COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE ELECTRONIC APPLICATION OF EAST KENTUCKY POWER COOPERATIVE, INC. FOR 1) A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT A NEW GENERATION RESOURCE; 2) A SITE COMPATIBLITY CERTIFICATE; AND 3) OTHER GENERAL RELIEF	)	**CASE NO. 2024-00310**

RESPONSES TO SIERRA CLUB'S THIRD INFORMATION REQUEST

TO EAST KENTUCKY POWER COOPERATIVE, INC.

DATED FEBRUARY 6, 2025

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE ELECTRONIC APPLICATION OF EAST KENTUCKY POWER COOPERATIVE, INC. FOR 1) A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT A NEW GENERATION RESOURCE; 2) A SITE COMPATIBLITY CERTIFICATE; AND 3 OTHER GENERAL RELIEF	))))))))	**CASE NO. 2024-00310**

CERTIFICATE

STATE OF KENTUCKY)
)
COUNTY OF CLARK)

Darrin Adams, being duly sworn, states that he has supervised the preparation of the responses of East Kentucky Power Cooperative, Inc. to the Joint Intervenor's Third Request for Information in the above-referenced case dated February 5, 2025, 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.

Darrin Adams

_____

Subscribed and sworn before me on this 18th day of February, 2025.

Notary Public

GWYN M. WILLOUGHBY
Notary Public
Commonwealth of Kentucky
Commission Number KYNP38003
My Commission Expires Nov 30, 2025

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE ELECTRONIC APPLICATION OF EAST KENTUCKY POWER COOPERATIVE, INC. FOR 1) A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT A NEW GENERATION RESOURCE; 2) A SITE COMPATIBLITY CERTIFICATE; AND 3 OTHER GENERAL RELIEF	)	**CASE NO. 2024-00310**

CERTIFICATE

STATE OF KENTUCKY)
)
COUNTY OF CLARK)

Craig Johnson, being duly sworn, states that he has supervised the preparation of the responses of East Kentucky Power Cooperative, Inc. to the Sierra Club's Third Request for Information in the above-referenced case dated February 5, 2025 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.

Craig Johnson

Subscribed and sworn before me on this 18th day of February, 2025.

Notary Public

GWYN M. WILLOUGHBY
Notary Public
Commonwealth of Kentucky
Commission Number KYNP38003
My Commission Expires Nov 30, 2025

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE ELECTRONIC APPLICATION OF EAST KENTUCKY POWER COOPERATIVE, INC. FOR 1) A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT A NEW GENERATION RESOURCE; 2) A SITE COMPATIBLITY CERTIFICATE; AND 3 OTHER GENERAL RELIEF	)	**CASE NO. 2024-00310**

CERTIFICATE

STATE OF KENTUCKY)
)
COUNTY OF CLARK)

Julia J. Tucker, being duly sworn, states that she has supervised the preparation of the responses of East Kentucky Power Cooperative, Inc. to the Sierra Club's Third Request for Information in the above-referenced case dated February 5, 2025, and that the matters and things set forth therein are true and accurate to the best of her knowledge, information, and belief, formed after reasonable inquiry.

Julia J. Tucker

_____

Subscribed and sworn before me on this 18th day February, 2025.

Notary Public

GWYN M. WILLOUGHBY
Notary Public
Commonwealth of Kentucky
Commission Number KYNP38003
My Commission Expires Nov 30, 2025

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE ELECTRONIC APPLICATION OF EAST KENTUCKY POWER COOPERATIVE, INC. FOR 1) A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT A NEW GENERATION RESOURCE; 2) A SITE COMPATIBLITY CERTIFICATE; AND 3 OTHER GENERAL RELIEF	))))))))	**CASE NO. 2024-00310**

CERTIFICATE

STATE OF KENTUCKY)
)
COUNTY OF CLARK)

Brad Young, being duly sworn, states that he has supervised the preparation of the responses of East Kentucky Power Cooperative, Inc. to the Sierra Club's Third Request for Information in the above-referenced case dated February 5, 2025, 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.

Brad Young

_____

Subscribed and sworn before me on this 18th day of February, 2025.

Notary Public

GWYN M. WILLOUGHBY
Notary Public
Commonwealth of Kentucky
Commission Number KYNP38003
My Commission Expires Nov 30, 2025

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00310
THIRD REQUEST FOR INFORMATION RESPONSE

SIERRA CLUB'S REQUEST DATED FEBRUARY 6, 2025
REQUEST 1
RESPONSIBLE PARTY: Julia J. Tucker

Request 1. Did EKPC perform any modeling (production cost modeling, optimization modeling, capacity expansion modeling, and/or market valuation modeling) to support its decision to build the Liberty Rice Units? If yes:

a. Please identify each model that was used or utilized by EKPC or one of its agents to select the Liberty RICE Project.

b. Produce in machine-readable, electronic, digital format, as used by EKPC or one of its agents, with protections removed, all input files used in production cost, optimization, capacity expansion, or market valuation modeling for all scenarios or portfolios to support this case.

c. To the extent that such input files, as used by EKPC or one of its agents, cannot be produced in a commonly accessible format (i.e., text file, spreadsheet, or Access file), produce input files in a commonly accessible format.

d. Please identify any changes to the input files that may be required to reproduce modeling for this case. Please specify why such changes are required.

e. Please identify the assumptions, including any supporting documentation, EKPC or its agents used in each base case and sensitivity scenario modeled.

f. Produce in machine-readable, electronic, digital format, as used by EKPC or its agents, with protections removed, all output files used in production cost or optimization or capacity expansion or market valuation modeling for all scenarios or portfolios to support this case.

g. To the extent that such output files, as used by EKPC or its agents, cannot be 6 produced in a commonly accessible format (i.e. text file, spreadsheet, or Access file), produce input files in a commonly accessible format.

h. Produce in machine-readable, electronic, digital format any other files, worksheets, or workpapers used to develop, interpret, or review inputs or outputs of production cost or optimization or capacity expansion or market valuation modeling for all scenarios or portfolios to support this case.

i. Produce in machine-readable, electronic, digital format all pre- or post-processing documents of all input or output files as used by EKPC or its agents, with protections removed for all scenarios or portfolios to support this case.

j. Please refer to Sierra Club IR 1-3, Sierra Club IR 1-16 and EKPC's Response to those requests. Please explain why modeling files have not been produced to date.

Response 1 a-j. See EKPC's Supplemental Response 16 to the Sierra Club on February 14, 2025 and Response 2 (d) to Staff's Third Request.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00310
THIRD REQUEST FOR INFORMATION RESPONSE

SIERRA CLUB'S REQUEST DATED FEBRUARY 6, 2025
REQUEST 2
RESPONSIBLE PARTY: Julia J. Tucker

Request 2. Please refer to the Direct Testimony of Witness Tucker at page 23, line 5 through page 24, line 1, the Response to Mountain Association Request 20(a)(ii) stating that "EKPC modeling indicates that the RICE units will have a 73% capacity factor," and other references identified below.

a. Please provide the workpapers supporting the calculations provided in the referenced testimony and the modeling supporting the calculation of the 73% capacity factor, with all assumptions and supporting data provided and formulas intact in a working spreadsheet. If the modeling cannot be exported to a spreadsheet, provide the closest possible equivalent response.

b. Please confirm that EKPC did not provide the workpapers requested in part (a) in response to PSC IR 1-6, MA IR 1-17, MA IR 2-3, AOG IR 1-1, or SC IR 1-3.

c. In its response to PSC IR 2-4, EKPC states that the RICE units will run 6,426 hours per year. In PSC IR 2-8, EKPC states that there is a difference of 3,767 hours per year between RICE and CT units. Please confirm that EKPC's modeling indicates that the CT units would run 2,659 hours per year. If not confirmed, please provide the correct number of operating hours and explain the reason for the discrepancy.

d. Please confirm that the number of hours per year for CT units indicated by the response to part (c) is a result of the 2022 IRP. If that is not confirmed, please provide the source including all workpapers, with all assumptions and supporting data provided and formulas intact in a working spreadsheet. If the modeling cannot be exported to a spreadsheet, provide the closest possible equivalent response.

e. In AOG IR 1-3(b), EKPC states that a combustion turbine unit typically runs 20 percent of the time, or 1,752 hours / yr. Please explain why EKPC expects that the CT operating hours indicated by its responses to part (c) and part (d) are significantly higher than the typical operating hours for a CT unit.

f. Please provide any information in EKPC's possession that identifies any RICE units in North America that have operated at a capacity factor of more than 65% for at least one year.

g. Please provide any information from Wartsila in EKPC's possession regarding the frequency and duration of routine maintenance, including the number of hours or kilowatt hours between each recommended maintenance shutdown, the expected duration of each recommended maintenance shutdown, and whether any level of use (e.g., hours per month or capacity factor) is considered to be a higher-than expected level of use that requires additional inspection and potential maintenance activities above the normal recommended maintenance period.

h. If EKPC has not obtained the information requested in part (g) from Wartsila, please explain why this was not evaluated before selecting Wartsila as the supplier for the proposed RICE units.

i. Please refer to the response to PSC IR 1-9 and confirm that EKPC will only dispatch the RICE units by offering them into the PJM energy market (except in emergency conditions).

j. If the response to part (i) is not "confirmed," please explain how EKPC will dispatch the RICE units and provide details confirming that the dispatch practices are reflected in the economic modeling requested in part (a) of this question.

Response 2.

a. See Supplemental Response 16 to Sierra Club filed on February 14, 2025, and Response 2(d) to Staff Third Request.

b. EKPC responded that it did not perform capacity expansion plan modeling, however it did perform production cost modeling. It was understood that the requests listed sought expansion plan models. EKPC has provided the requested production cost modeling data.

c. Confirmed, EKPC's JK Smith 9 and 10 CT units are expected to run at or above 2,659 hours per year, or roughly at a 30% capacity factor.

d. No, the number of hours of run time for the hypothetical CT is a numerical calculation using the difference between the heat rates of the CT and RICE engines. It was not based on the 2022 IRP modeling.

e. The response to AG1-3b was for illustrative purposes only, EKPC did not state that 20% capacity factor was common for its CT resources.

f. EKPC does not have operation statistics for other RICE units.

g. See attachment *SC3-2.g.pdf* information provided by Wärtsilä during the bid period discussing maintenance periods and intervals. Maintenance for RICE units is purely based on operational run hours. Additional run hours increase maintenance frequency, but the maintenance schedule is still maintained without additional activities required. Estimated costs for maintenance considered a 60% Capacity Factor on a yearly basis.

h. N/A

i. Confirmed

j. N/A

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00310
THIRD REQUEST FOR INFORMATION RESPONSE

SIERRA CLUB'S REQUEST DATED FEBRUARY 6, 2025
REQUEST 3
RESPONSIBLE PARTY: Brad Young

Request 3. Please refer to the Direct Testimony of Witness Tucker at page 8, lines 6 – 16 and Response to Sierra Club IR 1-7.

a. Please provide a breakdown of the large load forecast in the response into (i) the component that is based on owner-member and Economic Development staff input and (ii) the component that is based on EKPC's projection using the regression analysis.

b. Please break component (i) of part (b) into the amount representing large consumers that have commenced construction activities and those that are not known to have commenced construction activities.

c. Please confirm that for each new load, a demand of 1.5 MW is assumed on a per new load basis. If not confirmed, please explain.

d. Please provide the basis for the 1.5 MW demand for each new load or as otherwise explained in response to part (d).

e. Please provide the basis for the 70 percent load factor.

Response 3.

a.

	Modeled with Regression Analaysis			Based on Input		
Year	New Consumer Increased Demand MW (Cumulative)	New Consumer Increased Energy MWh (Cumulative)	Load Factor	New Consumer Increased Demand MW (Cumulative)	New Consumer Increased Energy MWh (Cumulative)	Load Factor
2024	-	-		13	78,924	69.4%
2025	-	-		72	424,916	67.8%
2026	3	18,396	70%	123	696,963	64.8%
2027	8	45,990	70%	148	823,764	63.4%
2028	15	91,980	70%	151	842,160	63.6%
2029	18	110,376	70%	164	941,829	65.4%
2030	21	128,772	70%	164	941,829	65.4%
2031	27	165,564	70%	164	941,829	65.4%
2032	35	211,554	70%	164	941,829	65.4%
2033	39	239,148	70%	164	941,829	65.4%
2034	44	266,742	70%	164	941,829	65.4%
2035	50	303,534	70%	164	941,829	65.4%
2036	60	367,920	70%	164	941,829	65.4%
2037	65	395,514	70%	164	941,829	65.4%
2038	72	441,504	70%	164	941,829	65.4%
2039	77	469,098	70%	164	941,829	65.4%

b. For long-term load forecasting purposes, EKPC does not track the construction activities of potential end-users served by its 16 owner-members.

c. 1.5 MW is the assumption for new unnamed industrial loads included in the load forecast. For new named consumers, assumptions regarding the specific consumer are used.

d. The large commercial class is defined by RUS as consumers more than 1,000 kVA. 1.5 MW is more than 1,000 kVA.

e. 70% is a reasonable assumption based on historical data. For example, 2024 load factor for industrial consumers was 73%.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00310
THIRD REQUEST FOR INFORMATION RESPONSE

SIERRA CLUB'S REQUEST DATED FEBRUARY 6, 2025
REQUEST 4
RESPONSIBLE PARTY: Julia J. Tucker

Request 4. Please refer to the Response to Sierra Club IR 1-10.

a. Please confirm that the response to IR 1-10(a) should be interpreted to reflect that the only significant change from EKPC's 2022 IRP that supports the addition or advancement of projects is the change in the reserve margin, as described in the Direct Testimony of Tucker at page 13. If not confirmed, please clarify the response.

b. Please reconcile the response to IR 1-10(a) with the response to IR 1-10(c).

c. In IR 1-10(d), EKPC was asked to "explain why EKPC is filing an expansion plan, but not an updated IRP." EKPC responded that it "Intends to file an updated IRP on schedule in April of 2025. EKPC referenced EKPC's response to Staff IR6, but this response does not appear to discuss the decision to not file an updated IRP. Please provide a clear response as to the reason that EKPC has decided that it does not need to file an updated IRP to support the changes to its expansion plan.

Response 4. a. EKPC's Long Term Load Forecast has changed significantly based on recent load experience, and has made a major change in the timing for the need for winter

resources. As stated in the response to Commission Staff's First Request for Information (Staff's First Request), Item 6, EKPC has an expected capacity deficiency in the winter of 200 MW before considering the reserve margin.

b. No reconciliation is needed.

c. The Integrated Resource Plan is a snapshot in time and is filed on a scheduled basis as required by the Commission.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00310
THIRD REQUEST FOR INFORMATION RESPONSE

SIERRA CLUB'S REQUEST DATED FEBRUARY 6, 2025
REQUEST 5
RESPONSIBLE PARTY: Julia J. Tucker

Request 5. Please refer to the Direct Testimony of Witness Tucker, page 11, lines 11-20 and the response to Sierra Club IR 1-14.

a. Sierra Club IR 1-14(a) asked EKPC to explain "if EKPC has taken any steps to dampen the swing in demand observed in January 2024." EKPC's response is that it has factored winter storms "into its revised LTLF." Please (i) explain how factoring winter storms into the LTLF dampens the swing in demand and (ii) provide any other steps that EKPC has taken to dampen the swing in demand or, as represented in its response to IR 1-14(b) dampen the saturation of the load.

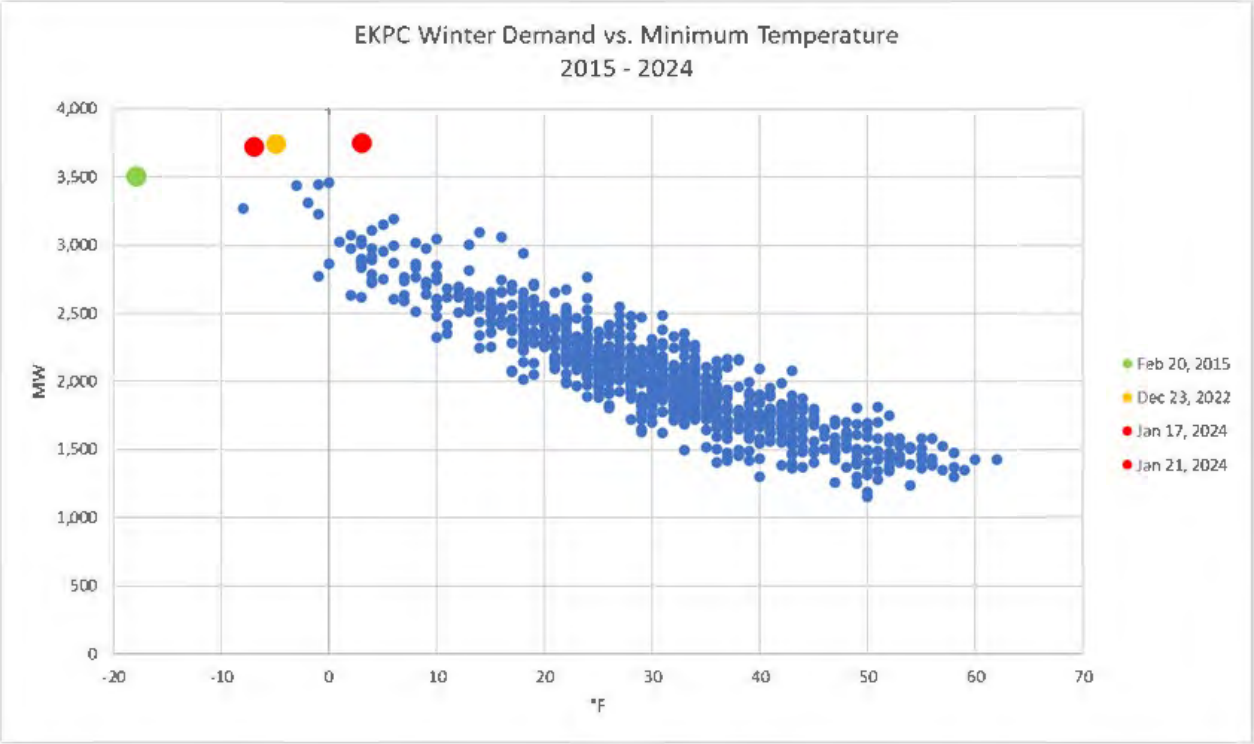
b. Please provide any analyses performed by EKPC or its members to understand the "saturation of the load within the system due to the cold weather."

c. Please provide all documents that support the responses to subparts a and b.

Response 5.

a. The DSM and DR programs filed with this case are the steps EKPC has taken to dampen the swing in demand.

b. See graph below of EKPC's historical daily peak load plotted against daily minimum temperature. Prior to Winter Storm Elliott, EKPC's all-time peak was in February 2015 (green dot). EKPC's peak loads during Winter Storm Elliott (orange dot) and Winter Storm Gerri (red dots) are well above previous peaks. It is notable that these peaks occurred at temperatures warmer than those during 2015. This illustrates the saturation of the load during the cold weather.



c. See the DSM Technical Appendix filed with this case for support for subpart a. There are no additional details to provide for subpart b.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00310
THIRD REQUEST FOR INFORMATION RESPONSE

SIERRA CLUB'S REQUEST DATED FEBRUARY 6, 2025
REQUEST 6
RESPONSIBLE PARTY: Julia J. Tucker

Request 6. Please refer to the Direct Testimony of Witness Tucker at pages 15-16, 23 and the response to Sierra Club IR 1-16(a). The response references EKPC response to Staff IR 1-6. That response states the following: EKPC did not include RICE units in its alternatives in the 2022 IRP. EKPC compared the RICE units to a simple cycle combustion turbine only in its analysis for this application, since the detailed optimization studies for the 2022 IRP were still pertinent with regards to energy needs. However, the timing of the need for the next resource has changed due to the change in peak load expectations. Witness Tucker references, "run time of over 6,000 hours."

a. Please provide the "run time" for the referenced simple cycle combustion turbine in the 2022 IRP.

b. Please provide the annual energy forecast for the referenced simple cycle combustion turbine in the 2022 IRP in a workbook format.

c. Please provide the annual energy forecast for the RICE units in the "EKPC Capacity Expansion Plan" supporting this application in a workbook format.

Response 6.

a. The run time for the Simple Cycle Gas Turbine ("SCGT") are shown on page 110 of the 2022 IRP.

b. The annual energy forecast for the SCGT is shown on page 110 of the 2022 IRP.

c. See Supplemental Response to Sierra Club Response 2-16 filed on February 14, 2025.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00310
THIRD REQUEST FOR INFORMATION RESPONSE

SIERRA CLUB'S REQUEST DATED FEBRUARY 6, 2025
REQUEST 7
RESPONSIBLE PARTY: Julia J. Tucker

Request 7. Please refer to the Direct Testimony of Witness Tucker at pages 15-16, 23 and the response to Sierra Club IR 1-16(b), which references the response to Staff IR 1-6. Please confirm that EKPC's response to Staff is intended to state that "all the assumptions (including Environmental Protection Agency (EPA) and PJM related assumptions), and all potential resource (including power purchase agreements (PPAs)) fixed and variable cost data used determine the specific resources selected and the timing of new resource implementation represented in Exhibit JJT-3" in the EKPC Capacity Expansion Plan are identical to the 2022 IRP unless specifically provided in response to Staff IR-6. If not confirmed, please provide a fulsome response to the Sierra Club and Staff information requests as originally requested.

Response 7. EKPC has explained all of its assumptions throughout the course of this entire proceeding.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00310
THIRD REQUEST FOR INFORMATION RESPONSE

SIERRA CLUB'S REQUEST DATED FEBRUARY 6, 2025
REQUEST 8
RESPONSIBLE PARTY: Julia J. Tucker

Request 8. Please refer to the response to Sierra Club IR 1-16(c). Please confirm that the "remaining MWs announced by EKPC" total 321 MW and provide EKPC's expectation or best current understanding of the PJM ELCC adjusted value for those resources.

Response 8. The remaining MWs announced by EKPC in late October 2024 is in reference to PSC Case No 2024-00370.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00310
THIRD REQUEST FOR INFORMATION RESPONSE

SIERRA CLUB'S REQUEST DATED FEBRUARY 6, 2025
REQUEST 9
RESPONSIBLE PARTY: Julia J. Tucker

Request 9. Please refer to the response to Sierra Club IR 1-17, which requested annual revenue requirements and present value revenue requirements. The response referenced EKPC's response to Staff IR 1-6, which did not include any reference to annual revenue requirements or present value revenue requirements. Please provide the requested data in workbook format with all formulas and links intact.

Response 9. See Staff Response 3-2 (d). No net present value revenue requirements were developed.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00310
THIRD REQUEST FOR INFORMATION RESPONSE

SIERRA CLUB'S REQUEST DATED FEBRUARY 6, 2025
REQUEST 10
RESPONSIBLE PARTY: Julia J. Tucker

Request 10. Please refer to the response to Sierra Club IR 1-15, which stated that the 7% reserve margin was based on a comparison of the normal load forecast to the extreme weather forecast.

a. Please explain how the capacity planning reserve margin was calculated in the 2022 IRP and why that method was not used in the expansion plan used in this proceeding.

b. Please confirm that EKPC can and does routinely obtain resources from neighboring systems to meet demands that exceed its normal load forecast.

c. If the answer to (b) is not "confirmed," please provide data from the most recent ten events in which EKPC's demand exceeded its normal load forecast that supports the answer to part (b).

d. Please explain why the availability of resources from neighboring systems was not considered in the calculation of the 7% reserve margin.

e. Please provide a list of each transmission interconnection between EKPC and a neighboring system, including but not limited to TVA and LGE/KU.

f. Please provide the transfer capability (both directions) at each point listed in the response to part (e).

g. Please identify any constraints on EKPC's utilization of the available transfer capability provided in response to part (f) such as firm transmission commitments between other (not EKPC) parties.

Response 10 a-g. EKPC participates in the PJM Reliability Pricing Model ("RPM") market, and as such, all reserves are technically covered by PJM. However, EKPC is also a regulated utility in Kentucky and the Commission has made it clear through various orders that relying solely on the market to supply load is not an acceptable planning methodology. EKPC previously planned to only cover its expected winter peak load and rely on the market for reserves to cover any overruns or unit failures. Operations during Winter Storm Elliott revealed that was a risky strategy. The PJM market was operating with very low reserves and the volatile pricing was a reflection of those operations. EKPC cannot recover through the Fuel Adjustment Clause any energy that it purchases at a price in excess of its highest cost unit. The pricing incurred during Elliott quickly revealed that EKPC needs to hedge its energy cost exposure by planning on its peak plus reserves to cover its exposure to load forecast error as well as unit operational derates.
EKPC has the capability to import and export adequate power to be able to fully supply its load. It is not a matter of transfer capability but a matter of price exposure and available resources in the market.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00310
THIRD REQUEST FOR INFORMATION RESPONSE

SIERRA CLUB'S REQUEST DATED FEBRUARY 6, 2025
REQUEST 11
RESPONSIBLE PARTY: Julia J. Tucker

Request 11. Please refer to the response to Sierra Club IR 1-37(e), which requested, "What model or models does the Company use to assess resource adequacy?" EKPC's response referenced its response to Sierra Club IR 1-16 which does not include this information nor is the requested information included in its response to Staff IR 1-6. Please provide a response to the original request.

Response 11. Attachment JJT-3 to the Application shows the information that EKPC uses to assess its resource adequacy. It starts with the Load Obligation and then adds reserves to determine the amount of capacity that is needed. That value is then compared to Existing Capacity and the ""Deficit before Capacity Additions" is determined. The Deficit is the amount of additional capacity needed to adequately serve load at the defined reserve level.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00310
THIRD REQUEST FOR INFORMATION RESPONSE

SIERRA CLUB'S REQUEST DATED FEBRUARY 6, 2025
REQUEST 12
RESPONSIBLE PARTY: Julia J. Tucker

Request 12. Please refer to the response to AOG IR 1-3(b) in which EKPC stated that it purchases roughly half of its annual energy needs from the market on an economic basis, to the response to PSC IR 1-8(a) in which EKPC states that the proposed RICE units will not impact the economic dispatch of Cooper Station, and to the response to AOG IR 1-8 in which EKPC states that it "uses the PJM energy market to optimize its Owner-Member's generation fleet to dispatch units," but also states that it "only utilizes the PJM market when it is economically prudent and beneficial to its Owner Members …"

a. Please identify where EKPC obtains the other half of its annual energy needs.

b. If EKPC obtains the other half of its annual energy needs from self-commitment or an equivalent dispatch practice, please provide any analysis in EKPC's possession that demonstrates that such practices are cost-effective and in the interests of its customers.

c. Please provide a clear and complete explanation as to how EKPC's "Owner Member's generation fleet" is dispatched. If the answer is anything other than economic dispatch under the direction or control of PJM (other than in emergency circumstances), then please include supporting data and records to fully illustrate each type of operator or market desk decision that

departs from economic dispatch by PJM, including the type of information that would justify a finding that utilizing the PJM market is not "economically prudent and beneficial to its Owner Members."

d. Please explain why the presence of the proposed RICE units on the PJM system would not impact Cooper Station dispatch. In other words, if Cooper Station is economically dispatched, won't its dispatch be impacted by the availability of new generation on the PJM system, particularly generation located in a transmission-adjacent location such that congestion is a minimal factor in determining economic dispatch?

Response 12 a-d. See Response 3-7 of the Joint Intervenors.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00310
THIRD REQUEST FOR INFORMATION RESPONSE

SIERRA CLUB'S REQUEST DATED FEBRUARY 6, 2025
REQUEST 13
RESPONSIBLE PARTY: Julia J. Tucker

Request 13. Please refer to AOG DR-1-3(a) in which EKPC states, "Other components such as the capacity sales in the PJM market, the value of off-system sales, and lower operating costs of the new units versus existing generation or purchases could ultimately result in a savings to the average consumer's monthly bill." Please identify where, in its Application, EKPC has provided an estimate of the potential future savings associated with each of these components. If EKPC has not provided such an estimate, please provide one, along with the workpapers that support such calculation.

Response 13. See Response 3-2(d) to the Staff Request.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00310
THIRD REQUEST FOR INFORMATION RESPONSE

SIERRA CLUB'S REQUEST DATED FEBRUARY 6, 2025
REQUEST 14
RESPONSIBLE PARTY: Julia J. Tucker

Request 14. Please refer to MA IR 1-1(a) in which EKPC expressed "concern over being able to depend on a third party to successfully complete a large [renewable energy resource] project as proposed in their offers."

a. Please confirm that EKPC is aware that third parties have successfully completed thousands of renewable energy resource projects and placed them into commercial operation over the past decade and even over the past several years in North America, with a significant portion of them in PJM.

b. Please provide any analysis in the possession of EKPC that indicates that the third-party developers were responsible for unsuccessful project outcomes as referenced in its response. If no such documents are available, please explain on what basis EKPC has formed the opinion stated in the referenced response.

c. Please explain why it would not be reasonable for third-party developers to assign responsibility for project failure to either EKPC itself or to any Kentucky-specific circumstances that EKPC may be aware of but did not refer to in the referenced response.

Response 14 a-c. EKPC issued multiple RFPs, as referenced, and engaged in active and deliberate contract negotiations on at least two separate projects. Neither contract was finalized and neither project was completed to date. There are no documents to show because neither was completed. EKPC cannot comment on other parties' abilities to complete projects and contracts.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00310
THIRD REQUEST FOR INFORMATION RESPONSE

SIERRA CLUB'S REQUEST DATED FEBRUARY 6, 2025
REQUEST 15
RESPONSIBLE PARTY: Brad Young

Request 15. Please refer to MA IR 1-1(f) in which EKPC references a competitive bid process between Wartsila and MAN.

a. Please provide the solicitation (or RFP), responses, and EKPC's evaluation of the responses.

b. Please provide a detailed cost breakdown of the anticipated and known costs of each element of the proposals from MAN and Wartsila for the RICE units, including but not limited to required engineering, procurement expenses, construction, and routine maintenance.

c. Please provide the same detailed cost breakdown provided in response to part (b) for the costs that EKPC relied upon when awarding the limited notice to proceed to Warsila as stated in MA IR 1-1(g).

Response 15.

a. Original RFP, bidder proposals and bid evaluation / recommendation letter are being filed under seal pursuant to a motion for confidential treatment. See attachment *Confidential SC3-15a - Reciprocating Engines RFP Rev. 0.pdf*.

b. Bid evaluation / recommendation letter includes a detailed breakdown of costs from the bidder proposals and is being filed under seal pursuant to a motion for confidential treatment. A differential evaluation of engineering, procurement, construction and routine maintenance costs associated with each manufacturer's offering was performed, and the appropriate cost adjustment is included in the detailed cost breakdown summary. See attachment *Confidential SC3-15b - Reciprocating Engines.Bid Recommendation Letter.pdf*.

c. Cost breakdown is the same as part (b).

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00310
THIRD REQUEST FOR INFORMATION RESPONSE

SIERRA CLUB'S REQUEST DATED FEBRUARY 6, 2025
REQUEST 16
RESPONSIBLE PARTY: Darrin Adams

Request 16. Please refer to PSC IR 1-48, in which EKPC states that it is installing a 69 kV capacitor bank at Cooper Station and that it has previously considered other transmission options. Please describe these other options and provide any analysis that EKPC performed to compare these options on the basis of cost and any other factors that EKPC deemed relevant. If no such analysis is available, please explain why not.

Response 16. After the real-time operational issues experienced in the southern Kentucky region during Winter Storm Elliott in December 2022, EKPC formed a team of subject-matter experts from various internal departments to assess potential transmission alternatives and develop a recommendation for the best transmission alternative to implement in the event that generation is not maintained and/or added at or near Cooper Station. Attachment *SC3-16-1.pdf* provides a summary of the alternatives considered, the relative load-serving benefits, the estimated costs, and the recommended solution from this internal EKPC team in the event that generation is no longer located in the area around Cooper Station.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00310
THIRD REQUEST FOR INFORMATION RESPONSE

SIERRA CLUB'S REQUEST DATED FEBRUARY 6, 2025
REQUEST 17
RESPONSIBLE PARTY: Darrin Adams

Request 17. Please refer to the Direct Testimony of Witness Adams (p. 10-11), which describes "a reliability concern in the southern portion of [EKPC's] system" and further states that this has been a known problem for several years. Please also refer to PSC IR 1-8(b) in which EKPC states, "The addition of the Liberty RICE units will provide real and reactive power support for the southern region of Kentucky when operating," and discusses voltage support from Kentucky Utilities and TVA.

a. Please confirm that due to the "support from Kentucky Utilities' Brown Station and TVA … to the overall voltage support and load-serving reliability in this region," the Liberty RICE units should operate on an economic basis except when "other generation and/or transmission facilities … are not available." If not confirmed, please explain why the Liberty RICE units will operate on an other than-economic basis even when the other generation and transmission facilities referenced in PSC IR 1-8(b) are available.

b. Please confirm that in MA IR-30, EKPC provided no instances of low-voltage issues in the "southern portion of [EKPC's] system," even during periods of high customer demand or when Cooper Station is offline.

c. Please provide an explanation as to why the thermal loading violations identified in MA IR-30 would have been mitigated by the work proposed in this application. If EKPC has any analysis or technical reports supporting this explanation, please supply those documents.

d. Please provide any analysis or other evidence supporting a determination that the reliability concerns referenced in the cited testimony and information responses require the proposed Liberty RICE units. In other words, if there were no other goals or objectives of the project, could the identified reliability concerns be mitigated by alternative solutions, such as a lesser capacity of RICE units, additional capacitor banks, an e-STATCOM unit, or other transmission system upgrades?

e. If in the response to part (d), EKPC agrees that other, potentially lower cost solutions are available for the reliability concerns, please provide any analysis or other supporting information as to the size, cost, and components of other potentially technically feasible mitigation solutions that EKPC may have prepared in evaluating the reliability concern in the southern portion of EKPC's system over the past several years

Response 17.

a. The RICE units will be dispatched on an economic basis unless dispatch is required for reliability constraints. This is true of all unit dispatch within the PJM system.

b. This is not accurate. The response to MA-IR-30 provided the instances of thermal-loading violations in Table 30-1 and referenced EKPC's response to Staff's First Request, Item 46, for the listing of low-voltage issues that occurred in the area for the period

from 10/1/2022 through 9/30/2024. As shown in the response to Staff 1-46, there were numerous instances of low voltage that occurred in the area for this time period.

c. The response provided all thermal-loading issues in the area that occurred in the period from 10/1/2022 through 9/30/2024. The response was not intended to identify only thermal-loading issues that would be mitigated by the proposed Liberty RICE generation facility and associated transmission reinforcements. Regardless, some of these thermal-loading PCLLRWs would have been aided by having additional generation at the Liberty RICE facility. The thermal-loading issues on the Cooper-Elihu 161 kV line and the Ferguson South-Somerset line during the period from 12/23/2022 through 12/26/2022 were due in part to flows into the Cooper Station area as a result of the limited amount of generation that was operating at Cooper Station. Generation at the Liberty RICE facility would have reduced the flows on these transmission lines due to the direction of the flows during this period. For similar reasons, the thermal-loading issue on the Ferguson South-Somerset 69 kV line on 3/22/2024 would have been aided by generation operating at the Liberty RICE facility. For the Cooper 161-69 kV transformer loading issues that occurred in 2022 and 2024, the Liberty RICE facility would not have provided any mitigation if all other operating conditions in effect at the time were unchanged.

d. Transmission-system reinforcements could be implemented to continue to maintain the reliability of the electric system in the area. While these transmission-system reinforcements would not provide the same relative level of reliability as the installation of local generation within the area, EKPC could continue to reinforce the transmission system to maintain reliability to at least the minimum required level. Therefore, if there were no other goals and objectives other than maintaining grid reliability in the area, the Liberty RICE facility would not be the recommended

solution due to the inordinate difference in costs versus transmission solutions. However, given that EKPC has established a need for additional generation capacity within its system, locating that capacity in an area of the system that needs additional support is an efficient and holistic approach to address multiple needs through an integrated resource planning approach.

e. See the response to Request #16 above.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00310
THIRD REQUEST FOR INFORMATION RESPONSE

SIERRA CLUB'S REQUEST DATED FEBRUARY 6, 2025
REQUEST 18
RESPONSIBLE PARTY: Julia J. Tucker

Request 18. Please refer to MA IR 1-15, in which EKPC states that energy storage options were not considered because EKPC does not have enough solar generation to justify energy storage.

a. Please confirm that in the PJM energy market, battery energy storage built by EKPC would be charged with market energy, unless the project was a hybrid solar storage facility. If not confirmed, please explain on what economic or operational basis freestanding battery energy storage projects would be charged by EKPC.

b. If the response to (a) is confirmed, please confirm that the quantity of solar generation on EKPC's system is not relevant to the operation of freestanding energy storage projects.

Response 18 a-b. EKPC did not consider battery energy storage to be a feasible option.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00310
THIRD REQUEST FOR INFORMATION RESPONSE

SIERRA CLUB'S REQUEST DATED FEBRUARY 6, 2025
REQUEST 19
RESPONSIBLE PARTY: Julia J. Tucker

Request 19. Please refer to the response to MA IR 1-20(c)(iv), in which EKPC states that it did not select CTs because it anticipates a large number of startups or shutdowns.

a. Please confirm either RICE or CT units will be dispatched based on PJM energy markets.

b. Please provide any modeling or analysis that EKPC has in its possession that support EKPC's statement regarding the number of startups and shutdowns assumed in MA IR 1-20

Response 19 a-b. Units will be dispatched by PJM. See Supplemental Response 2-16 to the Sierra Club, filed February 14, 2025 for modeling results.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00310
THIRD REQUEST FOR INFORMATION RESPONSE

SIERRA CLUB'S REQUEST DATED FEBRUARY 6, 2025
REQUEST 20
RESPONSIBLE PARTY: Julia J. Tucker

Request 20. Please refer to Direct Testimony of Witness Tucker (pg. 15-16) and Attachment JJT-3. Is JJT-3 the entirety of the "Expansion Plan"? If it is not the entirety of the "Expansion Plan," please produce all documents that encompass the "Expansion Plan."

Response 20. Attachment JJT-3 shows the entirety of the Expansion Plan.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00310
THIRD REQUEST FOR INFORMATION RESPONSE

SIERRA CLUB'S REQUEST DATED FEBRUARY 6, 2025
REQUEST 21
RESPONSIBLE PARTY: Brad Young

Request 21. Please refer to Attachment_BY-3_optimize, which is EKPC New Generation Project Feasibility Report and Alternatives Analyses."

a. Is this the only alternative analysis that was performed to support the selection of the Liberty Rice Units?

b. If not, please produce each and every document that encompasses the alternative analyses done to support the selection of the Liberty Rice Units.

Response 21 a-b. Attachment BY-3 does not evaluate the RICE engines against other technologies. However, Power Supply conducted an economic comparison between the RICE engines as compared to a simple cycle CT. The economic comparison is shown in Response 2(d) to Staff's Third Request. The Liberty RICE units were necessary from a technology perspective to support increased injection of intermittent resources such as solar. Essentially, EKPC needs a resource that can quickly dispatch to support renewable resources and still maintain reliability and voltage support of the system.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00310
THIRD REQUEST FOR INFORMATION RESPONSE

SIERRA CLUB'S REQUEST DATED FEBRUARY 6, 2025
REQUEST 22
RESPONSIBLE PARTY: Julia J. Tucker

Request 22. Please provide all documents that support the heat rates utilized by EKPC for CT and RICE boilers?

Response 22. Combustion turbines and RICE units do not utilize boilers. Refer to JI DR3-19d for historical heat rates for EKPC's existing CT fleet.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2024-00310
THIRD REQUEST FOR INFORMATION RESPONSE

SIERRA CLUB'S REQUEST DATED FEBRUARY 6, 2025
REQUEST 23
RESPONSIBLE PARTY: Craig Johnson

Request 23. Please provide the variable operation and maintenance costs for the proposed Liberty RICE units, broken down by category, and provide all documents that support, document, or explain that calculation.

Response 23. In Attachment BY-1 to the application, Table 1-2 summarizes estimated operation and maintenance (O&M) costs for the RICE units, with a brief explanation provided below the table. Section 7.7 of the same attachment offers a more detailed discussion, and Appendix T provides a complete cost breakdown. Further detail on the RICE unit maintenance schedule is provided in EKPC's response to Sierra Club's third data request, item 2.g. Therefore, EKPC is unclear about what further documentation is needed.