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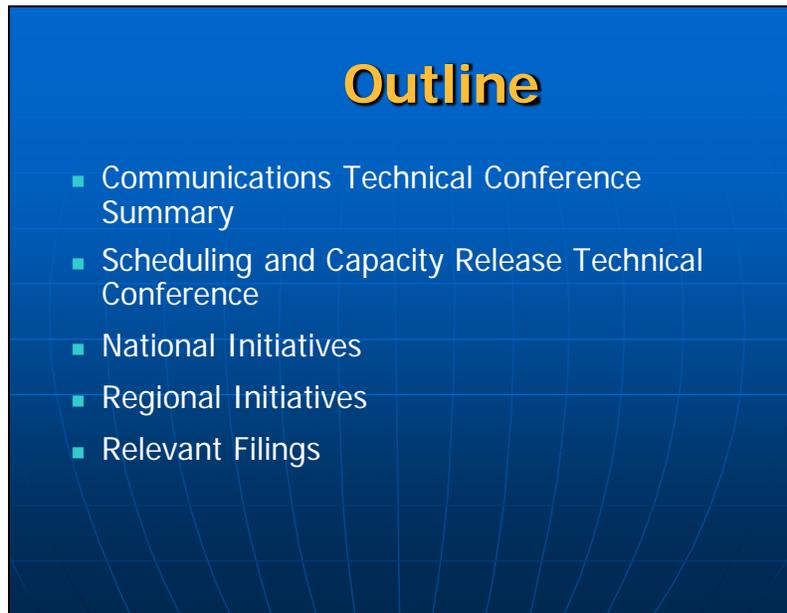


**Gas-Electric Coordination
Quarterly Update**

Docket No. AD12-12

Item No: A-3
March 21, 2013

Good morning Mr. Chairman and Commissioners. Today, we are pleased to present the first Quarterly Update on Gas-Electric Coordination Activities, as directed by the Commission in its November 15, 2012 order in Docket No. AD12-12.



Today's presentation will provide an overview of discussions at the February 13 Gas-Electric Communications Technical Conference, highlight national and regional efforts on natural gas and electric coordination, and briefly summarize relevant applications that have come before the Commission and the Commission's disposition. This presentation captures events during the period September 2012 to February 2013.

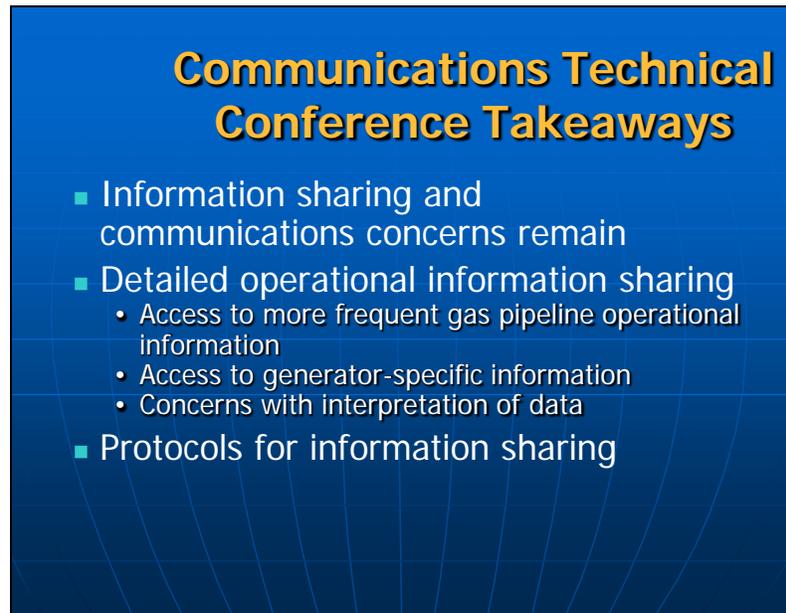


Communications Technical Conference Summary

- Key Discussion Topics
 - Additional communication needs in
 - day-to-day operations
 - emergency conditions
 - longer-term planning

Commission members, Commission staff and a broad cross section of natural gas and electric industry representatives, as well as Chairman Snitchler with the Ohio PUC, participated in the February 13 staff conference.

During the panel discussion, representatives of an interstate natural gas pipeline, electric transmission operator, and a generation owner described the types of communications that occur today among the electric and natural gas industries during stressed, non-emergency operating conditions. Commission staff from the Office of Enforcement discussed application of the Commission's standards of conduct and the statutory prohibitions on undue discrimination and preference as they apply to communications between the natural gas and electric industries. These initial presentations were followed by a series of roundtable discussions that explored communication needs in day-to-day operations, emergency conditions, and longer-term planning.



Communications Technical Conference Takeaways

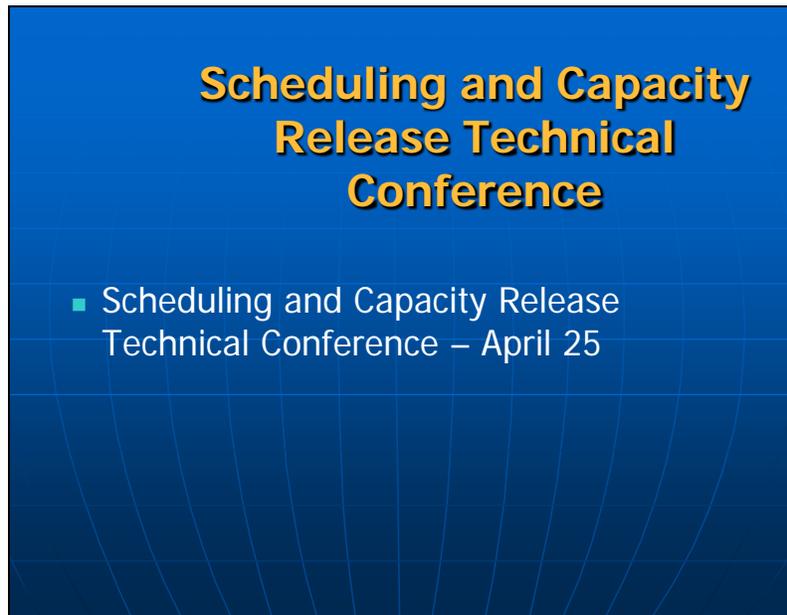
- Information sharing and communications concerns remain
- Detailed operational information sharing
 - Access to more frequent gas pipeline operational information
 - Access to generator-specific information
 - Concerns with interpretation of data
- Protocols for information sharing

Much of the discussion centered on pressing issues in New England. For example, a representative from ISO-NE expressed concerns that the ISO is not getting all of the information needed to identify risks for reliable operations and to make more accurate decisions during the operating day. He suggested that pipelines should provide additional pipeline operational data and generators should provide generator-specific data regarding fuel supply options.

Some of the additional pipeline data that the system operator would like to be provided included more frequent flow data to what is already shared through pipeline postings as well as information regarding pipeline pressures at all receipt and delivery points, day-ahead nominations confirmation changes, and fuel supply availability. The pipeline operators expressed concern about how this data would be interpreted, specifically the pressure changes on the pipelines. The pipelines also expressed that they do not have the fuel supply information to provide the generators and are not in the position to opine on fuel supply security in the market.

Similarly, generator representatives expressed concern about releasing certain generator-specific information to electric system operators, and were especially concerned if that information were to be provided by the pipeline operator. Generators stated that pipelines do not necessarily know a generator's complete fuel supply picture or options available.

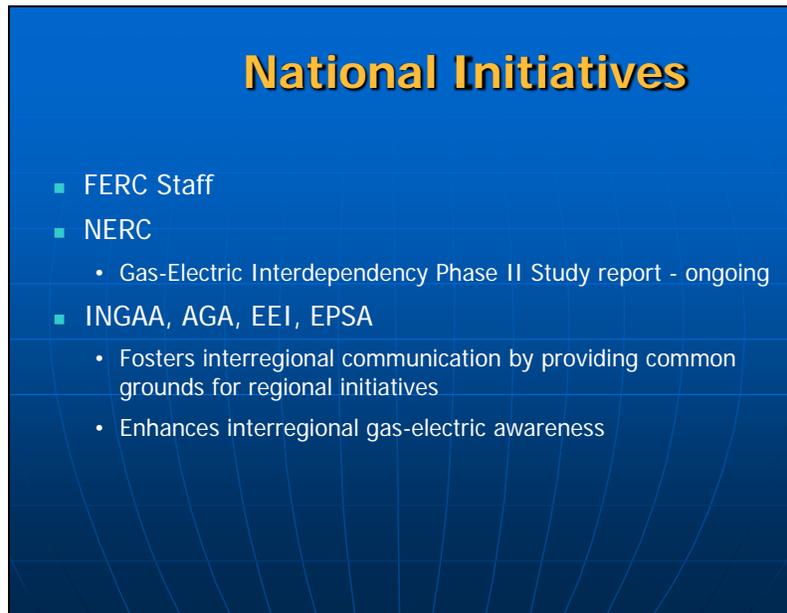
Representatives from both industries generally agreed that increased information sharing and communications should not be limited to emergency situations and that protocols for information sharing should be the same in all situations, whether in day-to-day operations, emergency conditions, or longer-term planning. However, protocols need to follow and reflect non-disclosure agreements and additional clarification is needed with regard to regulations. Specifically, pipeline operators sought confirmation that sharing information with individual generators will not be construed as engaging in undue discrimination or providing an undue preference in violation of the Natural Gas Act and Federal Power Act.



Scheduling and Capacity Release Technical Conference

- Scheduling and Capacity Release
Technical Conference – April 25

As announced in a Notice of Technical Conference issued March 5, 2013, FERC staff will continue its efforts to examine gas-electric coordination issues through a Technical Conference on scheduling and capacity release issues to be held on Thursday, April 25 at the Commission.

A blue rectangular slide with a grid pattern and a globe graphic at the bottom. The title "National Initiatives" is centered at the top in a bold, orange font. Below the title is a bulleted list of initiatives in white text.

National Initiatives

- FERC Staff
- NERC
 - Gas-Electric Interdependency Phase II Study report - ongoing
- INGAA, AGA, EEI, EPSA
 - Fosters interregional communication by providing common grounds for regional initiatives
 - Enhances interregional gas-electric awareness

Staff has been conducting outreach with a number of entities in both the natural gas and electric industries to gain a better understanding of their activities on gas-electric coordination efforts. We continue to follow industry initiatives on the national level, and continue to engage with trade organizations such as the North American Energy Standards Board (NAESB), North American Electric Reliability Corporation (NERC), American Gas Association (AGA), Edison Electric Institute (EEI), Interstate Natural Gas Association of America (INGAA), and Electric Power Supply Association (EPSA) to monitor their activities on gas-electric coordination efforts. Most of the mentioned trade associations' individual members are involved in the regional working group efforts.

NERC is developing a special reliability assessment on natural gas and electric power interdependency in the United States. The first phase of this special assessment was completed in December 2011 with the release of a primer on the natural gas industry and its interface with the electric power industry. Phase II of the special assessment is nearly finished and will examine vulnerabilities that can affect bulk power system reliability and identify ways to minimize those vulnerabilities.



Although outside the stated reporting period, staff would like to highlight two recent Congressional hearings addressing gas-electric coordination issues. On March 5, 2013, the House Energy and Commerce Committee, Energy and Power Subcommittee held a hearing entitled "American Energy Security and Innovation: The Role of a Diverse Electricity Generation Portfolio." The hearing focused on reliability and affordability issues, among others. The March 5 hearing was intended to start a conversation on issues regarding gas-electric coordination.

On March 19, 2013, the Subcommittee held a hearing entitled "American Energy Security and Innovation: The Role of Regulators and Grid Operators in Meeting Natural Gas and Electric Coordination Challenges." The hearing featured two panels. The first panel focused on problems the industries are facing on gas-electric coordination, as well as possible solutions at the federal level. Commissioners LaFleur and Moeller testified during the first panel. The second panel focused on possible regional, state and local solutions to gas-electric coordination challenges. Gas and electric industry participants such as MISO, ISONE, representatives from the Texas and Colorado PUC's, and a representative from an economic consulting firm testified during the second panel.



Following is an update on regional progress of gas-electric coordination efforts and are based on staff outreach and participation in regional gas-electric coordination task force meetings.

Work in New England has been led by the New England States Committee on Electricity (NESCOE) Gas-Electric Focus Group established in October 2012. The Focus Group facilitates monthly communication meetings and calls between the natural gas and electric industries and continues to provide added paths for education and coordination. The Focus Group's purpose is to bridge communication gaps between the electric industry, natural gas industry, and States; and to identify and evaluate challenges resulting from increased dependence on natural gas for electric generation in New England.

At the conclusion of the Focus Group's efforts, NESCOE intends to issue a final report evaluating the challenges that were identified in regional discussions and a spectrum of potential solutions identified by the ISO-NE Strategic Planning Initiative and interested stakeholders that can be accomplished in the short-term (within two years), the intermediate-term (two to five years) and the long-term (more than five years).

In addition, the final report will include a multi-phase study of pipeline capacity by Black & Veatch. The Phase I report, presented in a January 2013 Focus Group meeting, reviewed existing studies analyzing Northeast issues given existing pipeline bottlenecks. The second phase of the report will evaluate how much additional pipeline capacity is needed to alleviate existing bottlenecks. The Phase II study is due to be out by mid-April.

In its upcoming meetings, the Focus Group plans to review information related to members' experience related to gas-electric coordination and system reliability during the current winter heating season supported by the ISO-NE Strategic Planning Initiative's Winter Operations Summary released on February 27, 2013. These experiences will be also be discussed in the final NESCOE report.

Stakeholders in New England have expressed that the Focus Group meetings have increased communications and awareness as well as understanding between the respective gas and electric industries.

ISO-NE, as discussed later, has been engaging stakeholders on a variety of reforms to prepare for next winter and expects to file with the Commission for approval of reforms to its markets.

A blue rectangular box with a grid pattern and a globe-like background. The title 'Regional Initiatives Mid-Atlantic' is centered at the top in orange and white text. Below the title are two bullet points in white text: 'Multiregional Natural Gas/Electric Study' with sub-bullets 'ISO-NE, NYISO, PJM, MISO, IESO, and TVA', and 'NYISO' with sub-bullet 'Electric Gas Coordination Working Group'.

Regional Initiatives Mid-Atlantic

- Multiregional Natural Gas/Electric Study
 - ISO-NE, NYISO, PJM, MISO, IESO, and TVA

- NYISO
 - Electric Gas Coordination Working Group

In the Mid-Atlantic region, ISO-NE, NYISO, PJM, MISO, Ontario IESO and TVA are partnering to conduct a multi-regional natural gas/electric analysis of major interstate, intrastate, and local natural gas infrastructure serving the Eastern Interconnection.

The primary objectives are to develop a baseline of the electric and natural gas systems, including their operation, planning and interactions. The study will include analysis of the major natural gas processing facilities, intrastate and interstate natural gas pipelines, underground natural gas and above-ground LNG storage systems, and local gas distribution systems (LDCs) serving the footprints of the Eastern Interconnection. The study will evaluate the adequacy of the regional gas systems to supply gas-fired generation needs over a 10-year horizon; identify contingencies on the natural gas system that could adversely affect the electric system and vice versa; and, review the benefits and costs of dual fuel capability compared with securing firm gas transportation. A request for proposal is anticipated in the first quarter of 2013 with the work being completed by the end of 2014.

In addition to its participation in these interregional activities, NYISO staff has engaged Levitan & Associates to conduct a quicker "static" study of New York's circumstances and more immediate issues with an anticipated release in the second quarter of this year. The staff group is also working on the Northeastern ISO/RTO Planning Coordination Protocol to set the foundation for processes and procedures through which coordination of system planning activities will be implemented by the ISOs and RTOs of the northeastern United States and Canada.

NYISO stakeholders have also formed a separate Electric-Gas Coordination Working Group to conduct an inter-regional gas-electric interaction study focused on identifying information that would allow the NYISO operators to have an understanding of the natural gas system.



MISO and its stakeholders formed the Electric-Natural Gas Coordination Task Force in May 2012 that has held monthly meetings and identified a number of high priority gas-electric issues.

During the monthly meetings, MISO has expressed that it generally views its current communication processes as adequate for gas-electric purposes but with room for improvement given the anticipated expanded role of natural gas on the MISO system. In efforts to improve cross industry understanding, MISO held an educational meeting that provided a high-level introduction to MISO's market design and operations in January 2013, while natural gas industry representatives conducted a Natural Gas 101 session at the February, 2013 MISO Task Force meeting.

The MISO Task Force plans to continue discussion of improving coordinated emergency operations and expand into day-to-day operations communication. Planned efforts include a discussion this May of the misalignment of gas-electric days. MISO also is considering moving up its day-ahead market awards deadline and an accelerated dispatch schedule for emergency and cold weather events.

The MISO Task Force is currently evaluating possible modifications to its resource adequacy construct to account for the possibility of fuel supply disruptions as well as the seasonal variance exhibited in some gas unit operations. The Task Force has identified that the Loss of Load Expectation calculations do not consider the risk of fuel supply disruption. Also, forced outage rates calculations use historical performance data, which is not indicative of future circumstances.

SPP's gas-electric coordination initiatives are in the initial stage of development. SPP established a Gas-Electric Coordination Task Force that convened on January 25, 2013 with the next meeting scheduled for May 8th. The stated goal of the Task Force is to establish monthly meetings providing grounds for discussion and education of the natural gas and electric industries. The latest efforts include finalizing a charter of the Task Force. Additionally, SPP expressed the need to train its staff in gas industry operations and to further these efforts is establishing "desktop displays" to monitor natural gas pipeline Electronic Bulletin Boards for information relevant to gas-fired generators connected to the SPP system.

On December 5, 2012 ERCOT hosted a meeting of ISO/RTO Council operations executives with representatives from the Interstate Natural Gas Association of America (INGAA). Topics discussed included: standards of conduct regarding communications between ISOs and pipelines, best practices of

gas/electric planning by ISOs, costs of firm and interruptible pipeline service, and impact of gas vs. electric scheduling day differences.

This group met semi-annually in 2011 and 2012. In November 2012 and January 2013 ERCOT participated in Texas Energy Reliability Council (TERC) meetings facilitated by the Texas Railroad Commission (RRC) with participants spanning both gas and electric industries. Discussion included winter gas storage status, expected electric generation outages that may affect gas demand and any planned pipeline maintenance that might affect delivery. ERCOT began working with the Texas Pipeline Association (TPA) and RRC to incorporate location of significant gas facilities into the ERCOT electric network model which will facilitate ERCOT's study of the potential impact of electric outages on pipelines and pipeline outages on generators.



The West has a number of subregional natural gas-electric coordination initiatives. The State-Provincial Steering Committee (SPSC) launched an initiative to perform a natural gas and electric sector critical needs assessment across the West under the Western Gas-Electric Regional Assessment Task Force. The regional infrastructure assessment will evaluate the risks and the reliability of the integrated natural gas and electric systems in the West.

The Task Force has held four meetings since November 2012 and has approved a draft "Request for Information" seeking input on two issues: 1) adequacy of the natural gas infrastructure to meet the long-term needs of the electric industry in the Western Interconnection; and 2) short-term adequacy of natural gas operational flexibility to meet the Western Interconnect's operational flexibility needs with increasing integration of renewables.

WECC held a Natural Gas-Electric Coordination Conference on November 12 and 13, 2012. In addition to providing educational information on existing communication protocols in each industry, attendees in a roundtable work session developed a draft Communication Protocol to outline best practices for Gas-Electric coordination. WECC has stated that it also is considering posting contact information for relevant gas personnel on its website. WECC may hold a follow-up meeting in May 2013.

In the Pacific Northwest, natural gas pipelines and electric utilities continue to discuss enhanced communications and coordination through the Power and Natural Gas Planning Task Force bimonthly meetings, during which the task force explores and addresses policy, planning, and reliability challenges. Entities participating in the Northwest Mutual Assistance Agreement have formed a collaborative Emergency Planning Committee and plan to meet twice a year to discuss winter preparedness with the next meeting planned in May. A joint effort between the Northwest Gas Association and Pacific Northwest Utilities Conference Committee is evaluating long term planning and reliability challenges given the high level of interdependence of the electric and gas industries. The task force has also supported the development of the Natural Gas and Electricity Primer and the Role of Natural Gas White Paper, and offered guidance on an I-5 Corridor analysis.

ColumbiaGrid's Gas-Electric Interdependencies Study Team is investigating electric transmission system reliability issues associated with a hypothetical limitation of gas supply to electric generators. A large number of natural gas powered generators are located in the I-5 corridor and are needed to provide

reliable electric service to the major load areas west of the Cascade Mountains, for example Portland and Seattle. Traditional planning studies have assumed that an unlimited natural gas supply to these generators is available when needed. ColumbiaGrid's Gas-Electric Interdependencies Study Team was formed to investigate whether this assumption on gas availability is appropriate. The Team studied a scenario involving the total curtailment of natural gas to the I-5 corridor, resulting in only dual-fuel natural gas-fired generators being left in service. The conclusion from the preliminary study is that the electric transmission system performed acceptably under this "what if" gas curtailment scenario. The final study is tentatively scheduled to be released in April.

Lastly, at the February 7, 2013 Board of Governor's meeting, CAISO's CEO noted in his report to the Governing Board that the ISO was launching gas-electric coordination discussions with the state's gas companies about the ISO's power plant needs and focus on assessing gas infrastructure necessary to meet renewables integration needs. CAISO intends to make their renewable integration studies available to pipeline operators for purposes of their assessment of gas infrastructure needs and anticipates providing ongoing support to pipeline operators to answer questions they may have concerning projected electric system needs as reflected by those studies.



In 2012, Southern Company, the largest generator of electricity in the Southeast, held discussions with representatives of the natural gas pipelines in their region. One discussion resulted in a decision to coordinate planned gas and electric system outages on a monthly basis beginning in November 2012. These outage coordination meetings were previously held on a bi-annual basis. A second discussion covered the timing and type of information that would be available after a catastrophic event on the gas system and after an electric system event that would impact power delivery to electric powered compressor stations.

Relevant Natural Gas Filings

Region	Pipeline	Capacity/Initiative	Docket No.
West	Gas Transmission NW	Capacity expansion ~175,000 Dthd	CP12-494
West	Northwest Pipeline	Capacity expansion ~63,000 Dthd	CP13-18
Southeast	Transco Gas Pipeline	Capacity expansion ~270,000 Dthd	CP13-30
Midwest	Trailblazer Pipeline	Additional nomination opportunities	RP13-240
Gulf Coast/South	Gulf South Pipeline	Optional enhanced nomination service offering 8 additional cycles	RP13-294
Gulf Coast/Southeast	Florida Gas Transmission	A third intraday nomination cycle	RP13-203
West	Transwestern Pipeline	Framing system balancing and operational issues	RP13-404

On this slide, Staff has highlighted filings made by interstate natural gas pipeline companies to provide increased flexibility. Gas Transmission Northwest and Northwest Pipeline both proposed to construct facilities to provide new or expanded firm transportation service to an electric power generator in the West, while Transco proposed to expand its transportation capacity to serve generators in Virginia and North Carolina. Approximately 510,000 Dth per day in overall design capacity is being added to the west and southeast regions. These cases are still pending.

In addition, several interstate natural gas pipelines made filings to provide increased service flexibility. The changes proposed by Trailblazer, Gulf South, and Florida Gas are designed to allow shippers additional nomination opportunities beyond the four standard NAESB nomination cycles. Lastly, Transwestern proposed changes to provide enhanced daily scheduling and gas balancing flexibility. Transwestern states that these changes could be especially useful to gas-fired generators that experience large swings in load late in the gas day. With the exception of Gulf South's proposed changes, these pipeline cases are still pending.

Relevant Electric Filings

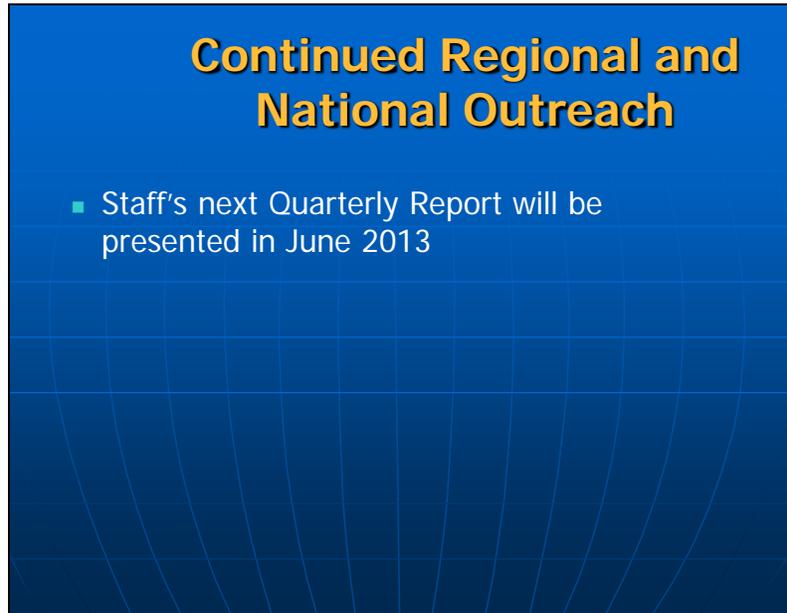
Entity	Filing Initiative	Docket No.
ISO-NE	Modify Day-Ahead Energy Market	ER13-895
	Revisions on Procurement of Ten-Minute Non-Spinning Reserve in the Forward Reserve Market	ER13-465
	Changes to Pipeline Information-Sharing	ER13-356

Staff has identified three filings submitted by ISO-NE proposing tariff changes to address increasing reliance on natural gas-fueled generators.

In Docket No. ER13-895, ISO-NE and NEPOOL proposed two alternative versions of the tariff changes to modify New England’s market rules to provide for earlier clearing of the Day-Ahead Energy Market and earlier completion of the initial Reserve Adequacy Analysis process. They state that the changes are being sought because of concerns with the current day-ahead market schedule and increasing reliance of natural gas-fueled generators at times when there is an increasingly tight availability of pipeline capacity. The case is still pending.

Previously ISO-NE proposed to increase the amount of Ten-Minute Non-Spinning Forward Reserves it procures. ISO-NE stated that by procuring additional Forward Reserves, as necessary, it aims to maintain reliability by ensuring the availability of sufficient reserves in real time to deal with concerns about resource performance during periods of stressed system conditions. On February 8, 2013, the Commission accepted for filing, via delegated letter, ISO-NE and NEPOOL Participants Committee’s filed revisions to Forward Reserve Market rules, effective March 1, 2013, as requested.

ISO-NE also had proposed revisions to its Information Policy to allow ISO-NE to share and discuss certain information regarding generation resources with pipelines in order to ensure reliability in New England during emergency conditions this winter. The Commission set this matter for hearing and settlement judge procedures. Subsequently, on January 23, 2013, the Commission accepted the proposal, with conditions, on an interim basis.



Continued Regional and National Outreach

- Staff's next Quarterly Report will be presented in June 2013

Staff's next quarterly report will be presented to the Commission at the open meeting in June. Staff will continue regular outreach with national and regional entities and with regulated entities regarding their efforts on gas-electric coordination. This concludes today's presentation of the first Quarterly Update on Gas-Electric Coordination Activities. We are available to answer any questions you may have.



Gas-Electric Coordination Quarterly Update

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