

Natural Gas & Electric Generation

Online “Literature” Review

January 2012

1. NERC Special Assessment on Gas and Electric Interdependency

www.nerc.com/files/Gas_Electric_Interdependencies_Phase_I.pdf

2011 Report providing overview of the gas industry, including history, infrastructure, supply and demand, and regional differences. Gives a primer on issues confronting the gas/electric interface, including system planning, wind generation, fuel switching, communications, and gas day/electric day differences. *December 2011*

2. Comments of the Natural Gas Supply Association to FERC Regarding Integration of Variable Resources

www.ngsa.org/Assets/ngsa_pipeline_noms.rm10_11.2011.pdf

Addresses the possibility for the need to reconfigure nomination scheduling in gas delivery to electric generators. *November 2011*

3. FERC Report on Outages and Curtailments During the SW Cold Weather Event of Feb. 2011

www.nerc.com/files/SW_Cold_Weather_Event_Final_Report.pdf

Describes the events leading up to and during the week-long outages in Texas and New Mexico. Provides causes for the event, including lack of winterization, lack of priority given to gas-fired generators by gas operators, and lack of priority given to gas pipeline infrastructure by electric operators. *August 2011*

4. Firming Renewable Electric Power Generators: Opportunities and Challenges for Natural Gas Pipelines

www.ingaa.org/11885/Reports/12751.aspx

The increased use of renewable electric power generation, particularly wind, will require electric power systems to provide back-up power to firm the generation from these intermittent sources of electricity. Natural gas-fired generation is a logical, low-cost choice for providing this back-up firming capability. This study evaluates the implications of the increased use of natural gas-fired generation for firming renewable resources for natural gas transportation infrastructure planning and pricing. This study provides a systematic review of the issues in order to inform policy makers and other stakeholders about the operational and regulatory issues raised by deploying significant natural gas fired generators to back-up intermittent power sources. *March 2011*

5. Natural Gas in a Smart Energy Future

www.ingaa.org/11885/Reports/12777.aspx

This white paper is the result of industry-wide support for the development of a compelling vision of a smart energy infrastructure integrating natural gas with electricity from multiple sources, including renewables, resulting in what we describe as a “smart energy future.” The vision includes seamless communication and data management between the electric and natural gas infrastructures expanding the concept of a smart electric grid to an energy infrastructure that can enable a smart energy future. This paper also identifies key tools and steps needed in order to achieve the vision in view of policy, regulatory, and technology challenges and proposes a framework to support discussions between natural gas companies, electric companies, regulators, policy makers and other stakeholders. *January 2011*

Natural Gas & Electric Generation

Online “Literature” Review

January 2012

6. Florida Reliability Coordinating Council Communication Protocols

<https://www.frcc.com/handbook/Shared%20Documents/EOP%20-%20Emergency%20Preparedness%20and%20Operations/FRCC%20Communications%20Protocols%20102207.pdf>

Lays out a procedure for establishing and maintaining communication between the gas pipeline operator, power plant operator, and balancing authority under extreme fuel supply conditions in Florida.

7. Memorandum of Understanding among Northeast ISO's and Transmission Providers to Coordinate Gas/Electric Interdependency

[pjm.com/documents/agreements/~media/documents/agreements/20050613-gas-mou-questions.ashx](http://pjm.com/documents/agreements/~/media/documents/agreements/20050613-gas-mou-questions.ashx)

Brief memo pledging to share information and coordinate planning and operations with reference to gas supply. Establishes a committee with reps from all parties to implement the agreement. Explores possibility of joint operating procedures during times of emergency. *June 2005*

8. Report of the Gas/Electricity Interdependency Task Force of NERC

www.nerc.com/docs/docs/pubs/Gas_Electricity_Interdependencies_and_Recommendations.pdf

2004 report on the differences between pipeline planning and electric planning, as well as the generally weak communication between the two groups. Makes seven recommendations to include natural gas fuel supply in NERC's regional assessments, reliability standards, and contingencies. Also recommends increased coordination and communication between gas and electric operators. *June 2004*

9. National Regulatory Research Institute: Increased Dependence on Natural Gas for Electric Generation

www.hks.harvard.edu/hepg/Papers/Costello.NRRI.nat.gas.elec.gen.Apr.04.pdf

Summarizes issues of gas supply from the perspective of both infrastructure and policy. Addresses economic motivations of interruptible demand gas supply contracts with generators. Summarizes major studies already done on the issue in the northeast, California, and by NERC. Proposes that the onus is on system operators to take the gas supply issue into account when measuring system reliability and to take action if necessary. Suggests that more drastic actions such as requiring generators to be dual-fuel or requiring them to have firm contracts for gas supply would drive prices too high to be feasible. *April 2004*

10. ISO/RTO Council Comments to NAESB: Request for the Creation of a Standard Energy Day

www.ieso.ca/imoweb/pubs/ircp/imo/ISO-RTO_Comment-NAESB_Standardized_Energy_Day.pdf

Addresses the impact that the standard gas day of 9 AM to 9 AM CST has on the electric power market. The disparate timelines of gas and power schedules caused problems during the New England cold snap of 2004. Proposes that the gas industry switch to a midnight to midnight day to more closely match the electric industry, or that they at least match timelines during extreme events to aid in communication. *Spring 2004*