

**BEFORE  
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of The Dayton     )  
Power and Light Company d/b/a AES Ohio for     )     Case No. 21-0956-EL-ESS  
Establishing New Reliability Standards     )

---

**APPLICATION OF THE DAYTON POWER AND LIGHT COMPANY D/B/A AES  
OHIO FOR ESTABLISHING NEW RELIABILITY STANDARDS**

---

**I.   INTRODUCTION:**

1.     Applicant The Dayton Power and Light Company (“DP&L”) d/b/a AES Ohio is a public utility and electric light company as defined by R.C. § 4905.02 and § 4905.03(C) respectively, and electric distribution utility as defined by R.C. § 4928.01(A)(6) and is subject to the jurisdiction of the Public Utilities Commission of Ohio (the “Commission”).

2.     On October 2, 2013, the Commission issued an Opinion and Order in Case No. 12-1832-EL-ESS (“the 2012 case”) approving a Stipulation that set AES Ohio’s current Reliability Standards. The Stipulation stated that Section 4901:1-10-10(B)(7) of the Ohio Administrative Code shall control the timing of the next filing to reset Reliability Standards. The Stipulation also required AES Ohio to conduct a customer perception survey under Staff oversight.

3.     Per §4901:1-10-10 OAC and the Opinion and Order issued by the Commission on October 2, 2013, in the 2012 case, AES Ohio submits this Application to update its Reliability Standards, Customer Average Interruption Duration Index (“CAIDI”) and System Average Interruption Frequency Index (“SAIFI”).

## **II. HISTORICAL PERFORMANCE:**

The Commission established Reliability Standards for AES Ohio in its Opinion and Order issued on October 2, 2013, in the 2012 case. The approved Reliability Standards are listed in Table I.

**TABLE I – Current Reliability Standards**

<b>CAIDI</b>	<b>SAIFI</b>
<b>Annual Standard</b>	<b>Annual Standard</b>
<b>125.04</b>	<b>0.88</b>

In its 2012 application, AES Ohio proposed to establish Reliability Standards based on a review of five years of AES Ohio’s historical performance data. However, as part of the stipulated agreement, AES Ohio agreed to establish Reliability Standards based on a review of three years of AES Ohio’s historical performance data as had been recommended by PUCO Staff.

Since the 2012 case, certain characteristics of the Company’s distribution system have changed as AES Ohio has continued to perform its annual maintenance plans on its distribution system, including vegetation management as well as pole inspections and replacements. A summary of the substantive changes to AES Ohio’s distribution system since the 2012 case are set forth in section V. As a result, even taking into account the exclusions permitted under O.A.C. 4901:1-10-10(C)(1) and the Stipulation, the data used as a basis for the prior standards has become stale and no longer represents appropriate benchmarks by which to measure AES Ohio’s reliability performance.

### **III. PROPOSED RELIABILITY STANDARDS:**

In this application, AES Ohio proposes to update its Reliability Standards for calendar year 2021 and beyond to utilize a five-year averaging methodology and include an increment of 15% to account for year-to-year performance variations. AES Ohio believes that this methodology is reasonable and more appropriately represents AES Ohio's recent system investments while incorporating sufficient time to incorporate variability from factors outside the Company's control, especially weather and outages caused by trees outside of right of way. In addition, pursuant to the ESSS Rule Review Case No. 17-1842-EL-ESS ("Rule Review Case") and the rules becoming effective November 1<sup>st</sup>, 2021, the Company has incorporated transmission outages within its proposed standards.

AES Ohio also proposes to amend its methodology for calculating its SAIFI standard. Historically, the Company used a premise count as a proxy for the number of customers to calculate SAIFI. In order to be consistent with other electric distribution utilities' methodologies in the state, AES Ohio proposes to begin using an active customer number to calculate SAIFI.

Table II illustrates AES Ohio's most recent 5-year CAIDI and SAIFI statistics per the requirements set forth in §4901:1-10-10(C) OAC and compares actual SAIFI performance under the prior calculation method versus the proposed method. The attached Workpapers provide more detailed support for the figures illustrated in Table II.

**TABLE II – Actual Performance and Proposed Reliability Standards with Transmission Outages**

	CAIDI	SAIFI
Year	Actual Performance (Minutes)	Actual Performance (Proposed Method)
2016	114.43	0.85
2017	123.84	0.91
2018	116.50	1.03
2019	130.30	1.09
2020	122.83	1.06
5 Year Avg	121.58	0.99
<b>Proposed Reliability Standards</b>	<b><u>139.82</u></b>	<b><u>1.14</u></b>

**Using a 5-year averaging methodology plus a 15% increment, the Company proposes a CAIDI standard of 139.82 minutes, and a SAIFI standard of 1.14.** The Company proposes that these Reliability Standards include transmission outages and continue to exclude “major event days” as that term is defined by the IEEE 1366 2.5 Beta Method standard. AES Ohio also proposes that these CAIDI and SAIFI standards remain in place until the Commission approves new standards. This Application does not usurp or otherwise relieve the Company of its obligation to file an application for revised standards by no later than June 16, 2026, that incorporates the proposed smartgrid reliability improvements as set forth in the Commission-approved Stipulation in Case No. 18-1875-EL-GRD, *et al.* In addition, AES Ohio may file an application to reset its Performance Standards should changes occur to the Ohio Administrative Code requiring the Company to make such filing.

#### **IV. CUSTOMER SURVEY RESULTS:**

Pursuant to O.A.C. 4901:1-10-10(B)(4)(b), AES Ohio must periodically conduct a customer perception survey (“Survey”) under the Commission Staff’s oversight. Consistent with this requirement, the Company developed and distributed surveys to 800 Residential and 800 Small Commercial respondents. The survey was conducted over four quarterly periods beginning in the

second quarter of 2020. Drafts of the surveys were shared with the PUCO Staff and Staff's comments were incorporated prior to launching the survey.

Generally, the survey results indicate that AES Ohio has consistently exceeded customer expectations as it relates to its reliability performance. 76% of the residential customer respondents indicated that they were very satisfied with the reliability of their electric service with an additional 18% responding somewhat satisfied. Similarly, 77% of business customer respondents were very satisfied with the reliability of their electric service with an additional 16% responding somewhat satisfied.

To measure customer expectations regarding SAIFI, respondents were asked how many sustained interruptions would be considered to be acceptable during a 12-month period. Customer responses were translated into a SAIFI value and weighted by the number of customers in each response segment. The SAIFI results are presented in Table III below.

**TABLE III – Customer Survey SAIFI Results**

<b>Customer Group</b>	<b>Average Survey SAIFI Results</b>	<b>Proposed SAIFI</b>
<b>Residential</b>	<b>2.04</b>	<b>1.14</b>
<b>Small Commercial</b>	<b>1.98</b>	

Similarly, to measure expectations regarding CAIDI, respondents were asked what would be considered an acceptable amount of time for it to take to restore power during a sustained interruption for both non-storm and storm related events. Customer responses were translated into an average CAIDI value. The CAIDI results are presented in Table IV below.

**TABLE IV – Customer Survey CAIDI Results**

<b>Customer Group</b>	<b>Average Survey CAIDI Results Non-Storm</b>	<b>Average Survey CAIDI Results Storm</b>	<b>Proposed CAIDI</b>
<b>Residential</b>	<b>252</b>	<b>900</b>	<b>139.82</b>
<b>Small Commercial</b>	<b>198</b>	<b>786</b>	

**V. OTHER CONSIDERATIONS:**

Pursuant to OAC Rule 4901:1-10-10(B)(4), AES Ohio has also assessed the effects on CAIDI and SAIFI of its system design, historical system performance, technological advancements, and service area geography. As an initial observation, AES Ohio notes that its system design, the state of the current technology on its system, and service area geography are all factors that influence its system performance. Because its proposed CAIDI and SAIFI Reliability Standards are based on average historical system performance, AES Ohio submits that the effects of these factors are adequately and completely taken into consideration in the development of the proposed CAIDI and SAIFI Reliability Standards.

System Design: AES Ohio's transmission system is designed to meet all NERC Reliability Standards and is also subject to analysis and review by PJM Interconnection, LLC in its annual Regional Transmission Expansion Plan process. AES Ohio's distribution system is designed to meet or exceed all applicable National Electric Safety Code requirements in order to provide safe and reliable power to customers within its service territory.

Historical System Performance: AES Ohio's proposed SAIFI and CAIDI standards are developed using the five-year average of historical system performance plus a 15% increment to account for year-to-year variations. Also included in the five-year average are near major event day storms. The Dayton area has experienced much more active storm seasons over the past several years than was typical in prior decades. In each of 2017, 2019, and 2020, the Dayton

area experienced active storm seasons that included significant storms near the major event day threshold for exclusion, but which did not cross that threshold. Thus, the outages caused by such storms were included in and raised the reliability statistics.

Service Area Geography: AES Ohio's historical performance is affected by its service area geography which includes an expansive 26-county mix of urban areas, suburban areas, and rural areas, some of which includes areas with significant numbers of trees near distribution lines.

Technological Advancements and Other Relevant Factors: AES Ohio believes that updating its reliability standards to reflect historical system performance over the most recent five years represents a more appropriate measure of expected performance because it incorporates the incremental improvements the Company has made to its system during this time in addition to more recent weather patterns and the overall age of its system. These changes have affected the Company's CAIDI and SAIFI performance. Below is a summary of the substantive factors that support updating the Standards and have contributed to the Company's actual performance since the 2012 case.

### **Distribution System Hardening**

- The proactive replacement of more than 15,000 A.B. Chance (Porcelain) cutouts has lessened the frequency of short duration outages and reduced cutout related equipment outages occurring on the Company's system. While highly positive from the standpoint of customer experience, this has the mathematical side-effect of increasing CAIDI – with fewer short duration outages, the average duration of outages increases.
- The proactive replacement of underground (URD) cable focused in higher customer count areas has reduced the overall volume of customer interruptions related to URD cable. Since 2017, AES Ohio has replaced over 1,641,000 feet of underground cable and

in doing so, the Company has experienced a 27% reduction in underground equipment failures. In contrast, AES Ohio has experienced a corresponding 33% increase in average outage duration due to the fact that the subsequent URD cable failures that have occurred are more difficult to trouble-shoot and thus, take longer to restore.

### **Hazard Trees**

- Instances of outages related to hazard trees, both in and out of AES Ohio's right-of-way, are more consistently responsible for longer restoration times. Due to the increasing frequency of whole tree and large limb failures in connection with issues such as the Emerald Ash Borer, the Company is experiencing more catastrophic and damaging vegetation impacts which have contributed to a 21% increase in average outage duration.

### **Planned Outages**

- Since the 2012 filing, the Company has undertaken significant infrastructure improvement projects in an effort to reduce customer interruptions. AES Ohio has utilized planned/customer coordinated outages to perform the work safely and effectively. This increased focus on infrastructure improvement projects has caused the number of customers interrupted due to planned outages to increase 195% and the duration of planned outages to increase 23%. Therefore, planned outages that benefit customers by reducing the number of short duration outages experienced also have the mathematical effect of increasing the average duration of the remaining outages that do occur as measured by CAIDI.

### **Public/Vehicle Accidents**

- Since the 2012 filing, the Company has experienced a slight reduction in customer interruptions related to public/vehicle accidents. In recent years, the Company has



experienced a 5% reduction in these types of events but has also experienced a 28% increase in average duration time due to the complexity of restoration and focus around public and employee safety associated with these outage events.

**VI. CONCLUSION:**

AES Ohio respectfully requests the Commission to approve the proposed Reliability Standards set forth in this application.

Respectfully submitted,

*/s/Randall V. Griffin*

Randall V. Griffin

AES Ohio

1065 Woodman Drive

Dayton, Ohio 45432

Ohio Bar No. 0080499

937-479-8983 (cell)

Email: [randall.griffin@aes.com](mailto:randall.griffin@aes.com)

**AES Ohio**  
Case No. 21-0956-EL-ESS  
Supporting Workpapers

Page 1 of 2

<b>SAIFI Calculation - Prior Methodology</b>			
		<b><u>SAIFI</u></b>	<b><u>Source</u></b>
(A)	(B)	(C)	(D)
1	2016	0.76	Company Records
2	2017	0.82	Company Records
3	2018	0.92	Company Records
4	2019	0.97	Company Records
5	2020	0.95	Company Records
6			
7	5 Year Average	0.88	Average: Col (C), Lines 1-5
8	15.00%	0.13	Col (C), Line 7 * 15%
9			
10	<b>New SAIFI Standard</b>	<b>1.02</b>	Col (C), Line 7 + Line 8

<b>CAIDI Calculation</b>			
		<b><u>CAIDI</u></b>	<b><u>Source</u></b>
(A)	(B)	(C)	(D)
1	2016	114.43	Company Records
2	2017	123.84	Company Records
3	2018	116.50	Company Records
4	2019	130.30	Company Records
5	2020	122.83	Company Records
6			
7	5 Year Average	121.58	Average: Col (C), Lines 1-5
8	15.00%	18.24	Col (C), Line 7 * 15%
9			
10	<b>New CAIDI Standard</b>	<b>139.82</b>	Col (C), Line 7 + Line 8

**AES Ohio**  
Case No. 21-0956-EL-ESS  
Supporting Workpapers

Page 2 of 2

<b>SAIFI Calculation - Proposed Methodology</b>					
<u>Line</u>	<u>Year</u>	<u>Customers Interrupted</u>	<u>Active Customers</u>	<u>SAIFI</u>	<u>Source</u>
(A)	(B)	(C)	(D)	(E)	(F)
1	2016	441,046	519,665	0.85	Company Records
2	2017	476,793	522,808	0.91	Company Records
3	2018	541,029	525,690	1.03	Company Records
4	2019	576,696	528,892	1.09	Company Records
5	2020	563,463	529,801	1.06	Company Records
6			5 Year Average	0.99	Average: Col (E), Lines 1-5
7			15.00%	0.15	Col (E), Line 7 * 15%
8					
9			<b>Proposed SAIFI Standard</b>	<b>1.14</b>	Col (E), Line 6 + Line 7

**This foregoing document was electronically filed with the Public Utilities**

**Commission of Ohio Docketing Information System on**

**10/21/2021 4:24:20 PM**

**in**

**Case No(s). 21-0956-EL-ESS**

Summary: Application of the Dayton Power and Light Company D/B/A AES Ohio for Establishing New Reliability Standards electronically filed by Mr. Robert J Adams on behalf of The Dayton Power and Light Company d/b/a AES Ohio