Proposal

- Creation of a Gas Domain Expert Working Group to address the intersection of gas and electric system interoperability standards with mutual benefit to both gas and electric grid stakeholder communities

- Revised slightly since Charlotte based on feedback and input from plenary officers and the Gas Technology Institute
Gas DEWG Rationale

- While SGIP is currently electric-centric, gas industry environments would benefit from the two-way communication-based monitoring and intelligent control that will be prominent in the evolving Smart Grid.

- Creation of a Gas DEWG would assist in ensuring that infrastructure requirements specific to the natural gas industry are included in the ongoing technology, standards, and regulatory initiatives currently being focused on by SGIP efforts.
Natural Gas and Electric Grid Nexus

“Texas weathers rolling blackouts as mercury drops…”
- Reuters, January 2011
“Interdependency”

- Who here has read this 357 page FERC/NERC report?
“Interdependency”

Summary
“Interdependency”

Summary
- It was cold
“Interdependency”

Summary

- It was cold
- Power went out
“Interdependency”

Summary
- It was cold
- Power went out
- That’s bad
The report also addresses the interdependency of the electric and natural gas industries. Utilities are becoming increasingly reliant on gas-fired generation, in large part because shale production has dramatically reduced the cost of gas. Likewise, compressors used in the gas industry are more likely than in the past to be powered with electricity, rather than gas. As a result, deficiencies in the supply of either electricity or natural gas affect not only consumers of that commodity, but of the other commodity as well.
“Interdependency”

- The report explores some of the issues relating to the effects of shortages of one commodity on the other.

- However, any resolution of the many issues arising from electric and natural gas interdependency must be informed by an examination of more than one cold weather event in one part of the country. For that reason, the report does not offer specific recommendations in this area, but urges regulatory and industry bodies to explore solutions to the many interdependency problems which are likely to remain of concern in the future.
The Interest of Gas Distribution in SGiP

- Guidance as to the most reasonable path for infrastructure upgrades
- Elimination of redundant/incompatible systems going forward
- Unified infrastructure for those companies that serve both electric and gas markets
- Real time communication between gas and electric grids rather than “pneumatic” signals
Gas + Electric Standards Collaboration

- The natural gas industry, supported by the Gas Technology Institute, has launched a Smart Grid program to develop and deploy technologies and processes that effectively use two-way communications and intelligent field devices to enhance safety and efficiency of the natural gas network, effectively serve new demand and supply sources and integrate with other infrastructure grids such as electric, water, telecom, and thermal.

- Critical interactions exist between electricity networks and gas networks; coordinating Smart Grid standards efforts between the electric grid and the gas grid would be beneficial to both sets of stakeholders.
Natural Gas Companies GTI Represents

- Alagasco
- NiSource
- APGARF
- Oklahoma Natural Gas
- Atmos
- SoCal
- LA RDC
- SW Gas
- National Fuel

- The Operations Technology Development Development LLC consists of the 17 largest natural gas distribution utilities in the United States
- The nine companies funding this particular effort represent millions of rate payers over a large geographic area
Gas DEWG Scope

- The Gas DEWG will investigate the intersection (and identify gaps) between the gas delivery and electric power grid sectors with respect to interoperability standards, common technological paradigms, and associated system implementations.

- A major emphasis will be an investigation of advantages available to both industries with development of interoperability standards that will foster integration of gas systems into a unified Smart Energy Grid.
Gas DEWG Draft Work Plan

- Review issues relating to the intersection of gas and electric system interoperability standards
- Identify synergies between gas industry and electric-centric SGIP 1.0 agendas that will be mutually useful for the enhancement of electric power and gas system reliability, integration of new sources (including renewables), cost effectiveness, and system safety
- Identify standards used by the electric grid that allow individual gas technology components to function within a coherent system
- Identify electric and electronic technologies in automation, sensors, and communications that enhance the safety, energy efficiency, and cost effectiveness of the gas delivery network
- Review state of integration of the gas delivery grid with the electric, water, telecom, and heating grids
- Rank order gas technology needs and opportunities in the evolving smart energy grid
- Propose strategic recommendations for gas technology within the evolving Smart Grid, beginning with highest priority categories; these recommendations should reflect a long-term strategy to optimize gas delivery effectiveness as the Smart Grid evolves
- Propose specific topics where regulators might coordinate gas and electric distribution operators to ensure that ratepayer investments are optimized
Goals

- While the SGIP 1.0 concept of Smart Grid explicitly relates to electric power generation, transmission, distribution, and end-use, the gas industry has similar functions relating to energy delivery and use with natural gas; both industries exist as a patchwork of regulated monopolies whose core mission is the provision of safe, cost effective, and reliable energy-on-demand to their customers.

- The proposed Gas DEWG would have as its primary goal the identification and development of interoperability standards that will address the interdependency of electric and natural gas grids.
Key Benefit

- The expected advantage to both the electric power and gas industries will be the enhancement of system reliability, improved cost-effectiveness to customers, and increased overall system safety.
Recommendation and Actions

- That the Governing Board create the Gas Domain Expert Working Group
- That the Governing Board appoint as Gas DEWG chair Mr. Chris Ziolkowski, the Gas Technology Institute’s Research & Development Manager for Sensors and Automation
- That the Gas DEWG use the 10 July workgroup session to begin its work within SGIP, including the solicitation of input from current SGIP members, particularly those with gas and electric interests