

Duke Energy Carolinas, LLC & Duke Energy Progress, LLC

Docket NO. M-100, Sub 163

PSDR No. 2-6&6b. Timeline of Company Actions Related to Pending Winter Event & Key Communications with Fuel Suppliers and Fuel Availability - NG, Fuel Oil & Power Trading
Period: December 19, 2022 through December 24, 2022

Natural Gas:

Wednesday 12/22: FSO Gas Group had a weather preparedness call with Transco Pipeline to discuss the pipeline status, forecasted natural gas burns and emerging issues. DEC automatically e-mails Transco and Piedmont Natural Gas forecasts produced by unit commitment with a 24-hour usage profile over a rolling 5-day period. The forecasts are meant to provide the best information at the time, understanding the gas forecast could change subject to system conditions in real time. DEC discussed its firm gas supply and determined it would be adequate to cover the daily gas volumes which varied over the 4- day natural gas weekend. Transco shared general winterization activity, compressor health on pipeline (station 120 was out of service per 12/20 notification), Manning station 160 (Dan River, Cardinal Location) and have personnel on standby for other stations in Z5, Transco Storage readiness getting Pine Needle ready to vaporize to supplement ramp up and line pack preparations for the non-ratable draft expected. Concerns: Large ramp up on system as cold weather approaches, their focus on maintaining pressures. We also agreed to have additional communications if needed over the Holiday weekend. Finally, as part of normal daily communication, the Gas Group will discuss any supply variance with natural gas suppliers and did so during this event.

Saturday 12/24: Piedmont gas was contacted to provide any update to system conditions. DEC contacted Transco Gas control to review system conditions after low gas pressures were reported by Buck CC at approximately 10.53 am. Transco reported the system was overpacked prior to the event, however, system was stressed due to heavy draft but no new compressor outages. Transco actions taken include using maximum storage capability, enforcing pipeline supply receipt points, and customer matching of receipts and deliveries. DEC and Transco discussed pressure recovery timeline, Transco said over time pressures would recover as demand slacked and they were doing everything possible to support pressures on the system coinciding with lower demand as the day progressed. DEC shared it expected to have a positive gas supply balances for gas days 12/24 through 12/27 which could help the system, over time, recover pressures.

Sunday 12/25: Transco and Duke had call to discuss Transco recovery of pressure and improvement as day evolves. Transco discussed Georgia to Maryland corridor recovery but indicated it would take time as the line pack builds every hour. Discussed DEC gas position and positive imbalance should help as well. Transco was max withdrawing from Pine Needle and the system was packing using horsepower from the north and sending south because of less northern demand. Transco indicated system should be in much better shape.

FUEL OIL

12/19-12/21/22: Delivered ~400,000 gallons to Rockingham to get topped off for the winter or ~38 flb hours

12/23/22: Inventory levels across CT's/CC's was ~49,000,000 gallons prior to event or ~97 flb hours across plant sites; initiated conversation with Indigo for deliveries to Wayne County

12/24/22: Initiated Eagle Transport Emergency trucking. Utilized for Indigo Wayne County deliveries starting on 12/26; contacted Hilco Transport Emergency trucking resources. Reached out to Hightowers regarding deliveries to WS Lee, Woodsdale and Rockingham. Reached out to GLP regarding WS Lee fuel oil deliveries. Delivers started 12/24/2022.

12/26/22: Eagle began delivering to WCOP under Indigo supply arrangement. Began deliveries to Rockingham utilizing Hightowers from the start and GLP for 12/28 - 12/30.

Power Trading:

During December 19 through 25th, Duke Energy Power Trading was monitoring the day-ahead planning reserve margin posted on the 7-day report, discussing opportunities for engaging the power markets with both ECCs, Unit Commitment, Gas Trading, and Meteorology. As a result, Duke Energy Power Trading took the following actions below. Note that these actions do not include actions taken in the normal course of business during this time. Normal course of business includes pursuing energy purchase or sale opportunities in Real Time (trading current hour for next hour) and Day Ahead (trading current day for next day).

Monday, December 19:

- Morning – Monitored DEC and DEP 7-day reports for Friday through Sunday which projected DEC and DEP to be above reserve target

Tuesday, December 20:

- Morning – Monitored DEC and DEP 7-day reports for Friday through Monday which projected DEC and DEP to be above reserve target

Wednesday, December 21:

- Morning – Monitored DEC 7-day report for Friday through Monday which projected DEC to be above reserve target
- Morning – Monitored DEP 7-day report for Friday through Monday which projected DEP to be above reserve target for Saturday but short of reserve target for Sunday (1069 MW projected versus 1195 MW target) and Monday (928 MW projected versus 1195 MW target)

- Engaged power market counterparties to indicate DEC and DEP capacity need for weekend and to determine availability of capacity and firm energy
- Procured transmission to enable weekend purchases for DEP based on projected capacity need and transmission path availability
 - For Monday, 300 for DEP
- Internal discussion regarding availability to commit Allen 1 and 5 for December 23-26

Thursday, December 22:

- Morning – Monitored DEC 7-day report for Friday through Monday which projected DEC to be short of reserve target for Saturday (1475 MW projected vs 1610 MW target) but above target for Sunday and Monday
- Morning – Monitored DEP 7-day report for Friday through Monday which projected DEP to be short of reserve target for Saturday (1173 MW projected versus 1195 MW target) and Monday (739 MW projected versus 1195 MW target) but above target for Sunday
- Discussed capacity needs for weekend with DEC and DEP ECCs
- Engaged power market counterparties to indicate DEC and DEP capacity need for weekend and to determine availability of capacity and firm energy
- Procured transmission to enable weekend purchases for DEC and DEP based on projected capacity need and transmission path availability
 - For Saturday, 200 MW for DEC and 100 for DEP
 - For Monday, 200 MW for DEP

Friday, December 23:

- Duke Energy Carolinas
 - Morning – Monitored DEC 7-day report for Saturday through Monday which projected DEC to be short of reserve target for Saturday (1288 MW projected before Firm purchases versus 1610 MW target) but above target for Sunday and Monday
 - Immediately after Day Ahead Power Trading for weekend, expected to be above reserve target each day
 - Morning – Engaged market counterparties to purchase available capacity and firm energy to attempt to meet day ahead reserve target. During this period, constraints included lack of available market offers and lack of available firm transmission paths.

- Firm transmission paths for DEC were mostly limited to PJM, YAD, or internal to DUK sources
- Day Ahead for Saturday,
 - Bought 400 MW of firm energy for HE 1-24 from Macquarie (PJM-DUK)
 - Bought 30 MW of non-firm energy for HE 1-13 from Cube Yadkin (YAD-DUK)
- Day Ahead for Sunday,
 - Bought 200 MW of firm energy for HE 1-24 from Macquarie (PJM-DUK)
 - Bought 40 MW of firm energy for HE 1-24 from Macquarie (YAD-DUK)
- Day Ahead for Monday,
 - None on Friday for Monday
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 - Morning – Monitored DEP 7-day report for Saturday through Monday which projected DEP to be short of reserve target for Saturday (596 MW projected before Firm purchases versus 1195 MW target) and Monday (716 MW projected versus 1195 MW target) but above target for Sunday
 - Immediately after Day Ahead Power Trading for weekend, expected to be 1136 MW projected reserves versus 1195 MW target on Saturday and above reserve target for Sunday and Monday; exhausted all available Firm purchase options for Saturday given constraints
 - Morning – Engaged market counterparties to purchase available capacity and firm energy to attempt to meet day ahead reserve target. During this period, constraints included lack of available market offers and lack of available firm transmission paths.
 - Firm transmission paths for DEP were mostly limited to YAD or PJM sources
 - Day Ahead for Saturday,
 - Bought 500 MW of firm energy for HE 1-24 from Macquarie (PJM-CPLE)

- Bought 40 MW of firm energy for HE 1-24 from Macquarie (YAD-CPLE)
 - Day Ahead for Sunday,
 - None on Friday for Sunday
 - Day Ahead for Monday,
 - Bought 500 MW of firm energy for HE 1-24 from Macquarie (PJM-CPLE)
 - Bought 40 MW of firm energy for HE 1-24 from Macquarie (YAD-CPLE)
- Procured transmission to enable weekend purchases for DEC and DEP based on projected capacity need and transmission path availability
 - For Saturday, 400 MW for DEC and 540 for DEP
 - For Sunday, 640 MW for DEC
 - For Monday, 140 MW for DEP
- In evening, attempted to locate additional Firm purchases for Saturday morning with no success
- Discussed capacity needs with DEC and DEP ECCs; communicated to ECCs what was purchased and from where; communicated unlikelihood of being able to find additional Firm purchases for Saturday
- Increased staffing to support trading activities
- Real Time for Friday,
 - Supported DEC ECC emergency sales for HE 7-24 to TVA
 - Bought 300 MW of non-firm energy for HE 11-24 from Macquarie (PJM-DUK)
 - Certain periods of this non-firm energy schedule were being curtailed by PJM, but Duke's understanding was that the counterparty's other firm schedules sourced from PJM were not being curtailed
 - Bought 40 MW of non-firm energy for HE 12-24 from Macquarie (YAD-DUK)
 - Bought 30 MW of non-firm energy for HE 14-24 from Cube Yadkin (YAD-DUK)

Saturday, December 24:

- Morning – With load over forecast and emergent generation issues, Real Time attempted to secure additional non-firm energy purchases across the morning peak; neighboring balancing authorities were in energy emergencies and Firm and Non-Firm transmission paths were limited; other market counterparties were exclusively looking to purchase as well
 - Firm purchases sourced from PJM fully flowed for 900 MW for 00:00 – 5:30 AM
 - Setup 250 MW non-firm energy purchase from PJM into DEC (PJM-DUK) at 04:57 AM for 05:30 – 10:00 AM; PJM curtailed to 0 MW at 05:19 AM for 05:30 – 06:30 AM and then eventually curtailed the whole schedule to 0 MW
 - PJM began curtailing the Firm purchases from PJM at 05:19 AM for 05:30 – 06:30 AM and eventually curtailed the purchases through 11:45 AM due to PJM Emergency Procedures; initial curtailments were relatively small but became larger over time with 07:00 – 07:30 AM curtailed to 0 MW; curtailments are made known through the OATI electronic tag with curtailments appearing roughly 15 minutes prior to the relevant time period, so limited notice
 - When the Firm purchases sourced from PJM began being curtailed, the counterparty attempted to resupply from MISO or elsewhere but was unable to.
 - As background, during previous tight system conditions, 1400+ MW per hour were purchased sourced from PJM by Duke. Between January 1, 2020 and December 23, 2022, over 500,000 MWh were similarly purchased by Duke as firm energy from the same counterparty out of PJM with no curtailments, so this was an unprecedented occurrence.
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 - Morning – Monitored DEC 7-day report for Sunday through Monday which projected DEC to be above reserve target for Sunday but short of reserve target for Monday
 - Engaged market counterparties to purchase available capacity and firm energy to attempt to meet day ahead reserve target. During this period,

constraints included lack of available market offers and lack of available firm transmission paths.

- Firm transmission paths for DEC were mostly limited to PJM, YAD, or internal to DUK sources
 - Day Ahead for Sunday,
 - Bought 300 MW of firm energy for HE 1-24 from Macquarie (PJM-DUK)
 - Bought 187 MW of firm energy for HE 4-11 from NCMPA1 (DUK-DUK)
 - Scheduled 16 MW of Forest City and Dallas diesels for HE 6-10; Wholesale Contact scheduled Lockhart Hydro and Diesel for same period
 - Day Ahead for Monday,
 - Bought 500 MW of firm energy for HE 1-24 from Macquarie (PJM-DUK)
 - Bought 187 MW of firm energy for HE 4-11 from NCMPA1 (DUK-DUK)
 - Scheduled 16 MW of Forest City and Dallas diesels for HE 6-10; Wholesale contact scheduled Lockhart Hydro and Diesel for same period
- Duke Energy Progress
 - Morning – Monitored DEP 7-day report for Sunday through Monday which projected DEP to be above reserve target for Sunday but short of reserve target for Monday
 - Engaged market counterparties to purchase available capacity and firm energy to attempt to meet day ahead reserve target. During this period, constraints included lack of available market offers and lack of available firm transmission paths.
 - Firm transmission paths for DEP were mostly limited to YAD or PJM sources
 - Day Ahead for Sunday,
 - Bought 200 MW of firm energy for HE 1-24 from Macquarie (PJM-CPLE)
 - Day Ahead for Monday,

- Bought 100 MW of firm energy for HE 1-24 from Macquarie (PJM-CPLE)
- Procured transmission to enable weekend purchases for DEC and DEP based on projected capacity need and transmission path availability
 - For Sunday, 187 MW for DEC and 300 MW for DEP
 - For Monday, 500 MW for DEC and 500 MW for DEP
- Communicated to DEC and DEP ECCs what was purchased and from where for Sunday; communicated challenges in finding additional Firm purchases
- Increased staffing to support trading activities

Sunday, December 25:

- Duke Energy Carolinas
 - Morning – Monitored DEC 7-day report for Monday which projected DEC to be short of reserve target for Monday
 - Engaged market counterparties to purchase available capacity and firm energy to attempt to meet day ahead reserve target. During this period, constraints included lack of available market offers and lack of available firm transmission paths.
 - Day Ahead for Monday,
 - None on Sunday for Monday
- Duke Energy Progress
 - Morning – Monitored DEP 7-day report for Monday which projected DEP to be short of reserve target for Monday
 - Engaged market counterparties to purchase available capacity and firm energy to attempt to meet day ahead reserve target. During this period, constraints included lack of available market offers and lack of available firm transmission paths.
 - Firm transmission paths remained limited but opened slightly
 - Day Ahead for Monday,
 - Bought 47-49 MW of firm energy for HE 2-24 from Macquarie (MISO-SOCO-DUK-CPLE)
 - Bought 10-150 MW of firm energy for HE 3-12 from NCEMC (DUK-CPLE)
 - Bought 150 MW of firm energy for HE 4-11 from NCMPA1 (DUK-CPLE)

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- Bought 300 MW of non-firm energy for HE 5-10 from PJM (PJM-CPLE)
- Procured transmission to enable weekend purchases for DEC and DEP based on projected capacity need and transmission path availability
 - For Monday, 350 MW for DEP
- Real Time for Sunday,
 - Bought 75-300 MW for HE 19-24 from PJM
- No PJM related curtailments were experienced on Sunday or Monday