Natural Gas-Electric System Interface Issues

Problem/Opportunity Statement

Growing Dependency on Natural Gas  Over the past 5 years PJM has witnessed the share of total energy provided by natural gas resources rise from 7 percent in 2007 to 20 percent in 2012 as natural gas prices declined in the PJM region associated with the development of the Marcellus shale gas reserves. Furthermore, the actual and announced retirement of nearly 18,000 MW of coal-fired generation due to forthcoming environmental rules and economic conditions, is resulting in this capacity being replaced in part by new natural gas-fueled resources. Finally, with the combination of lower natural gas prices projected out through 2020 and the retirement of coal resources, the amount of gas-fired generation in the interconnection queue has doubled between 2010 and 2012. All of these factors point to the continued growth in natural gas resources in meeting energy and reliability needs of PJM for the foreseeable future.

Maintaining Reliability and Market Efficiency  PJM is well positioned to maintain reliability of the bulk electric grid and the efficiency of electricity markets during this unprecedented transition of generation resources. Our location over the Marcellus and Utica shale gas plays, the large amount of interstate pipelines and storage facilities within our footprint, the geographic diversity of gas-fired generation, as well as the forward capacity market allow PJM to minimize potential gas-electric interdependency issues. Additionally, PJM has been improving communication and coordination with gas pipelines through information sharing, cross training of dispatch personnel, and increased monitoring of conditions that could impact natural gas-fired generation operations. This positioning provides the opportunity to thoroughly evaluate and address potential gas-electric issues.

Addressing Gas-Electric Issues  Natural gas-fired generators, unlike oil-, coal- or nuclear-fueled generators, operate on a “just-in-time-inventory” principle with gas purchases and the scheduling of deliveries and transportation on the interstate gas pipeline system being handled shortly before actual real-time operations. To date, there have been no reliability issues due to the inability of natural gas-fired resources to secure transportation and delivery of gas. However, looking forward, with the growing reliance on gas-fired resources, PJM seeks to engage a stakeholder group to identify and examine issues associated with the increased dependency of the PJM bulk power system on the natural gas system, and to propose resolutions to the issues where appropriate so that PJM can ensure reliability in short-term operations and maintain resource adequacy through system peaks in the most efficient manner possible.

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.

**Stakeholder Group Assignment**

Creation of the Gas-Electric Senior Task Force (GESTF), which will report to the Markets and Reliability Committee (MRC).

**Key Work Activities**

The initial work activity that will be handled by the Gas-Electric Senior Task Force (GESTF) is education, exploration and prioritization of gas-electric issues. Once prioritized, the group will develop specific problem statements for each issue, in order of greatest importance, and seek approval from the MRC. If approved, the group will work to develop potential solutions to those issues.

**Expected Deliverables**

The Gas-Electric Senior Task Force (GESTF) will provide a prioritized list of issues that can and need to be addressed by PJM.

**Expected Overall Duration of Work**

The work of this group is expected to last through the integration of the significant amount of new gas-fired generating capacity, which is currently forecast through the 16/17 delivery year.

**Decision-Making Method**

Stakeholders will seek Tier 1, consensus (unanimity) on a single proposal (preferred default option), or if not able to reach consensus, Tier 2 multiple alternatives.