Problem / Opportunity Statement
With increasing reliance on natural gas-fired generation, PJM system reliability can be impacted by generator unavailability caused by natural gas system delivery limitations. PJM has recently experienced two events that impacted generator availability locally. While not pervasive, these events could point to the possibility of future reliability issues. If these reliability issues are a result of inadequate gas deliverability or dual fuel capability, what should be done to address these problems?

Under current PJM market rules, generators are unable to reflect the cost of firm gas transportation in energy market offers as stated in Manual 15, and the PJM Tariff does not explicitly address the ability to reflect the costs of firm gas transportation in Market Seller Offer Caps in RPM. Moreover, given the current timing of the clearing of PJM’s Energy Markets, generators could not submit timely gas nominations with the knowledge of their Day-ahead Energy Market commitments even in the cases when they hold firm gas transportation, thereby eroding the value of holding firm gas transportation.

In contrast, costs of back-up fuel held on-site can be reflected in cost-based energy market offers, but these offers, and by extension a commitment to the back-up fuel, must be made Day-ahead and cannot be changed in real-time operation to reflect changing fuel supply conditions. The fixed costs of maintaining dual fuel capability can be reflected in the Avoidable Cost Rate that goes into determining the Market Seller Offer Caps. However, dual fuel capability may increasingly become less tenable due to increasing environmental air permit restrictions that would significantly limit the number of hours a generator could run on back-up fuel.

Consequently, generators, because they cannot reflect the costs of firm gas transportation, have little incentive to take firm gas transportation service from gas pipelines that may enhance generator availability on peak gas demand days even in the presence of dual fuel capability. Moreover, as fuel supply conditions change between day-ahead commitments and real-time operation, generators are unable to reflect changing costs in their energy market offers which may lead generators to take forced outages rather than operate at a loss further eroding generator availability on peak days.

What should be done to PJM market rules, if anything, to fully reflect the costs of firm gas transportation to allow generators to evaluate the trade-offs between firm transportation and dual fuel capability to enhance or ensure generator availability? What changes can be made to the timing of PJM Day-ahead market clearing to allow generators to know their commitments prior to the submission of timely gas nominations? What should be done to PJM market rules, if anything, to allow changes to energy market offers to reflect fuel supply and price changes between day-ahead commitments and real-time operation and align these with intra-day nomination schedules?

Issue Source
The FERC Order issued on November 15, 2012 in Docket No. AD12-12-000, directing further conferences and reports on the Coordination between Natural Gas and Electricity Markets, in which it noted “regional stakeholder processes have been initiated in some regions with engagement of electric and natural gas market participants and state regulators to look at both industries’ future needs.” FERC’s report on last year’s gas/electric technical conferences confirmed regional differences, but also found a few common areas to focus on regarding coordination, scheduling, electric resource adequacy, and reliability. FERC conducted another conference in January that focused on ways to enhance communication between the industries and will conduct an additional conference in April on how to design the most efficient scheduling systems for both industries. FERC is requiring regional power market operators to appear before the Commission in May and October of this year, to detail their efforts and progress in improving coordination between the industries. FERC is also interested in any natural gas transportation concerns that arise during the winter heating season and any fuel-related generator outages during the winter and spring.

On March 28, 2013, the Markets and Reliability Committee (MRC) approved the creation of the Gas Electric Senior Task Force (GESTF) to identify and examine potential issues associated with the increased dependency of the PJM bulk power system on the natural gas system.
Key Work Activities

1. Provide education as it relates to offers in both PJM’s capacity and energy markets.
2. Provide education on the rules covering what costs can be recovered in both PJM’s capacity and energy market.
3. Provide education on the assessment of any additional costs for any potential rule/policy changes to load.
4. Provide education on the possible operational issues that may arise with increased reliance on natural gas.
5. Provide education on the current issues created by the timing of the gas day and the DA energy market.
6. Define the nature of the potential local reliability issues.
7. If issues are identified, implement the Consensus Based Issue Resolution process to assess the need for market rule changes.

Expected Overall Duration of Work

This work effort is to be completed during the 2014 calendar year.

Decision-Making Method

The objective is to use the Tier 1, consensus-based, decision-making methodology (unanimity) on a single proposal (preferred default option), or Tier 2, multiple alternatives.