



# *Clean Air Project*

*Merrimack Station*

**March 31, 2010**  
**NH Public Utilities Commission**  
**Docket 08-103 Informational Session**



**Public Service  
of New Hampshire**

The Northeast Utilities System

# Agenda



- Introductions
- Project Overview
  - Purpose of the Clean Air Project
  - How the Technology Works
  - Project Status
  - Contracts Summary
  - Budget
  - Schedule
  - Jobs
  - Project Benefits
- Photos
- Discussion

# Introductions



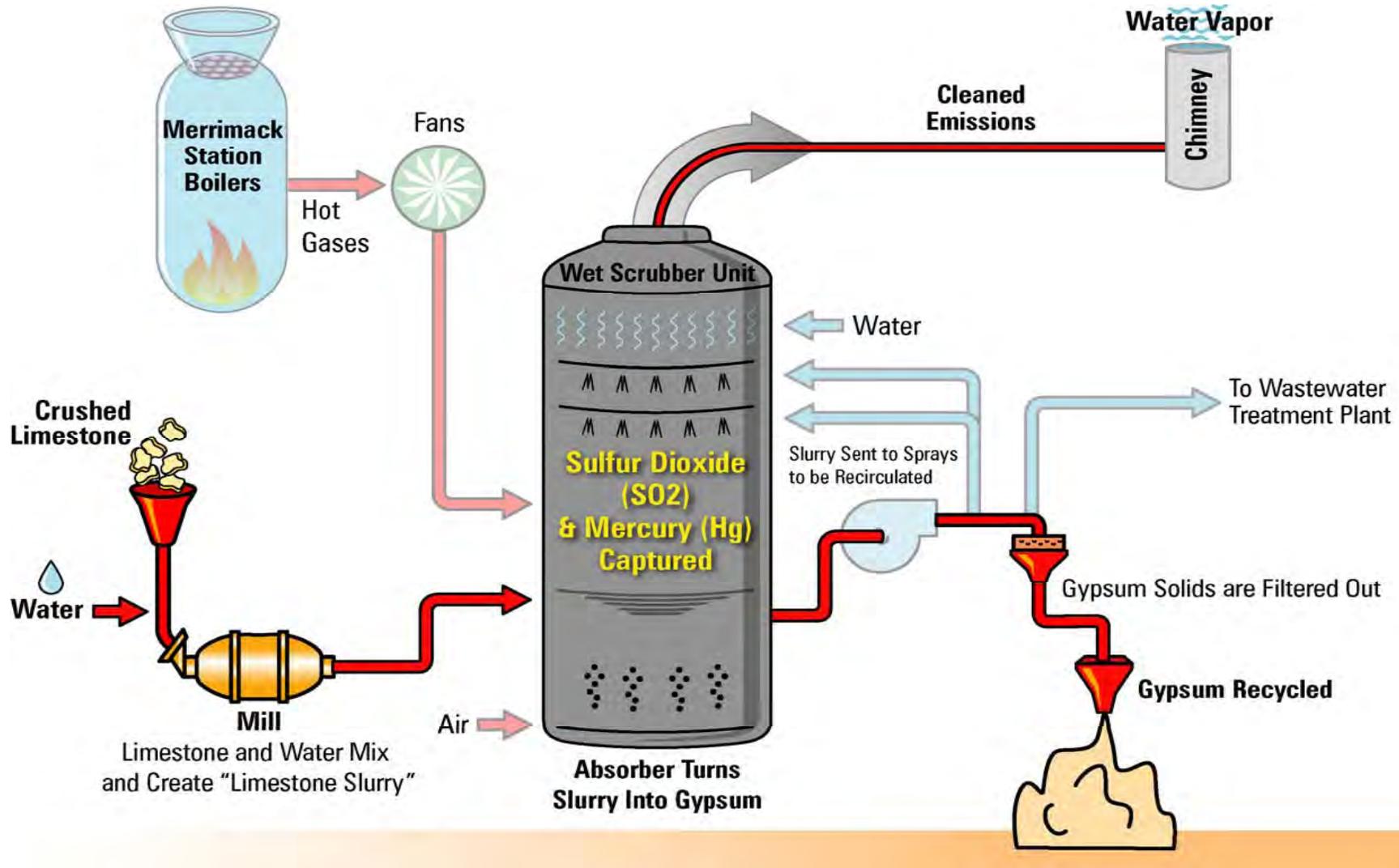
- Bill Smagula, Director - PSNH Generation
- Lynn Tillotson, Technical Business Manager
- Steve Hall, Rate & Regulatory Services Manager

# Purpose of the Clean Air Project



- Comply with the State law (RSA:125-O:11-18) that requires the installation of the wet flue gas desulfurization technology at Merrimack Station by July 1, 2013
- Achieve significant reductions in mercury and sulfur dioxide emissions
  - 80% Mercury
  - 90% SO<sub>2</sub>

# How the Wet Flue Gas Desulfurization Technology Works



# Project Status



PSNH is 2/3's through the six-year project:

- Engineering is almost complete
- Over \$300 Million and over 85 contracts committed
- Construction is in full swing
- Over 300,000 man-hours expended to date

# Contracts Summary



	<u>\$ Millions</u>
<u>Major Supplier Contracts</u>	\$165.6
<ul style="list-style-type: none"><li>• Scrubber</li><li>• Material Handling (Limestone, Gypsum)</li><li>• Waste Water Treatment</li><li>• Chimney</li></ul>	
<u>Large General Contracts</u>	\$ 97.1
<ul style="list-style-type: none"><li>• Foundations</li><li>• Duct Work and Installation (3)</li><li>• Site Work (8)</li><li>• Project Management</li></ul>	
<u>Specialty and Service Contracts</u>	\$ 33.6
<ul style="list-style-type: none"><li>• Electrical, Sound, Cranes, Fans, Emissions Monitors, Insulation, Legal, Etc.</li></ul>	

**OVER 85 CONTRACTS – IN PLACE TO DATE: \$306.3 MILLION**

Approximately five contracts remain to be issued over the next few months totaling about \$35 Million.

# Budget (\$ in Millions)



	<b>Thru 2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
Cost By Year		24.8	119.3	148.6	99.0	59.2	3.4
Cumulative Cost	2.7	27.5	146.8	295.4	394.4	453.6	457.0

# Schedule

## Merrimack Station Clean Air Project



Project	2006	2007	2008	2009	2010	2011	2012
NH Mercury Reduction Act	▲						
Preliminary Engineering	■■■■■	■■■■■					
Program Manager Hired		▲					
Detailed Engineering		■■■■■	■■■■■	■■■■■			
Major Contracts Awarded		■■■■■	■■■■■	■■■■■			
Major Permitting			■■■■■	■■■■■			
Preliminary Site Prep.				■■■■■	■■■■■	■■■■■	■■■■■
Major Construction						■■■■■	■■■■■
Testing & Commissioning							▲
In Service							▲

# Jobs



- Clean Air Project – Currently Active On-Site:
  - 31 companies
  - 215 craft workers
  - 75 supervisory and support personnel
  - Over 300,000 man-hours expended to date
- Merrimack Station
  - 110 employees
  - Annual outages temporarily increase work force twice a year
  - Merrimack Station uses over 100 local businesses for labor and materials
- New Hampshire Economy
  - CAP has spurred local economy: suppliers, small businesses, housing, restaurants, etc.
  - Local suppliers: concrete, site work, labor, equipment rentals, security, fuel, tools, parts, food, etc.

# Project Benefits



## Reduced Emissions

- Mercury – 80% reduction or better
  - Capture about 220 pounds of mercury/year
- Sulfur – 90% reduction or better
  - Capture about 31,000 tons of SO<sub>2</sub>/year
- Provides additional reduction to particulate emissions

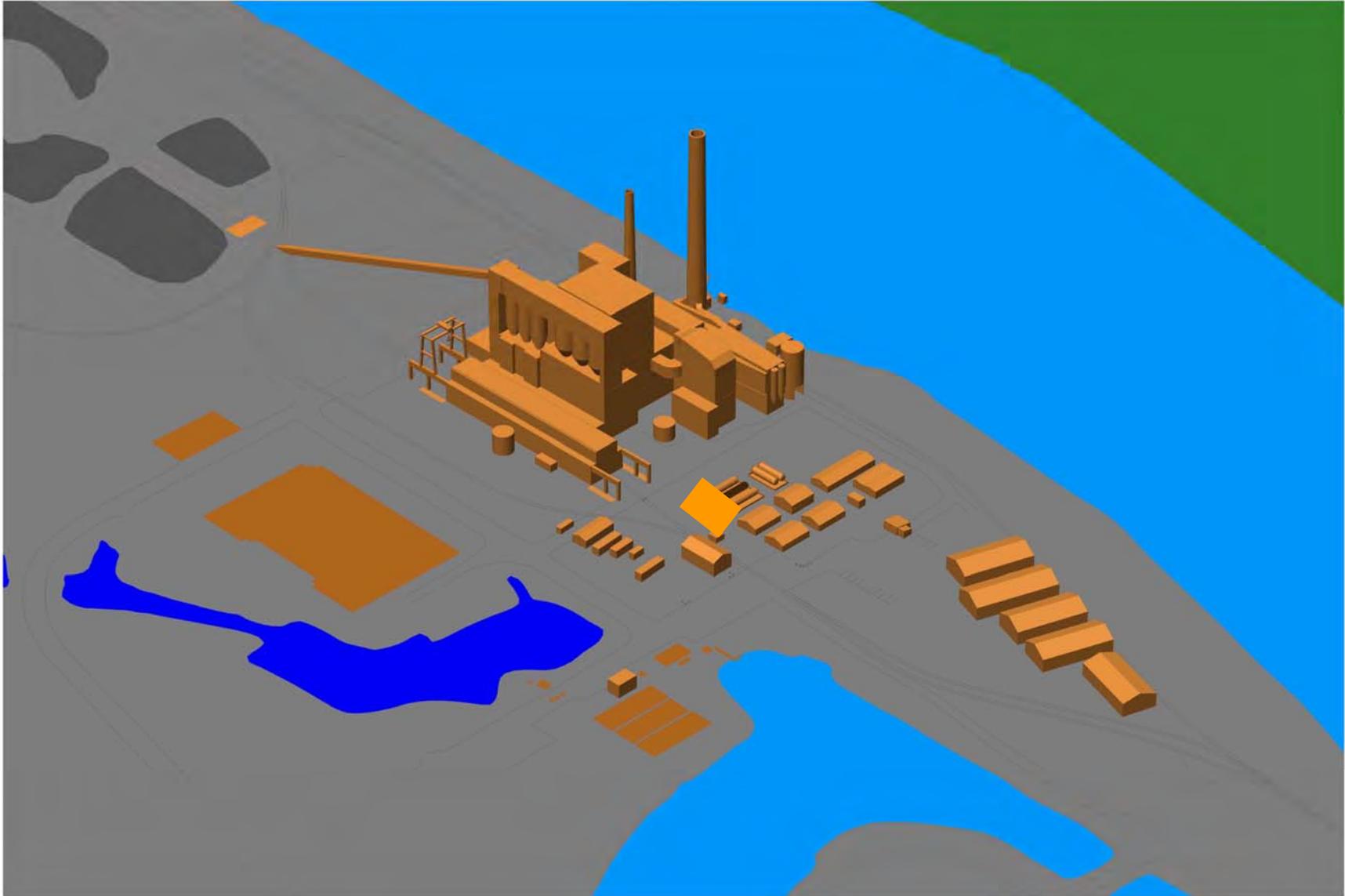
## Early Completion = Early Emissions Reduction

- Scheduled to be done by July 1, 2012 (one year early)

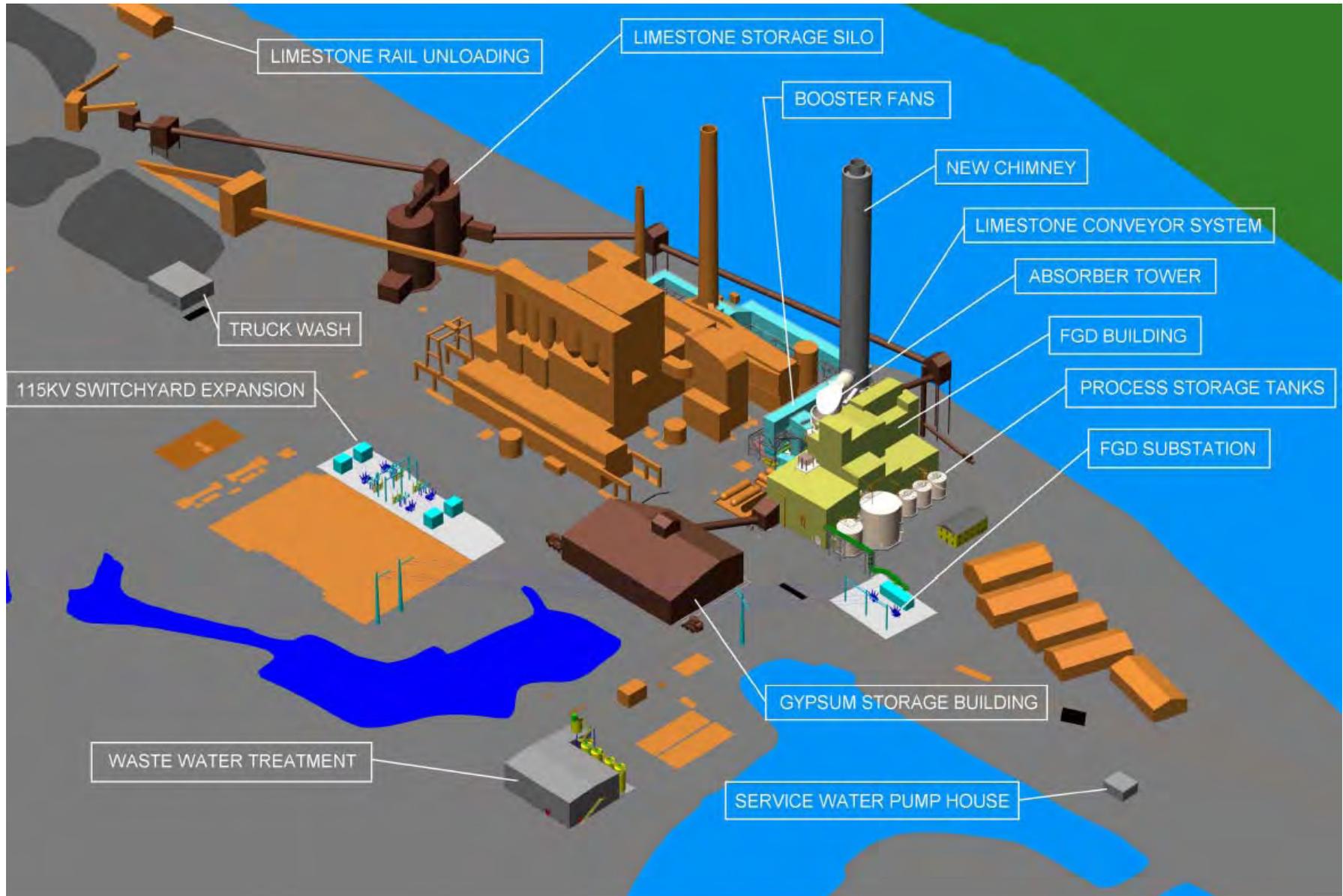
Direct Economic Benefit of Project Workforce: \$50 Million, 400+ jobs

Reliable Energy, from one of the lowest emission coal plants, as a bridge to the Future

# Merrimack Station: 2008



# Merrimack Station: 2012





12/02/2008



03/24/2009



03/31/2009



05/21/2009



05/29/2009



06/05/2009



06/12/2009



06/18/2009



06/25/2009



10/01/2009



10/05/2009



11/11/2009



11/11/2009



10/09/2009



11/18/2009



02/13/2010



03/19/2010



15/09/2009



11/18/2009



11/24/2009



03/19/2010



03/24/2010



06/18/2009



24/09/2009



11/24/2009



03/19/2010



02/13/2010



03/19/2010



03/06/2010



*Perspective Sketch*

## **Merrimack Station Clean Air Project**

**Bow, New Hampshire**



**Public Service  
of New Hampshire**

The Northeast Utilities System

**TFM** *Design*  
Landscape Architects