COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

Electronic Application Of Kentucky Power Company For A Certificate Of Public Convenience And Necessity To Replace and Upgrade Portions of the Bellefonte Station In Boyd County, Kentucky (Bellefonte Station Upgrade Project)	)))))	Case No. 2024-00343

ERRATA DIRECT TESTIMONY OF

NICOLAS C. KOEHLER

ON BEHALF OF KENTUCKY POWER COMPANY

ERRATA DIRECT TESTIMONY OF
NICOLAS C. KOEHLER ON BEHALF OF
KENTUCKY POWER COMPANY
BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY

CASE NO. 2024-00343

TESTIMONY INDEX

SECTION **PAGE**

ERRATA DIRECT TESTIMONY OF
NICOLAS C. KOEHLER ON BEHALF OF
KENTUCKY POWER COMPANY
BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY

CASE NO. 2024-00343

I. INTRODUCTION

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

A. My name is Nicolas C. Koehler. My position is Director of East Transmission Planning for American Electric Power Service Corporation ("AEPSC"). AEPSC supplies engineering, financing, accounting, planning, advisory, and other services to the subsidiaries of the American Electric Power ("AEP") system, one of which is Kentucky Power Company (the "Company"). My business address is 1 Riverside Plaza, Columbus, Ohio 43215.

II. BACKGROUND

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND BUSINESS EXPERIENCE.

A. I received a Bachelor of Science – Electrical Engineering degree from Ohio Northern University in Ada, Ohio. In 2008, I joined AEP as a Planning Engineer where I advanced through increasing levels of responsibility. I received my Professional Engineer license in the state of Ohio in 2012 (license number 76967). In May 2019, I assumed my current position.

Q. WHAT ARE YOUR RESPONSIBILITIES AS DIRECTOR OF EAST TRANSMISSION PLANNING?

A. My responsibilities include organizing and managing all activities related to assessing the adequacy of AEP's transmission network to meet the needs of its customers in a reliable,

safe, cost effective, and environmentally compatible manner. I participate in planning activities with Kentucky Power to address overall system performance.

Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY BEFORE THE KENTUCKY PUBLIC SERVICE COMMISSION?

A. Yes. I previously submitted testimony in support of three of Kentucky Power's previous transmission Certificate of Public Convenience and Necessity ("CPCN") cases, Case No. 2020-00062, Case No. 2021-00346, and Case No. 2023-00040.

III. PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. I am testifying in support of Kentucky Power's application for a CPCN authorizing Kentucky Power to construct the Bellefonte Station Upgrade Project (the "Project") located in Boyd County just northwest of Ashland. I will provide information related to the need for the Project.

IV. PROJECT NEED AND SOLUTION

Q. PLEASE DESCRIBE THE NEED FOR THE PROPOSED PROJECT.

A. This Project is driven by baseline thermal and short circuit violations at the Bellefonte Station identified by AEP and PJM during the 2026 Regional Transmission Expansion Plan ("RTEP"), as well as supplemental asset renewal needs identified by AEP within the Station. During the 2026 RTEP planning process, an N-1-1 violation was identified on the station conductors ("risers") between 138/69 kV Transformer #3 and the 69kV causing a thermal overload due to loss of the 138/69kV transformer and associated buses at Kenova Station. and the Bellefonte 138/69kV Transformer #2. These risers will need to be upgraded. Also during the 2026 RTEP, six 69 kV breakers, C, G, I, Z, AB, and JJ, were

identified as overdutied. Addressing this baseline violation has the additional benefit of upgrading these 1970's vintage oil-filled breakers, which are increasingly difficult and expensive to maintain. After these upgrades are complete, some minor remote end upgrades must also be completed at associated stations, Pleasant Street Station and Coalton Station, to adjust for the upgrades.

For supplemental needs, the 138/69 kV Transformer #2 is 1970's vintage and has nitrogen and oil leaks, along with failed fans, and it lacks high-side protection. The oil filled 69kV circuit breakers H and T are 1960's vintage and are increasingly difficult and expensive to maintain and will be upgraded as part of the Project. The 69kV capacitor bank KK is installed on the Raceland 69kV line instead of the 69kV bus. The Company is also using this opportunity to electrically reterminate the Raceland 69kV line from bus #2 to bus #1 and the capacitor bank from the Raceland 69kV line to bus #1. After these upgrades are complete, some minor remote end upgrades must also be completed at an associated station, Raceland Station, to adjust for the upgrades.

The 34.5 kV yard is obsolete and no longer serves any customers and will be retired. The two 138/34.5 kV Transformers, #1 and #5, are 1950's and 1960's vintage respectively and have asset health concerns such as oil and nitrogen leaks and also will be retired. The 34.5kV circuit breakers E, K, M, and F are 1950's-1970's vintage and have asset health concerns such as being oil filled without oil containment, and will also be retired.

Q. PLEASE DESCRIBE HOW THE PROJECT ADDRESSES THE NEEDS YOU IDENTIFIED ABOVE.

A. The baseline needs will be addressed on this Project by replacing the overloaded and overdutied equipment. The risers on 138/69kV Transformer #3 are overloaded to 101%.

This Project will increase the rating of the risers. The 69kV circuit breakers C, G, I, Z, AB, and JJ are overdutied to 115%. This Project will replace these circuit breakers with 40 kA circuit breakers.

The remaining supplemental equipment condition needs will be addressed by replacing 69kV circuit breakers H and T. The 138/69kV Transformer #2 will be replaced and a 138kV circuit switcher will be installed. The 69kV line to Raceland will be relocated from 69kV bus #2 to 69kV bus #1 and the 69kV capacitor bank KK will be moved from the Raceland line to 69kV bus #1. The 34.5 kV yard and equipment will be retired since it no longer serves any customers. This includes 138/34.5kV Transformer #5 and #1, and 34.5kV circuit breakers E, K, M, and F.

Q. HOW MANY CUSTOMERS ARE SERVED BY THIS STATION IN THE AREA?

A. Bellefonte Station currently serves two industrial customers and 3,570 distribution customers. The industrial customers served from transmission have a peak load of approximately 26.9 MW. The distribution customers served from Bellefonte Station have a peak load of approximately 17.5 MW.

Q. ARE THERE FUTURE PROJECTS ANTICIPATED FOR THIS STATION?

A. If the CPCN requested in this Application is granted, the Company does not anticipate further projects at the Bellefonte Station this time.

Q. IS THE DESIGNATION OF A PROJECT AS "BASELINE" OR "SUPPLEMENTAL" INDICATIVE OF WHETHER THE PROJECT IS NECESSARY OR HOW NECESSARY IT IS?

A. No, it is not. The designation of a project as a Baseline or Supplemental is not indicative of the level of, or absence of, need for the project. Instead, the designations simply reflect

that the project addresses different system reliability and resilience needs.

The criteria for designation as a Supplemental or Baseline Project are not mutually exclusive, and a single project can be needed under either or both. Under the existing PJM RTO framework, Transmission Owners retain planning responsibility for managing the maintenance and replacement of their transmission assets and planning of their local transmission systems.

PJM planning criteria addresses the expansion and enhancement of transmission facilities required to meet national and regional planning criteria. Supplemental Projects improve or preserve a PJM Transmission Owner's ability to provide reliable service to its customers, consistent with its obligation to serve, and are grounded in Good Utility Practice.

Q. DO ANY OF THE COMPONENTS OF THE PROJECT RESULT IN WASTEFUL DUPLICATION?

A. No. All components, whether baseline or supplemental, of the proposed Project are required to fully address the needs described above. By performing the work inside the existing station location to better take advantage of space and available outages, the Company is proposing to move forward with the most cost-effective solution to address the needs. The baseline components are required to address planning criteria violations at the Station to avoid the risk of damaging equipment and/or not being able to serve load (load drop) as a means to address thermal and short circuit issues as identified in the 2026 RTEP analysis. The supplemental components are needed to address deteriorating infrastructure concerns that could potentially lead to failures and extended outages in the future if not addressed. By performing all this work together, the Company is better able

to utilize available resources to complete the work instead of using a piecemeal approach to replacement.

V. ALTERNATIVES TO THE PROJECT

Q. WHAT ELECTRICAL ALTERNATIVES WERE EVALUATED BY THE COMPANY?

A. The Project Alternative would consist of rebuilding and relocating the existing Bellefonte 69kV Station facilities and seven transmission lines, plus two transformer feeds to the existing Bellefonte Station 34kV yard located to the north-west of the existing 69kV yard (see Exhibit 6). Instead the Proposed Project will upgrade the existing Bellefonte 69kV Station facilities generally in place. Both the Proposed Project and the project alternative require completing the proposed supplemental work at the existing Bellefonte 138kV Station yard and retiring the obsolete 34kV equipment. The Project Alternative was dismissed early since (i) it is significantly more work and cost; (ii) it would result in wasteful duplication; and (iii) it does not provide additional benefits to justify the additional cost. The cost of the alternative is $46.5 million as compared to the Proposed Project estimate of $26.3 million. Please see the Direct Testimony of Company Witness Wolffram for a breakdown of the estimated cost of the Proposed Project.

Q. FROM AN ELECTRICAL PERSPECTIVE, IS THE ALTERNATIVE PREFERABLE TO THE PROPOSED PROJECT?

A. While there might be slight electrical benefits to constructing specifically the ring bus configuration from the alternative, the alternative configuration would not address any current needs beyond those addressed by the Proposed Project and is therefore not presently justified given the significant cost difference. As such, the Project represents the least-

cost, most reasonable option to address the baseline and supplemental needs identified above.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

VERIFICATION

The undersigned, Nicolas C. Koehler, being duly sworn, deposes and says he is the Director of East Transmission Planning for American Electric Power, 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.

Signed by:
Nicolas C Koehler
5701CC311F0D49D...
Nicolas C. Koehler

Commonwealth of Kentucky)
) Case No. 2024-00343
County of Boyd)

Subscribed and sworn to before me, a Notary Public in and before said County and State, by Nicolas C. Koehler, on December 18, 2024.

Signed by:
Michelle Caldwell
E9B1BC7AC31F421...
Notary Public

MARILYN MICHELLE CALDWELL
ONLINE NOTARY PUBLIC
COMMONWEALTH OF KENTUCKY
Commission #KYNP71841
My Commission Expires 5/5/2027

My Commission Expires May 5, 2027

Notary ID Number KYNP71841

Certificate Of Completion

Envelope Id: F5365327-F4C4-4C49-A548-B3C7B40FD343
Status: Completed
Subject: Complete with Docusign: Koehler Verification Form.doc
Source Envelope:
Document Pages: 1
Signatures: 2
Envelope Originator:
Certificate Pages: 5
Initials: 0
Michelle Caldwell
AutoNav: Enabled
mmcaldwell@aep.com
EnvelopeId Stamping: Disabled
IP Address: 167.239.221.107
Time Zone: (UTC-08:00) Pacific Time (US & Canada)

Record Tracking

Status: Original
12/17/2024 5:00:25 PM
Holder: Michelle Caldwell
mmcaldwell@aep.com
Location: DocuSign

Signer Events	Signature	Timestamp
Nicolas C Koehler nckoehler@aep.com Security Level: Notarized Signing (Notary: Michelle Caldwell)	Signed by: Nicolas C Koehler 5701CC311F0D49D... Signature Adoption: Pre-selected Style Using IP Address: 167.239.221.104	Sent: 12/17/2024 5:02:22 PM Viewed: 12/18/2024 10:01:17 AM Signed: 12/18/2024 10:01:35 AM

Electronic Record and Signature Disclosure:
Accepted: 12/18/2024 10:01:17 AM
ID: 46835097-7a0f-4699-ab39-d0343015956e

In Person Signer Events	Signature	Timestamp

Editor Delivery Events	Status	Timestamp

Agent Delivery Events	Status	Timestamp

Intermediary Delivery Events	Status	Timestamp

Certified Delivery Events	Status	Timestamp

Carbon Copy Events	Status	Timestamp

Witness Events	Signature	Timestamp

Notary Events	Signature	Timestamp
Michelle Caldwell mmcaldwell@aep.com Regulatory Case Coordinator AEP Kentucky Power Notary for Nicolas C Koehler (nckoehler@aep.com) Security Level: Email, Account Authentication (Required), Digital Certificate **Signature Provider Details:** Signature Type: DS Authority IDV (Client ID: c171dfd7-d7e5-4793-b1bf-4d660787eaa0) Signature Issuer: DocuSign Cloud Signing CA-Identity **Electronic Record and Signature Disclosure:** Not Offered via DocuSign	MARILYN MICHELLE CALDWELL ONLINE NOTARY PUBLIC COMMONWEALTH OF KENTUCKY Commission #KYNP71841 My Commission Expires 5/5/2027 Using IP Address: 167.239.221.107 Signature Provider Location: https://ssasign.docusign.net/sca/1940	Sent: 12/17/2024 5:02:23 PM Viewed: 12/18/2024 10:01:11 AM Signed: 12/18/2024 10:02:15 AM

Envelope Summary Events	Status	Timestamps

Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	12/17/2024 5:02:23 PM
Certified Delivered	Security Checked	12/18/2024 10:01:17 AM
Signing Complete	Security Checked	12/18/2024 10:01:35 AM
Completed	Security Checked	12/18/2024 10:02:15 AM

Payment Events	Status	Timestamps

Electronic Record and Signature Disclosure