

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of Ohio	)	
Power Company to Revise its Reliability	)	Case No. 20-1111-EL-ESS
Performance Standards Pursuant to Ohio	)	
Adm.Code 4901:1-10-10.	)	

**COMMENTS
OF
THE OHIO MANUFACTURERS' ASSOCIATION ENERGY GROUP**

I. INTRODUCTION

The Ohio Power Company (AEP Ohio or Company) filed an amended application to revise its reliability performance standards and methodology on April 29, 2022 (Application). Troublingly, these revisions amount largely to weakened reliability standards that would permit AEP Ohio to subject its customers to significantly less reliable service without consequence to AEP Ohio.

More specifically, it is concerning that AEP Ohio is proposing the weakest minimum reliability standards since the creation of minimum reliability standards in 2012. As explained herein, AEP Ohio's proposed reliability standards would allow an increase of 188,000 additional customer outages per year without negatively affecting AEP Ohio. It is also concerning that this change comes in the wake of significant outages in AEP Ohio's service territory that left nearly 250,000 Ohio residents, hospitals, and businesses without power during a dangerous heat wave.¹

¹ Laura Hancock, *Extreme heat leads to calls for the Ohio legislature to develop climate change policies, PUCO to investigate utility*, CLEVELAND.COM (June 16, 2022), https://www.cleveland.com/news/2022/06/extreme-heat-leads-to-calls-for-the-ohio-legislature-to-develop-climate-change-policies-puco-to-investigate-utility.html?utm_medium=email.

In order to promote and create a more reliable distribution system with fewer customer outages, OMAEG urges the Commission to consider the recommendations contained herein. These recommendations include excluding failing performance years from the baseline calculation, applying a consistent formula for margin of error for Ohio electric distribution utilities (EDUs), documenting and improving coordination between AEP Ohio and AEP Transmission Company (AEP Transmission), and more thoroughly investigating and valuing local, distributed energy resources as a method of reducing outages even during transmission system stress. Ohioans expect, and deserve, increased reliability from their EDUs, especially in the wake of AEP Ohio purportedly completing more than \$2.8 billion in investments in distribution reliability over the past decade.²

Pursuant to Ohio Adm.Code 4901:1-10-10(B)(6), to assist the Public Utilities Commission of Ohio (Commission) with its review of AEP Ohio's proposed reliability standards, the Commission invited comments on AEP Ohio's proposed reliability standards to be filed by September 28, 2022. Accordingly, the Ohio Manufacturers' Association Energy Group (OMAEG) hereby submits the following comments regarding AEP Ohio's proposed reliability standards to promote cost-effective, transparent, and sensible investments in the distribution system that are paid for by customers.

² See *In the Matter of the Commission's Review of the Ohio Power Company's Distribution Investment Rider Work Plan for 2022*, Case No. 22-0037-EL-RDR, Notice of Ohio Power Company's Distribution Investment Rider Work Plan (Jan. 14, 2022) (Compiled from a review of AEP Ohio DIR expenditures from 2010 to 2022. This excludes reliability investments funded by the gridSMART or ESRR riders and thus does not completely capture AEP Ohio's historical investment in distribution system "reliability.").

II. COMMENTS

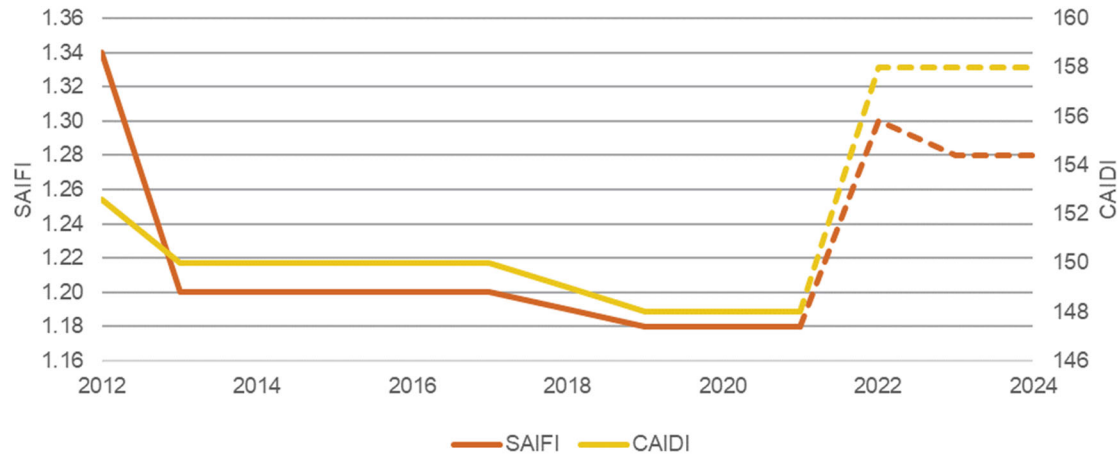
A. AEP Ohio's proposed standards are unjust, unreasonable, and the weakest since the establishment of minimum reliability standards in 2012 by a significant margin.

Beginning in 2012, Ohio's EDUs were required to develop minimum performance standards for distribution system reliability per Ohio Adm.Code 4901:1-10-10. Two indices govern these standards: CAIDI (the customer average interruption duration index) and SAIFI (system average interruption frequency index).³ These two standards quantify how often a customer is likely to lose electric service and for how long, on average. Lower values for each index are better, equating to fewer service interruptions and shorter durations of interruptions.

It stands to reason that Ohio ratepayers and manufacturers would desire increased reliability as measured by CAIDI and SAIFI. However, AEP Ohio's proposed standards for 2022 and onward would lower the minimum standards, allowing AEP Ohio to subject its customers to significantly more outages without consequence. In fact, as shown in the figure below, during the age when reliability is critical to the operation of advance equipment and when interruptions and outages can negatively affect manufacturing operations, the standards proposed by AEP Ohio are the weakest since minimum reliability standards were implemented in 2012. AEP Ohio's proposed minimum standards for 2022 and onward are identified below by a dashed line.

³ CAIDI and SAIFI are reliability indices defined by IEEE 1366

Figure 1: AEP Ohio Historical and Proposed Minimum Reliability Standards⁴



Additionally, the request to ease reliability standards comes before the Commission after recent AEP system outages that left nearly 250,000 Ohio customers without power.⁵ This represents a 10% decrease in system performance as measured with SAIFI,⁶ and a 7% decrease in system performance as measured by CAIDI⁷ between 2021 and 2022. This means that customers in AEP Ohio's territory could expect as many as 181,000 more outages each year,⁸ with 88

⁴ See Application to Revise Reliability Performance Standards (July 1, 2020); see also *In the Matter of the Establishment of Minimum Reliability Performance Standards, Pursuant to Ohio Adm. Code 4901:1-10-10(B), for Ohio Power Company*, Case No. 16-1511-EL-ESS, Opinion and Order at ¶¶ 14-15 (Feb. 7, 2018); *In the Matter of the Application of Ohio Power Company to Establish New Reliability Standards*, Case No. 12-1945-EL-ESS, Opinion and Order (Mar. 19, 2014).

⁵ Laura Hancock, *Extreme heat leads to calls for the Ohio legislature to develop climate change policies, PUCO to investigate utility*, CLEVELAND.COM (June 16, 2022), https://www.cleveland.com/news/2022/06/extreme-heat-leads-to-calls-for-the-ohio-legislature-to-develop-climate-change-policies-puco-to-investigate-utility.html?utm_medium=email.

⁶ $(1.30 - 1.18) / 1.18 = 10.2\%$.

⁷ $(158 - 148) / 148 = 6.8\%$.

⁸ $(1,509,795 \text{ customers}) \times (1.30 [\text{SAIFI}] - 1.18 [\text{SAIFI}]) = 181,175 \text{ additional interruptions per year.}$

cumulative years of additional outage time per year,⁹ or about 31 minutes of additional outage time per customer.¹⁰

AEP Ohio argues that these relaxed standards are just and reasonable by pointing to survey data purportedly stating that residential and non-residential customers “are willing to accept longer outages due to storms.”¹¹ Such rationale is nonsensical and certainly cannot be true for businesses who lose significant amounts of revenue when outages occur or who lose product that cannot be saved during or after an outage. AEP Ohio’s claimed rationale in its Application also seems to not be consistent with reality. In fact, during the recent June 2022 outages, Tom Kratt, Vice President of Distribution for AEP Ohio stated that “we don’t like the inconvenience on our customers” and “we’re pretty committed to getting all the customers back and their air conditioning back and getting their quality of life back and we won’t stop until we’re done.”¹² As covered extensively in the news following these outages, and echoed by the Commission Chair, “these outages have caused not only inconveniences, but also serious problems for residents and businesses in the affected areas.”¹³ Loss of service is never just ‘inconvenient,’ and AEP Ohio should not downplay potential increases in loss of service due to relaxed standards.

⁹ $148 \text{ [CAIDI]} \times (1,509,795 \text{ customers} \times 1.18 \text{ [SAIFI]}) / (525,600 \text{ min/yr.}) = 502 \text{ years.}$ $158 \text{ [CAIDI]} \times (1,509,795 \text{ customers} \times 1.30 \text{ [SAIFI]}) / (525,600 \text{ min/yr.}) = 590 \text{ years.}$ $590 \text{ years} - 502 \text{ years of total customer outage durations} = 88 \text{ years of outages, per year.}$

¹⁰ This includes the compounding effects of increased outage frequency

¹¹ Amended Application to Revise Reliability Performance Standards, Attachment 2 (Apr. 29, 2022) (Amended Application).

¹² Daniel Griffin, *AEP rep explains widespread power outages*, NBC4i (June 14, 2022), <https://www.nbc4i.com/news/local-news/columbus/aep-we-wont-stop-until-power-restored/>.

¹³ STATEMENT ON POWER OUTAGES, PUB. UTIL. COMM’N OF OHIO, (June 15, 2022), <https://puco.ohio.gov/news/june2022-outages>.

B. AEP Ohio has failed to use existing reliability programs, like the interruptible service tariff, to maintain reliability.

Furthermore, it is important to note that OMAEG members' experiences radically differ from AEP Ohio's representations in its Application, with many manufacturers finding AEP Ohio's recent June 2022 outages and lack of communication to be unacceptable. AEP Ohio maintains an interruptible service tariff and can call on manufacturers to curtail during local, distribution system emergencies. As stated in the tariff, "[i]n the event of a local emergency or if the Company receives an interruptible notice originating from PJM, the Company will issue an interruption notification."¹⁴ Furthermore, "[i]f an emergency situation requires an immediate action by AEP Ohio, the customer will be required to interrupt service immediately."¹⁵

OMAEG members enrolled in this program confirmed that they received a communication stating that they may be required to curtail later over the next few days prior to the June 2022 outages.¹⁶ However, hours later as AEP Ohio's system began to fail, these manufacturers did not receive notification or a request from AEP Ohio to curtail load.¹⁷ This could have hindered AEP Transmission's ability to transfer load from highly loaded transmission circuits to others in a way that could have prevented overloading transmission circuits. If this was not the case, AEP Ohio should have completed contingency analyses which the Commission can now examine that show how AEP Ohio determined that the interruptible tariff need not be used.

¹⁴ Ohio Power Company, Original Sheet No. 470-1

¹⁵ *Id.*

¹⁶ One such communication stated: "I am reaching out to you because the recent storm activity and resulting equipment damage has put us in a position for a potential interruption event. At this time we have not called for any such event, however I wanted to make you aware that an event may be called during the next day or two. – AEP Ohio Customer Service Manager."

¹⁷ Survey of OMAEG members participating in AEP Ohio's IRP-D program.

Reliability is critical to the on-going operations of businesses and facilities for Ohio's manufacturers, and many manufacturers are willing to curtail load in exchange for adequate compensation to ensure the grid stays online for other Ohio customers, including residents.¹⁸ Indeed, this is the entire purpose of the interruptible service tariff. Standards that allow AEP Ohio to do the opposite and harm minimum system reliability should be considered unjust and unreasonable. In any case, AEP Ohio's failure to use the interruptible service tariff to relieve overloading circuits during a local grid emergency demonstrates potential imprudence, should be investigated further, and justifies the denial of AEP Ohio's proposal to reduce or lower its minimum reliability standards.

C. AEP Ohio's proposed standards rely on data from years where AEP Ohio failed to meet the minimum reliability standards, and therefore, those years should be excluded from the new historical baseline.

AEP Ohio also argues that "using the five-year average with two standard deviations is a solid statistical methodology to establish the baseline and anticipates continued use of this method in future standard setting."¹⁹ The proposed five-year baseline period includes 2017 through 2021.²⁰ However, AEP Ohio failed to meet its minimum reliability performance standards during two of those five years—2018 and 2019. In 2018, AEP failed to meet its CAIDI standard.²¹ For two years in a row, from 2018 through 2019, AEP Ohio also failed to meet its SAIFI standard.²²

¹⁸ Additionally, it is worth noting that the impact of voluntary curtailment for a manufacturer is different from that of loss of service. Unexpected power outages can damage valuable equipment necessary for the manufacturing process, whereas curtailment allows equipment to be safely idled.

¹⁹ Amended Application at 14.

²⁰ *Id.*

²¹ *In the Matter of the Annual Report of Electric Distribution System Reliability (Rule 10 for 2018)*, Case No. 19-0992-EL-ESS, Annual Report of Electric Distribution System Reliability at 2 (Mar. 29, 2019).

²² *Id.*; *In the Matter of the Annual Report of Electric Distribution System Reliability Pursuant to Rule 4901:1-10-10(C)*, Case No. 20-0992-EL-ESS, Annual Reports of Electric Distribution System Reliability at 2 (Mar. 31, 2020).

Per the Ohio Administrative Code, AEP Ohio should have filed an action plan identifying the primary factors for failing to meet the standards and listed corrective actions to take in order to achieve compliance.²³ Additionally, failing to meet the same performance standard for two consecutive years constitutes a violation of Commission rules.²⁴ Instead of taking actions necessary to meet its performance standards, AEP Ohio proposes simply weakening or reducing the minimum performance standards.

Thus, AEP Ohio is proposing a baseline period that includes periods wherein AEP Ohio violated the minimum reliability standards as established pursuant to the Ohio Administrative Code. Simply stated, this means that AEP Ohio based its proposed standards off a failing grade. This differs significantly from using system averages from prior reliability standards cases, since those baseline years were not in violation of the distribution system reliability standards. If, as AEP Ohio wishes, this methodology is perpetuated in future cases, AEP Ohio could easily create a feedback loop of ever-diminishing standards that make the distribution system reliability minimum standards irrelevant to their day-to-day operations and strategic investments to the detriment of customers. As such, OMAEG urges the Commission to exclude any years from the baseline that were in violation of AEP Ohio's then-existing reliability standards.

D. AEP Ohio's two standard deviation approach should be rejected in favor of a standardized formula for all Ohio EDUs.

AEP Ohio proposed adding two standard deviations to the five-year historical mean to account for error and variability.²⁵ Standard deviation is a measure of the amount of variation in a set of values. The practical significance of standard deviation, like all descriptive statistics,

²³ Ohio Adm.Code 4901:1-10-10 (D).

²⁴ Ohio Adm.Code 4901:1-10-10 (E).

²⁵ Amended Application at 12.

increases with an increasing number of observations. Generating a standard deviation as a metric is not erroneous, but it is also not particularly significant or meaningful. OMAEG urges the Commission to investigate and consider a standard margin of error or methodology to use among all of Ohio's EDUs. It is also worth noting that an EDU does not violate Commission reliability standards unless it fails to meet the same performance standard for two consecutive years.²⁶ Thus, the Ohio Administrative Code already accounts for year-to-year variability by providing a margin for error.

AEP Ohio argues that age old causes of outages—independent variables—are somehow new: “a challenging factor during this period has been the emergence of outages due to trees outside of rights-of-way (TOR).”²⁷ According to AEP Ohio, “[o]ther challenging factors include outage causes that are not controllable including vehicle accidents.”²⁸ Neither trees nor vehicle accidents are new phenomena and have been around since the creation of the reliability standards, and are thus already considered as causes of outages when setting the existing standards.

The Ohio Administrative Code instructs the Commission to hold a hearing if it appears, to the Commission, that the proposed minimum reliability standards and methodology are unjust or unreasonable:²⁹

If it appears to the commission that the proposals in the application may be unjust or unreasonable, the commission shall set the matter for hearing and shall publish notice of the hearing in accordance with section 4909.10 of the Revised Code. At such hearing, the burden of proof to show that the proposals in the application are just and reasonable shall be upon the electric utility.³⁰

²⁶ Ohio Adm.Code 4901:1-10-10(E).

²⁷ Amended Application at 14.

²⁸ *Id.*

²⁹ Ohio Adm.Code 4901: 1-10-10(B)(6)(e).

³⁰ *Id.*

Without changes to AEP Ohio's methodology and standards, AEP Ohio's proposal to reduce its minimum reliability standards are unjust and unreasonable and should be rejected as AEP Ohio has failed to satisfy its burden of proof to demonstrate that its proposals are just and reasonable. Ohio ratepayers and manufacturers have paid AEP Ohio more than \$2.8 billion dollars for distribution system reliability improvement over the past twelve years, and that is just one rider assessed to customers. This spending should have resulted in a more reliable grid, not less, and AEP Ohio should be held accountable.³¹

E. The Commission should evaluate if AEP Ohio's stated investments in reliability have had any demonstrated or measurable reliability benefit.

AEP Ohio is proposing to exclude specific adjustments to the baseline reliability standard to account for increased reliability expected from the Distribution Investment Rider (DIR), Enhanced Service Reliability Rider (ESRR), and gridSMART Rider.³² Generally, these riders recover costs associated with investments intended to improve reliability. The Application states that these adjustments should capture increased reliability benefits "to the extent not already reflected in the baseline data."³³ No adjustments were proposed for the DIR, ESRR, and

³¹ See *In the Matter of the Commission's Review of the Ohio Power Company's Distribution Investment Rider Work Plan for 2022*, Case No. 22-0037-EL-RDR, Notice of Ohio Power Company's Distribution Investment Rider Work Plan (Jan. 14, 2022) (Compiled from a review of AEP Ohio DIR expenditures from 2010 to 2022. This excludes reliability investments funded by the gridSMART or ESRR riders and thus does not completely capture AEP Ohio's historical investment in distribution system "reliability.").

³² See Amended Application at 7 ("GridSmart Phase 1 is completed and the associated reliability savings have been included in the historical reliability metrics and additional adjustments are not warranted.") *id.* at 8 ("Until further DACR investments are approved, further adjustments to the proposed standards are not warranted."); *id.* ("Since these types of investments have been ongoing, the impact of these investments are already reflected in the five-year historical data and no adjustments will need to be made to the targets."); *id.* at 9 ("With the vegetation program in place for the past 5 years, the reliability improvements have been reflected in the 5-year historical performance indicators and no additional adjustments are needed.").

³³ Amended Application at 6.

gridSMART riders, as the expected impact from each of these riders is already captured within the 5-year historical performance indicators.

AEP Ohio's exclusion of these riders' expected improvement on reliability makes it unclear whether the reliability impact was effectively measured and verified, and how it compares to initial estimates. It also remains unclear how detailed these initial proposals are and whether they quantify the proposed reliability benefit when AEP Ohio decided to make the investments. Put plainly, it is impossible to discern whether the DIR investments are intended to improve reliability, or actually do so. For example, Commission Staff are currently reviewing AEP Ohio's DIR Work Plan for 2022.³⁴ Section A of the Work Plan includes "all of the programs listed [that] either proactively replace infrastructure or impact reliability to customers."³⁵ AEP Ohio is projecting more than \$85 million in proposed projects that should have some positive impact on system reliability.³⁶ However, none of the expected reliability improvements include estimated impacts to SAIFI or CAIDI.

In fact, there is no quantification of reliability benefit from these proposed projects at all. Rather, DIR components are qualitatively described as follows: "may reduce customer interruptions and outages," "reduced outages," and "proactive efforts to maintain system reliability."³⁷

³⁴ See *In the Matter of the Commission's Review of the Ohio Power Company's Distribution Investment Rider Work Plan for 2022*, Case No. 22-0037-EL-RDR, Notice of Ohio Power Company's Distribution Investment Rider Work Plan (Jan. 14, 2022).

³⁵ *Id.* at 4.

³⁶ See *In the Matter of the Commission's Review of the Ohio Power Company's Distribution Investment Rider Work Plan for 2022*, Case No. 22-0037-EL-RDR, Notice of Ohio Power Company's Distribution Investment Rider Work Plan, AEP Ohio 2022 DIR Work Plan Components, Section A (Jan. 14, 2022).

³⁷ *Id.*

In this same Work Plan, Section B lists projects with no expected reliability improvement. The total investment in Section B projects is more than \$220 million, which is nearly three times as much as Section A investment. While these projects provide further investment in the distribution system, it is concerning that new investment would not positively impact system reliability.

Furthermore, the disparity in spending between Section A projects, which have some stated reliability benefit, and Section B projects, which have none, is troubling. Within the Compliance Audit of the DIR rider for both 2019 and 2020, the auditor recommended removing certain costs associated with incentive compensation from Rider DIR recovery.³⁸ These include relocation, stock options, and chief customer officer incentives.³⁹ OMAEG would urge the commission to conduct a thorough review of the cost elements identified in the compliance audits, as well as Section B components of the annual DIR work plan, as well as the gridSMART Rider and ESRR Rider, to assure that AEP Ohio is not irresponsibly spending its customers' money.

The Commission should also promote a more thorough documentation of the expected reliability impact resulting from AEP Ohio's proposed investment in reliability. For instance, in the Amended Application, an adjustment to the baseline reliability standards was made to account for the impact of DACR Phase 2 investments, should they be approved.⁴⁰ This practice of estimating the potential impact to reliability metrics from specific projects facilitates transparency to customers for the revenue collected. Further, the DACR Phase 2 adjustment is based upon the

³⁸ *In the Matter of the Review of the Distribution Investment Rider Contained in the Tariff of Ohio Power Company*, Case 20-0169-EL-RDR, 2019 Compliance Audit at 15 (Aug. 28, 2020); *In the Matter of the Review of the Distribution Investment Rider Contained in the Tariff of Ohio Power Company*, Case 21-0016-EL-RDR, 2020 Compliance Audit at 22 (Sept. 1, 2021).

³⁹ *Id.*

⁴⁰ Amended Application at 13.

measured impact of previous DACR implementation, which illuminates the capability to assess expected impact of investment efforts on reliability metrics using real system data.

The Commission should promote quantitative impact estimates associated with investment in reliability. It is important to study, via measurement and verification, whether various reliability projects have had a statistically significant impact on reliability in Ohio, and to what degree the measured impact agrees with the estimate. This will help ensure that revenue recovered through these riders is directed and targeted in ways that truly benefit the grid.

F. In future proceedings, the Commission should consider changing Ohio Adm.Code 4901:1-10-10 (B)(4)(c) to include, rather than exclude loss of service and major event days from reliability indices.

The Ohio Administrative Code states that “performance data during major events and transmission outages shall be excluded from the calculation of the indices, proposed standards, and any revised performance standards, as set for in paragraph (B) of this rule.”⁴¹ The rationale for this is likely intended to evaluate the EDU specifically on the day-to-day reliability of its distribution system, rather than events that are thought to be outside the EDUs’ control.

However, changing or adding performance indices to also include loss of service (LOS) and major event days (MEDs) could be valuable for Ohioans by targeting measures that specifically reduce LOS and MED contributions to SAIFI and CAIDI. For instance, the construction of a microgrid could ensure that residents and manufacturers retain power during a transmission LOS, thus improving system reliability. Thus, in a future case, the Commission should investigate and study the impact of including LOS and MED contributions in Ohio’s reliability standards, as outages caused by LOS or MED are still outages, and tools exist to mitigate their impact. LOS and MED related outages can be measured and can be managed.

⁴¹ Ohio Adm.Code 4901:1-10-10 (B)(4)(c).

G. AEP Ohio should detail and make public its plan for communication and coordination with AEP Transmission during a LOS with the aim of improving reliability for Ohio customers.

At the September 8, 2022, technical conference, AEP Ohio stated that the Company maintains a plan for communicating and coordinating with AEP Transmission. We believe it would be beneficial for AEP Ohio to formalize and share this plan with the public or intervening parties with the intent of improving collaboration and grid resilience during LOS or periods of transmission grid strain.

Improving communication and coordination between transmission owners and the EDUs that they serve would likely improve reliability for customers (when including MEDs and LOS). The current level of coordination may be insufficient. For instance, AEP Ohio has repeatedly stated that the June outages were unique because they had little to no warning of impending grid failure. However, it has been widely stated that following several transmission lines tripping, PJM issued a load shed directive between 1:40 PM and 1:58 PM on June 14, 2022.⁴² PJM's senior vice president of operations stated that "AEP [Transmission] then had five minutes to follow that directive and shut off power to the affected areas."⁴³

However, it is concerning that despite many warnings issued to AEP Transmission throughout the day, prior to the load shed directive, starting at 5:46 AM on June 14, 2022, these outages still occurred.⁴⁴ This first warning was a post contingency local load relief warning, and was issued by PJM to transmission owners. Per PJM:

⁴² Andy Chow, *Grid operators gave AEP five minutes to shut off power to thousands of homes in June*, THE STATEHOUSE NEWS BUREAU (July 13, 2022), <https://www.statenews.org/government-politics/2022-07-13/grid-operators-gave-aep-five-minutes-to-shut-off-power-to-thousands-of-homes-in-june>.

⁴³ *Id.*

⁴⁴ See Posting 103523: Post Contingency Local Load Relief Warning, PJM, available at <https://emergencyprocedures.pjm.com/ep/pages/viewposting.jsf?id=103523>.

the purpose of the Post Contingency Local Load Relief Warning (PCLLRW) is to provide advance notice to a Transmission Owner(s) (TOs) of the potential for load shed in their area(s). It is issued after all other means of transmission constraint control have been exhausted or until sufficient generation is on-line to control the constraint within designated limits and timelines.⁴⁵

This first warning was issued approximately eight hours *prior* to PJM's load shed directive. Following this first warning, PJM issued four additional PCLLRWs to AEP Transmission prior to the load shed directive, spanning 9:43 AM to 12:37 PM on June 14, 2022.⁴⁶

Moreover, AEP Transmission should have been conducting contingency analyses during this time to understand how downed transmission lines would shift electric load during an expected hot day. AEP Transmission knew which transmission lines were down from storms, it knew which lines it had down for maintenance, it knew the following day that it would result in heavy loads, and it received ample warnings of all of this from PJM. And, AEP Transmission had plentiful time to conduct contingency analysis to determine which transmission circuits might overload. Therefore, the Commission should investigate the thoroughness of AEP Transmission's contingency analysis, and if there was a non-storm or non-heat related equipment failure.

AEP Ohio could have coordinated more effectively with AEP Transmission in the day leading up to the outages, as the AEP Companies had or should have had the information needed

⁴⁵ PJM Manual 13, Section 5.4 (Mar. 23, 2022), available at <https://www.pjm.com/~media/documents/manuals/m13.ashx>.

⁴⁶ See Posting 103524: Post Contingency Local Load Relief Warning, PJM, available at <https://emergencyprocedures.pjm.com/ep/pages/viewposting.jsf?id=103524>; Posting 103525: Post Contingency Local Load Relief Warning, PJM, available at <https://emergencyprocedures.pjm.com/ep/pages/viewposting.jsf?id=1035235>; Posting 103526: Post Contingency Local Load Relief Warning , PJM, available at <https://emergencyprocedures.pjm.com/ep/pages/viewposting.jsf?id=103526>; Posting 103527: Post Contingency Local Load Relief Warning , PJM, available at <https://emergencyprocedures.pjm.com/ep/pages/viewposting.jsf?id=103527>.

to communicate the risk of outages to the public, and to coordinate a response with local leaders.⁴⁷ In the future, AEP Ohio should have a plan in place to reduce local load without first resorting to emergency shut offs to manufacturers, neighborhoods, community centers, hospitals, and businesses. This could include targeted curtailment with smart thermostats, calling on IRP-D participants and other interruptible customers to curtail load, expanding tariffs that value demand reduction during transmission system peaks and stress. These plans should be tied to potential PCLLRWs so that when AEP Transmission receives a warning, AEP Ohio is able to take action to prevent catastrophic and potentially cascading outages.

This plan could also document the use of AMI and other grid modernization efforts to reduce load and prevent emergency outages. Smart meters could be used to rotate and isolate outages rather than resorting to shutting off entire circuits. As mentioned above, the plan could include temperature setbacks via smart thermostats. Volt/Var Optimization (VVO) can be used to optimize system voltage and reduce power draw. Customers on interruptible tariffs could be called on to reduce load. AEP could expand their interruptible tariffs or expand access to the BTCR Pilot program, which provide system benefits and incentivize large users to reduce load during critical peak periods. Microgrids could island parts of the grid that might otherwise lose service, thereby reducing strain on the grid. Batteries, local demand response, and other distributed energy resources could provide much needed local load relief. Customer sited generation could be called

⁴⁷ For comparison, California ISO sent out an emergency alerts via text to keep the grid online during unprecedented demand: “Extreme heat is straining the state energy grid. Power interruptions may occur unless you take action. Turn off or reduce nonessential power if health allows, now until 9pm.” See *State Officials Sent Cell Phone Alerts to Protect Public Safety Amidst Ongoing Record Heat, Energy Grid Shortfalls*, CAL OES NEWS (Sept. 6, 2022), <https://news.caloes.ca.gov/state-officials-sent-cell-phone-alerts-to-protect-public-safety-amidst-ongoing-record-heat-energy-grid-shortfalls/>.

on to produce power. AEP Ohio representatives seem to ignore these potential solutions. When asked about AEP Ohio's responsibility, one representative stated that they have done "...a lot of soul searching to see if there is something we could have done differently. With that I don't see it."⁴⁸

Since this would require planning prior to any outage taking place, it is essential that AEP Ohio develop a local load relief plan that considers all these factors and provides Ohio customers value for participation in the plan. This would benefit both AEP Ohio and its customers by using existing technologies and resources to significantly improve system reliability in a cost effective manner. Finally, areas of Columbus that lost power during the June outages, and other underserved areas, should be prioritized for such local planning. This planning should include a full and transparent investigation into AEP Ohio's intentional load shedding in central Ohio in June 2022. This will ensure that AEP Ohio is ready and able to respond to future MEDs and LOS events.

Thus, OMAEG urges the Commission to instruct AEP Ohio, either in this case or a separate proceeding, to take steps to formalize a response to LOS, MED, and Transmission stress events and allow for public collaboration and input. Ideally, this would be a living document that adapts to changing technologies and distributed energy resources. This would improve reliability for Ohio and would be in the interest of both AEP Ohio and its customers.

III. CONCLUSION

Despite recent, significant outages that left nearly 250,000 Ohio residents, hospitals, and businesses without power during a dangerous heat wave, and past failures to meet Commission-mandated reliability standards, AEP Ohio proposes the creation of unjust and unreasonable

⁴⁸ Mark Williams, *AEP documents 18 minutes before the lights went out for 150,000 customers*, DISPATCH (July 15, 2022), <https://www.dispatch.com/story/business/2022/07/15/18-minutes-then-lights-went-out-150-000-aep-customers/10058236002/>.

reliability standards which would be the weakest since the creation of minimum reliability standards. Rather than taking action to improve reliability, AEP Ohio seeks to lower the standard against which the Commission evaluates its reliability.

For emphasis, on July 13, 2022, AEP Ohio and the PJM Regional Transmission Operator testified before the Commission that exceedance of thermal capacity limits and a protective relay failure were key causes of transmission facility failures in central Ohio during June of 2022. The exceedance of thermal capacity limits and failure of protective relays were cited as causes for “tripping” transmission facilities and AEP Ohio’s subsequent intentional load shed of June 14 and 15, 2022. Both AEP Ohio and PJM explained that wider electric grid failures could have occurred, nearly causing a larger catastrophe.

Therefore, OMAEG respectfully requests that the Commission consider the recommendations contained herein, which would lead to a more reliable distribution system. These recommendations include excluding failing performance years from the baseline calculation; applying a consistent formula for margin of error for Ohio EDUs; documenting and improving coordination between AEP Ohio and AEP Transmission Company; and more thoroughly investigating and valuing local, distributed energy resources, as a method of reducing outages even during transmission system stress.

The system failures in central Ohio in June 2022 should produce a range of prudent changes to not just regulation and operation of the transmission system, but also the distribution system. Without change, Ohio customers, including manufacturers, will be subject to repeated system failures stemming from the same underlying conditions of extreme weather, lack of proper documentation, and lack of coordination with customers and their power resources. Central Ohio

is poised to become a leader in high-tech manufacturing sensitive to power disruption, and cannot afford continued inaction on system reliability.

Respectfully submitted,

/s/ Kimberly W. Bojko

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CERTIFICATE OF SERVICE

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Case No(s). 20-1111-EL-ESS

Summary: Comments electronically filed by Mrs. Kimberly W. Bojko on behalf of
The Ohio Manufacturers' Association Energy Group