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August 7, 2013

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HAND DELIVERED

Jeff R. Derouen
Executive Director
Public Service Commission
211 Sower Boulevard
P.O. Box 615
Frankfort, Kentucky 40602-0615

Re: *In the Matter of: An Investigation of the Reliability Measures of Kentucky's Jurisdictional Electric Distribution Utilities*, Case No. 2011-00450.

Dear Mr. Derouen:

Please find enclosed and accept for filing the original and ten copies of the testimony of Everett G. Phillips being filed by Kentucky Power Company.

Copies of the testimony are being served on all other parties of record to this proceeding along with a copy of this letter.

Very truly yours,

STITES & HARBISON, PLLC

R. Benjamin Crittenden

COMMONWEALTH OF KENTUCKY

BEFORE THE

PUBLIC SERVICE COMMISSION OF KENTUCKY

In the Matter Of:

AN INVESTIGATION OF THE RELIABILITY	)
MEASURES OF KENTUCKY'S	) CASE NO. 2011-00450
JURISDICTIONAL ELECTRIC	)
DISTRIBUTION UTILITIES	)

DIRECT TESTIMONY OF

EVERETT G. PHILLIPS

ON BEHALF

OF KENTUCKY POWER COMPANY

August 7, 2013

VERIFICATION

The undersigned Everett G. Phillips, being duly sworn, deposes and says he is the Managing Director, Distribution Region Operations for Kentucky Power Company, that he has personal knowledge of the matters set forth in the forgoing testimony and the information contained therein is true and correct to the best of his information, knowledge, and belief.

Everett G Phillips

COMMONWEALTH OF KENTUCKY)
) CASE NO. 2011-00450
COUNTY OF BOYD)

Subscribed and sworn to before me, a Notary Public in and before said County and State, by, Everett G. Phillips, this the _____ day of August 2013.

Notary Public

My Commission Expires: 4/5/2015

DIRECT TESTIMONY OF
EVERETT G. PHILLIPS ON BEHALF OF
KENTUCKY POWER COMPANY
BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY

CASE NO. 2011-00450

I. INTRODUCTION

Q. Please state your name, business address, and position.

A. My name is Everett G. Phillips. My business address is 12333 Kevin Avenue, Ashland, Kentucky 41102. I am the Managing Director of Distribution Region Operations for the Kentucky Power Company (KPCo).

II. BACKGROUND

Q. Please briefly describe your educational background and professional experience.

A. I earned a bachelor's degree in Electrical Engineering in 1985 from West Virginia University. I am a registered professional engineer in the state of Kentucky, a member of the National Society of Professional Engineers (NSPE) and a member of the applied process technologies advisory committee for the Ashland Community and Technical College. I have over 28 years of electric utility experience and have held progressively responsible positions throughout my career with the Company. In 1998, I became the KPCo Pikeville district superintendent, and in 2000, I became the Pikeville district manager. In 2004, I moved to Ashland, Kentucky where I was the Director of Customer and Distribution Operations. In 2011, I assumed my current position.

Q. What are your responsibilities as Managing Director of Distribution Operations?

A. I am responsible for overseeing the planning, construction, operation and maintenance of KPCo's distribution system. My duties include the oversight and management of service extension to new customers, the safe and reliable delivery of service to KPCo's current customers, and the restoration of service when outages occur on KPCo's system.

Q. Have you previously testified before this Commission?

A. Yes, I filed testimony in Case No. 2006-00494, *In the Matter of: An Investigation of the Reliability Measures of Kentucky's Jurisdictional Electric Distribution Utilities and Certain Reliability Maintenance Practices*, and Case No. 2009-00459, *In the Matter of: The Application for General Adjustment of Electric Rates of Kentucky Power Company.*

III. PURPOSE OF YOUR TESTIMONY

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to discuss changes made by the Public Service Commission of Kentucky (Commission) to current reporting practices and procedures and provide KPCo's recommendations related to these changes.

Q. **Are you sponsoring any exhibits as part of your testimony?**

A. Yes. I am sponsoring Exhibit EGP-1 to my testimony, described as Pages 7-9 of the May 30, 2013 Final Order in this case with revisions suggested by KPCo.

Q. Does KPCo support the methodology to determine worst-performing circuits as set forth in the Final Order issued on May 30, 2013 in this proceeding?

A. No. KPCo does not support the methodology to determine worst-performing circuits and reporting additional circuit-level detail, such as a corrective action plan, for those circuits that have either a SAIDI or SAIFI value that is higher than that circuit's respective rolling historical five-year average (excluding Major Event Days, as per the IEEE standard).

Q. Why does KPCo not support these new requirements?

A. As discussed in KPCo's and Duke Energy Kentucky, Inc.'s Joint Petition for Rehearing filed with the Commission on June 19, 2013, KPCo believes that the additional data collection and reporting requirements associated with distribution circuits is not an appropriate benchmark for measuring reliability, is overly burdensome, and does not provide any commensurate benefits.

Q. Please provide more detail as to why KPCo does not support the new worst-performing circuit methodology as part of these new reporting requirements.

A. KPCo does not believe that providing additional distribution circuit-level data as outlined in the Final Order in this proceeding will provide the Commission with any additional useful information or insight into a utility's reliability. Specifically, the Final Order's methodology of comparing a circuit against its five-year rolling historical average could produce an inaccurate list of worst-performing circuits. For example, KPCo's Ashland-14th Street circuit has historically had good reliability; from 2007-2011, it had an average SAIDI of 53.0. However, in 2012 it experienced one transmission-caused outage and experienced a SAIDI of 94.1 for the year. This one outage was sufficient to increase the SAIDI high enough to the point that this historically reliable circuit would now need to be reported as a worst-performing

circuit. Once KPCo restored service to this circuit, there would be no additional corrective action plans needed for this circuit even though it made the worst-performer list, since it is considered a good performer by KPCo.

Conversely, a circuit that KPCo considers to be a poor performing circuit may not make the worst-performing circuit list if its comparison year is only slightly better than historical performance. For example, KPCo's Johns Creek-Meta circuit has had an average SAIDI of 1,201.6 for the historical period of 2007-2011. In 2012, this circuit experienced a SAIDI of 1,018.9, which is less than the historical five-year average. Under this scenario, a circuit that was above the system SAIDI of 457.99 and for which KPCo has already developed a corrective action plan, would not be reported to the Commission.

Q. What are the potential impacts if the worst-performing circuit methodology is not changed?

A. Since the current methodology may not produce a representative list of the circuits in need of corrective action, the additional circuit data provided would not provide any valuable information related to a utility's reliability. In this respect, having to produce a non-representative list of worst-performing circuits, spending time and resources to analyze this list of circuits, and creating a corrective action plan for each of these circuits, even when one is not warranted, becomes an overly burdensome and costly requirement. The cost of the additional efforts needed to comply with these new reporting mandates would ultimately be passed on to ratepayers and may not provide a commensurate benefit. Also, having to review

additional data, some of which may not be meaningful, may add a similar burden onto the Staff.

Q. Is KPCo opposed to providing additional circuit data to the Commission?

A. No, it is not. KPCo is amenable to providing additional circuit data to the Commission as long as the data given to the Commission provides useful and actionable information concerning the reliability of a distribution circuit. As such, KPCo has a recommendation for a methodology for determining worst-performing circuits and providing additional circuit data to the Commission.

Q. Is KPCo's recommendation based on any information that was related at the June 28, 2013 technical conference?

A. Yes, KPCo's recommendation is predicated on information stemming from discussions held with the Staff at the June 28, 2013 technical conference. Specifically, when asked about work plans associated with worst-performing circuits, the Staff understood that some of the worst-performing circuits provided to the Commission by KPCo may not have an associated work plan. Additionally, the Staff would be amenable to receiving worst-performing circuit work plans in a Microsoft Excel spreadsheet format. Also, the Staff clarified that as part of the methodology to determine worst-performing circuits, it is the reporting year that is compared to the prior five years. In other words, the reporting year is not part of the five years of rolling historical data used in the determination of a worst-performing circuit.

IV. CONCLUSION

Q. What is KPCo's recommendation to the Commission for achieving its perceived objectives in this proceeding?

A. KPCo's recommendation is to utilize a different statistical methodology that would identify worst-performing circuits coupled with giving the Commission the reporting year SAIDI and SAIFI performance, as well as the prior five years of historical performance, for each of its distribution circuits each year. In addition, KPCo is proposing an annual filing date of May 1, as more time is needed to meet these additional reporting requirements. If the Commission's intent is to obtain additional information on distribution circuits, including the worst-performing circuits, KPCo's recommendation achieves these goals.

For example, Kentucky Utilities Company and Louisville Gas and Electric Company suggested a methodology that would require a utility to only report a circuit whose current-year SAIDI or SAIFI exceeds its own historical five-year average by two standard deviations as a worst-performing circuit. Some level of variation is normal in annual performance, usually influenced by weather and causes beyond a utility's control. Standard deviation is a widely used measure of variability or diversity used in statistics and probability theory. It shows how much variation or "dispersion" there is from the average within a normal population distribution. Applying two standard deviations to the five-year average allows KPCo to capture

approximately 95 percent of the normal expected variation caused by typical factors, giving a more accurate assessment of the worst-performing circuits.

KPCo supports this type of approach for identifying its worst-performing circuits, and could provide a corrective action plan for those circuits that fall outside of the established SAIDI range. KPCo believes that reporting SAIDI would be sufficient, as SAIFI is a component of SAIDI (SAIDI = SAIFI * CAIDI). Exhibit EGP-1 is a copy of pages 7-9 of the May 30, 2013 Final Order with the original verbiage in items 7, 10, 11, and 12 "redlined" to show KPCo's proposed recommendations. The following list summarizes the redlined changes in this exhibit:

- Item 7: KPCo has added the phrase "plus two standard deviations" so this item now reads "Compare each circuit to that circuit's rolling five-year average SAIDI plus two standard deviations;" to reflect KPCo's recommendation for determining worst-performing circuits.
- Item 10: KPCo has removed this item, as this item refers to the Commission's methodology for determining worst-performing circuits.
- Item 11: KPCo is also proposing to file this report on May 1 of each year to allow the Company the requisite time that it needs to complete this filing.
- Item 12: Item 12 now reads "For each circuit with a SAIDI value higher than that circuit's respective rolling five-year average SAIDI plus two standard deviations, excluding MEDs, include in the annual Reliability Report the following information…" For the worst-performing circuits that met this SAIDI threshold,

KPCo would still provide all of the information outlined in item 12, with the following revision to paragraph "o":

- Item 12 paragraph "o" now reads "A Corrective Action Plan which describes any measures the utility has completed or plans to complete to improve the circuit's performance, or where no corrective action is necessary, this field may be labeled "N/A."

Utilizing the average plus two standard deviation methodology, in 2012 KPCo would have had 21 worst-performing circuits from a SAIDI-perspective, which is approximately 9.6 percent of its circuits. Also, as previously stated, KPCo would also provide the Commission with the SAIFI and SAIDI performance for each of its circuits for the reporting year, as well as the prior five years of historical performance, that did not make the worst-performing circuit list. This recommendation would allow KPCo to comply with the reporting mandates in a way that still achieves the Commission's goals, while not being overly burdensome on the Staff, KPCo, or its customers.

Q. Does that conclude your direct testimony?

A. Yes, it does.

and SAIFI in some fashion, they do not use these indices as the primary indicator of reliability or as the primary determinant of where to perform additional clearing or to make additional capital investment. Likewise, the Commission considers SAIDI and SAIFI, whether calculated system-wide or on a circuit-by-circuit basis, with or without

Major Event Days ("MEDs"), as simply indicators of reliability.

Therefore, based on the evidence of record and being otherwise sufficiently advised, the Commission finds that each jurisdictional electric distribution utility should collect and maintain all records necessary to evaluate its system-reliability performance in accordance with the methodology established by the most recent edition of the ("IEEE") standard number 1366 "Guide for Electric Power Distribution Reliability Indices," which currently is IEEE Standard 1366-2012[13] and, at a minimum should annually:

1. Calculate the SAIDI system-wide indices including MEDs and calculate the SAIDI system-wide indices excluding MEDs;
2. Calculate the SAIFI system-wide indices including MEDs and calculate the SAIFI system-wide indices excluding MEDs;
3. Develop a system-wide rolling five-year average SAIDI excluding MEDs;
4. Develop a system-wide rolling five-year average SAIFI excluding MEDs;
5. Calculate SAIDI excluding MEDs for every circuit within its system;
6. Develop a rolling five-year average SAIDI for each circuit within its system;
7. Compare each circuit to that circuit's rolling five-year average SAIDI plus two standard deviations ~~SAIDI~~;

[13] In subsequent years, should the IEEE standard number 1366 "Guide for Electric Power Distribution Reliability Indices" be updated, each utility should collect and maintain all records in accordance with the

8. Calculate SAIFI excluding MEDs for every circuit within its system;

9. Develop a rolling five-year average SAIFI for each circuit within its system;

~~10. Compare each circuit to that circuit's rolling five-year average SAIFI.~~

11. File a Reliability Report[14] by May ~~April~~ 1 of each year, containing the reliability information as outlined in the attached Appendix for the preceding calendar year from January 1 to December 31 that includes the SAIDI and SAIFI system-wide indices, both including and excluding MEDs.

12. For each circuit with a ~~either~~ SAIDI ~~or SAIFI~~ value higher than that circuit's respective ~~SAIDI or SAIFI~~ rolling five-year average SAIDI plus two standard deviations, excluding MEDs, include in the annual Reliability Report the following information:

a. The circuit's SAIDI index for the year;

b. The circuit's SAIFI index for the year;

c. The circuit's rolling five-year average SAIDI;

d. The circuit's rolling five-year average SAIFI;

e. The substation name, number and location (i.e., County-Road-Town);

f. The circuit name, number and location (Town-Road-General Area);

g. The circuit's overall length in miles to the nearest tenth of a mile;

h. The number of customers served on the circuit for the year;

i. The date of the last circuit trim performed by the utility as part of its vegetation management plan;

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most recent version of the 1366 Guide. The IEEE 1366 (latest version) shall be utilized to define SAIDI, SAIFI, and T_{MED}.

[14] A format different from that outlined in the Appendix is acceptable so long as each jurisdictional electric distribution utility provides the substantive information outlined in Appendix A and the electronic copy is in an electronic format which is compatible with Microsoft Excel

j. A list of outage causes for the circuit, along with the percentage of total outage numbers represented by each cause;

k. Circuit five-year average SAIDI;

l. Reporting year SAIDI;

m. Circuit five-year average SAIFI;

n. Reporting year SAIFI;

o. A Corrective Action Plan which describes any measures the utility has completed or plans to complete to improve the circuit's performance, or where no corrective action is necessary, this field may be labeled "N/A"; and

p. Any other information the utility believes will assist the Commission in understanding the circumstances surrounding the circuit's performance.

The Commission further finds that it is reasonable for Commission Staff to conduct a technical conference to address any questions concerning the requirements set out in this Order.

IT IS THEREFORE ORDERED that:

1. Each jurisdictional electric distribution utility shall collect and maintain all records necessary to evaluate its system reliability performance in accordance with the methodology established by the most recent edition of the ("IEEE") standard number 1366 "Guide for Electric Power Distribution Reliability Indices," which currently is IEEE Standard 1366-2012,[15] and shall report by April 1 of each year for the preceding.

[15] In subsequent years, should the IEEE standard number 1366 "Guide for Electric Power Distribution Reliability Indices" be updated, each utility should collect and maintain all records in accordance with the most recent version of the 1366 Guide. The IEEE 1366 (latest version) shall be utilized to define SAIDI, SAIFI, and T_{MED}