Interstate Transmission Pipeline Update

Presentation to:

New England Pipeline Safety Representatives Seminar

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NGA’S ANTITRUST COMPLIANCE PROCEDURES

Adopted by the NGA Board of Directors on June 4, 2003

Objective
The Northeast Gas Association (NGA) and its member companies are committed to full compliance with all laws and regulations, and to maintaining the highest ethical standards in the way we conduct our operations and activities. Our commitment includes strict compliance with federal and state antitrust laws, which are designed to protect this country’s free competitive economy.

Responsibility for Antitrust Compliance
Compliance with the antitrust laws is a serious business. Antitrust violations may result in heavy fines for corporations, and in fines and even imprisonment for individuals. While NGA’s attorneys provide guidance on antitrust matters, you bear the ultimate responsibility for assuring that your actions and the actions of any of those under your direction comply with the antitrust laws.

Antitrust Guidelines
In all NGA operations and activities, you must avoid any discussions or conduct that might violate the antitrust laws or even raise an appearance of impropriety. The following guidelines will help you do that:

• Do consult counsel about any documents that touch on sensitive antitrust subjects such as pricing, market allocations, refusals to deal with any company, and the like.

Continued on NGA web site...

http://www.northeastgas.org/about-nga/antitrust-guidelines
Topics

- Macro Trends
- Expansion Developments in the Region
- Gas & Power Generation
- Proposed Transmission Infrastructure
Marcellus Shale Production: Rapid, Sustained Rise

Marcellus Natural Gas Production, 2007-14

Source: U.S. EIA, 9-14
Demand: Growth Shaped by Price Advantage

Average Consumer Expenditures for Heating Fuels, $, 2008-2014


Source: U.S. EIA, 10-14

Percent of Homes, Main Heating Fuels, Northeast 2005-2013

Chart: U.S. EIA, 9-14
Home Heating Sector Choosing Natural Gas

Source: U.S. EIA, 10-14


500,000+ residential gas customers added Since 1990 - a nearly 30% increase

Percent of Homes, Main Heating Fuels, Northeast 2005-2013

Chart: U.S. EIA, 9-14
Role of LNG

- LNG is key to meeting peak day demand in the region – especially New England
- Two LNG import terminals are operating
- LDCs in NE, NY, NJ utilize LNG for peak-shaving

Gas utilities gained approval from CT PURA in Nov. 2013 for their expansion plans.

Goal: to add as many as 280,000 customers in next 10 years.

Proposed pipeline projects: Tennessee’s “CT Expansion” and Spectra’s “AIM.”

Connecticut
Maine

Legislature passed bill in June 2013 to enable PUC to contract for up to 200 million cubic feet of gas. Trying to “jumpstart” infrastructure devl’t in the state.

Utility expansions:

- Unitil conversions,
- Maine Natural Gas “Kennebec Valley” project,
- new LDC with Summit Natural Gas,
- Bangor Gas and its “Loring Pipeline”
DOER commissioned “Gas Expansion” study in 2013 by Sussex Economic Advisors; just initiated “low demand analysis” to be released 12-23-14.

MA Legislature unanimously passed “gas leaks” bill in June – seeking to accelerate replacement of older distribution pipe components; it also has provision on gas expansion.
New Hampshire

CNG “virtual pipeline” and LNG plants planned at several points – to be fueled by LDC and pipeline systems

Proposed pipeline expansions:
- PNGTS “C2C”
- Tennessee’s “Northeast Energy Direct”
- Spectra’s “Atlantic Bridge”
Rhode Island

Infrastructure replacement program advancing – with regulatory participation from PUC
Vermont

Addison Natural Gas Project – *Phase I*
approved by PSB in Dec. 2013

Extending distribution system south to Middlebury by 2015.

Future *proposed* phases:

*Phase 2:*
Extend line under Lake Champlain to serve further towns in paper mill in Ticonderoga, NY.

*Phase 3:*
Extension to serve Rutland.
New England’s Changing Electric Generation Fuel Mix

Currently natural gas is about 46% of total capacity. Data source: NEPOOL, ISO-NE
Gas for Power Gen
Nationally

U.S. power plant capacity additions in 2013
megawatts (MW)

- natural gas: 6,861
- solar: 2,959
- coal: 1,507
- wind: 1,032
- biomass: 549
- hydroelectric: 384
- other: 214

Chart: U.S. EIA, 4-14
Proposed Power Plants by Fuel, Northeast

**New York ISO System, 2014**

- **Proposed Power Projects by Fuel Type**
  - Natural Gas: 70%
  - Wind: 55%
  - Dual Fuel: 74%
  - Other: (data not shown)

**New Jersey, 2013**

- **Queued Capacity by Fuel Type**, Percentage (In-State Only)
  - Natural Gas: 74%
  - Wind: 11%
  - Solar: 14%
  - Other: 0.5%

Source: NY ISO, PJM
Infrastructure Developments
Interstate Transmission Projects In-Service in 2013: All outside New England

- Tennessee’s “Northeast Upgrade”: 636 MMcf/d
- Tennessee’s “MPP Project”: 240 MMcf/d
- Millennium’s “Minisink Compressor”: 150 MMcf/d
- National Fuel Gas’s “Line N”: 30 MMcf/d
- Transco’s “Northeast Supply Link”: 250 MMcf/d
- Spectra’s “NJ-NY Expansion”: 800 MMcf/d

Photo courtesy of Spectra Energy
Days with Zero Interruptible Capacity

(Algonquin Gas Transmission)

Chart: Spectra Energy
Northeast Spot Prices: New heights in winter

Northeastern and Mid-Atlantic prices, winter 2013-2014

Source: Natural Gas Intelligence

Chart: U.S. Energy Information Administration (EIA), 4-14
Gas & Power Generation

- Renewed focus on gas & electric coordination – on NY-ISO, ISO-NE and PJM systems; EIPC study underway; Scheduling, communications – and infrastructure?

- Strong coordination & communications is in place among pipeline industry and electric grid operators in the region; NGA Gas Supply Task Force also plays a role.

- For natural gas industry in New England, central issue remains the over-reliance of the power sector on “non-firm” or interruptible gas capacity.

- New pipeline infrastructure needed and will help – but will (can?) the regional power sector invest in its share of pipeline capacity?
LDCs Can & Are Signing Up – but Power Gens?

Spectra’s AIM Project

Shippers:
• UIL Holdings
• Northeast Utilities
• National Grid
• NiSource
• City of Middleborough, MA
• City of Norwich, CT

TGP’s Connecticut Expansion Project

Shippers:
• UIL Holdings
• Northeast Utilities

TGP’s Northeast Energy Direct Project

Initial Shippers:
• 9 LDCs, @ 500,000 Dth/d
Proposed Pipeline Projects

Prepared by NGA, based on publicly available information. Project locations approximate. As of 9-14.

- **National Fuel / Empire, “Northern Access 2015 & 2016”**
- **Tennessee, “Niagara Expansion”**
- **Tennessee, “Rose Lake”**
- **Tennessee, “Connecticut Expansion”**
- **Iroquois, “Wright Interconnect”**
- **Iroquois, “South to North”**
- **Tennessee, “Northeast Energy Direct”**
- **PNGTS, “C2C”**
- **Spectra, “Atlantic Bridge”**
- **Spectra/NNU, “Access Northeast”**
- **Spectra, “AIM”**
- **Iroquois, “Eastern Long Island”**
- **Williams, “Rockaway Lateral / Northeast Connector”**
- **Williams/Transco, “Diamond East”**
- **Spectra/Texas Eastern, “TEAM 2014”**
- **Dominion, “New Market Project”**
- **National Fuel, “Mercer Expansion”**
- **PennEast Project**
- **Williams & Cabot, “Constitution Pipeline”**
- **National Fuel / Empire, “Tuscarora Lateral”**
- **Columbia, “East Side Expansion Project”**
Algonquin Incremental Market (AIM) Project

**Purpose:**
Provide growing New England demand with access to abundant regional natural gas supplies

**Project Scope:**
- Providing more than 342 MMcf/d of additional capacity to move Marcellus production to Algonquin City Gates
  - CapEx: ~$1 B

**Customers:**
- UIL Holdings
- Northeast Utilities
- National Grid
- NiSource
- City of Middleborough, MA
- City of Norwich, CT

**Project Status:**
- FERC pre-filing commenced June 2013
- Filed FERC application February 2014
- Receive FERC certificate 1Q15
- Commence construction 2Q15
- In-service 2H16

**Facilities:**
- Take up and relay portions of existing 26” with 42”
- Additional horsepower at almost every compressor station
- Expansion of constrained parts of the pipeline system
- Upgrades of meter stations to accommodate incremental flow

Chart courtesy of Spectra Energy
Connecticut Expansion Project: Kinder Morgan

Purpose:
TGP upgrading its existing system within New York, Massachusetts and Connecticut

Project Scope:
- Providing 72 MMcf/d of additional capacity to meet utility demand
- CapEx: ~$87.5 million

Customers:
- UIL Holdings (CT Natural Gas, Southern CT Gas)
- Northeast Utilities (Yankee Gas)

Project Status:
- Outreach Meetings – Ongoing
- FERC Certificate Application filing – July 31, 2014
- Proposed Construction Commencement – November 2015
- Proposed In-Service Date – November 2016

Facilities:
- Approximately 13.26 miles of 24-inch and 36-inch diameter pipeline looping in Albany County, N.Y., Berkshire and Hampden Counties, Mass. and Hartford County, Conn., minor modifications at one compressor station in Mass., and installation of minor appurtenant facilities
Atlantic Bridge Project: Spectra Energy

Moving abundant, economic supplies of natural gas from the Marcellus & Utica to constrained New England markets

Project Scope:
- CapEx: ~$900 MM
- Capacity: 175 MMcf/d (with potential to 300 MMcf/d)

Customers:
- Late stage negotiations with various local distribution companies in New England and Atlantic Canada

Project Status:
- Estimated in-service: 2H17

Preliminary Facilities:
- New compressor station, upgrades of existing compressor stations and meter station modifications
- Pipeline looping and take-up and relay
Northeast Energy Direct: Kinder Morgan

**Purpose:**
TGP upgrading its existing system within New York, Massachusetts and Connecticut

**Project Scope:**
- Providing from 0.8 up to 2.2 Bcf/d of additional capacity to meet market demand

**Customers:**
9 LDCs, with capacity of 500,000 Dth/d
- The Berkshire Gas Company
- Columbia Gas of Massachusetts
- Connecticut Natural Gas Corporation
- Liberty Utilities (EnergyNorth)
- National Grid
- Southern Connecticut Gas Corporation

**Proposed Facilities:**
- 32 miles of looping of the existing TGP 300 Line in Pennsylvania
- 135 miles of greenfield pipeline from the TGP 300 Line to Wright, N.Y.
- 52 miles co-located with the existing TGP 200 Line in New York and Massachusetts
- 125 miles of greenfield pipeline in Massachusetts to Dracut, Mass.
- Lateral construction and modification of existing laterals to serve markets
- Modifications to existing and construction of new compressor stations and meter stations

**Project Status:**
- Project Development and Commercial Negotiations – Ongoing
- Outreach Meetings at state, local and town level – Ongoing
- Route Selection and Permit Preparation – Ongoing
- Planned FERC filing – Sept. 2015
- Proposed Construction Start Date – January 2017
- Proposed In-Service Date – November 2018
*Any final route determination is subject to surveying, land acquisition and easements, environmental impact assessments, permitting and stakeholder input.
Access Northeast Project: Spectra Energy & NU

- Direct delivery to critical power plants
- Scalable expansion of existing pipelines
- Direct access to natural gas supply through multiple existing interconnects
- New firm service to accommodate generation needs utilizing regional storage assets
- Additional delivery points to access gas for LDCs
- In-service date as early as 2018

**Generation served by AGT**
1. ANP Bellingham
2. Bellingham
3. Dartmouth Power
4. Dighton Power
5. Kleen Energy
6. Lake Road
7. Manchester Street
8. Milford Power
9. Ocean State Power
10. Genconn Power
11. Fore River
12. Tiverton
13. Wallingford Energy
14. Brayton Point
15. CMEEC - Pierce Power
16. Middletown
17. Mirant Canal
18. Montville
19. Potter Street (BELD I)
20. TMLP
21. Watson Generating (BELD II)

**Generation served by M&N**
22. Newington
23. Casco Bay
24. Bangor Gas
25. Westbrook
26. PSNH-Newington
PNGTS’s “C2C Project”

**Advantages:**
- Access to new Marcellus Production
- Short, direct route
- Nov. 2016 target start date
- Pipe-in-ground
- Build risks minimized
Iroquois’ “SoNo Project”

Iroquois’ SoNo Project *(Mainline Flow Reversal)*

- Markets = PNGTS & NB/ON/QC provinces
- Minimal facility modifications required
- Presidential Export Permit secured in 2010
- Volume = 300,000 Dt/d
Also on the Horizon…

- Growth in off-system deliveries of CNG, via “virtual pipeline”.
- Companies in the market include:
  - Global CNG
  - iNatGas
  - NG Advantage
  - Xpress Natural Gas
  - Irving Oil

Photo of Clean Energy’s NG fueling station, Pembroke, NH, which opened in July 2014.
The New England Governors last December announced a joint energy initiative designed to accelerate regional cooperation on expanding renewable energy and energy infrastructure in New England. The governors said that they would advocate “for greater integration and utilization of renewable generation; development of new natural gas pipeline infrastructure; maximizing the use of existing transmission infrastructure; investment, where appropriate, in new transmission infrastructure; and continuation of the inclusion of energy efficiency – and the addition of distributed generation – in load forecasting and transmission planning.”
Summary

- Marcellus production in the Northeast continues to be robust, leading to greater supply availability and lower price opportunities.

- New gas pipeline development activity continues to be active in the NY/NJ/PA area, to move new area supplies to markets. Infrastructure for New England several years away – and contingent on pipeline commitments.

- Lessons learned from last winter: infrastructure is important, as is inter-industry coordination.
Thank you and enjoy the Seminar…