



March 5, 2013

Valeria Annibali
Federal Energy Regulatory Commission
888 1st Street NE
Washington DC 20426

Dear Valeria,

The Pacific Northwest Utilities Conference Committee (PNUCC) and the Northwest Gas Association appreciate the Federal Energy Regulatory Commission's (FERC) attention to the suite of issues relating to natural gas and electric system coordination. We are especially gratified by FERC's particular interest in our region's gas-power coordination work.

As you are aware, we committed to providing FERC with periodic updates on our efforts here in the Pacific Northwest. To that end, we convey the attached report summarizing our efforts over the last few years, preceding FERC Docket AD12-12.

To summarize, our activities have improved communications between our respective industries. These efforts are also yielding a better understanding of the issues and challenges confronting each of our industries in the context of increasing interdependencies.

Of particular note is the Power and Natural Gas Planning Task Force (Task Force). Facilitated by the PNUCC, the Task Force consists of the mid and long-range planning experts from the power and gas sectors including the major distribution and transmission operators in the region, both public and private. In addition to providing for more informed planning, this effort is a great forum for developing relationships that improve ongoing communications.

Another highlight is the revitalization and recasting of the Northwest Mutual Assistance Agreement (NMAA). NMAA is designed to be a tool for communicating about and addressing system reliability issues during disruptions or other periods of significant stress. NMAA includes the balancing authorities and transmission operators, most of the major electric and gas distributors and the gas pipeline companies that serve the Pacific Northwest. NMAA has purchased equipment that allows for immediate communications between NMAA participants during a system event, and will conduct periodic exercises to test the system and operating assumptions.

To conclude, in the Northwest we are making real strides in the three areas that FERC is most interested in: ongoing communications between the two energy sectors, urgent communications to address immediate system reliability issues, and more fully informed mid- and long-term planning. Please don't hesitate to contact either of us with any questions you may have.

Sincerely,

Handwritten signature of Dan Kirschner in blue ink.

Dan Kirschner
NWGA, Executive Director

Handwritten signature of Dick Adams in blue ink.

Dick Adams
PNUCC, Executive Director

cc: Caroline Daly and Jacob Lucas, FERC Staff
Northwest Power and Natural Gas Planning Task Force

Quarterly Report to FERC

Power and Natural Gas Planning Task Force

March 2013



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Background

Electric power and natural gas are two distinct but interdependent industries in the United States. One-time competitors for energy load, electric power and natural gas have become increasingly interconnected in recent years for a number of reasons, including regulation, economics, and the environment.

A stark reminder of this interdependence occurred in February 2011 within the boundaries of the Electric Reliability Council of Texas. An unusual combination of record cold temperatures and power plant failures led to rolling blackouts across Texas. The blackouts shut down key compressor stations that keep gas moving through the pipelines. Without adequate pipeline pressure, gas-fired power plants were left without an adequate fuel supply, which caused more power outages. As a result of this colossal system failure, FERC joined others in launching an investigation to examine the interdependence between electric power and natural gas.

While the Northwest has avoided such a crisis, the power and natural gas connection here is gaining strength. Most of the incremental demand for natural gas over the next 20 years is expected to come from new gas-fired power plants, which are on the drawing boards to replace base-load coal-fired generation and take up the slack in firming up Variable Energy Resources – mainly wind generation.

Leaders in the Northwest's electric power and natural gas industries joined forces in early 2011 to assess their growing interdependence and to become better acquainted with practices and issues that could affect the region's energy supply. They have looked to their trade associations, [Pacific Northwest Utilities Conference Committee](#) (PNUCC) and the [Northwest Gas Association](#) (NWGA), to coordinate these efforts. The industries' desire to work jointly to understand their intersection and interdependence was the impetus for the activities described in this report.

Joint Efforts Take Root in 2011

Natural Gas & Electricity Workshop

PNUCC and the NWGA held a joint workshop in May 2011 that brought together the region's power and natural gas planners along with system operators to talk about how each foresees its role over the next five to 20 years. The purpose was to increase mutual understanding about the industries. The agenda and presentations from the workshop are available at www.pnucc.org/system-planning/natural-gas-for-electric-power/natural-gas-and-electric-power-industries-workshop-ma.

One thing was immediately clear: like the rest of the nation, Northwest utilities expect their demand for natural gas will grow to fuel base-load plants that provide 24/7 power, peaking units, and to firm up wind power. To meet the demands of intermittent renewable resources, power producers are counting on the ability to draw on large amounts of natural gas on a 24-hour basis.

But that did not necessarily match the reality electric utilities heard from gas pipeline operators. Because of the relatively slow speed of gas transportation (between 10 and 20 mph) relative to electricity's near lightning speed, it is very difficult for the gas industry to accommodate large-scale changes in gas flows within the day. It would take significant gas storage infrastructure and firm reservations on existing or new pipelines to provide that kind of service to the power industry.

Gas Scheduling Discussion

PNUCC saw the need for a follow-up discussion on how the natural gas industry schedules its deliveries to customers. At PNUCC's July 2011 System Planning Committee meeting, members pointed out how much recent national attention was being given to the use of natural gas for electricity generation. The issues were clearly capturing the region's attention.

A follow-up discussion hosted by PNUCC focused on the details of the electric power and natural gas scheduling days. Gas traders and schedulers described the steps in a typical trading day. The audience gained a better understanding of operational issues associated with intraday natural gas trading in the Northwest. It was clear that the travel rate of gas through a pipeline and the gas scheduling protocols present a challenge for delivering an adequate fuel supply to serve large-scale power generation needs in the region.

As a result of the discussion and presentations, group members agreed an analysis was needed to quantify the potential future draw on the gas system. This would help clarify whether structural changes are necessary to provide the needed gas supply and operating flexibility. Knowing the potential demand, gas producers and pipeline operators would be able to assess how much intraday flexibility they could provide.

2012 Plugging In to Natural Gas Conference

A joint industry conference, sponsored by Bonneville Power Administration (BPA), NWGA, and PNUCC, took place in January 2012. The conference provided an opportunity for national and regional leaders to meet and discuss issues and learn more about the convergence of these two industries. Specifically, the focus of the day-long event was to:

- Raise the visibility of the gas/power reliability relationship.
- Identify cross-industry impacts and opportunities for maintaining a reliable, affordable energy infrastructure and services.
- Build on recent research efforts.

The agenda, presentation, and other conference materials are available at www.pnucc.org/system-planning/natural-gas-for-electric-power/plugging-natural-gas-2012-energy-summit-january-25-20.

The region's Power & Natural Gas Planning Task Force was an outgrowth of this conference.

Power & Natural Gas Planning Task Force

The Northwest currently has over 8,000 MW of gas-fired turbine capacity, and a significant amount of gas-fired generation is planned over the next decade. In addition, almost 8,000 MW of wind generation has been built in the region. The intermittent and unpredictable nature of wind generation poses a new set of challenges in daily system operations. Additional peaking capacity is likely to be needed in the Northwest to provide hourly balancing services – beyond what the hydro system can supply – for wind generation. Much of that capacity is expected to be met with natural gas-fired generation. Some electric utilities are already seeing peak demand grow and are building natural gas-fired capacity to meet peak, as well as base-load energy needs.

Purpose

PNUCC and the NWGA established the Power & Natural Gas Planning Task Force in March 2012 to investigate the growing interdependence of natural gas and electricity generation and to promote information sharing on the issues in the Northwest. The task force, made up of experts from the gas and electricity industries, meets bimonthly to explore and address policy, planning, and reliability challenges.

The task force meetings have created an opportunity to increase understanding about the functions and practices of both industries. The meeting agendas and presentations are available at www.pnucc.org/meetings/power-and-natural-gas-taskforce-meetings. The task force has supported the development of the *Natural Gas-Electricity Primer* and the *Role of Natural Gas White Paper*, and offered guidance on an I-5 Corridor analysis described below.

Participants

The list of task force participants varies from meeting to meeting. The criterion for participation is an interest in working with industry colleagues on issues of joint concern and a desire to know more about these issues. The task force directs its own activities, which are reported on to the PNUCC and NWGA boards of directors and others, depending on the issue. The following is a list of regular participants:

Avista (electric & natural gas)	NW Power & Conservation Council staff
BPA - Power	Pend Oreille PUD
BPA - Transmission	PNUCC staff
Clark Public Utilities	Portland General Electric
ColumbiaGrid	Puget Sound Energy (electric & natural gas)
PacifiCorp	Seattle City Light
NW Gas Association staff	Tacoma Power
NW Industrial Gas Users	TransCanada Gas Transmission NW
NW Natural	Williams NW Pipeline

Information Sharing Forum

Task force meetings are made up of pre-planned presentations and updates on various aspects of the electric power and natural gas industries. They are designed to promote understanding and an appreciation for the issues each industry confronts in planning and operations. The following are examples of the topics at past meetings:

- Review of local natural gas distribution company planning
- Review of natural gas system modeling tools
- Review of Bonneville Power Administration transmission planning
- Review of electricity and natural gas long-range planning
 - o Specific utility (gas and electricity use)
 - o Electric power regional perspective, PNUCC's [Northwest Regional Forecast](#)
 - o Natural gas regional perspective, NWGA's [Natural Gas Outlook](#)
- Overview of Northwest Power and Conservation Council's natural gas price forecast
- Discussion of FERC Order 587-V natural gas-electricity coordination and communication
- Update on Western Interstate Energy Board natural gas efforts
- Update on ColumbiaGrid Transmission Study

Natural Gas-Electricity Primer

In August 2012, the Power and Natural Gas Planning Task Force released its first joint paper, the [Natural Gas-Electricity Primer](#). The primer was written as a background piece to facilitate communication. It outlines key issues surrounding the growing interdependence of natural gas and electricity in the region and provides fundamental information about the two industries.

Role of Natural Gas – White Paper

BPA drafted a white paper, [The Role of Natural Gas in the Northwest’s Electric Power Supply](#), that was finalized in August 2012. The paper discusses the region’s shift toward gas-fueled electricity generation and provides an overview of several presentations from the Northwest electricity and natural gas summit held in early 2012.

I-5 Corridor Analyses 2011-2013

Quantifying Natural Gas Demand

In July and August 2011, a small group spearheaded by PNUCC’s System Planning Committee investigated three detailed scenarios to determine the natural gas supply needed to meet base-load and peak electricity generation, plus the generation to integrate intermittent wind generation. The three scenarios were:

July 6th, 2011 – a day when electricity supply is tight in the afternoon and some gas turbines would not operate when called upon.

July 27, 2011 – a day when BPA was having problems on its transmission system and cut schedules into the Puget Sound area.

December 9, 2009 – a day when gas supply was an issue and curtailing gas-fired electric generation was considered.

These discussions about the three specific dates helped define the broader analysis in the Interstate-5 corridor. No formal report was produced.

Assessing Infrastructure Adequacy

In September 2012, the Power & Natural Gas Planning Task Force undertook an effort to answer the following question: Is the I-5 corridor natural gas delivery infrastructure adequate to meet the needs of local distribution companies and power generators?

Using a regional production cost model, analysts simulated one year of hourly power generation to meet forecasts for the year 2015 and came up with a range of daily and hourly natural gas volumes needed for power generation. The rates of change were examined for both TransCanada GTN and Williams Northwest pipelines.

The results led the group to recommend further analysis. A Phase 1 report is currently being drafted to document the analysis, describe what was learned, and identify next steps. The Phase 1 report will be completed in the next few months.

Transmission System Reliability in the Corridor

In September 2012, ColumbiaGrid began a study of transmission system reliability issues that could arise if the natural gas supply to generators in the I-5 corridor were limited. The first phase of the study investigated whether electric system reliability would be adequate during a total curtailment of natural gas to all power plants in the I-5 corridor. Only those natural gas plants capable of switching to an alternative fuel supply would remain in service. The study tests the ability of the transmission system to serve loads in the I-5 corridor with local generation curtailed and a greater dependence on resources outside of the area (e.g., the Columbia River hydro system).

The Gas-Electric Interdependencies Study Team released its third draft of the transmission system reliability study in December 2012. The Power and Natural Gas Planning Task Force reviewed the draft and provided comments and recommendations. Additional information on the ColumbiaGrid study can be found at www.columbiagrid.org/GasElectric-overview.cfm.

Northwest Mutual Assistance Agreement

The Northwest Mutual Assistance Agreement has been revitalized in recent years under the auspices of the Western Energy Institute. Puget Sound Energy has led an effort to develop an additional agreement among electric and gas utilities that defines the terms and conditions for voluntary cooperation and/or assistance in an emergency. Another function of the Northwest Mutual Assistance Agreement is to maintain and improve communication linkages between parties for emergency planning and incident response. The agreement does not, however, impose an obligation on the parties with regard to providing aid or assistance.

A copy of the September 2012 version of the Northwest Mutual Assistance Agreement is available [here](#).