gyr	MSE2	121	10
30	Landis & Gyr/Duncan	MSK	49	5
31	Landis & Gyr	MS2	2,800	50
32	Landis & Gyr	MS2	2,800	50
33	Landis & Gyr	MS2	564	35
34	Landis & Gyr	MX	2,800	50
35	Landis & Gyr	MX	1,950	50

***The maximum population of any group will not exceed 3,000.**

PROCEDURE continued on next page.

PROCEDURE (cont.)

Randomly selected meters (lot) from each group will be sent to the meter shop. If damaged or non-registering meters have issues that are not a manufacturer's defect or meter was exposed to abnormal conditions these meters will be replaced by another random selection.

The meters will be tested under full load, light load and 50% power factor.

Watthour meter shall be adjusted when the error in registration exceeds 1% at either light load or full load or when the error in registration exceeds 1% at 50 percent power factor. The meter will be retired if the registration error cannot be corrected.

For each lot, calculations will be based on the Double Specification Limit Variability Unknown-Standard Deviation Method. Full Load test results will be evaluated. **Example B-4** in ***ANSI/ASQC Z1.9-2003*** demonstrates this calculation method. **Table B-3** is included in this proposal.
An annual report (showing each group's performance) and a copy of the manufacturer's new meter test data will be provided.

Lot performance shall be deemed acceptable if the full-load and light-load performance of the meters within the lot meet the acceptability criteria of the **ANSI** standard. When a group is classified as failed and a poorly performing sub-group can be identified for separation from the original control group, the deviate sub-group will be removed from service within a 12-month period.

If, by the removal of a specific sub-group of meters, Kenergy can demonstrate that the original control group of meters now meets the acceptability standard, the remaining meters in the original control group shall remain in service.

If a deviate sub-group of meters cannot be identified to improve the control group's accuracy, then Kenergy will remove and test the entire control group of meters within 18 months once it has failed the applicable governing standard for the control group. Subgroups of the control group may be determined by evaluating the date of original purchase, date of original manufacture, and date of remanufacture. Other methods of determining subgroups may also be used.

If Kenergy should suffer an operational hardship due to this requirement, a request for deviation may be filed.

Kenergy will sample test new meters using an Inspection Level I and an AQL 1.0.

Table A-1
AQL Conversion Table

For specified AOL values falling within these ranges			Use this AQL value
–	to	0.109	0.10
0.110	to	0.164	0.15
0.165	to	0.279	0.25
0.280	to	0.439	0.40
0.440	to	0.669	0.65
0.700	to	1.09	1.0
1.10	to	1.64	1.5
1.65	to	2.79	2.5
2.80	to	4.39	4.0
4.40	to	6.99	6.5
7.00	to	10.9	10.0

ANSI **Part A7**, Sample Selection, from the standard, states that **Inspection Level, General II**, shall be used for the discrimination level. Unless otherwise required by the PSC, this level will be in effect for the Kenergy program.

Table A-2[1]
Sample Size Code Letters[2]

Lot Size			Inspection Levels				
			Special		General		
			S3	S4	I	II	III
2	to	8	B	B	B	B	C
9	to	15	B	B	B	B	D
16	to	25	B	B	B	C	E
26	to	50	B	B	C	D	F
51	to	90	B	B	D	E	G
91	to	150	B	C	E	F	H
151	to	280	B	D	F	G	I
281	to	400	C	E	G	H	J
401	to	500	C	E	G	I	J
501	to	1,200	D	F	H	J	K
1,201	to	3,200	E	G	I	K	L
3,201	to	10,000	F	H	J	L	M
10,001	to	35,000	G	I	K	M	N
35,001	to	150,000	H	J	L	N	P
150,001	to	500,000	H	K	M	P	P
500,001	and	over	H	K	N	P	P

[1]The theory governing inspection by variables depends on the properties of the normal distribution and, therefore, this method of inspection is only applicable when there is reason to believe that the frequency distribution is normal.

[2]Sample size code letters given in body of table are applicable when the indicated inspection levels are to be used.

Table B-3 Standard Deviation Method

Master Table for Normal and Tightened Inspection for Plans Based on Variability Unknown
(Double Specification Limit and Form 2—Single Specification Limit)

Sample Size Code Letter	Sample Size	Acceptance Quality Limits (normal inspection)																
		T	.10	.15	.25	.40	.65	1.00	1.50	2.50	4.00	6.50	10.00				
		M	M	M	M	M	M	M	M	M	M	M	M				
B	3	↓	↓	↓	↓	↓	↓	↓	↓	7.59	18.86	26.94	33.69				
C	4	↓	↓	↓	↓	↓	↓	1.49	5.46	10.88	16.41	22.84	29.43				
D	5	↓	↓	↓	↓	0.041	1.34	3.33	5.82	9.80	14.37	20.19	26.55				
E	7	↓	0.005	0.087	0.421	1.05	2.13	3.54	5.34	8.40	12.19	17.34	23.30				
F	10	0.077	0.179	0.349	0.714	1.27	2.14	3.27	4.72	7.26	10.53	15.17	20.73				
G	15	0.186	0.311	0.491	0.839	1.33	2.09	3.06	4.32	6.55	9.48	13.74	18.97				
H	20	0.228	0.356	0.531	0.864	1.33	2.03	2.93	4.10	6.18	8.95	13.01	18.07				
I	25	0.250	0.378	0.551	0.874	1.32	2.00	2.86	3.97	5.98	8.65	12.60	17.55				
J	35	0.253	0.373	0.534	0.833	1.24	1.87	2.66	3.70	5.58	8.11	11.89	16.67				
K	50	0.243	0.355	0.503	0.778	1.16	1.73	2.47	3.44	5.21	7.61	11.23	15.87				
L	75	0.225	0.326	0.461	0.711	1.06	1.59	2.27	3.17	4.83	7.10	10.58	15.07				
M	100	0.218	0.315	0.444	0.684	1.02	1.52	2.18	3.06	4.67	6.88	10.29	14.71				
N	150	0.202	0.292	0.412	0.636	0.946	1.42	2.05	2.88	4.42	6.56	9.86	14.18				
P	200	0.204	0.294	0.414	0.637	0.945	1.42	2.04	2.86	4.39	6.52	9.80	14.11				
		.10	.15	.25	.40	.65	1.00	1.50	2.50	4.00	6.50	10.00					
		Acceptance Quality Limits (tightened inspection)															

All AQL values are in percent nonconforming. T denotes plan used exclusively on tightened inspection and provides symbol for identification of appropriate OC curve.

↓ Use first sampling plan below arrow: that is, both sample size as well as k value. When sample size equals or exceeds lot size, every item in the lot must be inspected.

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