

May 9th, 2022

Commission Clerk
Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

Commission Clerk:

On behalf of JEA, please accept the 2022 Ten-Year Site Plan – Staff's Data Request #2.

If you have any questions, please contact me by email at landsg@jea.com.

Sincerely,



Stephany Landaeta Gutierrez
Associate Engineer
JEA

1. Please refer to NERC's Level 2 Alert, issued August 18, 2021, titled Cold Weather Preparations for Extreme Weather Events. Please indicate what changes, if any, the Utility has implemented or intends to implement to address the recommendations contained within the alert.

JEA has addressed or will address all five (5) recommendations to prepare for severe cold weather thru assessments, operating plans and review and update of existing winterization plans. This includes severe weather load forecasting, dispatching of limited fuels, maximizing import capability under severe weather, review of existing equipment winterization practices, backup fuel testing and inventory requirements, and manual load shed capability.

2. Please refer to FERC Order Approving Cold Weather Reliability Standards, issued August 24, 2021. Please indicate what changes, if any, the Utility has implemented or intends to implement to address the revisions to the NERC Reliability Standards that become effective April 2023.

JEA is in process of developing plans to be compliant to the NERC Reliability Standards by April 2023.

3. Please refer to NERC's Project 2021-07: Extreme Cold Weather Grid Operations, Preparedness, and Coordination. Is the Utility a participant in this project? If so, please explain what way.

JEA is not a participant in the project.

4. Please refer to the FERC, NERC, and Regional Entity Staff Report: The February 2021 Cold Weather Outages in Texas and the South Central United States (2021 Cold Weather Report), issued November 2021. Please indicate what changes, if any, the Utility has implemented or intends to implement to address the recommended revisions listed below to the NERC Reliability Standards identified in the 2021 Cold Weather Report.

- a. Identify and protect cold-weather critical components.

JEA has hired a major engineering firm to conduct a study of existing generating units. The study is underway.

- b. Build all new and retrofit existing units to operate during extreme weather conditions, which include the impact of wind and precipitation.

These will be assessed upon completion of the study as described in question 4.a

- c. Perform annual training on winterization plans. If already incorporated, please provide the most recent winterization plan.

JEA currently has winterization plans in place for steam units and for CT based units. These procedures are reviewed annually in the fall, and preventive maintenance work orders are in place to insure that system are working as required. Any recommendations made by the study will be incorporated as well.

- d. Develop Corrective Action Plans for any affected generating units.

The study that is being conducted by the independent engineering firm will identify any generating units that will be affected. Once that study is completed, JEA will develop corrective action plans for those affected generating units.

- e. Provide the balancing authority the percentage of generating capacity that can be relied upon during forecasted cold weather.

At this time, JEA's expectation is that all JEA resources are expected to be available during cold weather. This will be re-evaluated after the study is completed by the independent engineering firm.

- f. Account for wind and precipitation when providing temperature data to the balancing authority.

The engineering study will include recommendation of appropriate winterization design temperatures.

- 5. Will the Utility's current capacity shortage plan require updating following the revisions to the NERC Reliability Standards that will go into effect April 2023 or the recommended revisions from the 2021 Cold Weather Report? If so, please identify the changes.

JEA would expect procedures to be modified that might include JEA's current capacity shortage plan.

6. For your generating units, please and provide the following information:

a. Identify any generating unit that has been winterized and describe the winterization activities that have been completed for each.

Northside Unit 3 (1977) was designed without significant winterization. Upgrades have been performed to drum level heat tracing and liquid (heavy oil backup) fuel transport into the plant. This upgraded winterization has performed well in the modern historical cold weather events. The other steam units (NGS 1&2 and Brandy Branch Steam 4 CC Unit), and the Simple Cycle gas fired / oil backup CT units BB1, K7, K8 and GEC 1&2 were all constructed with modern winterization designs, and are maintained to original winterization design specifications. The existing NCT units 3, 4, 5 & 6 are diesel fired CTs with minimal winterization, but are robust and have performed well in modern historical extreme winter events.

b. Identify any generating unit that still requires winterization and describe the winterization activities to be completed for each.

The liquid (backup) fuel tank heaters for Northside 3 are planned for upgrade to electric heating next year.

c. Identify any generating units the Utility does not intend to winterize and explain why.

Whatever recommendations arise from the independent engineering study will be evaluated, prioritized and implemented.

7. Please list and describe all winterization activities the Utility has completed or intends to complete for its natural gas infrastructure. If none, please explain why.

As outlined in question #4, the independent engineering firm will conduct a full winterization evaluation of all of our generating facilities. The results of the evaluation will be utilized in developing a prioritization matrix based on criticality of system/component and the susceptibility of cold weather failure.

8. Please identify any generating units that have experienced forced outages or derates due to cold weather conditions within the last ten-year period.

JEA reviewed all forced outage events occurring within the last ten-year period. For the steam units at Northside, no events were attributed to cold weather. There were 14 events for the combustion turbine units that occurred during cold weather, with one event in 2015, one event in 2021 and the rest in 2018. There were 11 events fundamentally related to cold weather tuning of the simple-cycle CT units, including 5 derations due to NOx emissions and 6 combustion events resulting in unit trips. There were 3 failures to start resulting from I&C/mechanical issues. The last unit trip or failure to start occurred in 2018. The 2021 event was a derate for NOx emissions compliance.

- a. Please explain if these generating units have had corrective action plans developed for the identified equipment. If so, what has been done to evaluate whether the corrective action plan applies to similar equipment for other generating units in the Utility's generating fleet.

All of the simple cycle 7FA units were affected by the issues noted above. Cold weather tuning of the units was performed during the 2018 event. These units are also monitored by GE to help better identify combustion issues that could affect unit performance.

9. Please identify each of the Utility's generating units that have dual fuel capabilities. As part of this response, please provide the following for each applicable generating unit.

- a. Generating unit name and location.
b. Net capacity by seasonal peak (Summer/Winter).
c. Whether fuel switching derates/uprates the unit (and if so, by what amount).
d. Primary and secondary fuel type and sources.

Please refer to the following table for questions 9a-d.

Unit	Location	Net Capacity (MW)				Fuel Switching				Fuel	
		Summer (Gas)	Winter (Gas)	Summer (Oil)	Winter (Oil)	Derate/Uprate (Summer)	Amount (MW)	Derate/Uprate (Winter)	Amount (MW)	Primary	Secondary
GT1	Brandy Branch	149.9	185.9	178.6	191.2	Uprate	28.7	Uprate	5.3	Natural Gas	Diesel
GT1	GEC	149.9	185.9	178.6	191.2	Uprate	28.7	Uprate	5.3	Natural Gas	Diesel
GT2	GEC	149.9	185.9	178.6	191.2	Uprate	28.7	Uprate	5.3	Natural Gas	Diesel
GT7	Kennedy	149.9	185.9	178.6	191.2	Uprate	28.7	Uprate	5.3	Natural Gas	Diesel
GT8	Kennedy	149.9	185.9	178.6	191.2	Uprate	28.7	Uprate	5.3	Natural Gas	Diesel
3	Northside	524	524	524	524	N/A	0	N/A	0	Natural Gas	Oil

e. Number of days the generating unit could operate at full load using the secondary fuel source.

- BCT1 – 5.9 days
- GEC CT1 & 2 – 1.5 days (17 hours per day limitation)
- KCT7 & 8 – 2.6 days
- NS3 – 3.8 days

f. Amount of time required to switch to secondary fuel.

- BCT1 – 30 minutes
- GEC CT1 & 2 – 30 minutes
- KCT7 & 8 – 24 hours (If quick start), 30 minutes (If non-quick start)
- NS3 – On the fly with 24 hours’ notice just enough time to heat the fuel and get it flowing

10. Please identify how many alerts and advisories, due to cold weather, have been issued within the last ten-year period, and describe each event that lead to the issuance of each alert/advisory.
- a. As part of this response, please indicate whether interruptible/curtailable customers were interrupted during each event, and if so, the duration of the interruption.

There have been no alerts or advisories in the last 10 years.

11. Please identify the number of times the Utility has had to perform rolling blackouts within the last ten-year period. As part of this response, please provide the reason for each rolling blackout, how many megawatts were impacted, and the duration of each rolling blackout.

JEA has not implemented rolling blackouts in the last 10 years.

12. Please identify the total number of megawatts that can be controlled during rolling blackouts. As part of this response, please describe how this amount was determined, the priorities for interrupting firm load, and provide the anticipated duration between rolling blackouts.

All JEA load can be controlled remotely via manual load shed by the system operator. JEA uses 20 minutes on/off for the periodicity of rolling blackouts. JEA ensures the FRCC UFLS program is maintained and exempts some critical load (hospitals, etc). This allows approximately 600 MW of load that can rotated after interruption of any non-firm load.

13. Please explain how the Utility coordinates with cogenerators, qualifying facilities, and other non-utility generators during cold weather events to maximize generating capacity. As part of this response, please explain how the Utility determines as-available energy prices if all available Utility assets are already dispatched.

JEA has no cogeneration, qualifying facilities, or other non-utility generators to coordinate with.

14. Please list each form of communication (such as phone calls, text, utility website, social media, etc.) the Utility uses to inform customers of anticipated cold weather events. As part of this response, please provide a sample of such communications.

For this question please refer to the attached pdf. file name "PSC Request Cold Weather Comms".

15. Please refer to the Florida cold weather event from January 29-31, 2022, and provide the following for each day during the event.

a. Anticipated load forecast.

1/29/2022 - 2239 MW

1/30/2022 - 2652 MW

1/31/2022 - 2154 MW

b. Anticipated operating reserve (with and without demand response).

1/29/2022 - 1100 MW

1/30/2022 - 569 MW

1/31/2022 - 1017 MW

c. Actual load, and if available, actual operating reserve.

Date, Actual Load, Operating Reserve

1/29/2022 - 2249 MW, 1090 MW

1/30/2022 - 2655 MW, 566 MW

1/31/2022 - 2206 MW, 965 MW

d. Amount of customer outages due to cold weather that occurred, if any.

There were not reported outages during this time due to cold weather.

e. Amount of generating capacity derated or forced offline due to cold weather, if any. If forced outages occurred, identify each generating unit derated or forced offline, and the cause of the derating or forced outage, if known.

There was not any generating capacity forced offline during this time due to cold weather.

- f. Whether demand response and/or interruptible/curtailable assets were activated. If so, please identify which programs, the number of customers interrupted, the amount of capacity interrupted, and the frequency of interruptions.

None of these assets were activated during this time.

16. Please refer to the Florida cold weather event from January 29-31, 2022. Please explain if any winterization plans were enacted during this time. If so, please describe what activities were involved.

Freeze protection was implemented on all Northside units. Unit 1 (only offline unit prior to event) was placed online. Unit 3 burned #6 oil periodically to help with natural gas reserves.

17. Please refer to the NERC 2021-2022 Winter Reliability Assessment, issued November 2021, for the following questions. Please provide load forecast and generation availability data provided to your regional entity for use in NERC's winter reliability assessment. As part of your response, explain how the data was derived and what assumptions were used.

SERC pulled the data the member's entered in the portal for load and generation data and used that, as well as SERC winter written assessment information , to build the NERC Winter Reliability Assessment.

No Winter Extreme Load Forecast was provided to SERC for JEA individually.

However, as a part of the Written Assessment, there was a question that requested a "Seasonal Load Adjustment" (e.g. 90/10 forecasted load) for all of FRCC. FRCC's staff used the most recent consultant work that was performed in 2020 for the LOLP study and pulled the 90/10 load value from Leo Green's high case and provided it to SERC.

18. **[TECO & FPL Only]** Please identify and describe any actions undertaken to encourage adoption of natural gas heating over electric resistance (strip) heating. If no actions have been taken, please explain why.