# Winter 2013-2014 Operations and Market Performance in Regional Transmission Organizations and Independent System Operators
# Docket No. AD14-8-000

## TECHNICAL CONFERENCE
## April 1, 2014

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### Introduction

Thank you for the opportunity to speak to the Commission today. The Alliance for Cooperative Energy Services (ACES) is owned by 21 electric cooperatives who participate in the wholesale electric and gas markets in five RTOs and ISOs (PJM, MISO, SPP, ERCOT and CAISO). The ACES Members have supply portfolios but also serve load. Our members exist to provide affordable and reliable power to their member-consumers.

ACES was organized to conduct energy commodity transactions and manage the risks associated with the wholesale energy markets. ACES manages natural gas requirements and electric output for nearly 50,000 MW of peak load and supply requirements. Collectively, ACES Members own and operate portfolios of approximately 15,000 MW of natural gas generation with a daily peak fuel requirement of over 3 BCF/day. ACES does not speculate in the markets, rather we employ hedging and operational strategies to manage our members' electricity and natural gas market risks.

It's important to emphasize that the electric cooperatives we serve are not-for-profit load-serving entities whose purpose is to provide low cost and reliable electricity to their member-consumers. All costs associated with wholesale markets are ultimately paid by their member-consumers, so we are keenly aware and concerned with wholesale market issues that cause increased costs to end-users.

ACES understands that the top priority of an RTO/ISO is reliability, and we thoroughly appreciate the hard work and tough decisions the nation's RTO/ISOs had to make this winter to ensure reliability. ACES itself experienced firsthand numerous gas and electric operational, physical, and process challenges that had profound impacts on the performance of our Members' loads and generation fleet.

While from our perspective the challenges were greatest in the East, we observed varying degrees of impact all the way to California.

ACES Members experienced substantial financial losses and lost opportunities this winter in the MISO, SPP, ERCOT and PJM markets. It was virtually impossible to maintain normal bidding and cycling of generation resources during extreme cold temperatures while working within the existing scheduling confines of the gas and power marketplaces. These challenges were increased exponentially when trying to manage the scheduling conflicts of procuring reliable gas in response to reliability directives. From a load perspective, ACES observed in our Member's RTO/ISO invoices a significant increase in uplift charges, especially in PJM. These uplift charges cannot be hedged and will be paid by end use consumers.

Before addressing experiences and lessons learned, I want to first broadly emphasize three key overarching observations:

- First, there are both physical gas pipeline constraints and gas-power process issues that need to be addressed to deal with the increasing growth of natural gas-fired generation. The factors to consider include: 1) expanded gas pipeline capacity and non-pipeline physical infrastructure; 2) expanded service offerings by the pipelines; 3) alignment of the gas-power day, and 4) appropriate sequencing of pipeline scheduling and nominations, and RTO/ISO generation bidding and awarding processes.

- Second, the availability and reliability of the coal and nuclear generation fleet far exceeded that of natural gas fired, solar, and wind generation. That is a critical fact about generation performance during the period of extreme weather that cannot be overlooked. Moreover, current and potential future regulations, as well as certain market dynamics, will lead to new additional retirements of coal and nuclear generation. This, in turn, will expand the reliance on the demand of natural gas-fired generation, and will likely lead to both greater risk of electric reliability deficiencies and higher costs for consumers on future critical operating days.[1] Toward this end, ACES is appreciative of Commissioner Moeller's advance question on power plant retirements caused by EPA regulations. We will be addressing this request in our post-conference comments.

[1] http://www.nytimes.com/2014/03/11/business/energy-environment/coal-to-the-rescue-this-time.html?_r=0

- Third, this past winter highlighted clear challenges to ensuring future electric reliability. Until the gas pipeline and RTO/ISO operations and rules are consistent, the industry will struggle with providing reliable electricity to end-users during periods of extreme weather and significant generator outages.

**1. Experiences during the cold weather events: Describe experiences and observations during the cold weather events, the information that was available to assist in preparation, and the actions taken in real-time to respond.**

ACES members participate in wholesale markets to serve load and, as such, experienced tens of millions of dollars in financial harm this winter in the MISO, SPP, ERCOT, and PJM regions. Members experienced exceptionally high costs to serve load, as well as an unprecedented amount of RTO/ISO uplift charges from non-market activities. These are directly the result of gas and power physical constraints and process issues.

ACES was keenly aware of risks associated with extreme winter weather and we experienced several issues on extreme operating days as follows:

1. During an unusual weather event such as the polar vortex, it was exceptionally difficult to develop an accurate load forecast based upon inferences from historical comparable weather days. This was ACES' experience and it certainly applies to other market participants as well. When extrapolated across an RTO/ISO footprint, this difficulty in creating an accurate load forecast created a reliability issue in having to dispatch additional generation to manage these short-falls.
2. The overall difficulties in managing price volatility and risk in generation offers within the RTO/ISO scheduling rules, given the mismatch with the associated gas nomination cycles, were insurmountable and resulted in undue risk and excess cost.
3. On critical gas days, securing reliable gas to flow non-ratably was difficult, if not impossible. While buying gas for a ratable burn over 24 hours would increase reliability of flow, this greatly increased risk and cost to our members because these units were not called to operate for 24-hour periods and the excess cost for fuel in the hours the plants did not run would not be compensated.
4. Our members' generation plants were called at critical times, often outside the normal scheduling times, and directed to procure gas and operate for reliability, but gas was often not available to meet the directive.

5. Planning to offer gas-fired generation for the next morning peak was problematic since gas nominations for that period must occur two days in advance because of the well-known gas and power operating day mismatch. ACES' ability to procure reliable gas to run gas fired plants, even generating units served by firm transportation pipeline contract, was limited at best.
6. With extreme cold temperatures, generation resources experienced stopping and starting problems. When compounded across a large RTO/ISO footprint, these operational constraints posed a reliability issue that was difficult for the RTO/ISO to manage.
7. There was an inability to manage gas and deliverability risks and uncertainties in intraday offers because of scheduling limitations of the pipeline gas nomination cycles, and also because of the cost- prohibitive real time offer changes within an RTO/ISO.
8. At various times in some regions, ACES was unable to procure gas at any price.

The well-known mismatch between the gas and electric day and the risks in managing the inherent uncertainty of gas availability and RTO/ISO dispatch orders increased exponentially during this severe weather event. Differences in gas nomination periods and RTO/ISO generation dispatch orders further exacerbated the challenges of maintaining reliable power supply.

ACES worked closely with the various RTO operations staff and its members' generation operators to assure its members' units were available for reliability purposes. There was a clear departure from "normal" market-based operations, with some RTOs directing ACES to procure fuel in anticipation of critical peak periods outside of established timeframes for day-ahead bidding and clearing. And although ACES was well aware that normal RTO operating and settlement rules were unclear in such extreme circumstances, ACES followed RTO dispatch instructions based on reliability needs.

Additionally, in some areas, gas prices soared up to 20 times the monthly index price. Also, many pipelines enforced gas flow restrictions on many days requiring generation operators, including those with firm transportation, to acquire 24 hours of fuel over the gas day even though RTO/ISO-mandated run requirements were for shorter periods. At times gas transportation was not even available to generators with firm transportation unless it was nominated well before the generator knew if the RTO was going to dispatch the unit.

To summarize, risks that had been manageable during normal operations became unmanageable and ACES experienced the following specific circumstances in the various RTO/ISOs:

1. Gas was not available at any cost.
2. Gas was available but only at prices that caused generation costs that exceeded allowable RTO price caps.
3. RTOs instructed generators to run for reliability needs when gas was not available to meet the directive.
4. RTOs instructed generators to run for reliability needs and gas was procured; only to have unit dispatch canceled a few hours later.
5. Generators cleared to run in the day-ahead market only to find that gas prices soared once the RTO award was known at 4pm causing extensive losses.

Again, we want to emphasize that reliability is everyone's top priority. But current RTO rules are insufficient to address the catastrophic impact to an operator when gas prices are so high and gas availability is so uncertain. Maintaining RTO reliability dispatch directives with the prospect of losing millions from potential uncompensated fuel costs is very unsettling. These problems were clearly more prevalent in RTOs than non-RTO areas.

**2. Lessons learned: Explain the most important lesson(s) learned, particularly as relevant to regional electric market prices and performance, adequacy of infrastructure, fuel procurement, and fuel diversity.**

During a polar vortex weather event, the mismatch between the gas and electric day can have a severe impact on grid reliability and must be addressed as soon as practical. Both sides must be willing to move to align the gas day and electric day – not just move them closer together. Better sequencing of gas nomination and generation day-ahead dispatch award periods, and coordinated notification times to respond to both gas nomination and generation dispatch changes, are necessary as well.

For the first time in the history of our industry, the traditional symbiotic relationship between system operator and central dispatch during emergency operations became suspect. This is a relationship based on mutual trust and reliance. The RTO/ISO trusts the generator will respond to dispatch. The generator trusts the RTO/ISO will dispatch it if needed for reliability and will compensate at least its costs. This could lead to severe reliability issues for future

emergency events if this trust is eroded due to the lack of timely reimbursements of appropriately incurred costs.

Current pipeline infrastructure is not adequate to withstand such events. Additionally, enhanced quality communications and cross-training among and between pipelines and RTOs may improve the ability to efficiently manage the situation. Energy security and reliability spans both the gas and electric industries and more coordination could avoid catastrophic reliability events.

Current electric transmission infrastructure is inadequate to withstand such events. A number of ACES Members' units had to be run to satisfy reactive power constraints.

Dual fuel capability can be an effective tool to manage short-term gas pipeline flow restrictions and gas scarcity prices, but there are often limits to the use of secondary fuels that prevent this from being a reliable solution. Additionally, various RTO scheduling rules can also limit the efficacy of dual fuel. As a result, requiring all plants to have dual fuel capability, while useful in certain limited situations, is not a long-term solution.

Coal and nuclear plant availability far exceeded gas-fired plant, wind, and solar availability and provided much needed system stability and reliability during emergency conditions. The unreliability of gas, wind, and solar provided the lesson that fuel diversity is needed for reliability as well as for other policy reasons.

**3. Policy implications: Share observations about changes that could be made to improve the performance of Commission-regulated markets during future extreme weather events. Panelists are encouraged to highlight any short-term operational, fuel procurement, or other changes that may be necessary before next winter. Additionally, they should share their views on any long-term improvements needed in the future more generally.**

ACES supports the Commission's recent notice of proposed rulemaking and orders on the coordination of scheduling processes and RTO/ISO scheduling practices.[2]

[2] Coordination of the Scheduling Processes of Interstate Natural Gas Pipelines and Public Utilities, Docket No. RM14-2-000, 146 FERC P 61,201 (March 20, 2014) and Order Initiating Investigation into ISO and RTO Scheduling Practices and Establishing Paper Hearing Procedures. Docket No. RM14-22-000 *et al.,* 146 FERC P 61,202 (March 20, 2014).

This is a step in the right direction, given the nation's rapidly increasing reliance on natural gas for electric generation. Given our shared goal of maintaining a reliable electric grid and avoiding the risks of sweeping outages, ACES believes attention must be focused on aligning the physical and process related characteristics of the electric and gas industries. ACES has the following suggestions for areas to address:

1. Pipeline infrastructure improvements (compression, looping, pipe expansion).
2. Alignment of Gas/Power operating day.
3. Appropriate sequencing of gas nomination and RTO/ISO dispatch award periods.
4. RTO/ISO rule changes (hourly offer changes in both the day-ahead and real-time, minimum run time, and compensation for reliability directives).
5. New pipeline service offerings that address the needs of the natural gas-fired generation.
6. Recognition of the need for fuel diversity and in particular, the critical reliability role played by coal or nuclear plants.
7. Pipelines & RTO/ISOs should be required to develop rules that allow for fair and comparable services for all market participants including electric generation while recognizing that the producers needs (ratable 24 hour maximum flow) are very different than the needs of the various consumers.
8. Provide incentives to pipelines to create new services in a stream-lined manner that minimizes the requirement for them to submit a cost of service or rate case filing but still has regulatory oversight.
9. Encourage RTOs and pipelines to develop plans for periods of extreme weather or other crises where different rules would apply. Among other things, this could eliminate or reduce generators intra-day fuel price risk and thus encourage more generation to be available.
10. Encourage other pipeline customers (Producers, Industrial & LDCs) to suggest ideas to help solve the issues of gas-fired electric generation (e.g., segmenting of releasing firm storage, intraday hourly firm transportation service, etc).

Thank you,