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October 13, 2023

VIA ELECTRONIC FILING

Ms. A. Shonta Dunston
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4300

**RE: Duke Energy Carolinas, LLC and Duke Energy Progress, LLC's
Responses to Commissioner Data Requests from September 26, 2023
Winter Storm Elliott Technical Conference
Docket No. M-100 Sub 163**

Dear Ms. Dunston:

Please find enclosed for filing Duke Energy Carolinas, LLC and Duke Energy Progress, LLC's First Submission of Responses to Commissioner Data Requests from the September 26, 2023 Winter Storm Elliott Technical Conference in the above-referenced docket. Certain information in the responses is protected from public disclosure and is being filed under seal pursuant to N.C. Gen. Stat. § 132-1.2.

If you have any questions, please let me know.

Sincerely,

A handwritten signature in black ink that reads "Jason Higginbotham". The signature is fluid and cursive, with the first name "Jason" and last name "Higginbotham" clearly legible.

Jason A. Higginbotham

Enclosure

cc: Parties of Record

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Oct 13 2023

CERTIFICATE OF SERVICE

I certify that a copy of Duke Energy Carolinas, LLC and Duke Energy Progress, LLC's Responses to Commissioner Data Requests from September 26, 2023 Winter Storm Elliott Technical Conference, in Docket No. M-100 Sub 163, has been served by electronic mail, hand delivery, or by depositing a copy in the United States Mail, 1st Class Postage Prepaid, properly addressed to parties of record.

This the 13th day of October, 2023.



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Oct 13 2023

DUKE ENERGY CAROLINAS, LLC AND DUKE ENERGY PROGRESS, LLC

Request:

(Commissioner Duffley)

Provide an update on NERC Standard EOP-012-02, including the expected implementation date for the standard as well as Duke Energy's compliance with the standard.

Response:

During Duke Energy's January 3, 2023 briefing to the Commission on the December 24, 2022 load shed event that occurred as a result of Winter Storm Elliott, the Commission asked Duke Energy to provide a status update on Project 2021-07, which was implemented by the North American Electric Reliability Corporation ("NERC") to develop Reliability Standards in response to the Federal Energy Regulatory Commission ("FERC"), NERC, and Regional Entity Joint Staff Inquiry into the February 2021 extreme cold weather event. On January 3, Duke Energy reported that NERC had filed proposed Reliability Standard EOP-012-1 (Extreme Cold Weather Preparedness and Operations) in late 2022; however, FERC had not issued an Order regarding the Standard at the time of the January 3 briefing.¹

On February 16, 2023, FERC issued its *Order Approving Extreme Cold Weather Reliability Standards EOP-011-3 and EOP-012-1 and Directing Modification of Reliability Standard EOP-012-1*.² In that order, FERC approved Reliability Standards EOP-011-3 and EOP-012-1 with an effective date beginning on the first day of the first calendar quarter following regulatory approval, which is October 1, 2024.³ However, FERC found that EOP-012-1, in its current form, included undefined terms, broad limitations, exceptions and exemptions, and prolonged compliance periods.⁴ As a result, FERC ordered NERC to submit modifications to EOP-012-1 within 12 months of the February 16 Order, or by February 16, 2024. Those modifications are currently underway in the development of Reliability Standard EOP-012-2. In addition, FERC reasoned that the entities needing to comply with the Reliability Standard EOP-012-1 should not need

¹ FERC's filing also included proposed Reliability Standard EOP-011-3 (Emergency Operations).

² *North American Electric Reliability Corporation*, 182 FERC ¶ 61,094 (2023).

³ *Id.* at P 23.

⁴ *Id.* at P 3.

additional implementation time to comply with FERC's ordered revisions to the standard. Therefore, FERC ordered NERC to ensure that Reliability Standard EOP-012-2 was implemented by October 1, 2024, the current effective date for Reliability Standard EOP-012-1.⁵

Duke Energy is on track to comply with Reliability Standard EOP-012-2 by the October 1, 2024 implementation date and has already begun to implement the majority of its requirements. Under Reliability Standard EOP-012-2, generator owners are required to update their cold weather preparedness plans to include the Extreme Cold Weather Temperature ("ECWT") and Generator Cold Weather Critical Components ("GCWCC") and document freeze protection measures for those components. In addition, generator owners must provide unit-specific cold weather plan training on an annual basis and develop corrective action plans or declare constraints. As of the filing of this update, Duke Energy has completed all the items required by Reliability Standard EOP-012-2 except the action to include GCWCCs in cold weather preparedness plans. All existing stations meet the protection requirements to operate at or below the ECWT and no upgrades are required. As noted, the Companies are on track to complete all remaining requirements of Reliability Standard EOP-012-2 by the proposed implementation date.

⁵ *Id.* at P 4.

DUKE ENERGY CAROLINAS, LLC AND DUKE ENERGY PROGRESS, LLC

Request:

(Commissioner Clodfelter)

Please provide a copy of the unredacted version of the Report of the South Carolina Office of Regulatory Staff (“ORS”) on the December 2022 Winter Storm Outages with appropriate confidentiality designations as needed.

Response:

CONFIDENTIAL ATTACHMENTS

A copy of the unredacted ORS Report is attached and marked as “CONFIDENTIAL Inspection and Examination Report of ORS on December 2022 WSE Outages.” As discussed during the September 26, 2023 Technical Conference, the redactions in the public version of the report are protected from disclosure under N.C.G.S. § 132-1.2. Therefore, the unredacted report is being filed as a confidential exhibit.

In addition, Duke Energy is providing herewith its response to the final ORS report, which the Companies believe provide important additional information and context for several of the ORS’s findings and conclusions. This document is marked as “ND 2023-1-E ORS Winter Elliott Duke Energy Response”.

DUKE ENERGY CAROLINAS, LLC AND DUKE ENERGY PROGRESS, LLC

Request:

(Commissioner Clodfelter)

Please provide an explanation for the following finding in Section 4.3 of the Office of Regulatory Staff (“ORS”) Report on the December 2022 Winter Storm Outages:

On December 24, Duke Energy chose not to utilize certain load reduction programs with total capacities of 40 MW. These programs included its residential programs and a small commercial program. On December 23, Duke Energy made a supply planning decision to reserve its residential programs for December 26. The commercial program was not utilized based on its small size and holiday timing.

Response:

The ORS finding in Section 4.3 of its Report is based on the Companies’ response to ORS Data Request No. 3-29, which the ORS propounded to Duke Energy in Public Service Commission of South Carolina Docket No. ND-2023-1-E. That data request item and response are copied below.

Request:

3-29 Were any of the Companies’ DSM programs not utilized on December 24, 2022? If so, identify the programs and explain why the DSM programs were not utilized.

Response:

Power Manager (DEC residential program) and EnergyWise Home (DEP residential program) were not used on December 24th. Each has a winter capability of 20MW. A decision was made on the evening of December 23 to use these programs Monday, December 26 because at the time Monday was expected to have more load on the system and the

Companies had called events to use large business programs on December 24 with significantly more capability. In fact, Power Manager and EnergyWise Home were successfully used on December 25 and 26.

EnergyWise Business was not used. Its winter capability was 67kW in DEP and 439kW in DEC. Business customers participate in programs based on a cost/benefit analysis. Since the winter capability was too small to make an impact on the system and the impact to the customer's business may have well exceeded the value of the credits on a very business holiday shopping day, the decision was made, for the purpose of avoiding program attrition, not to use the program.

To provide additional context for the above response, on December 23, 2022, the Companies were attempting to balance the use of available load reduction programs with the possibility of an extended period of high load. This balance included weighing the impact of certain programs with the possibility that those programs might be called on multiple days in a row. In general, Duke Energy seeks to limit the customer fatigue that results from activating load reduction programs multiple days in a row. However, the Companies acknowledge that in unprecedented conditions, such as those that occurred on December 24, all available resources should be utilized. The Companies have taken their experience with Winter Storm Elliot as a lesson learned and are prepared to activate all load reduction programs in the future if faced with a similar event.

**DUKE ENERGY CAROLINAS, LLC &
DUKE ENERGY PROGRESS, LLC**

**Confidential Inspection and Examination
Report of ORS on December 2022 WSE
Outages**

FILED UNDER SEAL

DOCKET NO. M-100, SUB 163



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August 29, 2023

VIA ELECTRONIC FILING

The Honorable Jocelyn G. Boyd
Chief Clerk/Executive Director
Public Service Commission of South Carolina
101 Executive Center Drive, Suite 100
Columbia, SC 29210

Re: Request for the South Carolina Office of Regulatory Staff to Conduct an Inspection and Examination of the December 2022 Winter Storm Outages and Blackouts in the Duke Energy Carolinas, LLC's and Duke Energy Progress, LLC's Service Territories
Docket No. ND-2023-1-E

Dear Ms. Boyd:

Duke Energy Carolinas, LLC and Duke Energy Progress, LLC (collectively "the Companies" or "Duke Energy") submit this letter as a brief response to the Inspection and Examination Report ("ORS Report" or "Report") submitted by the Office of Regulatory Staff ("ORS") on Friday, August 25, 2023, in the referenced docket. The ORS Report provides the results of an investigation by the ORS and its consultant, GDS Associates, Inc., into events relating to outages on the Companies' systems relating to Winter Storm Elliot ("Elliot") in December 2022. While the Companies mostly concur with the factual reporting and analysis in the ORS Report, there are complex issues covered in the Report that are not accurately reported or contextualized. The Companies believe these issues must be clarified for the Commission to have a complete and accurate understanding of the events relating to Elliot and the outages it caused.

The ORS Report, at page 56, purports to provide "Duke Energy's Perspective." The Companies disagree that the information on page 56 conveys Duke Energy's perspective on the events discussed in the Report. This letter is intended to begin the process of providing that perspective. Because a presentation on the ORS Report is scheduled for this Friday, September 1st, the Companies are summarizing their preliminary concerns about the Report in this letter in the interest of time. Following is a list of six aspects of the ORS report that the Companies believe mischaracterize the events surrounding Winer Storm Elliott in ways that must be clarified.

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1. The ORS Report mischaracterizes the event on December 24 as a “blackout.” A blackout results when the system responds in an uncontrollable manner by shedding load to restore balance. The Companies intentionally instituted controlled, rotating load shed to avoid a blackout. This distinction is fundamental to an understanding of the event and critical to learning from it. Intentional load shedding is an unfortunate but sometimes necessary means of addressing an imbalance between demand and generation; an uncontrolled blackout is much more serious and may cause long-term damage to the grid leading to more significant outages. Load shedding is a tool used by electric utilities to avoid blackouts.

It is important context to the events surrounding Elliot that when the Companies engaged in load shedding of firm load, they did so pursuant to the provisions of NERC Reliability Standard EOP-011-2. Following those operating procedures prevented a bad situation from becoming much worse.

2. The executive summary and Table ES-1 make no mention of the preceding windstorm and resulting outage event on December 23, which significantly impacted the time it took for the Companies to manually restore power.
3. The summary indicates that the Companies “significantly under-forecasted its load requirements” without any additional context. The models used by the industry look backwards in time for similar days to estimate load. A similar day (i.e., a day in December or any December weekend with similar temperatures and wind speeds) did not exist. This resulted in under forecasted load by most Balancing Authorities in the Mid-Atlantic and Southeast regions of the country by the same degree.
4. While the Companies agree that their short-term planning (operating reserves) forecasts used the forecasted load, the Report’s Executive Summary states that Duke Energy failed to adequately respond to a “substantial decrease in available excess supply as early as the morning of Wednesday December 21.” This statement is incorrect. On December 21, the DEP 7- day operating reserve forecast did reflect below target operating reserves for Sunday, December 25 and Monday, December 26.
 - a. On December 21, the DEP 7- day operating reserve forecast did reflect below target operating reserves for Sunday, December 25 and Monday, December 26. On the December 22, Duke Energy made purchases and other system capacity adjustments increasing the operating reserves to greater than target as a result the final DEP 7- day operating reserve forecast run on Thursday, December 22, reflected increases in target operating reserves for both Sunday, December 25 and Monday, December 26. December 25 increased from 1,069 MWs at the beginning of December 21 to 2,212 MWs and December 26 increased from 985 MWs at the beginning of December 21 to 1,212 MW (target 1,195).
5. Table ES-1 states that Duke Energy “failed to respond to supply adequacy risk.” As noted above, Duke Energy did respond and make purchases to increase operating reserves where they were forecasted to be below target.

6. The ORS Report does not acknowledge, or take into account, the fact that several other electrical utilities in the Southeast, including in South Carolina, experienced similar issues.

The Companies also believe that the “Recommended Areas of Improvement” found in Table ES-2 of the ORS Report do not reflect the steps that the Companies have taken, or have committed to taking, to improve their processes moving forward. Some of these examples include:

- Duke Energy has protocols in place to ensure load forecasts and reserve margin targets are updated intra-day (Table ES-2 item 2).
- Duke Energy does avoid planned outages during the winter where possible. The past winter began on December 21, 2022 and ended on March 20, 2023 (Table ES-2 item 3a).
- Allen is a unit in Extended Plan Reserve (EPR) and would be included in the procedures referenced in item 3c (Table ES-2 item 3b).
- Duke Energy’s EPR procedures and protocols contained a process for returning a unit to service to respond to system conditions and those procedures were utilized. Duke Energy has improved these procedures and will continue to implement them (Table ES-2 item 3c).
- Duke Energy does test remotely operated combustion turbine units and will continue to do so. (Table ES-2 item 4a).
- Duke Energy has previously installed windscreens and will continue to install additional windscreens (Table ES-2 item 5a).
- Duke Energy has processes to evaluate freeze protection measures which were implemented prior to the start of winter. Duke Energy will continue to improve and implement these processes (Table ES-2 item 5d).
- Duke Energy did review site specific cold weather preparedness procedures and checklists prior to the start of winter. Duke Energy will continue to improve and implement these procedures (Table ES-2 item 5e).
- As part of the ongoing summer and winter peak period preparedness meetings, Duke Energy will continue to conduct fuel assurance review. However, as noted under Table ES-1, fuel supply did not contribute to customer outages (Table ES-2 item 6a).
- Duke Energy has expanded its review of the RLS tool to track relationships between systems (Table ES-2 item 8).

- Although Duke Energy will continue to ensure that DSM programs are utilized to their maximum capabilities, the capacity of DSM will be impacted on holiday weekends (Table ES-2 item 9).
- Duke Energy will continue to review policies and procedures to improve coordination with network and wholesale customers. However, Duke Energy cannot “ensure” that network and wholesale customers address supply issues. Duke Energy can and does assess a penalty if those supply issues are not addressed pursuant to the Federal Energy Regulatory Commission approved Open Access Transmission Tariff (Table ES-2 item 11).
- The decision to implement rotating load shed is a dynamic decision made by system operators to prevent uncontrolled blackouts. Duke Energy will implement a notification process to alert customers as soon as possible but cannot commit to providing that notice prior to the commencement of the load shed to protect the grid (Table ES-2 item 12).
- Duke Energy will continue to evaluate and adjust timeframes for power restoration. However, those timeframes are not provided by the RLS tool. Duke Energy cannot ensure that the timeframes are correct as field conditions are continuously changing (Table ES-2 item 13).

The Companies further note that the version of Confidential Appendix D: Duke Energy Corrective Action Tracker that ORS appended to its Report is a living document that is constantly being updated to reflect the Companies’ progress. To date, the Companies have completed 76 of the 101 action items reflected in Appendix D with the remaining actions in progress; there are no longer any action items that have not been started.

The Companies appreciate the opportunity to provide this context and are willing to provide additional feedback on the findings and recommendations contained in the Report to the Commission upon request.

Sincerely,



Camal O. Robinson

cc: Ben Mustian, South Carolina Office of Regulatory Staff
Roger Hall, South Carolina Department of Consumer Affairs