

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF EAST)	
KENTUCKY POWER COOPERATIVE, INC. FOR)	
APPROVAL TO AMEND ITS ENVIRONMENTAL)	CASE NO.
COMPLIANCE PLAN, AND RECOVER COSTS)	2025-00053
PURSUANT TO ITS ENVIRONMENTAL)	
SURCHARGE, AND OTHER GENERAL RELIEF)	

RESPONSES TO STAFF’S SECOND REHEARING INFORMATION REQUEST

TO EAST KENTUCKY POWER COOPERATIVE, INC.

DATED MARCH 10, 2026

COMMONWEALTH OF KENTUCKY

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In the Matter of:

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CERTIFICATE

STATE OF KENTUCKY)
)
 COUNTY OF CLARK)

Jerry Purvis, being duly sworn, states that he has supervised the preparation of the responses of East Kentucky Power Cooperative, Inc. to the Commission Staff's Second Rehearing Request for Information in the above-referenced case dated March 10, 2026, and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.


 Jerry Purvis

Subscribed and sworn before me on this 25th day of March, 2026.

JOHN CHRISTIAN EVERLY
 Notary Public
 Commonwealth of Kentucky
 Commission Number KYNP104251
 My Commission Expires Aug 27, 2029


 Notary Public

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CERTIFICATE

STATE OF KENTUCKY)
)
COUNTY OF CLARK)


Jacob R. Watson, being duly sworn, states that he has supervised the preparation of the responses of East Kentucky Power Cooperative, Inc. to the Commission Staff's Second Rehearing Request for Information in the above-referenced case dated March 10, 2026, and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.



Jacob R. Watson

Subscribed and sworn before me on this 13 day of April, 2026.





Notary Public

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2025-00053
SECOND REHEARING REQUEST FOR INFORMATION RESPONSE

STAFF'S REQUEST DATED MARCH 10, 2026

REQUEST 1

RESPONSIBLE PARTY: Troy Lovell

Request 1. Refer to EKPC's response to Commission Staff's First Rehearing Request for Information (Staff's First Rehearing Request), Item 2 a-b; and in Case No. 2023-00177, EKPC's response to Commission Staff's First Request for Information, Item 31. Given the low-capacity factor of Cooper Unit 2 in both responses, provide a five-year summary of the Cooper Unit 2 capacity factors which indicates the time the air heater assembly was in operation.

Response 1. Please see the table below.

Unit	Year	Net Cap Ftr (NCF)
Cooper Unit 2	2021	18.08
Cooper Unit 2	2022	20.52
Cooper Unit 2	2023	20.90
Cooper Unit 2	2024	16.02
Cooper Unit 2	2025	18.60

EAST KENTUCKY POWER COOPERATIVE, INC.

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SECOND REHEARING REQUEST FOR INFORMATION RESPONSE

STAFF'S REQUEST DATED MARCH 10, 2026

REQUEST 2

RESPONSIBLE PARTY: Kyle Shadoan and Jacob R. Watson

Request 2. Refer to EKPC's response to Staff's First Rehearing Request, Item 2c. Recognizing that the typical air heater assembly is exposed to a variety of typical operating conditions (including low load or cycling operation resulting in dew-point corrosion of the air heater assembly, coal quality issues resulting in significant ash and corrosive contamination of the air heater baskets, combustion control issues resulting in poor combustion that results in air heater basket fouling, corrosion due to the ammonia bisulfate corrosive fouling), provide a detailed analysis of the failed air heater assemblies that explains the root cause of the associated failure and what steps may be taken to prevent this type of failure.

Response 2.

Root Cause

Electric Power Research Institute ("EPRI") has performed extensive research, modeling, testing and assessment to determine root cause of the dominate failure mode associated with air preheaters. See attachment *PSC RHDR2 Response 2 – EPRI ABS Formation Research.pdf* which outlines EPRI's Research on Ammonium Bisulfate ("ABS") Formation in Air Preheaters. EPRI

states “ABS formation and deposition is the most common operating problem affecting air preheaters in fossil power plants with post combustion NO_x controls that use selective noncatalytic reduction (SNCR) or selective catalytic reduction (SCR).”¹ Based on the research results above, EPRI also developed more reports which are attached as *PSC RHDR2 Response 2 - Air Preheater Maintenance Guideline.pdf* and *PSC RHDR2 Response 2 - Air Preheater Field Inspection Guide.pdf*. However, for instance, the Cooper Unit 2 Air Preheater showed signs of significant deterioration in the 2023 OEM inspection report with recommendation for replacement at next planned annual outage. See attachment *PSC RHDR2 Response 2 – 2023 Cooper Unit 2 Inspection Report.pdf*. From the information given in the inspection report, it was evident that the primary failure mode of the cold end baskets was a result of ABS formation. Ammonia injected at the SCR passed through the reactor, without reacting (“Ammonia slip”) and into the air preheater. When that ammonia reaches the colder temperatures of the cold end inlet, it mixes with SO₃ (present in the flue gas of fossil fuel combustion) and H₂O vapor (present in the ambient air) to produce ABS. ABS is an extremely sticky and corrosive substance. ABS is deposited on the heat transfer baskets and create localized corrosion of the carbon steel at the ABS-steel interface. The corrosion continues, creating thin and weak spots. Additionally, the ABS collects fly ash and the accumulation eventually blocks the flow paths between the preheater plates. The blockage grows and the dP increases. In an attempt to correct the rising dP, the soot blowers, which are the primary method for cleaning air heater baskets, are triggered to operate more rapidly. The force of high-pressure air from the soot blower becomes too much for the weakened plates and they begin to break apart. As this occurs, the plates begin to move in ways they are not designed, more wear

¹ PSC RHDR2 Response 2 – EPRI ABS Formation Research.pdf, page v (PDF page 7).

points are introduced, and more plates break apart. EKPC utilizes EPRI research results, OEM best available technology, equipment condition monitoring technologies, and internal O&M expertise to provide reliable, affordable, and sustained energy to our owner members.

Replacement Strategy

The mission of system and reliability engineering is to ensure critical assets are operated and maintained to perform their required function within design specifications. Technical based preventative and predictive strategies are utilized for early detection of performance or condition decline due to degradation influences such as ABS formation. Early detection allows for proper planning, procurement, and scheduling of returning the asset to expected status while minimizing financial impact. As discussed above with the Cooper Unit 2 Air Preheater, EKPC proactively identified and replaced the deteriorated components prior to them reaching functional failure, avoiding costly derates or outages while maximizing the life cycle cost of the asset. Just to note, post SCR unit heating element baskets that **do not** have enamel coating have a typical useful life of 2-5 years. However, EKPC was able to extend the useful lives of the Cooper Unit 2 baskets to 13 years, due to Cooper Unit 2 having a relatively lesser capacity factor, see EKPC's Response 1, and routinely inspecting the baskets to identify any signs of failing.

Future Preventative Steps

EKPC elected to proceed with the newest design of the OEM (DN8 and TF4), enamel coated heat transfer plates which are best suited to handle the operating conditions present in a post SCR Air Preheater. The increased thickness of the plates allows for a more efficient heat transfer. The

larger flow channels for the flue gas creates a lower dP. The enamel coating creates a corrosion resistant surface to guard against the effects of ABS; it also creates a surface with a lower coefficient of friction. The lower coefficient of friction increases the effectiveness of the soot blowing air to dislodge and ash deposition. The combination of these new characteristics increases the efficiency of the generation unit, decreases operational costs, and increases the life of the Air Preheater baskets. See attachment *PSC RHDR2 Response 2 - Assessment of Air Preheater Effects on Power Plant Efficiency.pdf*, which includes a case study where early upgrades result in a payback of 1.5 years for fuel alone. In addition to upgrading to the best available technology, EKPC will continue to utilize the best operational, maintenance, and reliable engineering practices.

Cost Recovery

As an electric generation and transmission cooperative, EKPC is a not-for-profit utility. EKPC is very mindful of the ways it spends its Owner-Members and their end-use members' dollars. EKPC spends time developing strategies for maintenance of its generation fleet that ensure the longest life with the best cost for members. While choosing enamel coated heat transfer plates for the Air Preheater baskets might cost more upfront, this decision allows EKPC to maintain the baskets for a longer period of time. KRS 278.183 allows EKPC to recover reasonable operating expenses, which includes the costs of operating and maintaining environmental equipment.² These enamel plates for the baskets are necessary for maintaining EKPC's environmental equipment at an overall lower cost to the end-use members than if EKPC were to use non-coated plates. Additionally, while the costs could be recovered through general base rates will be at a substantial lag. Allowing

² KRS 278.183.

recovery for these maintenance projects through the ESM also allows current customers who are benefiting from these baskets are the ones paying for the projects. Requiring future end use ratepayers to essentially “foot the bill” goes against long standing Commission precedent. EKPC believes the inclusion of the enamel plates for the air heater baskets is proper pursuant to KRS 278.183 because the items are for maintenance of items that would not have been installed but for the environmental regulations and including the recovery in the ESM surcharge proper because it will result in a fair, just and reasonable rate.

EAST KENTUCKY POWER COOPERATIVE, INC.

CASE NO. 2025-00053

SECOND REHEARING REQUEST FOR INFORMATION RESPONSE

STAFF'S REQUEST DATED MARCH 10, 2026

REQUEST 3

RESPONSIBLE PARTY: Jerry Purvis

Request 3. Refer to EKPC's response to Staff's First Rehearing Request, Item 2 a-b.

a. Identify all federal environmental regulations promulgated by the U.S. Environmental Protection Agency (EPA) that EKPC contends require replacement of the Cooper Unit 2 air heater baskets and seals.

b. For each identified regulation, state whether the rule is:

- 1) Currently in effect,
- 2) Stayed,
- 3) Subject to reconsideration, or
- 4) Proposed but not yet finalized.

c. Explain how any recent amendments, stays, withdrawals, or revisions to EPA regulations since December 23, 2025, affect the necessity of Project 44 for environmental compliance.

Response 3. a-b. As detailed in EKPC's application, *Attachment JRW-1 – Compliance Plan Project List.xlsx*, cells H315-H317, the environmental regulations that are included are 40

CFR 50, 40 CFR 52, and 40 CFR 97. Additionally, as discussed in EKPC's Response to Staff's First Rehearing Request for Information, Request 2, there are additional environmental regulations that impact these projects. All of these regulations are currently in effect.

c. No, there are no recent amendments, stays, withdrawals, or revisions to EPA regulations since December 23, 2025, that would affect the necessity of Project 44 for environmental compliance. EKPC still concludes that this project is necessary and environmentally required.

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REQUEST 4

RESPONSIBLE PARTY: Kyle Shadoan

Request 4. State whether, absent any recently finalized or currently effective EPA regulatory findings or requirements, the air heater basket/seal replacement is still required as a matter of routine plant maintenance.

Response 4. No. In the absence of any recently finalized or currently effective EPA regulatory findings or requirements this project, along with the environmental surcharge in its entirety, would not exist. EKPC would not have installed the AQCS, SCR, or other environmental controlled equipment on any of its generating units had it not been for the EPA requirements. The material design change and enamel coating enhancement of the OEM (DN8 and TF4) would not be required but for the environmental requirements. Traditional Air Preheater basket/seal design can only achieve a small fraction of its operational design life, therefore replacement is not routine plant maintenance.