

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

AN ELECTRONIC EXAMINATION OF THE)
APPLICATION OF THE FUEL ADJUSTMENT)
CLAUSE OF KENTUCKY POWER COMPANY)
FROM NOVEMBER 1, 2021 THROUGH APRIL)
30, 2022)

Case No. 2022-00263

REBUTTAL TESTIMONY OF
TIMOTHY C. KERNS
ON BEHALF OF KENTUCKY POWER COMPANY

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I. INTRODUCTION

1 **Q. PLEASE STATE YOUR NAME, POSITION, AND BUSINESS ADDRESS.**

2 A. My name is Timothy C. Kerns and my business address is Rockport Generating Station,
3 2791 N. US Highway 231, Rockport, IN 47635. I am Vice President Generating Assets
4 for Indiana Michigan Power Company (“I&M”), Wheeling Power Company (“WPCo”),
5 and Kentucky Power Company (“Kentucky Power” or the “Company”). I&M, WPCo, and
6 Kentucky Power are wholly-owned subsidiaries of American Electric Power Company,
7 Inc. (“AEP”).

8 **Q. PLEASE DESCRIBE YOUR CURRENT RESPONSIBILITIES.**

9 A. I am responsible for the safe, reliable, and economic operation of the fossil-fueled
10 generating assets owned or operated by Kentucky Power, WPCo and I&M, including the
11 Mitchell Plant and the Rockport Plant. Specifically, I plan, organize, coordinate, direct,
12 and control plant activities, including the operations, maintenance, engineering, and
13 construction of the plant facilities. I also oversee plant budgets and interface with other
14 AEP functional groups such as accounting, regulatory, and commercial operations to
15 ensure the needs of the generating plants are met. Additionally, I am responsible for the
16 decommissioning, demolition, and disposition of generating assets owned or operated by
17 Kentucky Power, WPCo, and I&M. In my capacity as Vice President Generating Assets
18 for Kentucky Power, I have direct oversight over the operation and management of the
19 Mitchell Plant and the Rockport Plant.

1 **Q. HAVE YOU TESTIFIED PREVIOUSLY IN REGULATORY PROCEEDINGS?**

2 A. Yes. I have submitted testimony on behalf of Kentucky Power before the Public Service
3 Commission of Kentucky in Case Nos. 2020-00174 (base rate case) and 2021-00421
4 (Kentucky Power's application for approval of affiliate agreements for the Mitchell Plant).
5 I have also submitted testimony on behalf of WPCo before the West Virginia Public
6 Service Commission and on behalf of I&M before the Indiana Utility Regulatory
7 Commission.

8 **Q. PLEASE BRIEFLY DESCRIBE YOUR EDUCATIONAL BACKGROUND AND**
9 **BUSINESS EXPERIENCE.**

10 A. I hold a Bachelor of Science in Mechanical Engineering Degree from West Virginia
11 Institute of Technology and have been employed with AEP for 34 years. I have worked at
12 various power plants across the AEP system as a Performance Engineer, a Maintenance
13 Engineer, and a Plant Manager. From 2001 to 2005, I was the Regional Services
14 Organization Manager responsible for providing maintenance related services to AEP's
15 Fossil, Hydro, and Nuclear generating fleet facilities owned by various AEP affiliates. I
16 have also held the positions of Regional Engineering Manager and Regional Outage
17 Manager. I was promoted to my current position with American Electric Power Service
18 Corporation ("AEPSC") in October 2020. AEPSC supplies engineering, financing,
19 accounting, and planning and advisory services to the subsidiaries of AEP.

20 **Q. DID YOU OFFER DIRECT TESTIMONY IN THIS PROCEEDING?**

21 A. No.

II. PURPOSE OF REBUTTAL TESTIMONY

1 **Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?**

2 A. The purpose of my rebuttal testimony is to provide evidence that the Company's owned
3 generating units did not "operate poorly" during the review period as asserted by AG-KIUC
4 Witness Lane Kollen, and to provide further information and context concerning the
5 operation of the Company's generating units.

6 **Q. ARE YOU SPONSORING ANY REBUTTAL EXHIBITS?**

7 A. No.

III. DISCUSSION OF THE COMPANY'S GENERATING UNITS

8 **Q. DO YOU AGREE WITH MR. KOLLEN'S CHARACTERIZATION ON PAGE 9**
9 **OF HIS DIRECT TESTIMONY THAT THE COMPANY'S OWNED**
10 **GENERATING UNITS "OPERATED POORLY" DURING THE REVIEW**
11 **PERIOD?**

12 A. No. While I can't speculate on Mr. Kollen's definition of "operated poorly", the tables
13 included with his response (page 10) indicate that his characterization is based solely on
14 the units' Net Capacity Factors ("NCF") and Equivalent Availability Factors ("EAF"). Mr.
15 Kollen correctly points out that there were times when none of the units were generating
16 due to outages (Planned, Maintenance and Forced)¹, and Reserve Shutdowns and market

¹ Planned Outage is an outage lasting several weeks and is taken to permit the Company to perform work on major equipment groups that are not immediately required for the safe operation of the unit. Planned Outages are scheduled approximately a year in advance. The dates of the Planned Outages are approved by PJM.

Maintenance Outages also are approved by PJM. They require shorter lead time for notifying PJM and are taken to perform repair and maintenance work. Maintenance Outages may be initially scheduled for up to nine days, although they may be extended once underway.

A Forced Outage is an unplanned outage to address an immediate operational or safety concern at the generation facility. Forced outages typically last from a few hours to several days depending on the situation.

1 conditions, and their subsequent negative impact on NCF and EAF. Mr. Kollen fails to
 2 acknowledge, however, that Planned and Maintenance Outages are taken to address
 3 reliability issues on the units and to prevent those issues from causing forced outages or
 4 de-rates during times when the units are economic. Thus, none of the indicators upon
 5 which Mr. Kollen bases his assumptions would indicate how the units actually operated.

6 Forced Outage Factor (“FOF”) is an unweighted (time based) metric defined as the
 7 ratio of the Forced Outage Hours to the Period Hours, expressed as a percentage.

8
 9 The equation for FOF is shown below.

Forced Outage Factor – FOF

$$FOF = \frac{FOH}{PH} \times 100\%$$

10 where, FOF = Forced Outage Factor
 11 FOH = Forced Outage Hours
 12 PH = Period Hours

13 Table 1 below describes the FOF for the “Company’s owned generating units”
 14 during the review period, and a 4.19% FOF for the units in question for the review period
 15 does not align with Mr. Kollen’s “operated poorly” characterization.

Unit	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	Review Period Average
Big Sandy Unit 1	0.00%	0.00%	2.53%	0.00%	0.00%	8.24%	1.80%
Mitchell Unit 1	0.00%	0.00%	0.00%	18.33%	15.62%	3.18%	6.19%
Mitchell Unit 2	7.66%	9.68%	0.00%	0.00%	0.00%	1.82%	3.19%
Rockport Unit 1	0.00%	0.00%	35.08%	21.12%	0.00%	0.00%	9.37%
Rockport Unit 2	1.27%	1.22%	0.00%	0.00%	0.00%	0.00%	0.42%
Monthly Average	1.79%	2.18%	7.52%	7.89%	3.12%	2.65%	4.19%

Table 1: Forced Outage Factor during Review Period

16 **Q. CAN YOU PLEASE DESCRIBE WHAT THE “EQUIVALENT AVAILABILITY**
 17 **FACTOR” IS?**

18 **A.** Yes. EAF is an unweighted (time based) performance metric defined in Appendix F of the

1 NERC's 2022 GADS Data Reporting Instructions as the ratio of a generating unit's
 2 available hours to the number of hours in the period being measured, expressed as a
 3 percentage. It represents the percent of time in a specific period when the unit was
 4 available to operate. When a unit is in a Planned, Maintenance, or Forced Outage, it is
 5 considered unavailable and therefore reduces the number of Available Hours. Similarly,
 6 de-rates to the unit are converted to Equivalent Hours and subtracted from the number of
 7 Available Hours for the EAF determination. Therefore, a unit's EAF will be lower in
 8 months when there are a high number of Planned, Maintenance, or Forced Outage hours or
 9 when it has a significant de-rate.

10 The equation for EAF is shown below.

Equivalent Availability Factor – EAF

$$\text{EAF} = \frac{\text{AH} - \text{EPDH} - \text{EUDH} - \text{ESEDH}}{\text{PH}} \times 100\%$$

11 where, EAF = Equivalent Availability Factor

12 AH = Available Hours

13 EPDH = Equivalent Planned Derate Hours

14 EUDH = Equivalent Unplanned Derate Hours

15 ESEDH = Equivalent Seasonal Derate Hours

16 **Q. CAN YOU PLEASE GIVE SOME BACKGROUND AS TO WHY BIG SANDY**
 17 **UNIT 1, MITCHELL UNIT 1, ROCKPORT UNIT 1, AND ROCKPORT UNIT 2**
 18 **HAD EAFS OF 0.0 FOR THE MONTH OF NOVEMBER 2021?**

19 A. Yes. Big Sandy Unit 1 was in a Planned Outage for the entire month of November 2021.
 20 The Planned Outage started on October 8, 2021 and ended December 21, 2021. The major
 21 scope of that outage included high energy piping inspections (safety), cooling tower repairs
 22 (reliability), and inspections for corrosion fatigue (safety).

1 Mitchell Unit 1 was in a Planned Outage for the entire month of November 2021.
2 The Planned Outage started on October 16, 2021 and ended December 21, 2021. In
3 addition to routine inspections and repairs, the scope of that outage included the
4 replacement of one layer of SCR catalyst (environmental compliance) and the boiler feed
5 pump rotating element (reliability).

6 Rockport Unit 1 was in a Planned Outage for the entire month of November 2021.
7 The Planned Outage started on September 11, 2021 and ended December 15, 2021. The
8 scope of that outage was for general boiler maintenance and other equipment inspections
9 and repairs (reliability).

10 Rockport Unit 2 was in a Planned Outage for the entire month of November 2021.
11 The Planned Outage started on October 9, 2021 and ended November 30, 2021. The scope
12 of that outage was for general boiler maintenance and other equipment inspections and
13 repairs (reliability).

14 Since each of these units was in Planned Outages for the entire month of November
15 2021, the number of Available Hours (AH in the equation above) is zero, resulting in an
16 EAF of zero for the month for each.

17 **Q. IS THERE ANY OTHER INFORMATION YOU CAN PROVIDE THAT WOULD**
18 **GIVE SOME ADDITIONAL CONTEXT REGARDING EAFS FOR THE**
19 **COMPANY'S GENERATING UNITS DURING THE REVIEW PERIOD?**

20 A. Yes. Throughout the review period, Big Sandy Unit 1, Mitchell Unit 1, Mitchell Unit 2,
21 Rockport Unit 1 had Planned, Maintenance and Forced Outages, while Rockport Unit 2
22 had Planned and Maintenance Outages (no Forced Outages). By definition, any event that

1 reduces the number of Available Hours will result in a lower EAF for the period in which
 2 the event occurs.

3 PJM bars utilities from taking Planned Outages during the months of January,
 4 February, June, July, and August when energy demand typically is high. Kentucky Power
 5 further limits its requests for Planned Outages to the “shoulder months” of March, April,
 6 May, September, October, November, and December when energy demand is expected to
 7 be less.² The review period thus includes four of the seven months available for Planned
 8 Outages.

9 With each of the units having these types of outages during the review period, the
 10 number of Available Hours was reduced resulting in a lower EAF than a period with fewer
 11 outage hours.

12 **Q. WHY WERE THE NET CAPACITY FACTORS ZERO OR NEARLY ZERO FOR**
 13 **ALL UNITS IN MARCH OF 2022?**

14 A. NCF is defined as the ratio of Net Actual Generation to the Net Maximum Capacity
 15 (“NMC”) of the unit times the Period Hours, expressed as a percentage.

16 The equation for NCF is shown below.

Net Capacity Factor – NCF

$$17 \quad \mathbf{NCF = \frac{Net\ Actual\ Generation}{PH \times NMC} \times 100\%}$$

18 where, NCF = Net Capacity Factor

19 Net Actual Generation = Net Generation from the unit during the period

20 PH = Period Hours

21 NMC = Net Maximum Generating Capacity of the unit

² Milder temperatures typically experienced in shoulder months historically result in lower energy prices and lower customer consumption.

1 Since NCF represents the ratio of a unit's actual generation to its maximum potential output
2 for a given period, anything that results in the unit output being less than its NMC will
3 negatively impact its NCF. Therefore, outages (all types), de-rates (all types), and even
4 Reserve Shutdown (RS) hours represent times when the unit's output is either zero (outages
5 and RS) or less than its nameplate (de-rates) and will result in a lower NCF. In addition to
6 outages and de-rates, market conditions will dictate a unit's output when it is in service. It
7 is very common during periods of low energy prices (typically nights and weekends) that
8 the unit will be dispatched to its economic minimum ("Ecomin") which is usually between
9 30% and 50% of the unit's NMC. This too results in a lower NCF.

10 Since each of the units experienced either a Planned, Maintenance, or Forced
11 outage or had de-rates due to equipment issues, their actual net generation was significantly
12 less than their NMC for the period, resulting in zero or near zero NCFs.

13 **Q. IS IT YOUR OPINION THAT THE COMPANY OPERATED EACH OF ITS**
14 **GENERATING UNITS IN ACCORDANCE WITH BEST PRACTICES?**

15 A. Yes. The Company operated its generating units prudently and consistent with regulated
16 utility best practices. It did so by utilizing price adders³ to conserve fuel and taking
17 advantage of times when the units were not selected for operation by PJM (Reserve
18 Shutdown) in order to address reliability issues by requesting Maintenance Outages.

IV. CONCLUSION

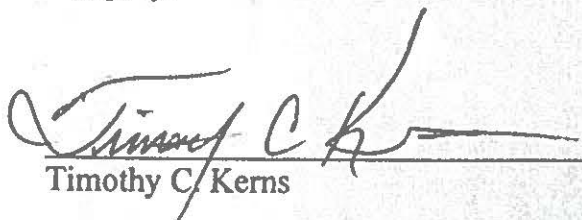
19 **Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?**

20 A. Yes, it does.

³ See Stegall Direct Testimony at 8-9.

VERIFICATION

The undersigned, Timothy C. Kerns, being duly sworn, deposes and says he is Vice President of Generating Assets for American Electric Power Service Corporation, that he has personal knowledge of the matters set forth in the foregoing testimony, and the information contained therein is true and correct to the best of his information, knowledge, and belief after reasonable inquiry.



Timothy C. Kerns

Commonwealth of Kentucky)

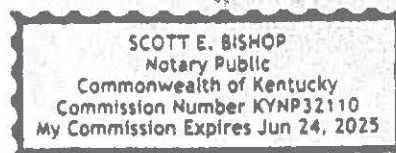
County of Boyd)

Case No. 2022-00263

Subscribed and sworn before me, a Notary Public, by Timothy C. Kerns this 13th day of January, 2023.



Notary Public



My Commission Expires June 24, 2025

Notary ID Number: KYNP 32110