

Summary of Testimony of FERC Commissioner Philip D. Moeller

**Before the U.S. House of Representatives
Committee on Energy and Commerce,
Subcommittee on Energy and Power**

Regarding Coordination Between the Gas and Electric Industries

March 19, 2013

Coordination of the natural gas and electric industries is among the most pressing energy issues we face as a nation, and I have been concerned about our increased reliance on natural gas to produce electricity. This recent and dramatic shift to natural gas as the preferred fuel of electric generators is the result of several factors including: (1) the fact that it is easier to site and construct natural gas-fired generating plants; (2) there has been a shift away from building new coal-fired plants due to more stringent air quality regulations; and (3) there has been a substantial increase in supplies of less expensive natural gas supplies as a result of new supply sources such as shale gas.

After a several high-profile events involving disruptions to the electric and natural gas systems, the FERC has initiated a number of proceedings and has convened numerous conferences to determine the causes of communication problems as well as possible solutions to improve coordination between these two distinct, yet increasingly integrated, industries. The challenges are serious, very real, and somewhat urgent, especially in New England and the Midwest, and the FERC is currently working hard to improve coordination between these industries.

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Chairman Whitfield, Ranking Member Rush, and members of the Subcommittee, thank you for the invitation to testify on our efforts to address the challenges of coordinating the functioning of the natural gas and electric markets. My name is Philip D. Moeller, and I serve as one of five sitting commissioners at the Federal Energy Regulatory Commission (FERC). Thank you for the opportunity to testify this morning, and thank you for the attention you are giving this issue.

Coordination of the natural gas and electric industries is among the most pressing energy issues we face as a nation, and your highlighting the issue helps us to stay focused on finding solutions to the challenges we face. I have been concerned for several years about our increased reliance on natural gas to produce electricity. I do not contend that this is a bad trend, but rather one that must be managed deftly to protect citizens so as to avoid supply disruptions and to maintain the reliability of the nation's production and supply of natural gas and especially electricity.

Although the most efficient use of natural gas is direct usage – especially space heating and water heating – as a nation, we are continuing a significant trend towards generating greater amounts of electricity from natural gas. I ascribe five major reasons for this trend: (1) it is easier to site and construct generating plants that burn natural gas; (2) even though expansion of the electric transmission grid is often more efficient and less expensive than building new generating plants, it has become increasingly difficult to construct electric transmission lines in this nation; (3) as the nation expands the deployment of intermittent renewable sources of electricity – especially wind and solar – traditional baseload generation will be needed to “firm” these renewable resources when they are not available. Gas generation is often used as the firming resource since it can quickly respond to sudden output fluctuations by renewable generation sources; (4) a suite of air regulations imposed by the Environmental Protection Agency will result in a significant amount of coal generation either being retired or retrofitted; and (5) lower natural gas prices have resulted largely from new supplies extracted using relatively new technological advances in horizontal drilling and the use of hydraulic fracturing.

Regarding this latter point, I was honored and privileged to serve on the Coordinating Subcommittee of the National Petroleum Council’s two-year study released in September 2011 that focused on the potential production and supply of North American oil and gas resources through 2030. I continue to recommend the study, titled “Prudent Development” as it documents the stunningly enormous oil

and gas resources that we have in North America. The size of this resource base was generally unrealized even a few years ago, and the aforementioned technological breakthroughs are now allowing for extracting these resources. This has had profound impacts for our nation's economy in addition to worldwide geopolitical ramifications. As a society we may choose to limit these techniques for resource extraction. However, technological advances will only allow us to find and potentially extract additional resources. Absent major restrictions on these new technologies, we appear to be facing a sustained period of abundant supplies of natural gas in North America.

Notwithstanding the dramatic increase in domestic natural gas supply over the last several years, areas in our nation have already experienced reliability challenges arising from the convergence of the natural gas and electricity industries. Well known is the 2004 event in New England that my colleague, Commissioner LaFleur, experienced first hand. Among others, some examples include rolling blackouts in the Denver area in 2006, and a near catastrophe in my home of the Pacific Northwest in December 2009 when quick action limited outages to several thousand natural gas customers.

The event that especially focused my attention on this issue was the Southwest Outage of February 2011 that impacted customers in Texas, New Mexico, and Arizona. Although unseasonably cold weather greatly contributed to this event, supply challenges on the natural gas side caused outages on the electric side, and outages on the electric side caused disruptions in the gas transportation

sector. Millions of people (mostly in Texas) lost electricity, and thousands of customers (mostly in New Mexico) lost natural gas service at a time of very cold weather.

In response to these widespread outages, FERC and the North American Electric Reliability Corporation (NERC) conducted a joint study of the causes of the event. The ensuing report that was issued in August 2011 thoroughly described the event and included 32 recommendations for industry and regulators in an attempt to avoid a similar occurrence.

I highly recommend this report for you and your staff. It is not only well written but also includes primers on the gas industry and electric industry. The report highlights the differences between the two industries. Each industry has fundamental physical differences (for example, the near-instant speed of electricity moving across transmission lines compared with the relatively slow speed of moving gas molecules) and the different industries have their own language and style. Yet the industries are converging and the need for each sector to understand the other is growing. Energy professionals typically have been involved with the electric industry or the natural gas industry but rarely both industries in a career.

Growing increasingly concerned about the lack of attention to the convergence issue (especially related to industry communications during the winter heating season) in February 2012 I posed a series of 11 questions to the public on the reliability ramifications of these trends. These detailed questions fell into three broad areas: (1) in the short term, what needs to be done to assure that

entities better communicate during potential supply emergencies; (2) in the medium term, do policies need to change to better align the electric and natural gas trading markets; and (3) are investment signals adequate so that additional energy infrastructure—especially additional natural gas pipelines—can be deployed to meet this growing demand?

I am grateful that FERC Chairman Wellinghoff made the series of questions, along with several others added by Commissioner LaFleur an official FERC proceeding in Docket No. AD12-12-000. In addition, our chairman has dedicated significant staff resources to this effort which has contributed momentum to address this issue.

FERC received over 70 responses to the list of questions, although most filings did not address every question posed. After reviewing the responses, the Commission moved forward with a series of five technical conferences in August 2012 held in Washington DC, Boston, Portland, Oregon and St. Louis. These conferences focused on the regional differences of the challenges posed and the potential solutions to these challenges.

After reviewing the extensive comments made during these region-specific technical conferences, the Commission scheduled another series of technical conferences on specific subject areas to discuss possible solutions and next steps. The first of these was held on February 13, 2013 on the subject of improving communications between the natural gas and electric system operators. The

second is scheduled for April 25, 2013 on the subject of the major differences between the gas trading day and the electric trading day and possible ways to harmonize or better align these days. Our third is scheduled for May 16, 2013 when the Commission will hear from the operators of the organized electric wholesale markets on their respective systems' performances during the 2012-2013 Winter season.

As stated earlier, solutions to the problems arising from the convergence of the gas and electric industries have varying time frames over the next several years. With only a few exceptions, most of the nation has had two consecutive unseasonably warm winters. My fear is that this warmer weather has masked system vulnerabilities that will be exposed when more normal colder weather patterns occur. My goal heading into next winter is to have additional confidence that natural gas and electric system operators in each region have widely disseminated and understood communication protocols in the event of extreme weather that results in greater system demands. It's not clear yet if formal Commission action will be needed to effectuate these communications channels.

Next we need to address the differences in the gas and electric scheduling and trading days and whether changes would result in greater efficiency and increased reliability. Until now, the industries largely operated independently of each other, and if problems arose during a particular day, there was typically sufficient pipeline capacity available to address any concerns. However that level of flexibility is not as common as more power generators rely on natural gas-fired

generation as well as non-firm pipeline transportation contracts to supply their needs.

And finally, longer term we will need to consider whether the correct market rules, investment signals and environmental policies are in place to assure that adequate natural gas infrastructure exists to meet this growing demand. During this period, the agency will continue to conduct outreach, pursue solutions, and consider next steps as we identify these longer term issues affecting the natural gas and power industries.

Ultimately, the challenges we face with gas and electric coordination is a good problem to deal with as it's partially the result of abundant domestic gas resources. But the challenges are serious, very real, and somewhat urgent, especially in New England and the Midwest. Indeed, some in the industry believe nothing short of a major blackout will provide sufficient motivation to the various stakeholders to solve the problems facing us. We need the energy industry, regulators, and legislators focused on the range of solutions necessary in the near term, medium term and longer term.

Again, I thank you for the chance to testify on this subject and the attention you are giving it. I look forward to working with you in the future and to answering any questions.