COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF EAST KENTUCKY POWER COOPERATIVE, INC. FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR THE CONSTRUCTION OF A 161 kV TRANSMISSION LINE IN PULASKI COUNTY, KENTUCKY AND OTHER GENERALRELIEF	**)**	**CASE NO. 2025-00311**

RESPONSES TO STAFF'S SECOND INFORMATION REQUEST

TO EAST KENTUCKY POWER COOPERATIVE, INC.

DATED DECEMBER 31, 2025

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF EAST KENTUCKY POWER COOPERATIVE, INC. FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR THE CONSTRUCTION OF A 161 kV TRANSMISSION LINE IN PULASKI COUNTY, KENTUCKY AND OTHER GENERAL RELIEF	)	**CASE NO. 2025-00311**

VERIFICATION OF LUCAS SPENCER

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF CLARK)

Lucas Spencer, Senior Engineer of East Kentucky Power Cooperative, Inc., being duly sworn, states that he has supervised the preparation of his Errata Testimony and Data Requests and certain filing requirements in the above-referenced case 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.

Lucas Spencer

The foregoing Verification was signed, acknowledged and sworn to before me this 6th day of February, 2026, by Lucas Spencer.

Notary Commission No. 1/18/28

Commission expiration: KYNP84425

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF EAST KENTUCKY POWER COOPERATIVE, INC. FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR THE CONSTRUCTION OF A 161 kV TRANSMISSION LINE IN PULASKI COUNTY, KENTUCKY AND OTHER GENERAL RELIEF	)	**CASE NO. 2025-00311**

VERIFICATION OF DARRIN ADAMS

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF CLARK)

Darrin Adams, Director of Transmission Planning & System Protection of East Kentucky Power Cooperative, Inc., being duly sworn, states that he has supervised the preparation of his Errata Testimony and Data Requests and certain filing requirements in the above-referenced case 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

The foregoing Verification was signed, acknowledged and sworn to before me this 6th day of February, 2026, by Darrin Adams.

Notary Commission No. 1/15/25

Commission expiration: KYNP84485

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2025-00311
SECOND REQUEST FOR INFORMATION RESPONSE

STAFF'S REQUEST DATED DECEMBER 31, 2025
REQUEST 4
RESPONSIBLE PARTY: Darrin Adams

Request 4. Refer to the Adams Direct Testimony, page 12, lines 11–14.

a. Further explain the benefits and reasonableness of constructing the Cooper-Alcalde 161 kV double-circuit line compared to constructing the Cooper-Alcalde line at 345 kV. In the response, include the estimated cost of constructing the Cooper-Alcalde line at 345 kV.

b. Explain the estimated cost of constructing the second Cooper-Alcalde 161 kV transmission line circuit as opposed to a single-circuit transmission line. Include in the response a comparison of how running the second circuit is less expensive than the cost of the additional projects that would have been required with running only a single circuit Cooper-Alcalde transmission line.

Response 4.

a. As detailed in the Adams Direct Testimony, Attachment DA-1, Section 5.2, describes the need to explore options to increase the transmission capacity to move power away from Cooper Station. Attachment DA-1, pages 20-21, describes the power flow direction on the system during normal conditions and under contingency scenarios.

A large portion of the power generated from Cooper Station will normally flow from EKPC's system to the LG&E/KU system via the existing Cooper – Elihu – Alcalde 161 kV line. An outage of both of these lines (N-1-1 conditions) would cause significant strain on the existing transmission system and results in the need for significant reinforcement projects in order to operate Cooper CCGT without restrictions during such line outage conditions. Furthermore, the Adams Direct Testimony, Attachment DA-1, shows that a single-circuit 161kV line between the Cooper and Alcalde substations results in a higher overall cost for the entire set of transmission projects required when compared to the set of required transmission projects with a Cooper-Alcalde double-circuit 161 kV line. For this reason, a single 345 kV would result in higher project costs when compared to those of a 161 kV double-circuit, and also would require a very similar set of reinforcement projects on existing transmission lines as the plan required for the single-circuit 161 kV alternative. This is because the new Cooper-Alcalde line – whether built at 161 kV or 345 kV – becomes the most critical contingency for power flows in the area. In order to provide efficient utilization of the existing lines in the area and moderate the level of upgrades required for these lines, two new circuits are required to address the N-1-1 conditions studied by PJM, regardless of voltage level of those circuits. Therefore, a 345 kV solution would also have to be constructed as a double-circuit line. The tables below include cost for a single-circuit and double-circuit 345 kV Cooper-Alcalde line.

Cooper-Alcalde 345kV single-circuit	Construct a new Cooper Alcalde 345 kV line (~~5.25~~ 4.54 miles) using 954 ACSR bundled conductor (Single-Circuit)	$26.25
	KU expands the 345 kV bus at the Alcalde substation to accommodate the new Cooper – Alcalde 345 kV circuit. (Single-Circuit)	$4.00
	Construct a new Cooper 345kV station (Breaker and A-Half - 1 rung)	$6.00
	Install a 345/161 kV transformer	$9.50
	Total	**$45.75**
Cooper-Alcalde 345kV double-circuit	Construct a new Cooper Alcalde 345 kV line (~~5.25~~ 4.54 miles) using 954 ACSR bundled conductor (Double-circuit)	$34.10
	KU expands the 345 kV bus at the Alcalde substation to accommodate the new Cooper – Alcalde 345 kV circuit. (Double-Circuit)	$8.00
	Construct a new Cooper 345kV station (Breaker and A-Half - 2 rungs)	$12.00
	Install 2 345/161 kV transformers	$19.00
	Total	**$73.10**

b. In the Adams Direct Testimony. Attachment DA-1, a comparison of Table 6.2 on page 22 and Table 6.3 on page 24 shows that the cost difference between construction of the single-circuit and double-circuit Cooper-Alcalde transmission line is $7.03 million. Those cost differences are summarized below.

Scenario	Project	Estimated Cost ($MM)
Single Circuit	Construct a new Cooper Alcalde 161 kV line (~~5.25~~ 4.54 miles) using 1272 MCM ACSS conductor	$15.10
	KU expands the 161 kV bus at the Alcalde substation to accommodate the new Cooper – Alcalde 161 kV circuit.	$2.00
Double Circuit	Construct a new double circuit Cooper-Alcalde 161 kV line (~~5.25~~ 4.54 miles) using 1272 MCM ACSS conductor	$20.13
	KU expands the 161 kV bus at the Alcalde substation to accommodate the new Cooper – Alcalde 161 kV double circuit.	$4.00

The cost shown above only represents the cost difference of the single vs double circuit explicitly, and shows a $7.03 million-dollar incremental cost for running a second circuit.

Further comparison of Tables 6.2 and 6.3 in Attachment DA-1 illustrates that additional reinforcement projects would be required if the single circuit line is constructed. The construction of the double-circuit line improves the system's ability to transmit the additional generation at Cooper out under various outage scenarios. Installation of only a single-circuit line would result in more constraints needing further mitigation. The list of projects no longer identified as needed with the double-circuit line that would be needed with the single-circuit line are shown below.

Project	Estimated Cost ($MM)
Install a 100 MVA transformer at Liberty Jct to replace the existing 93 MVA unit.	$4.00
Rebuild the Cooper - Laurel River Dam 161 kV line with 954 MCM ACSR to replace the existing 795 MCM ACSR conductor. (17.32 miles)	$19.80
Rebuild the Cooper - Somerset 69kV double circuit with 556 MCM ACSR replacing the existing 266 MCM ACSR conductor. (3.2 miles)	$5.03
Springfield KU- N Springfield 69 kV line: reconductor 3.24 miles of line with 397.5 MCM 18X1 ACSR	$8.10
Corbin 1-Corbin 2 69 kV line: reconductor 0.67 miles using a minimum of 556 ACSR conductor	$1.68

The scope change from the single-circuit to double-circuit results in an incremental construction cost increase of $7.03 million for the new line, but the double-circuit line removes the five projects listed above from the set of required reinforcements, resulting in an offsetting $38.61 million reduction in cost. This ultimately provides $31.58 million in overall cost savings with the double-circuit transmission line versus the single-circuit line.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2025-00311
SECOND REQUEST FOR INFORMATION RESPONSE

STAFF'S REQUEST DATED DECEMBER 31, 2025
REQUEST 5
RESPONSIBLE PARTY: Darrin Adams

Request 5. Refer to the Adams Direct Testimony, Attachment DA-1, Table 1.1 page 5– 6. For each individual project that was not included in EKPC's Cooper Station Certificate of Public Convenience and Necessity (CPCN), Case No. 2024-00370, but is included in this proceeding, provide specific justification for these additional costs included in the current proceeding, and specify any potential benefits to EKPC and its members may receive as a result of the additional costs.

Response 5. The table in the Adams Direct Testimony, Attachment DA-1, Table 1.1 on pages 5– 6 provides a comparison of the projects identified for the Cooper-Alcalde single-circuit line transmission plan as presented in Case No. 2024-00370,[1] EKPC's Cooper Station Certificate of Public Convenience and Necessity (CPCN), versus those identified based on updated power-flow modeling and available information. The updated information shows that with new system

[1] *Electronic Application of East Kentucky Power Cooperative, Inc. for 1) Certificates of Public Convenience and Necessity to Construct a New Generation Resource; 2) for a Site Compatibility Certificate Relating to the Same; 3) Approval of Demand Side Management Tariffs; and 4) Other General Relief*, Case No. 2024-00370, (Ky. PSC. Nov. 20, 2024).

models, updated coordination with LG&E/KU, and preliminary results from PJM's System Impact Studies for its generator interconnection queue, additional projects and associated costs are identified if EKPC proceeds with the single-circuit line between EKPC's Cooper Station and LG&E/KU's Alcalde substation. Attachment DA-1 in this proceeding provides analysis that considers a double-circuit line alternative to the new 161 kV single-circuit line between Cooper Station and Alcalde in order to provide the needed transmission capacity to allow the operation of the existing Cooper Station Unit #2, plus the planned Cooper CCGT and Liberty RICE units at full output without restrictions. This is the justification for these projects – they are all necessary in order to allow the existing and planned generation on the area to operate without restrictions.

Attachment DA-1 shows that the overall transmission cost necessary to address all transmission-system overloads is lower with the double-circuit line than either without any new line or with only a single-circuit line. Please see Attachment *PSC DR2 Response 5 – Cost Justification* for details regarding the costs noted in Case No. 2024-00370 compared to the costs listed in Adams Direct Testimony, Attachment DA-1. These costs, while higher compared to the costs listed in Case No. 2024-00370 ($158.91 million) are now estimated to be $74.81 million higher ($233.72 million) if EKPC proceeds with the single-circuit Cooper-Alcalde transmission line as opposed to $43.23 million higher ($202.14 million) with the double-circuit line based on the transmission-system information that is currently available to EKPC.

PSC DR2
Response 5
Cost Justification

Generation	Project	Scenario			Cost ($ in Millions)			$ Change	Justification
		Prior CPCN Case	Update	Double Circuit	Prior CPCN Case	Update (Single-Circuit)	Double-Circuit		
Liberty RICE	Construct a new 161 kV Switching Station ("Liberty RICE Substation") along the Casey County-Liberty Junction 161 kV Line	✔	✔	✔	$12.00	$12.00	$12.00	-	No change from Case No. 2024-00370
	Construct necessary transmission line facilities to loop the existing Casey County-Liberty Junction 161 kV Line into the new Liberty RICE Substation	✔	✔	✔	$1.50	$1.50	$1.50	-	
	Install OPGW on the Liberty RICE - Casey County 161 kV Line (6.6 miles)	✔	✔	✔	$0.80	$0.80	$0.80	-	
	Install OPGW on the Liberty RICE - Liberty Junction 161 kV Line (7.4 miles)	✔	✔	✔	$1.01	$1.01	$1.01	-	
	Rebuild the Liberty RICE-Liberty Junction 161 kV Line using 795 MCM ACSR conductor (7.8 miles)	✔	✔	✔	$13.70	$13.70	$13.70	-	
	Increase the maximum conductor operating temperature ("MOT") of the 636 MCM ACSR conductor in the Liberty RICE-Casey County 161 kV Line to 212 degrees F (6.2 miles)	✔	✔	✔	$1.95	$1.95	$1.95	-	
	Increase the MOT of the 795 MCM ACSR conductor in the Marion County-Marion County Industrial Park Tap 161 kV Line to 212 degrees F (4.0 miles)	✔	✔	✔	$1.15	$1.15	$1.15	-	
	Rebuild the Marion County-Lebanon 138 kV Line using 954 ACSR conductor (0.1 mile)	✔	✔	✔	$0.20	$0.20	$0.20	-	
	Install a 100 MVA transformer at Liberty Jct to replace the existing 93 MVA unit.	✘	✔	✘	-	$4.00	-	$4.00	Added as a result of the refreshed studies using updated modeling information for the single-circuit Cooper-Alcalde line, then removed under the double-circuit line scenario.
	Lebanon 138/69 transformer overloads: Add a second transformer at or near Lebanon.	✘	✔	✔	-	$9.20	$9.20	$9.20	Added as a result of the coordination with LG&E/KU.
	Campbellsville Tap-Taylor Co 69 kV line: reconductor 0.38 miles using a minimum of 397 ACSR conductor	✘	✔	✔	-	$0.95	$0.95	$0.95	
	Mile Lan Tap-Campbellsville 69 kV line: Reconductor 2.21 miles with 556.5 MCM 26X7 ACSR.	✘	✔	✔	-	$5.53	$5.53	$5.53	
	Lebanon-Springfield KU 69 kV: Reconductor 6.58 miles with 556.5 MCM 26X7 ACSR.	✘	✔	✔	-	$16.45	$16.45	$16.45	
			Total		**$32.31**	**$68.44**	**$64.44**		
Cooper CCGT	Construct a new 161 kV substation for termination of the combined-cycle units (3 GSUs) and re-terminate existing Cooper-Laurel Dam and Cooper-Denny 161 kV lines into the new substation.	✔	✔	✔	$25.00	$25.00	$25.00	-	No change from Case No. 2024-00370
	Construct a new Cooper Alcalde 161 kV line (4.54 ~~5.25~~ miles) using 1272 ACSS conductor (Single-Circuit)	✔	✔	✘	$11.15	$15.10	-	$3.95	Cost increase of the single-circuit Cooper-Alcalde line associated with due to construction labor cost escalations, rising material costs, and tariff considerations
	Construct a new Cooper Alcalde 161 kV line (4.54 ~~5.25~~ miles) using 1272 ACSS conductor (Double-circuit)			✔		$20.13	$20.13	$8.98	Cost escalation as a result under estimation on EKPC's part for the cost associated with upgrades on LG&E/KU's system.
	Replace all 161 kV circuit breakers at Cooper with 63 kA breakers.	✔	✔	✔	$3.00	$3.00	$3.00	-	No change from Case No. 2024-00370
	Rebuild the Cooper-Elihu 161 kV line (4.2 miles) using 1272 ACSS conductor	✔	✔	✔	$10.33	$10.33	$10.33	-	
	Increase the MOT of the Laurel Dam-Laurel County 161 kV line (13.5 miles) to 212 degrees F	✔	✔	✔	$3.85	$3.85	$3.85	-	
	Rebuild the South Lancaster-Garrard County 69 kV line (1.8 miles) using 556 ACSR conductor	✔	✘	✘	$1.82	-	-	($1.82)	Removed as a result of the refreshed studies using updated modeling information.
	Upgrade the Cooper 161/69 kV transformer with a 200 MVA unit, and purchase a spare 200 MVA transformer	✔	✔	✔	$6.70	$6.70	$6.70	-	No change from Case No. 2024-00370
	Upgrade the Marion County 161/138 kV transformer with a 300 MVA unit and purchase a spare 300 MVA transformer.	✔	✔	✔	$8.83	$8.83	$8.83	-	
	Increase the MOT of the Casey County-Marion County 161 kV line (17.8 miles) to 212 degrees F	✔	✔	✔	$5.08	$5.08	$5.08	-	
	Rebuild the Cooper - Laurel River Dam 161 kV line with 954 ACSR to replace the existing 795 ACSR conductor. (17.32 miles)	✘	✔	✘	-	$19.80	-	-	
	Rebuild the Cooper - Somerset 69kV double circuit line with 556 ACSR replacing the existing 266 ACSR conductor. (3.2 miles)	✘	✔	✘	-	$5.03	-	-	
	Increase the MOT on Taylor Co Jct-AF1-038 795 ACSR conductor to 212 degrees F. (0.92 miles)		✔	✔	-	$0.28	$0.28	$0.28	Added as a result of the refreshed studies using updated modeling information.
	KU constructs a 345 kV bus at the Alcalde substation and installs a 2nd Alcalde 345/161 kV transformer	✔	✔	✔	$18.00	$24.60	$24.60	$6.60	No change from Case No. 2024-00370
	KU expands the 161 kV bus at the Alcalde substation to accommodate the new Cooper – Alcalde 161 kV circuit.(Single-Circuit)	✘	✔	✘	-	$2.00	-	$2.00	Added as a result of re-evlauation of the scope of the new Cooper-Alcalde 161 kV line. This line item ensures consideration of exspenses on LG&E/KU's system are accounted for.
	KU expands the 161 kV bus at the Alcalde substation to accommodate the new Cooper – Alcalde 161 kV circuit. (Double-Circuit)			✔		$4.00	$4.00	$4.00	
	Lebanon-Springfield KU 69 kV: Reconductor 6.58 miles with 556.5 MCM 26X7 ACSR.[1]	✔	✘	✔	$9.78	-	-	($9.78)	Removed as a result of coordination with LG&E/KU. However, LG&E/KU identified this project as needed due to the Liberty RICE installation.
	Alcalde-Elihu 161kV line: Reconductor 2.94 miles with 954 ACSS[2]	✔	✔	✔	$5.90	-	-	($5.90)	Removed as a result of coordination with LG&E/KU.
	Alcalde-Farley 161 kV: MOT increase of the existing line (27.19 miles)	✔	✔	✔	$11.69	$20.40	$20.40	$8.71	Cost escalation as a result under estimation on EKPC's part for the cost associated with upgrades on LG&E/KU's system.
	Farley – Artemus Tap 161 kV: MOT increase of the existing line (12.77 miles)	✔	✘	✘	$5.49	-	-	($5.49)	Removed as a result of coordination with LG&E/KU.
	Springfield KU- N Springfield 69 kV line: reconductor 3.24 miles of line with 397.5 MCM 18X1 ACSR	✘	✔	✘	-	$8.10	-	-	No change from Case No. 2024-00370
	Corbin East-Sweet Hollow 69 kV line: reconductor 2.2 miles using a minimum of 556 ACSR conductor	✘	✔	✔	-	$5.50	$5.50	$5.50	Added as a result of the coordination with LG&E/KU.
	Corbin 1-Corbin 2 69 kV line: reconductor 0.67 miles using a minimum of 556 ACSR conductor	✘	✔	✘	-	$1.68	-	-	No change from Case No. 2024-00370
				Total	**$126.60**	**$165.28**	**$137.70**		
				Grand Total	**$158.91**	**$233.72**	**$202.14**		

[1] Project identified in EKPC initial analysis related to the Cooper CCGT, LG&E/KU results identified the project needed due to Liberty RICE. Cost total for the update does not reflect this project for Cooper CCGT.

[2] LG&E/ KU has an existing project to replace the conductor in the Alcalde to Elihu 161kV line. There is no cost included, since it is expected that the new conductor will provide the sufficient capacity needed after the generation additions. This line item will be removed from all future tables displaying projects and cost.