

Merrimack Station

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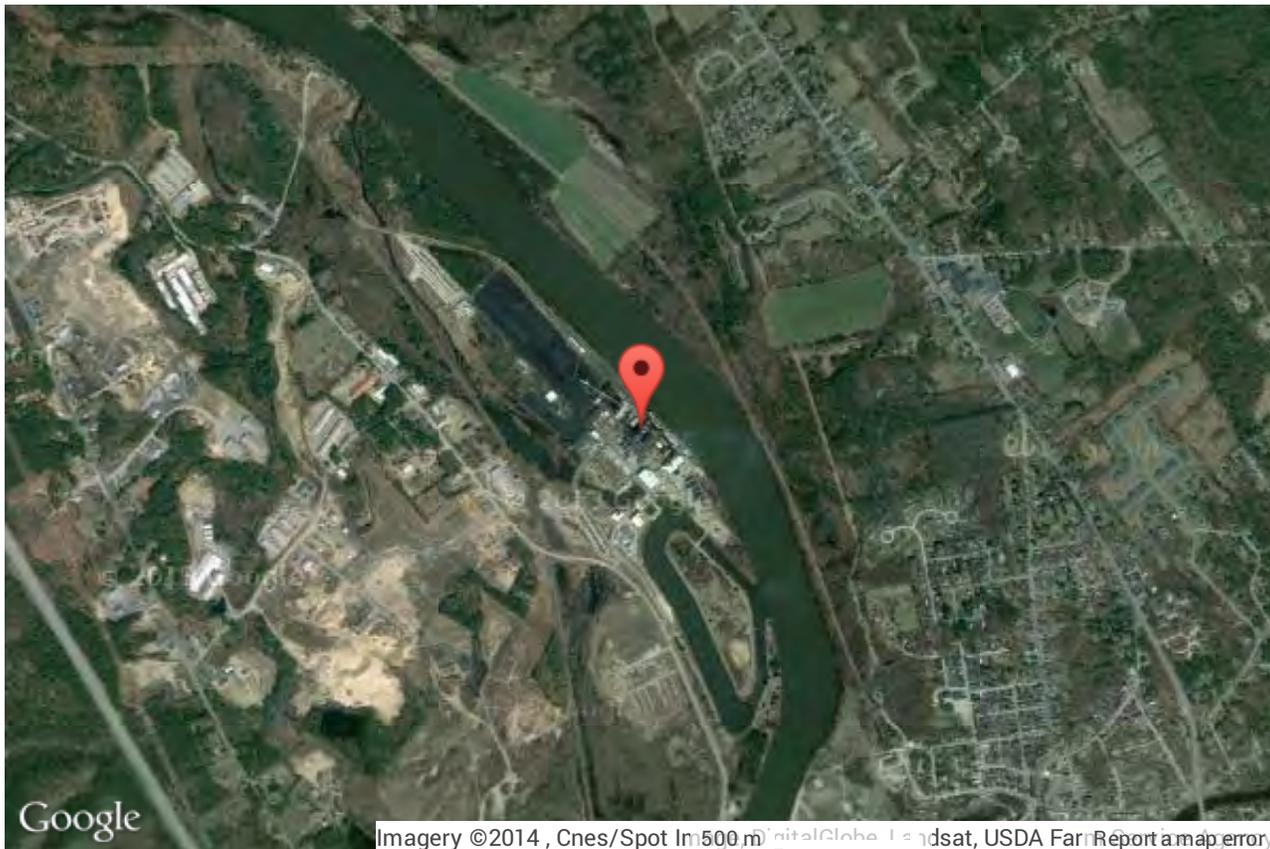
Merrimack Station is a coal-fired power station owned and operated by Public Service Company of New Hampshire (PSCNH), a subsidiary of Northeast Utilities, near Bow, New Hampshire. One unit of the plant was built in 1960, the other in 1968. In 2008, the future of the plant became the subject of controversy when PSCNH revealed in August that the projected cost of new mercury-control scrubbers had increased from \$250 million to \$457 million.^[1] The scrubbers would reduce mercury emissions by 80 percent.^[1]

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Plant Data

- **Owner:** Public Service Company of New Hampshire
- **Parent Company:** Northeast Utilities
- **Plant Nameplate Capacity:** 459 MW (Megawatts)
- **Units and In-Service Dates:** 114 MW (1960), 346 MW (1968)
- **Location:** 97 River Rd., Bow, NH 03304
- **GPS Coordinates:** 43.140833, -71.46777
- **Coal Consumption:**
- **Coal Source:**
- **Number of Employees:**

Emissions Data

- **2006 CO₂ Emissions:** 3,530,530 tons
- **2006 SO₂ Emissions:** 32,726 tons
- **2006 SO₂ Emissions per MWh:**
- **2006 NO_x Emissions:** 4,966 tons
- **2005 Mercury Emissions:** 130 lb.

Death and disease attributable to fine particle pollution from Merrimack

In 2010, Abt Associates issued a study commissioned by the Clean Air Task Force, a nonprofit research and advocacy organization, quantifying the deaths and other health effects attributable to fine particle pollution from coal-fired power plants.^[2] Fine particle pollution consists of a complex mixture of soot, heavy metals, sulfur dioxide, and nitrogen oxides. Among these particles, the most dangerous are those less than 2.5 microns in diameter, which are so tiny that they can evade the lung's natural defenses, enter the bloodstream, and be transported to vital organs. Impacts are especially severe among the elderly, children, and those with respiratory disease. The study found that over 13,000 deaths and tens of thousands of cases of chronic

bronchitis, acute bronchitis, asthma, congestive heart failure, acute myocardial infarction, dysrhythmia, ischemic heart disease, chronic lung disease, and pneumonia each year are attributable to fine particle pollution from U.S. coal plant emissions. These deaths and illnesses are major examples of coal's external costs, i.e. uncompensated harms inflicted upon the public at large. Low-income and minority populations are disproportionately impacted as well, due to the tendency of companies to avoid locating power plants upwind of affluent communities. To monetize the health impact of fine particle pollution from each coal plant, Abt assigned a value of \$7,300,000 to each 2010 mortality, based on a range of government and private studies. Valuations of illnesses ranged from \$52 for an asthma episode to \$440,000 for a case of chronic bronchitis.^[3]

Table 1: Death and disease attributable to fine particle pollution from Merrimack Station

Type of Impact	Annual Incidence	Valuation
Deaths	3	\$22,000,000
Heart attacks	6	\$610,000
Asthma attacks	47	\$2,000
Hospital admissions	3	\$58,000
Chronic bronchitis	2	\$830,000
Asthma ER visits	2	<\$1,000

Source: "Find Your Risk from Power Plant Pollution,"

(http://www.catf.us/coal/problems/power_plants/existing/) Clean Air Task Force interactive table, accessed March 2011

Coal Sources

In 2008, the Merrimack plant burned 534,420 tons of coal from Colombia, Pennsylvania, Virginia, and West Virginia.^[4]

- **Colombia:** 157,200 tons, or 28.57% of the coal burned in 2008
- **Greene, PA:** 232,150 tons, or 43.44%
- **Buchanan, VA:** 8,030 tons, or 1.5%
- **Marion, WV:** 49,050 tons, or 9.18%
- **McDowell, WV:** 31,730 tons, or 5.94%
- **Monongalia, WV:** 60,760 tons, or 11.37%
- **West Virginia total:** 141,540 tons, or 26.48%

According to iLoveMountains.org, Merrimack purchases some coal from companies who practice mountaintop removal mining (MTR), though does not burn coal directly from MTR mines.^[5]

Colombian Coal and Human Rights Violations

Colombia's coal mines, like many industries in the country, are filled with stories of displacement and terror. A number of entire communities in the coalfields have been displaced, including Tabaco, a 700-person Afro-Colombian village that was razed in 2001.^[6] People living near the coalfields have faced malnutrition, diseases such as ringworm, and restricted access to land since the large mines opened up.^[6]

The Drummond Company (operator of la Loma mine in Colombia) has been the subject of numerous lawsuits regarding the murders of 70 union miners and railroad workers, collectively.^{[7][8][9]} The murdered Colombians were killed by the notorious paramilitary group, United Self Defense Forces of Colombia (AUC), which had been hired by Drummond to act as security.^[8] In addition to those killed, a lawsuit against Drummond describes "how hundreds of men, women, and children were terrorized in their homes, on their way to and from work... innocent people killed in or near their homes or kidnapped to never to return home, their spouses and children being beaten and tied up, and people being pulled off buses and summarily executed on the spot."^[8]

Reducing Air Pollution Emissions

In 2006, Governor Lynch signed legislation that requires all New Hampshire coal-fired power plants are required to reduce mercury emissions by 80 percent.^[10] The legislation states that the Public Service Company of New Hampshire Merrimack station has to reduce mercury using a wet flue gas desulphurization (FGD), or scrubber, system by 2013.^[10] The company is not allowed to purchase mercury credits or allowances in place of a scrubbers.^[10] The scrubber system is also expected to reduce sulfur dioxide, sulfur trioxide, and small particulate matter, as well as increase area visibility.^[10]

PSNH had until June 8, 2007 to file an application for a Temporary Permit for a flue gas desulphurization system with the New Hampshire Department of Environmental Services (DES) Air Resources Division.^[11] On June 6, 2007, PSNH filed their application for the Temporary Permit; additional information was added to their application on September 4, 2007, April 17, 2008, October 24, 2008, November 21, 2008, and December 11, 2008.^[11] On December 11, 2008, an announcement of a public hearing and request for public comments was published in the "Concord Monitor".^[11] The same announcement was published in the New Hampshire "Union Leader".^[11] The public hearing was held on January 15, 2009 and public comments were accepted until January 23, 2009.^[11]

On March 9, 2009, the Department of Environmental Services issued the final Temporary Permit for the limestone-based FGD system.^{[12][13]} The permit expires on September 30, 2010.^[12] The DES also released a Findings of Fact and Director's decision (http://des.nh.gov/organization/divisions/air/pehb/apps/documents/psnh_findings_of_facts.pdf) document, which contains responses to comments submitted during the winter 2008/2009 comment period.^[11] The comments are grouped into the following categories: public health, project cost, federal New Sources Review Program Requirements, future state and/or federal rules, proposed sulfur dioxide emission limits and Regional Haze Requirements, alternative operation scenarios, procedural issues on the DES's Review of the Permit Application, and the Title V Permit.^[11]

An ad hoc group of 24 businesses, led by Stonyfield Farms CEO Gary Hirshberg and including inventor Dean Kammen and Timberland President Jeffrey Schwartz, petitioned the state to reconsider the scrubbers.^[1] The group adopted the name 21st Century New Hampshire. (<http://www.21stcenturynh.org/>)

Energy analyst Symbiotic Strategies LLC made an assessment of the future costs to comply with increased greenhouse gas, mercury and other requirements. It came up with an additional cost of between \$864 million and \$2.5 billion. The impact on ratepayers would be three to six times higher than PSNH's estimated increase of one-third of a cent per kWh for the scrubber project, according to the analysis.^[1]

On March 13, 2009, the New Hampshire Senate Energy, Environment and Economic Development Committee held a hearing on SB-152, the "Mercury Reduction and Ratepayer Protection Act." The bill that would order a review of the scrubbers.^[1] About 150 trade union members attended the hearing wearing T-Shirts that said "Don't scrub my job."^[14] Environmentalists supported the study, as did Hirschberg's businesses coalition. Several speakers said Merrimack Station should be closed. Representatives of the Concord and Nashua chambers of commerce testified against the bill, as did labor groups and officials from Bow, Hooksett and Manchester.^[14]

On April 8, 2009, proposed bill SB-152 was defeated in the New Hampshire State Senate by a vote of 21-1.^{[15][16]}

In November, 2009, the State Evaluation Committee voted 5-4 against reconsidering its approval of the scrubber retrofit, denying requests from from a group of businesses and power producers - including PSNH competitors, the Conservation Law Foundation, The Union of Concerned Scientists and the Campaign for Ratepayer Rights - that challenged the board's assessment that the 445-foot smokestack was not a "sizable" addition. The committee also rejected by 16-3 vote a petition from a citizens group of nearly 160 residents in neighboring towns, including Pembroke, Allenstown, Hopkinton, Dunbarton and Hooksett, which argued that the stack would decrease home values in sight of it, increase rates to the utility's customers and potentially contaminate the Merrimack River with mercury waste.^[17]

EPA requests emission data

In May 2009, the Environmental Protection Agency requested emission data on Public Service of New Hampshire's coal-fired power plants in Bow and Newington, NH.^[18] The EPA is looking for data on finances on upgrades to the plants since 2000.^[18] The request is not related to controversy over the Bow plant's scrubber project, but "part of a national initiative to investigate coal plants and whether they have complied with federal laws that require any new or expanded sources of pollution to be thoroughly reviewed."^[18] However, EPA investigator Greg Dain said that "information the agency gathers could answer some of the questions that PSNH's challengers are asking."^[18] PSNH was given until July 20, 2009 to submit information on the Bow plant and until September 20, 2009 for the Newington plant. ^[18]

Coal Train Derailment, November 2009

Late in the morning of November 17, 2009 in Nashua, New Hampshire, seven cars of an 87-car train derailed.^[19] Three of the cars toppled over, spilling about 300 tons of coal, while four cars remained standing upright.^[19] The train was traveling on Pan Am tracks to deliver coal to the Merrimack Station.^[19] According to the Nashua Telegraph, "The trains carrying coal to Merrimack Station make up a significant portion of the state's freight rail traffic. It takes more than 100 trains similar to the one that derailed Tuesday to provide the power plant with its coal each year, although not all of those run through Nashua."^[19]

Citizen Groups

- 21st Century New Hampshire (<http://www.21stcenturynh.org/>)
- Carbon Action Alliance (<http://www.carbonactionalliance.org/>) is a grassroots organization committed to addressing Global Warming by closing coal-fired electricity plants in New England.
- Environment New Hampshire (<http://www.environmentnewhampshire.org/energy/clean-power-for-new-hampshire>)

Articles and Resources

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- Existing U.S. Coal Plants
- New Hampshire and coal
- Northeast Utilities
- United States and coal
- Global warming
- Retrofit vs. Phase-Out of Coal-Fired Power Plants
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