

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

**Coordination between the Natural Gas
and Electricity Markets**)

Docket No. AD12-12-000

I. INTRODUCTION

The OMS commends FERC for establishing regional technical conferences on the interdependence and coordination between natural gas and electricity, including further examination of the markets and the relationship between system infrastructures. As regulators, the OMS must ensure that the public interest is protected and must weigh the impact on all customers, both electric and natural gas. We recognize that difficult decisions will have to be made regarding regulatory approval, as the expansion of infrastructure and upgrades would have an impact on the costs to electric and natural gas ratepayers.

With the OMS located throughout the MISO Footprint, our comments are founded on the Central Technical Conference in St. Louis, Missouri, on August 6, 2012. MISO has identified 48 GW¹ of coal generation which requires emission controls, replacement or retirement. With lower price projections for natural gas, the likelihood of retirements in MISO is estimated at 4.3 GW². As a result, the dependency on natural gas may rise as it becomes a more significant source of fuel for natural gas fired electric generation.

Given the somewhat interdependent nature of the electric and natural gas markets and the various factors impacting electric generation and dispatch, concerns have been expressed about system reliability. Among the concerns is the potential for a significant amount of new gas fired electric generation that may stress the existing gas infrastructure system and potentially impede

¹ *Planning Overview: EPA Proposed Rule Impacts on the MISO System*, MISO CSAPR Workshop, Meeting on October 13, 2011

² *EPA Survey Update, June 27, 2012*, MISO presentation at the St. Louis Regional Technical Conference, August 6, 2012.

delivery of supply. Collaboration among interstate and intrastate gas pipelines, MISO, power generators, state regulators and local distribution companies is important to strengthening key inter-relationships for improving system reliability, in a cost effective manner. Therefore, the OMS appreciates the productive round-table discussions on: (1) Gas-Electric Scheduling and Market Structures/Rules; (2) Communications/Coordination/Information Sharing; and (3) Reliability.

The OMS offers thoughts on the following matters:

First, the interdependency of the gas and electric markets and the desire to avoid gas disruptions that could lead to electricity shortages suggests that some level of coordination is needed between the pipelines and the RTOs³. Alignment is needed for gas nominations and electric market clearings that may be addressed through changes in either or both electric and gas scheduling, as well through market rules to better accommodate the different electric and gas days.

Second, RTO rules for resource adequacy may not take into account fuel delivery or supply issues. This raises the question if the RTO's Loss of Load Expectations (LOLE) Study, which determines the planning reserve requirement, recognizes the firmness of gas supply. Specific recognition of unit outages or load lost or forced outage rates due to lack of generation, lack of fuel supply, backup fuel, or fuel storage may increase. It may be appropriate to examine the need for RTO tariff and business practice changes in this regard.

Third, natural gas pipelines, storage, and facilities have a history of being built only when there is adequate long-term financial commitment to pay for firm service. Gas-fired generation with a low capacity factor may either procure interruptible pipeline transportation service or partner with other holders of firm service. While this may work for combined gas and electric utilities, it may be useful to explore whether there may be a way for independent sellers of power to purchase a slice of firm services to meet their needs. Whereas, it is up to the businesses involved to seek pipeline services that meet their business plans; the pipelines may also need to

³ Page 8; Comments of the Organization of MISO States, March 30, 2012; FERC Docket No. AD12-12-000

increase the range of services offered consistent with their customers' needs. FERC's role here should be to examine and approve, if necessary, new pipeline services that meet those needs.

Fourth, the actions that an RTO such as MISO takes during electric emergencies are important, in terms of coordinating with pipelines and perhaps coordinating with electric and gas utilities. This is an area where regulators could play a role to encourage proactive steps in communications that will promote gas and electric coordination during events impacting supply deliverability and reliability.

II. COMMENTS

A. Gas-Electric Scheduling and Market Structures/Rules

Scheduling issues between gas-fired generators balancing real-time electric market dispatch and pipeline scheduling is specific to each region of the country. General issues of nomination cycling however, appear to apply throughout the country. Pipelines have been addressing these issues and have in some cases modified tariffs to meet the needs of gas-fired generation customers. Pipelines and customers should sit down to plan how their scheduling and tariffs can be modified to meet future needs of gas-fired generators and at the same time provide all firm transportation customers the reliability they are currently paying for through firm transportation rates. NAESB may have a useful role to play with regard to this matter.

Transportation services on pipelines are offered with various degrees of reliability. Firm shippers pay fixed monthly charges for firm service and have the right to nominate (schedule) up to their full contracted capacity on a pipeline. To ensure uninterrupted delivery, however, a customer will typically have both firm capacity on the pipeline and firm supplies of natural gas with a natural gas supplier.

Natural gas fired electric generators tend to operate with interruptible gas service because they assert that firm service is uneconomic. However, if a gas generator is served by an interruptible contract, there is the potential for curtailment of natural gas service, which could create supply delivery issues for natural gas intended to produce electricity and of the electric system, which must then respond to potential unavailability of certain generators in certain hours.

The gas nomination/scheduling timelines and the electric generation dispatch notification timelines are not aligned and the physical Gas Day is a different 24-hour period than the Electric Day. The NAESB has discussed timeline considerations on the natural gas system in the past to no avail. Consequently, scheduled gas straddles two Electric Days requiring two days of gas nominations to cover one day of electric generation.

Despite a Day-Ahead Power Market, real-time dispatched gas generators may require transportation and balancing services on the natural gas pipeline system, in order to be reliable for the electric grid during real-time operations. Coordination and flexibility between the electric and gas markets may be useful for the gas-fired units to provide needed electric system reliability.

One issue that arises from the differences between gas and electric markets is that the electric Day-Ahead Market Clearings post after the deadline for a Timely Nomination (“Cycle 1”) on the pipeline. As a result, gas-fired generators have insufficient time after electric dispatch notification to schedule the delivery of an entire day’s worth of the gas supply needed to provide the generation committed to the power market. Thus, it is difficult for the generators to accurately determine their marginal costs for offers into the MISO Day-Ahead market. Further, it also makes deliveries of gas supply uncertain. This may result in exposure to real-time electric prices (for replacement resources), as well as, potential incurred costs for redispatch in MISO and exposure to real time natural gas prices for the committed gas-fired generating unit. These issues have the potential to increase costs in MISO if the amount of natural gas fired generation increases and natural gas fired generation is “on the margin” more frequently, establishing the MISO Market price.

In order for gas to be guaranteed to flow on the pipeline for a full Gas Day, shippers must have firm contractual rights to capacity and must submit a nomination for such capacity in either the Timely Nomination the morning before the gas flow day or in the Evening Nomination (“Cycle 2”), the evening before the gas flow day. Confirmed nominations in “Cycle 1” or “Cycle 2” begin to flow at 9:00am CT on the Gas Day. In the absence of making such a nomination, a firm shipper has only one more guaranteed opportunity to access its firm capacity, i.e., in the Intraday 1 Cycle (“Cycle 3”), which is nominated on the Gas Day, however, such gas only flows for sixteen (16) hours beginning that evening.

Under existing policy, a firm shipper is not allowed to access its unused firm capacity in the final Intraday 2 Cycle ("Cycle 4") if an interruptible shipper was awarded the capacity in a prior cycle. This "Cycle 4" preclusion, referred to as the "no-bump" rule, essentially gives the recipient interruptible shipper a minimum of sixteen hours of "firm" capacity, despite the fact that the service is defined as "interruptible" and that a firm shipper has already paid for such capacity. This no-bump rule may merit revisiting by policy-makers.

Changes in Texas after the recent winter situation are an example of scheduling issues. For Texas Gas Transmission LLC in FERC docket RP11-2569 Orders 10/31/11 and 3/15/12, approved Enhanced Nominations Service by providing for 11 additional nomination cycles to the 4 NAESB cycles. Absent changes in gas scheduling, the electric industry could explore changes in electric dispatch schedules, such as moving up the Day-Ahead clearing time.

In order to help better coordinate the gas and power markets, various alternatives should be considered and evaluated; including adding a fifth gas nomination cycle with a deadline one day prior to the operating day or moving the Timely Gas Nomination Deadline in Cycle 1, past a given region's RTO Day-Ahead Clearing. Another alternative to better align the markets include explore changing the electric day to a standard time, independent of region; to better align clearings in all RTOs with gas nomination cycles. Additionally, some gas utilities offer "No Notice Service"; having this service available within the tariff on all pipelines should help mitigate issues that may arise due to the "no-bump" rule.

B. Communications/ Coordination / Information Sharing

Achieving the collaboration needed to ensure reliability of the electric system requires communication among MISO, the interstate pipelines, electric generators and regulatory authorities. Additionally, it may be necessary in the future to involve local distribution companies. Given the timeline for unit retirements to comply with environmental regulations, the time it takes to develop pipelines, storage and transmission lines, it's prudent to consider these matters now. Among the actions that may be appropriate are long-term contractual commitments for gas pipelines, storage and facilities to ensure the delivery of additional gas supply. However, the OMS urges that prudence must still be observed when developing the next steps.

The OMS believes that every business that is planning a new electricity generation plant should develop its own short and long term business plan to meet its fuel needs, especially those with natural gas fired electric generation. Ensuring reliable electric service requires clarity as to whether natural gas used for specific electric generators can be delivered within specific timelines, and such information may be able to be developed through MISO's loss of load expectation (LOLE) process. Moreover, MISO has an important role in identifying needs, but does not and should not determine what types of resources fulfill that need, and therefore shouldn't plan the gas infrastructure that may be necessary. It may be useful, however for MISO to participate as part of the process with regards to information sharing.

Gas suppliers/marketers and pipelines are in communication with their customers through the use of the pipelines' electronic bulletin boards ("EBBs") and marketers should also be in communication. The OMS would suggest that it may be useful for MISO, regulatory authorities, and the generation plants within its jurisdiction to also have access to the EBBs for information regarding the pipelines serving the region's generating units.

The communication process and business continuity is essential for any operations but most especially during times of emergencies. In the case of system reliability, the actions taken by RTOs, pipelines, and utilities will necessitate coordination and attention prior to an emergency. A role exists here for both FERC and state regulators to ensure that proper process are in place between the gas and electric industries, which should be practiced simultaneously and implemented in times of interruptions, curtailments, or emergencies. These communications are critical to ensure electric and natural gas loads are not curtailed and supply is deliverable. The RTOs know the status of generation, the pipelines know (or should know) the status of gas deliveries, and the utilities know which load will be served and not served. Thus, this is an identifiable area where gas and electric reliability may be improved through enhanced communication.

C. Reliability

The OMS has some concerns with future reliability of the natural gas and electric infrastructure if unexpected levels of retirement of coal-fired generation units occur. One issue is the question of whether available capacity on interstate pipelines will be sufficient to cover an

increased dependence upon natural gas for electric generation. A second issue is the location and amount of natural gas storage available, which will be increasingly critical to provide capacity for gas fired generation. Gas Storage is important to support electric generation during winter gas peaking conditions when gas is also needed for heating and perhaps throughout the year as well. A third issue is the potential to lose gas supply for generation due to an electric outage that affects the delivery of the gas supply. It may be useful for MISO gas fired generator customers and regulatory bodies to work with interstate pipelines in the region to identify what infrastructure currently exists and what may be needed to ensure electric system reliability in the future, which can be facilitated through forward planning.

For the immediate future, pipelines need to be in communication with the RTOs during periods of high gas demand. If gas flows are already high on certain gas lines, procedures are typically in place to notify affected customers. These periods of high gas demand should be communicated to the RTOs to minimize electric outages should a sudden demand for gas occur due to electric system issue such as transmission outages, or changes in anticipated generation.

It is reasonable to assume that interruptible pipeline capacity may be curtailed during peak gas periods when demand for gas service is high. Pipelines are generally constructed based on firm contractual commitments. However, these commitments change over time. Since it appears that much of the MISO regional pipeline capacity is near full in the winter, it then becomes important to evaluate the possibility of interruptions to interruptible customers. As already noted, without an alternate source of fuel for units operating on interruptible gas supply contracts, the electric grid can be impacted by contingencies and curtailments of the fuel supply on the pipeline. The potential retirement of 4.3 GW of generation in the MISO region could increase this risk.

In addition to full pipeline capacity during winter months, analysis shows that natural gas storage in the MISO Region may be at or near capacity, too. It appears that most storage is owned and operated by nearby pipelines or a nearby utility. Natural gas fired electric generation, natural gas heating loads and long haul capacity rely significantly on storage making storage services useful to ensure firm delivery during the winter months. Storage services may also help mitigate price volatility and balance variations in demand. As previously noted, availability of natural gas storage facilities within the MISO Region will be important to ensure firm capacity

deliverability for electric generation and gas utility customers. Unfortunately, the issue of storage siting is complicated because some areas of the MISO footprint are not amenable to the development of storage due to economics and geological conditions.

Independent of tariffs there is some flexibility with pipelines, regarding storage services, which should be worth taking the time to explore. There is operational flexibility with parking and loan services and gas injections into storage during the summer peak months and shoulder months for power. This injection time is often referred to as a 1/7th fill because there are seven months of injections to fill storage, prior to a gas withdrawal season.

Participants engaged in gas and electric coordination discussions have suggested that consideration be given to require firm gas supply via firm pipeline transportation for resource adequacy credit. While such a requirement may be overly restrictive and discriminatory, it demonstrates the concerns that industry participants have because resource adequacy requirements produce a planning reserve requirement that is based on historical statistics. Where a significant change is expected, e.g., additional reliance on gas fired generation, re-examination of existing practices may be in order. The OMS states take their resource adequacy responsibility seriously and continue to do our best to ensure that adequate electric resources and fuel are available for meeting planning reserve targets. As such, the OMS does not believe the responsibility for resource adequacy requirements should fall to the RTO, and urges the FERC to recognize the many factors that states consider when addressing this reliability issues.

III. CONCLUSION

There is no one size fits all for the various states regarding reliability and the amount of gas each state needs will change with time. Consideration of the overall fuel mix, gas pipeline capacity, the electric transmission import capabilities, and reliability requirements shift with time. Coordination within the reliability regions remains an integral planning function for each state as its needs change in the future.

The first and lowest cost steps to address reliability should be identifying and resolving issues that lay within the flexible design of pipeline contracts, as well as with coordinated scheduling between pipeline nominations and electric dispatch notifications. In addition to the suggested changes with market rules and operations, the next step is to explore the availability

and use of back-up fuels. Not all generators require firm capacity for natural gas, and consideration should be given to the reliability of back-up fuel sources. Next, the development of gas and electric infrastructure is long-term and necessary; however, economic issues arise when identifying infrastructure build outs to improve reliability between the systems. In the electric industry, the general approach to building new facilities is to forecast load growth, show the need and build the transmission system to meet reliability standards with the capacity to serve the customer demand. In the gas industry, new pipelines are generally not developed until there is a need for more capacity *and* customers have committed via contract to relatively long term financial commitments for firm capacity. It is this situation that gives rise to the need for much greater collaboration in order to grasp the economics of how the reliability needs are going to be met.

The OMS suggests emphasis be placed on developing mechanisms and processes that can address the unique concerns of each industry and attain the desired reliability across the two industries in the most cost effective manner. It's going to require give and take from both the natural gas and electric sectors in order to make this happen. Working together within the reliability regions and beyond will help ensure the best results as our needs continue to evolve. FERC's role here is to encourage RTO tariff and business practice changes, which are prudent, cost-effective and provide improved coordination between both the gas and electric sectors.

Respectfully Submitted,

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