

**COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION**

In the Matter of:

ELECTRONIC INVESTIGATION OF)	
LOUISVILLE GAS AND ELECTRIC)	
COMPANY AND KENTUCKY UTILITIES)	CASE NO. 2023-00422
COMPANY SERVICE RELATED TO WINTER)	
STORM ELLIOTT)	

**INITIAL DATA REQUESTS OF JOINT INTERVENORS METROPOLITAN
HOUSING COALITION, KENTUCKIANS FOR THE COMMONWEALTH,
KENTUCKY SOLAR ENERGY SOCIETY, AND MOUNTAIN ASSOCIATION TO
LOUISVILLE GAS AND ELECTRIC COMPANY AND KENTUCKY UTILITIES
COMPANY**

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Dated: January 26, 2024

DEFINITIONS

1. “Document” means the original and all copies (regardless of origin and whether or not including additional writing thereon or attached thereto) of any memoranda, reports, books, manuals, instructions, directives, records, forms, notes, letters, or notices, in whatever form, stored or contained in or on whatever medium, including digital media.
2. “Study” means any written, recorded, transcribed, taped, filmed, or graphic matter, however produced or reproduced, either formally or informally, a particular issue or situation, in whatever detail, whether or not the consideration of the issue or situation is in a preliminary stage, and whether or not the consideration was discontinued prior to completion.
3. “Person” means any natural person, corporation, professional corporation, partnership, association, joint venture, proprietorship, firm, or the other business enterprise or legal entity.
4. A request to identify a natural person means to state his or her full name and business address, and last known position and business affiliation at the time in question.
5. A request to identify a document means to state the date or dates, author or originator, subject matter, all addressees and recipients, type of document (e.g., letter, memorandum, telegram, chart, etc.), identifying number, and its present location and custodian. If any such document was but is no longer in the Company’s possession or subject to its control, state what disposition was made of it and why it was so disposed.
6. A request to identify a person other than a natural person means to state its full name, the address of its principal office, and the type of entity.
7. “And” and “or” should be considered to be both conjunctive and disjunctive, unless specifically stated otherwise.
8. “Each” and “any” should be considered to be both singular and plural, unless specifically stated otherwise.
9. Words in the past tense should be considered to include the present, and words in the present tense include the past, unless specifically stated otherwise.
10. Unless otherwise specified in each individual interrogatory or request, the terms “you,” “your,” “LG&E,” “KU,” “LG&E/KU,” or “Companies” refer collectively to Louisville Gas & Electric Company and Kentucky Utilities Company, including any affiliated companies, predecessors-in-interest, employees, authorized agents, outside consultants or contractors, or other representatives.
11. “LG&E” means Louisville Gas & Electric Company and/or any of their officers, directors, employees or agents who may have knowledge of the particular matter addressed, and affiliated companies.

12. “KU” means Kentucky Utilities Company and/or any of their officers, directors, employees or agents who may have knowledge of the particular matter addressed, and affiliated companies including Pennsylvania Power and Light.

13. “The Companies” means LG&E and KU.

14. “Joint Intervenors” means the Metropolitan Housing Coalition, Kentuckians for the Commonwealth, Kentucky Solar Energy Society, and Mountain Association.

15. “Commission” or “PSC” means the Kentucky Public Service Commission, including its Commissioners, personnel, and offices.

16. “FERC-NERC Report” refers to the “FERC, NERC, and Regional Entity Staff Report, *Inquiry Into Bulk-Power System Operations During December 2022 Winter Storm Elliott* (Oct. 2023),” which is attached to the Commission’s December 22, 2023 Order in this proceeding as Appendix A.

17. “BA” means Balancing Authority.

18. “CPCN” means Certificate of Public Convenience and Necessity.

19. “CT” means Combustion Turbine.

20. “EEA” means Energy Emergency Alert.

21. “NGCC” means Natural Gas Combined Cycle.

22. “PJM” means PJM Interconnection, a regional transmission organization.

23. “RC” means Reliability Coordinator.

24. “RTO” means Regional Transmission Organization.

25. “TVA” means Tennessee Valley Authority.

INSTRUCTIONS

1. If any matter is evidenced by, referenced to, reflected by, represented by, or recorded in any document, please identify and produce for discovery and inspection each such document.
2. These requests for information are continuing in nature, and information which the responding party later becomes aware of, or has access to, and which is responsive to any request is to be made available to Joint Intervenors. Any studies, documents, or other subject matter not yet completed that will be relied upon during the course of this case should be so identified and provided as soon as they are completed. The Respondent is obliged to change, supplement, and correct all answers to interrogatories to conform to available information, including such information as it first becomes available to the Respondent after the answers hereto are served.
3. Unless otherwise expressly provided, each data request should be construed independently and not with reference to any other interrogatory herein for purpose of limitation.
4. Whenever the documents responsive to a discovery request consist of modeling files (including inputs or output) and/or workpapers, the files and workpapers should be provided in machine-readable electronic format (e.g., Microsoft Excel), with all formulas and cell references intact.
5. The answers provided should first restate the question asked and also identify the person(s) supplying the information.
6. Please answer each designated part of each information request separately. If you do not have complete information with respect to any interrogatory, so state and give as much information as you do have with respect to the matter inquired about, and identify each person whom you believe may have additional information with respect thereto.
7. Wherever the response to a request consists of a statement that the requested information is already available to Joint Intervenors, please provide a detailed citation to the document that contains the information. This citation shall include the title of the document, relevant page number(s), and, to the extent possible, paragraph number(s) and/or chart/table/figure number(s).
8. If you claim a privilege including, but not limited to, the attorney-client privilege or the work product doctrine, as grounds for not fully and completely responding to any discovery request, please describe the basis for your claim of privilege in sufficient detail so as to permit Joint Intervenors or the Commission to evaluate the validity of the claim. With respect to documents for which a privilege is claimed, please produce a "privilege log" that identifies the author, recipient, date, and subject matter of the documents or interrogatory answers for which you are asserting a claim of privilege and

any other information pertinent to the claim that would enable Joint Movants or the Commission to evaluate the validity of such claims.

9. In the case of multiple witnesses, each interrogatory should be considered to apply to each witness who will testify to the information requested. Where copies of testimony, transcripts or depositions are requested, each witness should respond individually to the information request.

10. The interrogatories are to be answered under oath by the witness(es) responsible for the answer.

**INITIAL DATA REQUESTS PROPOUNDED TO
LOUISVILLE GAS AND ELECTRIC COMPANY AND KENTUCKY UTILITIES
COMPANY BY JOINT INTERVENORS**

1.1. Please refer to the following text on page 11 of the FERC-NERC Report:

LG&E/KU also experienced significant unplanned generation derates during winter peak load conditions on the evening of December 23. To offset the generation derates, LG&E/KU was able to import 400 MW from PJM. At 4:29 p.m., PJM BA curtailed the 400 MW import due to experiencing rapidly increasing levels of unplanned generation outages coincident with increasing system load in its own footprint. In response, LG&E/KU requested emergency energy from the TVA Contingency Reserve Sharing Group, which TVA was able to supply. With its system load increasing, LG&E/KU entered into EEA 3 at 4:45 p.m. Following TVA's return at 5:18 p.m. to EEA 3, by 6:00 p.m. it also could no longer spare its 400 MW emergency power to LG&E/KU. With the loss of the import power to offset the unplanned generation derates, LG&E/KU began over 300 MW firm load shed at 5:58 p.m. This was the first time LG&E/KU had ever ordered firm load shed in response to an energy emergency (EEA) event.

- a. Please confirm whether it is the Companies' position that the quoted text accurately describes events that occurred on December 23, 2022.
- b. If the answer to the previous subpart is anything other than an unqualified confirmation, please explain in detail any material inaccuracies or omissions in the quoted text.

1.2. Please refer to page 29 of the FERC-NERC Report (Figure 12).

- a. Please confirm whether it is the Companies' position that the information reflected in Figure 12 detailing the number of transmission tie lines between LG&E-KU's balancing authority and adjacent balancing authorities is accurate.
- b. If the answer to the previous paragraph is anything other than an unqualified confirmation, please explain in detail any material inaccuracies or omissions of which the Companies are aware in Figure 12.
- c. Please produce a map or maps showing the locations of the transmission tie lines between LG&E-KU's balancing authority and adjacent balancing authorities.
- d. Please produce a spreadsheet or other document identifying the locations of the transmission tie lines between LG&E-KU's balancing authority and adjacent balancing authorities, along with the dates those transmission tie lines were constructed, the reason(s) why they were constructed, and the docket number(s)

of any Commission proceeding(s) in which their construction was approved by the Commission.

- e. Do the Companies have any pending cases whereby they are seeking to add additional transmission tie lines between LG&E-KU's balancing authority and adjacent balancing authorities? If yes, please identify all such cases. If no, please explain why not.
- f. Do the Companies have any plans to seek new approvals to add additional transmission tie lines between LG&E-KU's balancing authority and adjacent balancing authorities? If yes, please identify all such plans. If no, please explain why not.

1.3. Please refer to the following text on page 47 of the FERC-NERC Report:

Beginning at 1:28 a.m. on December 23, then throughout the morning and afternoon, generators experienced derates and outages due to cold weather and mechanical issues; at 1:08 p.m., significant power plant derates due to fuel issues (discussed further in subsection (a) below) led to an approximately 900 MW reduction, including one unit trip and six units that were derated to operate at minimum output for approximately 50 hours (until December 25, 4:00 p.m.); then from 3:39 p.m. to 6:44 p.m., an additional 500 MW of unplanned generation outages occurred.

- a. Please confirm whether it is the Companies' position that the quoted text accurately describes events that occurred on December 23–25, 2022.
- b. If the answer to the previous subpart is anything other than an unqualified confirmation, please explain in detail any material inaccuracies or omissions in the quoted text.

1.4. Please refer to the following text on page 50 of the FERC-NERC Report:

On December 23, at 1:09 a.m., pipeline pressures for two natural gas-fired generating stations began to drop below the contract limits; and at 1:08 p.m., LG&E/KU experienced approximately 900 MW in generation losses (unit trip and six units derated) arising from low delivery pressures on a pipeline supplying these generating units.

- a. Please confirm whether it is the Companies' position that the quoted text accurately describes events that occurred on December 23, 2022.
- b. If the answer to the previous subpart is anything other than an unqualified confirmation, please explain in detail any material inaccuracies or omissions in the quoted text.

1.5. Please refer to the following text on pages 64–65 of the FERC-NERC Report:

With LG&E/KU’s system load already at 96 percent of its new all-time record winter peak load which occurred December 23, coupled with significant unplanned generation derates, by 1:36 p.m. on December 23, LG&E/KU declared EEA 3, but recovered to an EEA 2 by 2:52 p.m. At 4:29 p.m., PJM BA curtailed the 400 MW import power due to experiencing rapidly increasing levels of unplanned generation outages coincident with increasing system load in its own footprint. With import power curtailment, at 4:29 p.m., LG&E/KU requested emergency energy from its contingency reserve sharing group. TVA, although in EEA 2 at the time, supplied LG&E/KU with 400 MW of emergency energy. At 4:45 p.m., LG&E/KU re-entered EEA 3. However, following TVA’s return at 5:18 p.m. to an EEA 3 condition, at 6 p.m. it could no longer spare the 400 MW of emergency power to LG&E/KU. With the loss of its import power schedules to offset the generation derates, and its increasing system load conditions, LG&E/KU began over 300 MW firm load shed at 5:58 p.m. Over the next several hours, LG&E/KU was able to incrementally restore firm load that was shed as system loads decreased after its evening peak, and by 10:11 p.m., restored all firm load.

- a. Please confirm whether it is the Companies’ position that the quoted text accurately describes events that occurred on December 23, 2022.
- b. If the answer to the previous subpart is anything other than an unqualified confirmation, please explain in detail any material inaccuracies or omissions in the quoted text.

1.6. Please refer to Case No. 2022-00402, Sierra Club Hearing Exhibit No. 10 (LG&E-KU Nov. 2022 RTO Membership Study), at 8, which states that “[t]he Companies will perform another RTO Membership Study in 2023, reassessing any changes in the outlook for RTO reliability as indicated in NERC, RTO, and other reports, as well as updating the inputs to energy and capacity market models.”

- a. Did the Companies perform another RTO Membership Study in 2023?
- b. If yes, please produce the study, along with documents reflecting any updated inputs and any updated modeling files.
- c. If no, please explain in detail why not.

1.7. Please refer to Case No. 2022-00402, Companies’ response to the Office of the Attorney General’s Request No. 1-13.

- a. Please identify all steps taken by Texas Gas Transmission since December 2022 to “upgrade equipment and update operational procedures to ensure transportation reliability.”
 - b. Please explain whether the Companies believe that the steps identified in response to subpart (a) are sufficient to ensure transportation reliability even during severe winter storm conditions similar to those experienced during Winter Storm Elliott. If so, please explain why. If not, please explain why not and identify what further steps the Companies believe are needed.
 - c. Have the Companies completed any additional reports or other analyses concerning the events of Winter Storm Elliott since the date of this response? If yes, please produce copies of all such reports or analyses.
 - d. Please produce copies of all contracts between the Companies and Texas Gas Transmission or Tennessee Gas Pipeline that were in place in December 2022, as well as all subsequent contracts or contract amendments or modifications, up to the present day.
 - e. Did the issues experienced during Winter Storm Elliott constitute a failure to perform by Texas Gas Transmission pursuant to any contracts that were in place with the Companies? Please explain why or why not.
 - f. Did the issues experienced during Winter Storm Elliott constitute a breach by Texas Gas Transmission of any contracts that were in place with the Companies? Please explain why or why not.
 - g. Have the Companies taken any steps to seek damages or other legal or equitable relief from Texas Gas Transmission due to the issues experienced during Winter Storm Elliott? Please explain why or why not.
- 1.8. Please refer to slide 5 of the February 2, 2023 presentation by LG&E/KU Chief Operating Officer Lonnie E. Bellar, “Generation Reliability Planning and Winter Storm Elliott,” which is attached to the Commission’s December 22, 2023 Order in this proceeding as Appendix B.
- a. Please identify and explain all steps that the Companies have taken to date in “working with Texas Gas Transmission to address the event.”
 - b. Please identify and explain all steps that the Companies have taken to date to “reduce risk of future occurrence” of the event.
 - c. Please identify the status of the Companies’ review of their winter operating procedures and produce any documentation of that review or its results.
- 1.9. Please refer to Case No. 2022-00402, Companies’ response to Joint Intervenors’ Request No. 1-22.
- a. Please explain what is meant by “pseudo-ties” and “dynamic schedules.”
 - b. Please explain what steps, in addition to the steps identified in response to Joint Intervenors’ Request 1-22(c)(ii), the Companies would take today to manage

additional load if they anticipated or experienced a similar increase in load under similar conditions as that on December 23, 2022.

- 1.10. Please refer to Case No. 2022-00402, Companies' response to Joint Intervenors' Request No. 1-28.
 - a. Please explain whether the Companies believe their current generation assets have sufficient ramping capabilities to meet swings in demand, such as the extreme demand swings that occurred on June 28, 2012, and January 6, 2014.
 - b. Please explain whether the Companies have evaluated the extent to which they expect existing measures (such as TOD rates, CSR, and DSM programs) to dampen future swings. If so, please explain the results, and produce any documentation, of that evaluation. If not, please explain why not.

- 1.11. Please refer to Case No. 2022-00402, Companies' response to Joint Intervenors' Request No. 3-4. In addition to prudent management of coal inventories, please explain what other steps Companies' have taken to prevent the potential for derates resulting from frozen coal.

- 1.12. Please refer to Case No. 2022-00402, Companies' response to Joint Intervenors' Request No. 4-4.
 - a. Please provide the operating plans developed by LG&E/KU BA to mitigate capacity and energy emergencies.
 - b. Please explain TVA RC process for review and approval of LG&E/KU BA's operating plans to mitigate capacity and energy emergencies.
 - c. Please state whether LG&E/KU BA's operating plans have been adjusted or updated in response to the Winter Storm Elliott event. If so, please explain in detail how those plans have been adjusted or updated, and produce the adjusted or updated plans. If not, explain why not.

- 1.13. Please refer to Case No. 2022-00402, Companies' response to Joint Intervenors' Request No. 4-22. Other than a drop in pressure on the Texas Gas Transmission system, have the Companies identified any other contributing factor(s) that impacted the ability of Cane Run 7 and Trimble County CTs to perform during the Winter Storm Elliott event?

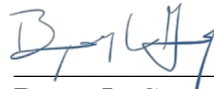
- 1.14. Please state whether the Companies experienced any outages or derates at any of their coal- or gas-fired generating units in January or February 2023, December 2023, or January 2024.

- a. If so, please identify each such outage or derate by generating unit, date, length, cause, and the size in MW if a derate.
- 1.15. Please refer to Figure 4 on page 14 of the FERC-NERC Report. State whether the Companies experienced any outages or derates at any of their coal- or gas-fired units during any of the 2011, 2014, 2018, or 2021 severe winter weather events identified therein.
- a. If so, please identify each such outage or derate by generating unit, date, length, cause, and the size in MW if a derate.
- 1.16. Please state whether the Companies experienced any incidents of low gas pressure or other gas supply inadequacies in January or February 2023, December 2023, or January 2024.
- a. If so, identify each such incident by pipeline, date, length, cause, and extent.
- 1.17. Please refer to Figure 4 on page 14 of the FERC-NERC Report. Please state whether the Companies experienced any incidents of low gas pressure or other gas supply inadequacies during any of the 2011, 2014, 2018, or 2021 severe winter weather events identified therein.
- a. If so, please identify each such incident by pipeline, date, length, cause, and extent.
- 1.18. Please produce the most recent cold weather plan that the Companies have for each of their coal- and gas-fired generating units.
- a. For each such plan, please state whether it has been updated or adjusted since Winter Storm Elliott and, if so, how.
 - b. For each coal- and gas-fired generating unit, please state whether the applicable cold weather plan was fully implemented in advance of this winter. If not, please explain why not.
- 1.19. Please state whether the Companies have evaluated each of the following as options for improving reliability, reducing peak demand, and/or reducing the chance of rolling blackouts or other load shedding events during severe winter weather conditions such as those experienced during Winter Storm Elliott. For each option that the Companies have evaluated, please explain the results and produce any documentation of such evaluation. For each option that the Companies have not evaluated, please explain why not.
- a. Demand response programs.

- b. Energy efficiency programs, beyond those approved in the CPCN docket, 2022-00402.
 - c. Battery storage projects, beyond those approved in the CPCN docket, 2022-00402.
 - d. Distributed solar plus batteries.
 - e. Home weatherization and high-efficiency home heating programs.
 - f. Increased interconnections to neighboring RTOs and/or Balancing Authorities.
 - g. New or upgraded transmission infrastructure within the Companies' service territory.
- 1.20. Please refer to pages 27 and 30 of the Rebuttal Testimony of David Sinclair in Case No. 2022-00402.
- a. Please state whether you have evaluated options for increasing the transmission capacity available to import into the Companies system. If so, please explain the results, and produce any documentation, of that evaluation. If not, please explain why not.
 - b. Please state whether you have evaluated the potential impact of the MISO Tranche 2 Long Range Transmission Planning¹ projects (*see* <https://cdn.misoenergy.org/MISO%20Long-Range%20Transmission%20Planning%20LRTP%20Tranche%202%20FAQs631005.pdf>) on the future availability of capacity or energy that could be imported into the Companies' system. If so, please explain the results, and produce any documentation, of that evaluation. If not, please explain why not.
- 1.21. Please state whether the Companies factor the potential for increasing frequency and/or severity of extreme weather events due to climate change or other causes into their resource or transmission planning. If so, please explain how and provide any supporting documentation. If not, please explain why not.

¹ *Long Range Transmission Planning (LRTP) Tranche 2 – Frequently Asked Questions*, MISO (updated Jan. 23, 2024), <https://cdn.misoenergy.org/MISO%20Long-Range%20Transmission%20Planning%20LRTP%20Tranche%202%20FAQs631005.pdf>.

Respectfully submitted,



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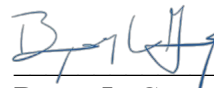
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CERTIFICATE OF SERVICE

In accordance with the Commission's July 22, 2021 Order in Case No. 2020-00085, Electronic Emergency Docket Related to the Novel Coronavirus COVID-19, this is to certify that the electronic filing was submitted to the Commission on January 26, 2024; that the documents in this electronic filing are a true representations of the materials prepared for the filing; and that the Commission has not excused any party from electronic filing procedures for this case at this time.



Byron L. Gary