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Reforms to Improve Gas-Electric Coordination

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Presentation Overview

- Revisions to the operating and scheduling processes of interstate natural gas pipelines and electric utilities
- Increased flexibility for gas shippers to respond to variable electricity demand
- Alignment of Independent System Operator ("ISO") and Regional Transmission Organization ("RTO") scheduling practices with FERC's proposed revisions
- FERC's oversight role and the next steps for developing final rules

Background

- Southwest Cold Weather Event
  - In February 2011, the Southwest region of the United States experienced unusual and extreme cold temperatures, affecting entities in both electric and gas industries.
    - Electric generators tripped, suffered derates, or failed to start, leading to service outages for 1.3 million customers at the peak of the cold weather event.
    - Natural gas customers experienced extensive curtailments, largely due to production declines in the five basins serving the Southwest.

Background

- The Southwest cold weather event prompted the Commission to examine the interdependencies between both industries.
- 2011 Joint FERC/NERC report concluded that gas shortages contributed to electric generator outages and that rolling blackouts led to gas production declines, but were not primary causes of those concerns.
  - The report offered limited recommendations, but urged industry and regulatory bodies to explore solutions to the interdependency issues that were exposed by the cold weather event.

Background

- February 3, 2012: Commissioner Moeller requested comments on the following gas-electric interdependency issues:
  - Roles of FERC, NERC, and NAESB
  - Differences between regions and market structures
  - Changing flows on gas pipelines
  - Harmonization of gas and electric markets
  - Effects of retired coal- and oil-fired generators
  - Possible revisions to the Standards of Conduct
- February 12, 2012: Commission LaFleur issued a statement highlighting the need to explore areas of gas-electric interdependency:
  - Coordination and communication to maintain reliability during weather events
  - New pipeline services to better meet generator needs
  - Scheduling protocols for gas and electric facilities
  - Electric reliability standards development
  - Improvements to pipeline storage infrastructure

Background

- FERC issued a formal request for comments in Docket No. AD12-12-000.
- FERC convened regional technical conferences focusing on:
  - Gas-electric scheduling
  - Market structures
  - Information sharing
  - Reliability Concerns
  - Potential oversight roles of NERC and NAESB
- November 15, 2012, FERC directed:
  - Further conferences on the two primary issues of information sharing and scheduling between the gas and electric industries
  - Each RTO and ISO to appear before the Commission and share seasonal operating experiences
  - Staff quarterly reports for 2013 and 2014 on gas-electric coordination activities

Background

- April 25, 2013: Commission staff convened a technical conference on addressing four major topic areas:
  - Natural gas and electric operating days
  - Natural gas nomination cycles
  - "No-Bump" Rule
  - Electric scheduling and market rules
- Technical Conference participants identified specific issues between the nationwide natural gas schedules and regional electric schedules:
  - Discontinuity between the operating days of electric utilities (and RTOs/ISOs) the standardized operating day of interstate gas pipelines
  - Lack of coordination between the day-ahead processes for gas pipeline nominations and electric generator scheduling
  - Inability to leverage intraday nomination on interstate pipelines

Existing Practices

- Under existing practices, the natural gas and electric industries employ differing scheduling schedules.
  - <u>Natural Gas Industry</u>: Interstate pipeline scheduling incorporates the NAESB standards, which establish nationwide timelines for scheduling transactions across interconnecting pipelines.
  - <u>Electric Industry</u>: Regional variation exists with respect to scheduling practices in the RTO and ISO markets; each RTO and ISO has established its own timelines for submission of bids and posting of awards.

FERC Takes Action

- *Coordination of the Scheduling Process of Interstate Natural Gas Pipelines and Public Utilities*
  - 146 FERC ¶ 61,201 (2014) ("NOPR")
- *California Indep. System Operator Corp., et al.*
  - Order Initiating Investigation into ISO/RTO Scheduling Practices and Establishing Paper Hearing Procedures, 146 FERC ¶ 61,202 (2014) ("Section 206 Order")
- *Posting of Offers to Purchase Capacity*
  - 146 FERC ¶ 61,203 (2014) ("Show Cause Order")

FERC Takes Action

- NOPR proposes to amend FERC regulations relating to the scheduling of transportation service on interstate natural gas pipelines.
  - FERC's intention is to better coordinate the scheduling practices of the natural gas and electricity industries and to provide scheduling flexibility to interstate gas shippers.
- Section 206 Order would coordinate the day-ahead scheduling of RTOs and ISOs with the revised interstate natural gas pipeline schedule.
- Show Cause Order examines whether interstate pipelines are complying with existing regulations relating to notices of offers to purchase released pipeline capacity.

Issues Driving FERC Proposals

- Some ISOs and RTOs expressed concern about the potential reliability effects on their systems if:
  - Gas-fired generators encounter difficulty in acquiring natural gas; or
  - Gas-fired generators are subject to curtailment of natural gas supplies, particularly during periods of high demand on both the interstate pipeline and electric transmission systems.
- Generators and transmission operators raised concerns that managing fuel procurement risk can be a challenge because of:
  - The different operating days used by the natural gas and electric industries; and
  - The timeframe for nominating natural gas pipeline transportation service is not synchronized with the timeframe during which generators receive confirmation of their bids in the day-ahead electric markets.
    - These differing timelines can cause significant price and/or supply risk for gas-fired generators because, to obtain the best gas price, the generators would need to nominate pipeline transportation service before they know if their electric bids are accepted.

Issues Driving FERC Proposals

- Consequences of scheduling inflexibility
  - Interstate pipelines expressed concern about the effect on their ability to deliver natural gas when electric generators are dispatched and need to burn more natural gas than they have nominated.
  - Generators expressed concerns about the flexibility of the gas scheduling system to accommodate their need to revise nominations in light of weather events or other operational needs.
    - These concerns were expressed by owners of gas-fired generators that are located within and outside of RTOs and ISOs.

Notice Of Proposed Rulemaking

NOPR

- FERC’s NOPR addresses three different (but related) issues:
  - Natural gas scheduling timelines
    - Start of the natural gas operating day.
    - Start of first day-ahead nomination cycle
    - Intra-day nomination timeline
  - FERC policy permitting firm shippers to bump interruptible shippers
  - Interstate pipeline multi-party service agreements

NOPR:
Natural Gas Scheduling Timeline

- Start the natural gas operating day ("Gas Day") earlier. FERC proposes to move the start of the Gas Day from 9:00 a.m. Central Clock Time ("CCT") to 4:00 a.m. CCT.
  - This would ensure that gas-fired generators are not running short on gas supplies during the morning electric ramp periods.
- Start the Timely Nomination Cycle for pipeline scheduling later than the current 11:30 a.m. CCT. FERC is proposing to move the Timely Nomination Cycle to 1:00 p.m. CCT.
  - This change will allow electric utilities to finalize their scheduling before gas-fired generators must make gas purchase arrangements and submit nomination requests for natural gas transportation service to the pipelines.
- Modify the current intraday nomination timeline to provide four intraday nomination cycles

NOPR:
Natural Gas Scheduling Timeline

Table 1: NAESB Gas Nomination Cycles[8]

Nomination Cycle	Nomination Deadline (CCT)	Notification of Schedule	Nomination Effective (CCT)	Bumping of IT
Timely	11:30 a.m.	4:30 p.m.	9:00 a.m. Next Day	N/A
Evening	6:00 p.m.	10:00 p.m.	9:00 a.m. Next Day	Yes
Intra-Day 1	10:00 a.m.	2:00 p.m.	5:00 p.m. Current Day	Yes
Intra-Day 2	5:00 p.m.	9:00 p.m.	9:00 p.m. Current Day	No

Table 3 -- Proposed Nomination Schedule[9]

Nomination Cycle	Nomination Deadline (CCT)	Notification of Schedule	Nomination Effective (CCT)	Bumping of IT
Timely	1:00 p.m.	4:30 p.m.	4:00 a.m. Next Day	N/A
Evening	6:00 p.m.	10:00 p.m.	4:00 a.m. Next Day	Yes
Intra-Day 1	8:00 a.m.	11:00 a.m.	12:00 p.m. Current Day	Yes
Intra-Day 2	10:30 a.m.	2:00 p.m.	4:00 p.m. Current Day	Yes
Intra-Day 3	4:00 p.m.	6:00 p.m.	7:00 p.m. Current Day	Yes
Intra-Day 4	7:00 p.m.	9:00 p.m.	9:00 p.m. Current Day	No

NOPR:
FERC "Bumping" Policy

- Currently:
  - Generally, primary and secondary pipeline nominations, which have higher priority, can bump scheduled interruptible service.
  - Under the "No Bump" Rule, interruptible service scheduled during the last intra-day nomination cycle cannot be bumped.
  - For pipelines that offer enhanced nomination schedules, interruptible shippers may be bumped until the nomination deadline for the last intra-day cycle (currently 5:00 p.m. CCT), so long as they are provided renomination opportunities in subsequent cycles.

NOPR:
FERC "Bumping" Policy

- Clarification
  - Under the NOPR's proposed gas timeline, shippers will have at least four intra-day cycles to nominate gas quantities instead of the existing two.
  - The proposed revisions maintain intra-day bumpable service for firm shippers that need to respond to forecasted weather changes or other events.
  - The last intra-day cycle, Intra-Day 4, would replace the current "no bump" cycle, providing interruptible shippers bumped during the third intraday cycle, Intra-Day 3, with one hour to reschedule bumped service.
    - FERC believes that making the last intra-day nomination cycle "no bump" provides stability to the nomination system and balances the interests of firm and interruptible shippers.
  - FERC clarified that pipelines with enhanced nomination services may continue to bump interruptible shippers until the time bumping notice is provided in the Intra-Day 3 cycle (proposed 6:00 p.m. CCT).

NOPR: Multi-Party Service Agreements

- Some pipelines offer service to multiple shippers under a single service agreement.
  - Shared capacity option can make firm capacity purchases more affordable, including for gas-fired generators.
  - Allows shippers to choose contracting partners with complementary needs.
- FERC's prior approval of those proposals was conditioned on:
  - A designated agent to manage the capacity.
  - Joint and several liability amongst the shippers to satisfy FERC's "shipper-must-have-title" rule.

NOPR:
Multi-Party Service Agreements

- The NOPR proposes to revise Part 284 of FERC's regulations to now require interstate pipelines offering firm service to provide service to multiple shippers under a single agreement.
  - Must designate an agent and establish agency in writing.
  - Jointly and severally liable.
  - Willing to be treated as one shipper for nomination, allocation, and billing purposes.
- The NOPR's proposal applies to firm service only, but FERC is seeking comment on whether to require multi-party agreements for interruptible service as well.

Section 206 Order

Section 206 Order

- FERC is concerned about the lack of synchronization between the day-ahead scheduling practices of gas and electricity markets.
  - Gas and electric operating days are not aligned.
    - Gas-fired generators committed across a single electric operating day must schedule transportation across two natural gas operating days.
    - Limited intraday nominations to revise schedules.
  - Day-ahead scheduling timelines in the organized electricity markets do not align with those in the natural gas market.
- Risks to generators, resulting increased electricity costs, and higher costs passed on to wholesale customers.

Section 206 Order

- ISO/RTO reliability unit commitment timing adds to the unpredictability
  - These commitments require units to cover start-up and minimum run obligations and deliver energy next day if needed.
  - If ISOs/RTOs do not announce these commitments prior to the Evening Nomination cycle, generators may be forced to obtain fuel at unreasonable prices.
  - Even under the NOPR's proposed revision to the intraday cycle, generators may risk being unable to secure gas nominations in time for morning load increases.

Section 206 Order: Existing Timelines

Table 1: NAESB Gas Nomination Cycles[8]

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Intra-Day 2	5:00 p.m.	9:00 p.m.	9:00 p.m. Current Day	No

Table 2 -- ISO/RTO Day-Ahead Scheduling

ISO/RTO	Bid Submission (CCT)	Successful Bids (CCT)	Notification of Reliability Unit Assessment (CCT)
California Independent System Operator Corporation	12:00 p.m.	3:00 p.m.	3:00 p.m.
ISO New England Inc.	9:00 a.m.	12:30 p.m.	4:00 p.m.
PJM Interconnection, LLC	11:00 a.m.	3:00 p.m.	5:00 p.m.
Midcontinent Independent System Operator, Inc.	10:00 a.m.	2:00 p.m.	7:00 p.m.
New York Independent System Operator, Inc.	4:00 a.m.	10:00 a.m.	10:00 a.m.
Southwest Power Pool, Inc.	11:00 a.m.	4:00 p.m.	8:00 p.m.

Section 206 Order:
Proposed Gas vs. Existing Electric Timelines

Table 3 -- Proposed Nomination Schedule[9]

Nomination Cycle	Nomination Deadline (CCT)	Notification of Schedule	Nomination Effective (CCT)	Bumping of IT
Timely	1:00 p.m.	4:30 p.m.	4:00 a.m. Next Day	N/A
Evening	6:00 p.m.	10:00 p.m.	4:00 a.m. Next Day	Yes
Intra-Day 1	8:00 a.m.	11:00 a.m.	12:00 p.m. Current Day	Yes
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New York Independent System Operator, Inc.	4:00 a.m.	10:00 a.m.	10:00 a.m.
Southwest Power Pool, Inc.	11:00 a.m.	4:00 p.m.	8:00 p.m.

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Section 206 Order

- In its order, FERC is requiring RTOs and ISOs to either:
  - Submit a filing that proposes tariff changes to adjust the time at which the results of its day-ahead energy market and reliability unit commitment process (or equivalent) are posted to a time that is sufficiently in advance of the Timely and Evening Nomination Cycles, respectively, to allow gas-fired generators to procure natural gas supply and pipeline transportation capacity to serve their obligations; or
  - Show cause why such changes are unnecessary.

Show Cause Order

Show Cause Order

- Order No. 636-A requires pipelines to post notices of offers to purchase released capacity.
  - Posting facilitates communication between buyers and sellers and allows releasing shippers to identify the party most interested in purchasing its capacity.
- Section 284.8(d) of FERC's regulations implements this rule.
  - Pipelines "must provide notice of offers to release or purchase capacity [and] the terms and conditions of such offers . . . , on an internet website, for a reasonable period."
- FERC conducted a sampling of informational posting websites and tariffs, finding that none of the pipeline websites or tariffs reviewed were compliant with these requirements.

Show Cause Order

- FERC initiated a show cause proceeding pursuant to section 5 of the Natural Gas Act regarding the manner in which pipelines allow shippers to post offers for released capacity.
- The show cause proceeding will ensure that there is a sufficient level of transparency in connection with the purchase and sale of pipeline capacity, consistent with FERC's capacity release program enacted as part of Order No. 636.

Show Cause Order

- Interstate natural gas pipelines are required to
  - Revise their tariffs to provide for the posting of offers to release capacity or to purchase released capacity in compliance with 18 C.F.R. § 284.8(d); or
  - Otherwise demonstrate that they are in compliance with the regulation.
- FERC additionally requested that NAESB develop business practice and communication standards specifying:
  - Information required for requests to acquire capacity
  - Methods by which that information will be exchanged
  - Location of the information on the pipeline's website

Implementation

Implementation: NOPR

- Industry stakeholders will have 180 days to reach consensus through NAESB on the proposed standards.
  - The 180 deadline is: Monday, September 29, 2014.
  - NAESB must notify FERC of either the consensus standards or inability to reach a consensus.
- Comments on FERC's proposals and NAESB standards are due on Thursday, November 28, 2014.
- If FERC adopts regulations that are not approved by NAESB, NAESB is directed to integrate the adopted regulations into its standards within 90 days of the effective date of FERC's rule.

Implementation: NOPR

- Industry participants have already started to take action:
  - NAESB has proposed the following meeting dates to begin addressing FERC's directives:
    - April 22-23*
    - May 5-6
    - May 22-23
    - June 2-3
  - The Eastern Interconnection Planning Collaborative has scheduled a Webinar of the Stakeholder Steering Committee for May 7.

Implementation: NOPR

- On April 22-23, the NAESB Harmonization Committee hosted its first meeting following FERC's issuance of the NOPR.
- Based on public sources:
  - Some gas industry participants have expressed concern that changes to the start of the gas day would impose additional costs on natural gas systems that receive no benefit from the change.
    - FERC staff communicated at the meeting that they recognize this will impose additional costs but believe the benefits will outweigh the costs.
  - Opinions expressed included whether:
    - The start of the gas day should be changed and to what time
    - Changes should be made within the electric industry.
  - Four issues were identified for further discussion. They were:
    - Whether there should be one or two energy days
    - The start of the gas day
    - Whether there should be three of four intraday cycles
    - The nomination schedules.

Implementation:
Section 206 Order

- On or before <u>90 days</u> after a Final Rule is published in the *Federal Register* in connection with the NOPR, each ISO and RTO is required:
  - To make a filing that proposes tariff changes to adjust the time at which the results of its day-ahead energy market and reliability unit commitment process (or equivalent) are posted to a time that is sufficiently in advance of the Timely and Evening Nomination Cycles, respectively, to allow gas-fired generators to procure natural gas supply and pipeline transportation capacity to serve their obligations; or
  - To show cause why such changes are unnecessary.
- Each ISO and RTO must explain how its proposed scheduling modifications are sufficient for gas-fired generators to secure natural gas pipeline capacity prior to the Timely and Evening Nomination Cycles.

Implementation: Show Cause Order

- On or before Monday, May 19, 2014, pipelines are required to either:
  - Revise their Tariffs to comply with Part 284.8(d) of FERC's regulations; or
  - Explain how their existing Tariffs comply with Part 284.8(d) of FERC's regulations.
- NAESB is directed to develop business practices and communication standards that specify the:
  - Information required for requests to acquire capacity;
  - Methods by which such information is to be exchanged; and
  - Location of the information on a pipeline's website.

Implementation:
Show Cause Order Examples

- Existing: Algonquin Gas Transmission, LLC – Section 14.9 – GT&C
  - Capacity Request Notice. If requested by a party desiring to receive firm capacity under this Section 14, Algonquin shall post a notice of such desire (including quantity, Point(s) of Receipt, Point(s) of Delivery, period, and rate) on its electronic bulletin board for one month.
- Proposed: Ozark Gas Transmission, L.L.C. – Section 14.12 – GT&C
  - Any party desiring to acquire firm capacity pursuant to this Section must submit the following information to Transporter via e-mail to linkhelp@spectraenergy.com:
    - (a) the Replacement Customer's name and contact information;
    - (b) the Maximum Daily Quantity desired for Rate Schedule FTS, or the Maximum Daily Withdrawal Quantity ("MDWQ") and Maximum Storage Quantity ("MSQ") for Rate Schedule FSS, as applicable;
    - (c) the desired commencement date and term of the service;
    - (d) the desired Primary Receipt Point(s) and Primary Delivery Point(s) and the associated Maximum Daily Receipt Obligation ("MDRO") and Maximum Daily Delivery Obligation ("MDDO") for the service, if applicable;
    - (e) the maximum rate(s) that Replacement Customer will pay for the service;
    - (f) whether Replacement Customer will accept a release with recall rights, and if so, what recall rights would be acceptable; and
    - (g) whether Replacement Customer's request is contingent, and if so, the basis for the contingency.

Questions?

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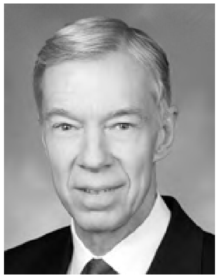

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