

Electric-Gas Coordination

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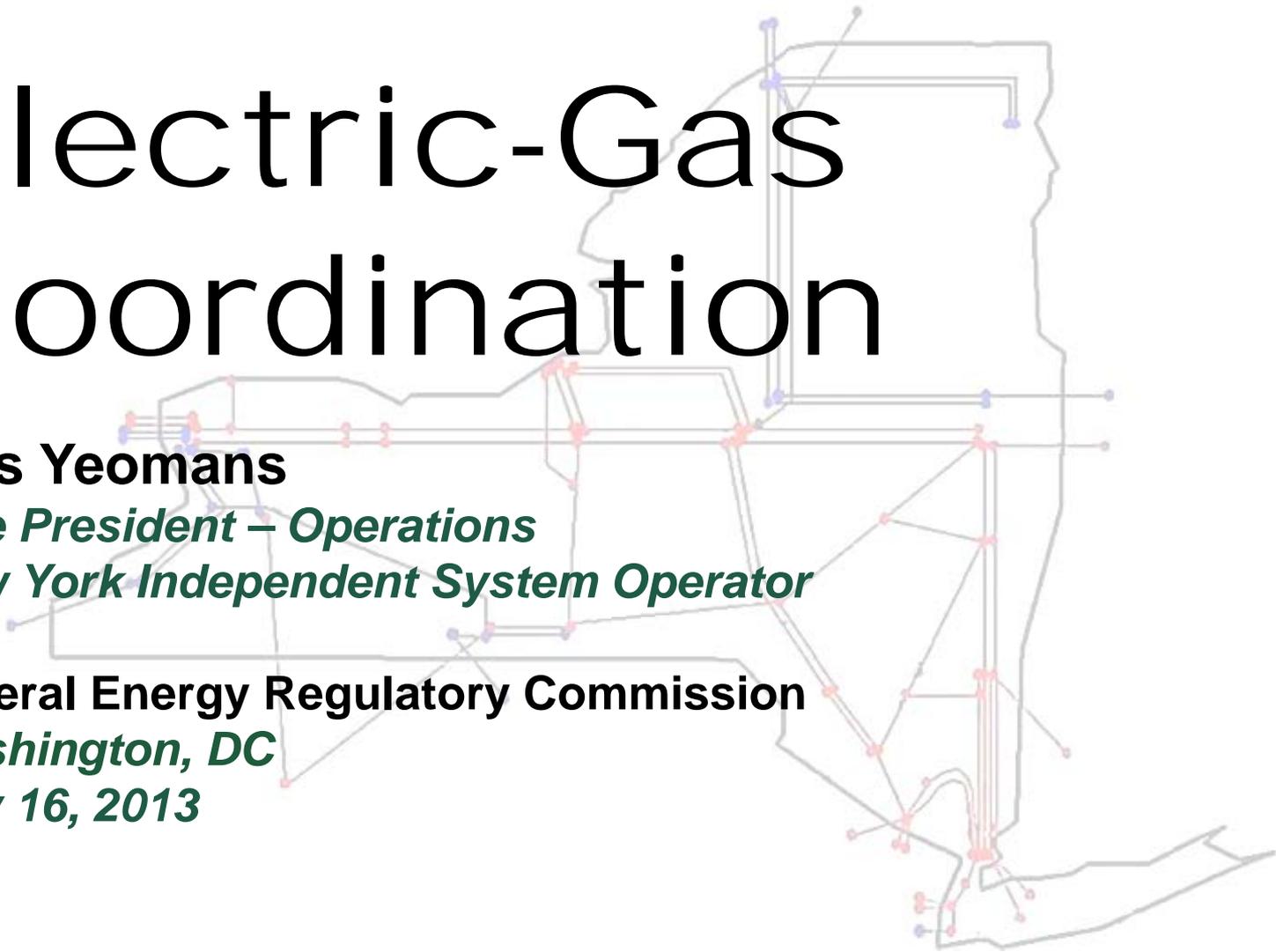
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New York Independent System Operator

Federal Energy Regulatory Commission

Washington, DC

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Topics

- ◆ **Winter 2012-13 Cold Snap**
 - *January 21-26*
- ◆ **Status of Electric-Gas Coordination Initiatives**

Winter 2013 Cold Snap

January 21-26, 2013

- ◆ **Low temperatures were forecast as early as Thursday, January 17 for the week of January 21-26**
- ◆ **The NYISO worked with Transmission Owners to re-schedule transmission maintenance work in anticipation of the “Cold Snap”**

General Operating Actions and Observations

- ◆ **This was not an “extreme” cold snap from a Natural Gas system “design day” perspective.**
- ◆ **Reserve requirements were met over the peak.**
- ◆ **Transmission security requirements were met throughout the week.**
- ◆ **No Demand Response notifications or deployments were required.**
- ◆ **Imports to NYISO were reduced, in part, due to the result of de-rated gas supplies or lack of oil inventory.**
- ◆ **In light of forecasted, continued significant import curtailments and other internal generator de-rates, the NYISO did schedule two reliability dual-fuel steam unit commitments, and one oil steam unit commitment, during the week of January 21.**

Cold Snap - January 22, 2013

- ◆ **Projected Capacity Margins**
 - *Sufficient capacity was committed for January 22*

- ◆ **NY Generation Performance**
 - *Internal generator commitments 23,738 MW*
 - *Actual generation capacity over the peak 21,938 MW*
 - **1,800 MW of De-rates over the peak**
 - 60% Non-Fuel Related
 - 40% Fuel Related – Lack of gas/oil or problems switching

- ◆ **Load Forecast Performance**
 - *ISO Day ahead peak load forecast for Tuesday was 23,749 MW*
 - *Actual peak load on Tuesday was 24,363 MW*
 - *Actual load exceeded day ahead forecast by 614 MW*
 - Actual minimum temperatures were 2 degrees lower than forecast

- ◆ **Import Schedule Performance**
 - *While 3,330 MW of imports were scheduled in the day ahead market, only 2,679 MW of actual imports were scheduled into NY over the peak*

Cold Snap - January 23, 2013

- ◆ **Projected Capacity Margins**
 - *Sufficient capacity was committed for January 23*

- ◆ **NY Generation Performance**
 - *Internal generator commitments 25,888 MW*
 - *Actual generation capacity over the peak 24,071 MW*
 - 1,817 MW of De-rates
 - 70% Non-Fuel Related
 - 30% Fuel Related - Lack of gas/oil or problems switching

- ◆ **Load Forecast Performance**
 - *ISO Day ahead peak load forecast for Wednesday was 24,101 MW*
 - *Actual peak load on Wednesday was 24,589 MW*
 - *Actual load exceeded day ahead forecast by 488 MW*
 - Actual minimum temperatures were 5 degrees lower than forecast

- ◆ **Import Schedule Performance**
 - *While 2,784 MW of imports were scheduled in the day ahead market, only 1,854 MW Actual imports flowed into NY over the peak*

Cold Snap - January 24, 2013

- ◆ **Projected Capacity Margins**
 - *Sufficient capacity was committed for Thursday, January 24*

- ◆ **NY Generation Performance**
 - *Internal generator commitments 25,748 MW*
 - *Actual generation capacity over the peak 24,621 MW*
 - **1,127 MW of De-rates**
 - 80% Non-Fuel Related
 - 20% Fuel Related - Lack of gas/oil or problems switching

- ◆ **Load Forecast Performance**
 - *ISO Day ahead peak load forecast for Thursday was 24,520 MW*
 - *Actual peak load on Thursday was 24,658 MW*
 - *Actual load exceeded day ahead forecast by 139 MW*
 - **Actual minimum temperatures were 1 degree lower than forecast**

- ◆ **Import Schedule Performance**
 - *While 3,150 MW of imports were scheduled in the day ahead market, only 1,573 MW Actual imports flowed into NY over the peak*

Operating Actions and Observations

- ◆ NYISO Operations made calls to internal generators soliciting updated gas, oil, and hydro supplies for peak hour generation
- ◆ There were no known significant NY gas pipeline physical outages. There were several gas variance/balance alerts and OFOs

	<u>DA Commitment</u>	<u>Actual</u>
Jan 22 Dual Fuel	5,619 MW	4,523 MW
Jan 22 Gas Only	2,637 MW	2,297 MW
Jan 23 Dual Fuel	6,642 MW	5,619 MW
Jan 23 Gas Fuel	2,221 MW	2,096 MW
Jan 24 Dual Fuel	7494 MW	6718 MW
Jan 24 Gas Fuel	1817 MW	1810 MW

Fuel Related De-rates Across January – April 2013

- ◆ ***Percentage of fuel related de-rates each month, as reported by generators***

Month	Overall
January Cold Snap (Jan. 21-26)	74%
Rest of January	26%
February	20%
March	9%
April	6%

Gas Electric Coordination

◆ Continued Electric Gas Coordination Working Group Meetings

- *Open discussions includes Gas Pipelines, LDCs, Generators, Gas Suppliers*
 - Timing processes – Price certainty versus volume certainty
 - Scheduling (Supply) – Holiday issues, off peak
 - Nomination (Transportation) – NAESB schedules & gas tariff flexibility
 - Balancing
 - Gas Operating Day Timing
 - Cost Recovery Discussions
 - Actual implications of Operational Flow Orders
 - Actual peak performance of both gas and electric systems
 - Seasonal Assessments
 - Input to Regional Study Scope & Objectives

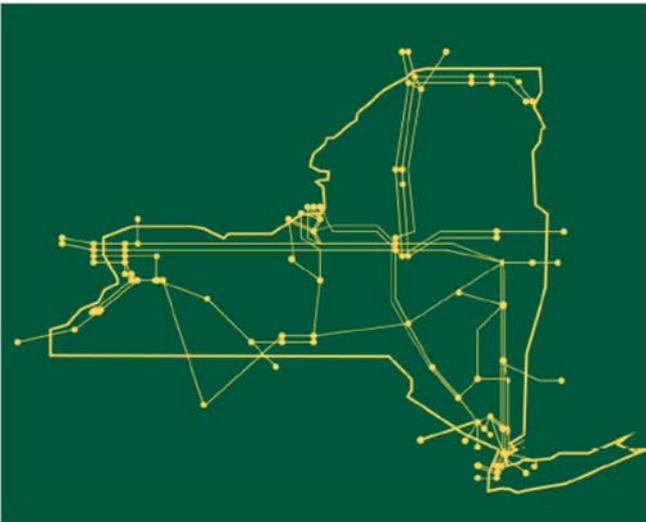
Gas Electric Coordination

- ◆ **During specific system conditions (e.g. Anticipated Extreme Cold Weather, etc.) the NYISO is monitoring the following:**
 - *Day ahead gas nominations for gas-fired units with day ahead commitments*
 - *Alternate fuel on-site and schedules to restore inventories*
 - *The certainty of non-installed capacity backed electric import transactions flowing on cold days*
 - *Consideration of non gas-fired generator reliability commitments as needed*

Gas Electric Coordination

- ◆ **Infrastructure Maintenance**
 - *NYISO has initiated a process to review and monitor pipeline, transmission, and generation outages.*
- ◆ **NYISO Control Center Visualization**
 - *Gas Pipeline System*
 - OFOs and status of pipeline alerts
 - During cold snaps - gas nominations, gas burned, and alternate fuel capability & inventory
- ◆ **Underway: Means to improve several hour ahead generator operating capacity**
 - *Reality is a generator may not know whether or not they will be able to secure gas supplies over next several hours*

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