

Exhibit No.:
Issue: Reliability Metrics
Witness: Claire M. Eubanks, PE
Sponsoring Party: MoPSC Staff
Type of Exhibit: Sur-Surrebuttal Testimony
Case No.: ER-2019-0374
Date Testimony Prepared: April 17, 2020

MISSOURI PUBLIC SERVICE COMMISSION

INDUSTRY ANALYSIS DIVISION

ENGINEERING ANALYSIS DEPARTMENT

SUR-SURREBUTTAL TESTIMONY

OF

CLAIRE M. EUBANKS, PE

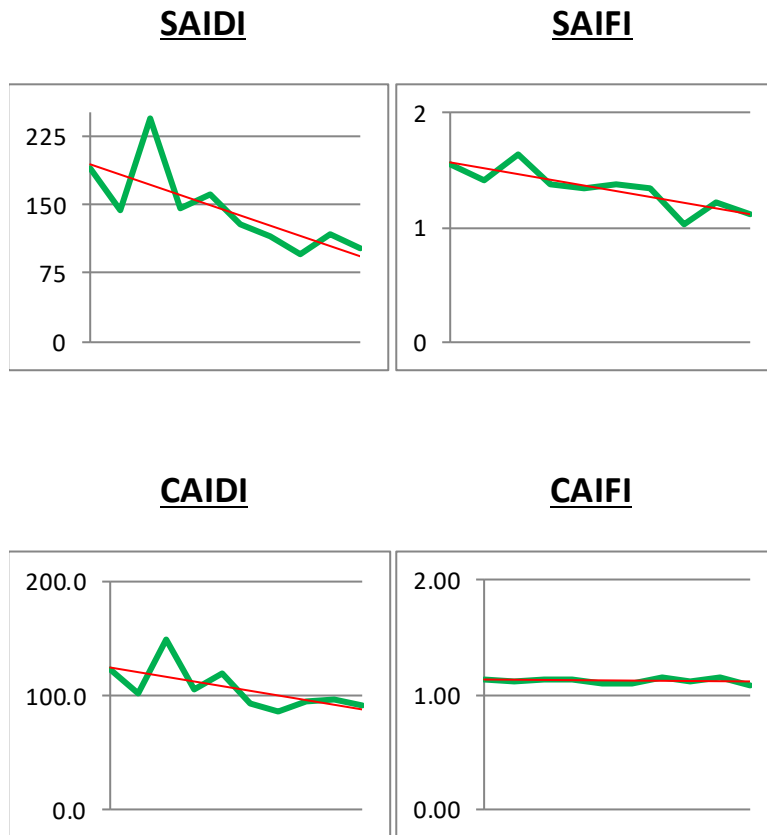
THE EMPIRE DISTRICT ELECTRIC COMPANY

CASE NO. ER-2019-0374

Jefferson City, Missouri
April 2020

1 included a cumulative value for SAIFI, SAIDI, and CAIDI. In order to graph the monthly
2 metrics I summed the monthly SAIFI and SAIDI values to obtain a yearly value. Empire's
3 reported cumulative values more closely match the reported EIA data for ** _____
4 _____ . ** For all other years, the values are a summation of the reported
5 monthly metrics. Except for calendar 2013, any difference in the summation of the reported
6 SAIDI and SAIFI values to those in the EIA dataset are likely to be due to rounding.¹

7 The following graphs have been corrected as described above:



¹ 2013 is the first year EIA gathered reliability metric data. For calendar year 2013 Empire (Missouri) reported exactly 1.0 as its SAIFI value which is significantly lower than the cumulative monthly SAIFI values reported to the Commission.

1 Q. The Office of the Public Counsel witness Dr. Geoff Marke characterizes the data
2 you presented on page 3 of your rebuttal (and presented above) as Empire’s monthly
3 “self-reports”, is that accurate?

4 A. No, Empire does provide Staff its monthly reliability metrics on a quarterly basis
5 pursuant to a past stipulation and agreement. However, Empire is required by Chapter 23 to
6 report its monthly reliability metrics on an annual basis. I used Empire’s Chapter 23 annual
7 reliability reports, which are filed in EFIS as non-contested cases, as the data source for the
8 tables presented in my rebuttal testimony.

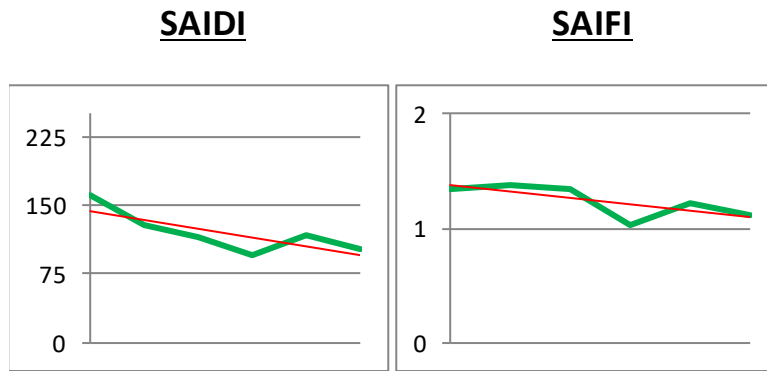
9 Q. Dr. Marke claims that the reliability metrics are “measured, filed, and then
10 forgotten,” do you agree?

11 A. No. Engineering Analysis Staff reviews the annual reliability reports and has
12 compiled data comparing the utilities’ reported metrics as needed. Staff is not required by
13 Chapter 23 to file a recommendation on the annual reliability report with the Commission,
14 however, Staff does monitor these reports.

15 Q. Dr. Marke states that he agrees with Staff’s opinion that Empire’s reliability
16 metrics are trending in the right direction only when the 2011 Joplin Tornado is included in the
17 range, what is your response?

18 A. A trend of the Chapter 23 reported SAIFI and SAIDI metrics from 2012 through
19 2018 is presented below. I will note that there is likely an error in the data reported to EIA
20 in 2013. A trend of SAIFI using the EIA dataset would appear flat.

1



2

3 Further, Staff includes the years prior to the Joplin Tornado in its range; Empire’s SAIFI and
4 SAIDI metrics were higher than all the other Missouri IOUs even in the years prior to the Joplin
5 tornado (2009 was the first year all utilities reported reliability metrics under Chapter 23).²

6 Q. Are there factors to consider when benchmarking utility reliability metrics?

7 A. Yes. In fact, this is reflected in Chapter 23 which discusses the disclosure of
8 reliability metrics to the public by the Commission:

9 Such disclosure shall include a statement that such indices are
10 affected by customer density, tree density, geography, observed
11 weather, and other factors that may be beyond the control of the
12 electrical corporation. Further, the commission may release
13 comparisons of this data with similar data from other states but in doing
14 so shall include...any caveats that would explain the differences in the
15 indices. These caveats shall include, but not be limited to, differences
16 in calculation methodologies.

17 Q. Dr. Marke states “[O]n a whole, Empire customers experience more frequent
18 and longer outage durations (relative to other Missouri investor-owned utilities), but also
19 experience fewer major events (defined as outages that exceed 10% of the customer base at one
20 time).” Is this accurate?

² EO-2010-0305 (Empire), EO-2010-0306 (KCPL), EO-2010-0307(KCPL GMO), EO-2010-0303 (Ameren),
EO-2011-0355 (Empire), EO-2011-0356 (Ameren), EO-2011-0358 (KCPL), EO-2011-0359 (KCPL GMO).

1 A. Not entirely. Dr. Marke does not accurately describe the major event
2 determination as defined by the published standard IEEE-1366 (2003) which is the version
3 adopted in Commission Rule 23. A “Major event day” is not determined by outages that exceed
4 10% of the customer base at one time. Rather, there is a statistical approach which is based on
5 5 years of historical data specific to the utility system.³ Empire’s classification of major event
6 days was impacted by the inclusion of calendar year 2011 (Joplin Tornado). Calendar year 2011
7 increased the threshold value used for classifying major event days resulting in Empire having
8 no major events days for several years.

9 Q. Dr. Marke concluded that Empire may have reported its reliability metrics
10 incorrectly, do you agree?

11 A. There are instances where the EIA dataset is inconsistent when compared to the
12 values reported in the Chapter 23 annual reliability reports. Empire noted in response to Staff
13 Data Request No. 0273, that the SAIFI value reported to the Commission for calendar year
14 2018 was incorrect due an error when pulling from its database. As noted above, there is likely
15 an error in the metrics reported to EIA for calendar year 2013.

16 Dr. Marke notes that there were several years where Empire reported the same value
17 for “with and without major events.” As explained above, in the years where Empire reported
18 the same value for its adjusted and unadjusted metrics, the major events were determined using
19 5 years of historical data (which included the year 2011) to determine the major event day
20 identification threshold value (T_{med}) as the IEEE standard suggests.

³ A major event day is a day in which the daily system SAIDI exceeds a threshold value, T_{med} . Even though SAIDI is used to determine the major event days all indices should be calculated based on the same major event days. IEEE 1366-2003, page 8.

1 Q. Dr. Marke recommends requiring Empire to benchmark its reliability metrics to
2 other utilities in the states of Missouri, Kansas, Oklahoma, and Arkansas. Do you agree?

3 A. Staff is not opposed to Empire benchmarking against other utilities and
4 presenting this information in its future annual reliability reports. However, Staff would suggest
5 that the benchmark should indicate whether the other utility is following the IEEE 1366-2003
6 standard or another standard, this information is easily found in the EIA datasets Dr. Marke
7 suggests using. Further, I suggest the benchmark not include calendar year 2013 as the EIA data
8 for that year is likely incorrect.

9 Q. Does this conclude your Sur-surrebuttal testimony?

10 A. Yes it does.



The Empire District Electric Company
A Liberty Utilities Company
Case No. ER-2019-0374
MPSC Data Request – 0273

Data Request Received: 02/13/20
Request No. 0273

Date of Response: 03/03/2020
Respondent: Sam McGarrah

Submitted by: Claire Eubanks (claire.eubanks@psc.mo.gov)..

REQUEST:

- (1) Refer to page 11, lines 10 to 13 of Jeffrey Westfall's Direct Testimony. Provide all supporting calculations and sources for the reported 2010 and 2018 SAIDI and SAIFI values.
- (2) Explain the reasoning for the difference between cumulative SAIDI and SAIFI values reported in Empire's 2018 Annual Reliability Report (EO-2019-0332) and the values presented in Jeffrey Westfall's Direct Testimony.

RESPONSE:

- (1) The calculations performed to determine the reliability metrics occur within a database reporting structure and are not performed manually. Refer to the database reliability reports attachments labeled: "DR 0273 2010 12 MISSOURI 12MOE EME" and "DR 0273 2018 12 MISSOURI 12MOE EME" for the reliability reports demonstrating the annual 2010 and 2018 SAIDI and SAIFI values which were used to support Jeffrey Westfall's testimony.
- (2) Liberty-Empire utilizes a database to efficiently record and report reliability metrics. This database is then used to create multiple reports for the Company's reliability metrics to satisfy various compliance filing requirements. During the completion of this data request response it was discovered the reports used to support Jeffrey Westfall's testimony did not align with the reports used to complete the 2018 Annual Reliability Report (EO-2019-0332). Liberty-Empire is currently working with the appropriate resources to correct the error as it relates to the reports used for the Missouri Annual Reliability Report. It should be noted that the values provided by Mr. Westfall in his Direct Testimony are accurate and can be used with confidence.

SCHEDULE CME-ss2

HAS BEEN DEEMED

CONFIDENTIAL

IN ITS ENTIRETY