THE STATE OF NEW HAMPSHIRE
BEFORE THE PUBLIC UTILITIES COMMISSION

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

DOCKET NO. DE 08-145

CONSERVATION LAW FOUNDATION, FREEDOM LOGISTICS, LLC, AND HALIFAX-AMERICAN ENERGY CO. LLC'S MEMORANDUM OF LAW REGARDING APPLICATION OF RSA 369-B:3-a TO PSNH'S MERRIMACK UNIT 2 CAPACITY EXPANSION PROJECT

I. INTRODUCTION.

During the January 16, 2009, prehearing conference in this matter, the Commission directed Public Service Company of New Hampshire ("PSNH"), Freedom Logistics, LLC and Halifax-American Energy Co. LLC ("Freedom") and intervenor Conservation Law Foundation ("CLF"), (collectively, the "Parties") to jointly develop facts that would "indicate that the actions of [PSNH] rise to the level of a modification that would fall within the parameters of 369-B:3-a[.]" *See* Prehearing Conference Transcript at 59-60 (January 16, 2009). The Parties subsequently endeavored to do so, and pursuant to the Secretarial Letter issued on April 2, 2009, submitted to the Commission on April 8, 2009, a Stipulation of Agreed Facts (hereinafter, "Stipulated Facts"), attached hereto as Exhibit 1, regarding the work PSNH had performed in connection with its largest boiler, Merrimack Unit 2 ("MK2") in April and May of 2008 ("Capacity Expansion Project").

On May 4, 2009, the Commission directed the Parties to submit briefing on the following questions: (1) whether the actions described in the Stipulated Facts amount to modifications for purposes of RSA 369-B:3-a, and, if so; (2) whether PSNH was

permitted to undertake those actions without Commission approval pursuant to RSA 125-O:13, IV.

II. PSNH'S REPLACEMENT OF THE MERRIMACK UNIT 2 TURBINE AND GENERATOR IN APRIL-MAY 2008, AND RELATED WORK, CONSTITUTES A MODIFICATION PURSUANT TO RSA 369-B:3-a.

A. *MK2 Turbine and Generator Replacement Project Costing At Least $11.4 Million*

During a planned outage in April and May of 2008 ("April-May Outage"), PSNH undertook the Capacity Expansion Project, making substantial modifications to MK2 to accommodate the operation of a wet flue gas desulphurization system mandated to be installed at Merrimack Station by RSA 125-O *et seq.* ("Scrubber Project").[1] The Capacity Expansion Project increased the power output of MK2 in the range of 6 to 17.175 megawatts, Stipulated Facts at ¶ 5, and possibly more.[2]

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[1] PSNH has represented in correspondence to New Hampshire Department of Environmental Services regulators that the MK2 work was undertaken to comply with RSA 125-O *et seq.* *See* Letter from William H. Smagula, Director-Generation, PSNH, to Robert R. Scott, DES ARD Director (June 7, 2006) ("[T]o maintain the generation output and value to customers, the large power consumption of a scrubber system—as much as 6 to 10 megawatts, *justified the need to fully assess balance of plant improvements necessary to offset the additional load. . . . installation of a scrubber will require . . . balance of plant work, MK2 high pressure / intermediate pressure (HP / IP) turbine and generator work,* in addition to the installation of the scrubber vessel. . . . Completion of the MK2 HP/IP turbine and generator projects is expected to maintain the reliability and output of MK2, and *allow for the operation of a scrubber.*") (emphasis supplied) attached hereto as Exhibit 2; Letter from William H. Smagula, Director-Generation, PSNH, to Robert R. Scott, DES ARD Director (January 31, 2008) (". . . the balance of plant projects planned to be completed during the 2008 MK2 outage, including the HP/IP project and associated generator repair work, *are necessary in order to maintain the output of MK2 and comply with RSA 125-O:13 which requires PSNH to install a wet scrubber at Merrimack Station, no later than July 2013.*") (emphasis supplied), attached hereto as Exhibit 3.

[2] Because PSNH has provided different estimates of the anticipated post-MK2 modification capacity increase to different regulatory agencies, the upper bound of the anticipated output remains to be determined. *Cf.* Letter from William H. Smagula, Director-Generation, PSNH, to Robert R. Scott, DES ARD Director, at 3 (June 7, 2006) (six to thirteen megawatt increase), attached hereto as Exhibit 2, *with* Interconnection Requests to the Administered Transmission System at 4 (queue position 291) (January 31, 2009) (nearly 32 megawatt increase over MK2's current winter capacity by the commercial operation date of December 14, 2009), attached hereto as Exhibit 4; *and* PSNH Objection, Site Evaluation Committee Docket No. 2009-01, ¶¶ 24, 25 (April 1, 2009) (17.175 megawatts). PSNH reported in its 2007 Least Cost Integrated Resource Plan (Sept. 30, 2007) that MK2's winter capacity rating is 321.75 megawatts, and the summer capacity rating is 320 megawatts. PSNH's January 2009 ISO request seeks an uprate to 340

Specifically, during the April-May Outage, PSNH removed a high pressure / intermediate pressure ("HP/IP") turbine, and replaced it with a new HP / IP turbine. Stipulated Facts at ¶ 2; *see also* Testimony of PSNH Technical Business Manager Lynn Tillotson, December 4, 2008, Redacted Hearing Transcript, New Hampshire Public Utilities Commission ("PUC") Docket No. DE 08-113, p. 16, lines 10-22 (hereinafter, "Tillotson Testimony"). The new turbine components include the HP/IP rotor, stationary blade rings, and inner and outer cylinder casings. Stipulated Facts at ¶ 2.

PSNH also replaced the generator rotor; air heater tube; boiler floor; selective catalytic reducer ("SCR") catalyst; secondary superheater inlet bank; station batteries; excitation switchgear voltage regulator; sootblowers; SCR sub-girt, insulation, and lagging; distributed control computer system; primary superheater bypass valve; secondary superheater bypass valve; main boiler feedpump control valve; SCR expansion joints; and coal bunker gates. *Id.* PSNH installed ash conditioning equipment on an existing flyash storage tank. *Id.* These projects were all treated as capital expenditures. *Id.* Substantial other work was performed on the unit during the outage, including "numerous other corrective and preventative tasks." *Id.*

PSNH "worked to modify boiler combustion temperatures," and "[t]ube shields were removed from the boiler reheater to increase heat transfer and improve steam temperatures," in order to "accommodate the design and engineering of a scrubber system." *See* September 2, 2008, PSNH Response to PUC Request for Information, PUC Docket No. DE-08-103 at 8.

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megawatts in the summer (an increase of 20 megawatts), and to 353.5 megawatts in the winter (an increase of 31.75 megawatts).

The April-May Outage was longer than the routine annual scheduled maintenance outage, *see* Tillotson Testimony, p. 16, lines 10-15, beginning April 1 and ending on May 22. Stipulated Facts at ¶ 2. The purpose was to increase turbine efficiency, increase output, and reduce maintenance outages. *See* Tillotson Testimony, p.17, lines 1-22. Increased output would provide "additional megawatts to offset the scrubber installation." *Id.* This work was performed with the assistance of outside turbine installation contractors. *See id*, p. 18, lines 9-10; p. 19, lines 11-12. The turbine ultimately failed. *See id*, pp. 18-20. An additional three and one-half week outage to accommodate further work on the new turbine occurred between June 20 and July 14, 2008. *See id.* at 19, line 8.

As of February 20, 2009, the cost of the MK2 modifications was $11.4 million dollars. Stipulated Facts at ¶ 4.

B. *The Commission—At PSNH's Behest—Has Previously Found Replacement of A Coal-Fired Boiler To Constitute A Modification.*

RSA 369-B:3-a provides in relevant part:

> Prior to any divestiture of its generation assets, PSNH may modify or retire such generation assets if the commission finds that it is in the public interest of retail customers of PSNH to do so, and provides for the cost recovery of such modification or retirement.

When PSNH sought to convert its Unit 5 coal-fired boiler at Schiller Station to a wood-burning unit, PSNH filed a petition with the Commission seeking approval of the modification pursuant to RSA 369-B:3-a. *See* DE 03-166, Petition for Authority to Modify Schiller Station, Order No. 24,276 at 1 (hereinafter "Schiller Order"). That modification involved the installation of a new, purportedly more efficient boiler, as well, *see id.* at 11, albeit a different type—a fluidized bed boiler. Indeed, the Commission

noted in the Schiller Order that "[i]n its legal memorandum, PSNH flatly rejected any suggestion that its proposal is not a request to 'modify' a generation facility as that word is used in RSA 369-B:3-a." *Id.* at 22.

The Commission agreed with PSNH that the Schiller conversion constituted a modification for purposes of RSA 369-B:3-a, rejecting the Office of Consumer Advocate's position that the project constituted something greater than a modification:

> [W]e do not agree with the OCA that PSNH's petition must be rejected because the Schiller project as proposed by PSNH goes beyond an effort to "modify" a generation facility as that term is used by RSA 369-B:3-a. As required, we ascribe the "plain and ordinary meaning" of "modify" as that word is used in the statute. *Nilsson v. Bierman*, 2003 WL 23018170 (N.H., Oct. 9, 2003).

Id. at 57.

Pursuant to the Commission's precedent in the Schiller matter, installation of a new boiler—as PSNH has done here with the replacement of the key components of MK2, the turbine and generator, in addition to other work—constitutes a modification under RSA 369-B:3-a. Accordingly, PSNH was obligated, just as it was in the Schiller matter, to seek the Commission's approval in advance of undertaking the modification.

The Capacity Expansion Project has increased PSNH's generation capacity, and that capacity increase will not be offset by any amount until the Scrubber Project is complete and the scrubber is fully operational. The Commission has previously found that "the construction or acquisition of new generation capacity by PSNH appears to require prior legislative authorization, . . ." *See* DE 04-072, PSNH 2004 Least Cost Integrated Resource Plan, Order No. 24, 695 at 24 (Nov. 8, 2006). Nevertheless, PSNH proceeded with the Capacity Expansion Project, without obtaining either Legislative or Commission approval, at times representing to the NH DES that the Capacity Expansion

Project was "*necessary*" for the scrubber installation, *see supra*, p. 2 & n.1, at times representing to the Commission, *see* Prehearing Conference Transcript at 25-26 (January 16, 2009), and more recently, to the Energy Facility Site Evaluation Committee, that the Capacity Expansion Project is *not* a part of the Scrubber Project. PSNH cannot cherry pick the laws with which it must comply based on how it may choose to characterize its activities to a particular regulatory body for a particular purpose.

As set forth *infra*, the Legislature in RSA 125-O:13, IV provided limited authorization for PSNH to increase its net capability only to the extent net power output at Merrimack Station is reduced due to the operation of the installed scrubber, and only as permitted by applicable laws. *See* RSA 125-O:13, IV. Under any circumstance, PSNH was obligated to seek the Commission's approval pursuant to RSA 369-B:3-a before undertaking the Capacity Expansion Project. RSA 125-O:13, IV requires Commission review for any modification undertaken to make up for scrubber parasitic load.

Assuming the Capacity Expansion Project will result in an overall net increase in capacity (in excess of any amount required merely to address parasitic load)—as it appears it will—it still constitutes a modification subject to Commission review pursuant to RSA 369-B:3-a, particularly because the Legislature approved no capacity increase in excess of what may be necessary to offset scrubber power demand. The Commission should reject PSNH's attempt to use RSA 125-O as a shield to avoid Commission review of what amounts to a substantial modification to increase PSNH's capacity, absent Legislative authorization for any increase in excess of what may be necessary to offset scrubber power demand, and with no demonstration whatsoever of why this expenditure—at an aging, coal-fired power plant soon to face millions in environmental

compliance costs associated with carbon dioxide emissions regulations—is in the "public interest of retail customers of PSNH." RSA 369-B:3-a.

III. RSA 125-O:13, IV PROVIDES TO PSNH A LIMITED, CONDITIONAL AUTHORIZATION TO ADDRESS NET POWER REDUCTION CAUSED BY THE INSTALLED SCRUBBER TECHNOLOGYAND THE PUBLIC INTEREST FINDING SET FORTH AT RSA 125-O:11 DOES NOT APPLY TO THE CAPACITY EXPANSION PROJECT.

RSA 125-O:13 , IV provides in relevant part:

> If the net power output (as measured in megawatts) from Merrimack Station is reduced, due to the power consumption requirements or operational inefficiencies of the installed scrubber technology, [PSNH] **may** invest in capital improvements at Merrimack Station that increase its net capability, within the requirements and regulations enforceable by the state or federal government, or both.

RSA 125-O:13, IV (emphasis supplied). The Legislature's use of the word "may" rather than "shall" demonstrates its intent to permit—but not require—PSNH to undertake modifications to restore lost generation capacity caused by scrubber operation. *City of Rochester v. Corpening*, 153 N.H. 571, 574 (2006).

Nor is RSA 125-O:13, IV a blank check—PSNH may make investments in such capital improvements only "if" net power output is reduced "due to the power consumption requirements or operational inefficiencies of the installed scrubber technology." RSA 125-O:13, IV (emphasis supplied). The only modifications to its net capability that PSNH may make pursuant to 125-O:13, IV are, therefore, those that address a net power output reduction caused by the operation of the installed scrubber. *Id.* To the extent PSNH makes such modifications to increase its net capability in response to a reduction in net power output caused by the operation of the installed scrubber, it must do so only "within the requirements and regulations of programs

enforceable by the state or federal government or both." *Id.* Those regulations include RSA 369-B:3-a. PSNH's activities during the April-May Outage were not authorized by RSA 125-O:13, IV.

First, the scrubber has not yet been installed and won't be installed and operational for several more years. The statute provides only a limited authorization—PSNH may undertake capacity modifications that make up for net power output "reduced" by the "install**ed** scrubber technology." *Id.* Using the past tense to refer to "installed scrubber technology," the Legislature clearly intended that any such capacity modifications would be made after the scrubber installation. The Legislature did not authorize PSNH simply to increase its capacity by 6 to 17.175 megawatts or more in 2008, years before the scrubber is actually installed, all the while evading every attempt to determine the actual amount of the capacity increase and refusing to specify the anticipated net power output reduction attributable to scrubber operations. *See, e.g.*, Stipulated Facts at ¶ 7.

Second, the Legislature's limited authorization is crafted to ensure that the amount of any capacity increase is inversely proportionate to the output reduction caused by the operation of the scrubber. RSA 125-O:13, IV effectively builds in a ceiling on any modification PSNH may undertake to increase net capability; PSNH may increase net capability only as much as its pre-scrubber capability is reduced by the operation of the scrubber, and no more. However, it appears that PSNH has increased MK2's capacity well beyond the amount reasonably anticipated to address scrubber parasitic load, *see p. 2 & fn 2, supra*, and certainly for the time period following the April-May Outage until

such time as the scrubber is operational, there is absolutely no statutory authority for PSNH to increase its net generation capability by *any* amount.

Further, the Legislature made no public interest finding with respect to any capital improvements PSNH may make to increase its net capability in response to a net power output reduction caused by the installed scrubber technology. *See* RSA 125-O:13, IV. By contrast, RSA 125-O:11, VI states that "[t]he installation of [scrubber] technology is in the public interest of the citizens of New Hampshire and the customers of the affected sources." RSA 125-O:11, VI. The plain text of the statute provides no plausible basis to conclude that the Legislature has determined that PSNH's capacity increase is in the public interest. *See generally*, DE 08-145, Objection of Freedom Logistics, LLC and Halifax-American Energy Company, LLC to Public Service Company of New Hampshire's Motion to Dismiss Petition at 6-10 (December 4, 2008).

This makes sense given the regulatory context in which RSA 125-O was passed. The Legislature, balancing its policy preference for competitive markets while allowing PSNH to retain its generation assets, was careful to adopt safeguards to ensure that PSNH will not modify its generation assets without Commission approval and to prohibit PSNH from increasing its generating capacity without a grant of legislative authority. While PSNH may retain its generation assets, it may not expand them, and 125-O:13 carefully negotiates that prohibition by permitting only such modifications as would restore the pre-scrubber status quo. To allow otherwise would contradict the rationale underlying the regulatory structure adopted by the Legislature that promotes competition and the continued transition to fully competitive markets. *See* RSA 369-A:1, I (greater competition and more efficient regulation has been found by the general court to be in the

public good and the State's policy is to continue the movement from monopoly to competition).

IV. CONCLUSION.

For the foregoing reasons, the Commission should find that (1) PSNH's actions to expand the capacity of MK2 constitute a modification for purposes of RSA 369-B:3-a; and (2) nothing in RSA 125-O exempts PSNH from its obligation to seek a public interest determination from the Commission in connection with the Capacity Expansion Project, pursuant to RSA 369-B:3-a.

Respectfully submitted,

Date: May 22, 2009

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CERTIFICATE OF SERVICE

I hereby certify that on the 22nd day of May, 2009, a copy of the above Memorandum of Law was sent electronically, and by First Class Mail, to:

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Dated in Concord, New Hampshire this 22nd day of May, 2009.

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EXHIBIT 1

THE STATE OF NEW HAMPSHIRE

BEFORE THE NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION

Docket No. 08-145

FREEDOM LOGISTICS, LLC

HALIFAX-AMERICAN ENERGY COMPANY

Investigation into Modifications to Merrimack Station

STIPULATION OF AGREED FACTS

By and through their undersigned counsel, the parties to the above-captioned proceeding hereby stipulate to the following facts:

1) Public Service Company of New Hampshire ("PSNH") conducted a planned outage of Merrimack Unit 2 from April 1 to May 22, 2008, ("April-May Outage").
2) During the April-May Outage, PSNH performed the capital projects, and what it characterizes as operation and maintenance projects, and other balance of plant maintenance described in PSNH's response to Data Request TS-01, Q-Staff-002 (copy attached).
3) PSNH's new HP/IP turbine was designed to increase the fossil fuel generation efficiency and net generating output of Merrimack Unit 2.
4) Costs accrued thus far in connection with the work described in PSNH's response to Data Request TS-01, Q-STAFF-001 (copy attached) are $11.4 million dollars.
5) The new turbine is expected to increase the net capability of Merrimack Unit 2 by a base of 6 megawatts (MW) to an upper range of 13 MW, resulting in net capability increases of 1.87% to 4.06%. According to PSNH, a potential increase of up to 4.175 additional MW could be realized from the new turbine if additional potential efficiencies are achieved.

6) The turbine being replaced was originally installed in 1968. The salvage value in 2008 was $34,745.

7) The parasitic load of the scrubber will cause the net power output (as measured in MW) from Merrimack Station to be reduced.

8) No changes in the types of coal to be burned at the Station are expected due to the new turbine.

9) In April 2006, the turbine upgrade was approved by PSNH personnel at an estimated cost of $9 million to $15 million.

Dated at Concord, New Hampshire this 8th day of April, 2009.

Melissa Hoffer
Conservation Law Foundation

Dated at Lebanon, New Hampshire this 8th day of April, 2009.

N. Jonathan Peress
Downs Rachlin Martin PLLC
Attorneys for Freedom Logistics, LLC and Halifax-American Energy Company, LLC

Dated at Manchester, New Hampshire this 8th day of April, 2009.

Robert Bersak
Public Service Company of New Hampshire

3038854.1

Witness: William H. Smagula
Request from: New Hampshire Public Utilities Commission Staff

Question:
Please provide the total cost and components of the turbine project.

Response:
The total cost of the turbine project is $11.4 million. The Contractor may be entitled to a performance payment upon final performance testing.

The turbine components included the HP/IP rotor with integral shroud rotating blading, integral shroud stationary blading, nozzle block, inner and outer cylinder casings, associated seals and piping, inspection ports.

Witness: **William H. Smagula**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:
Please provide a listing of work done at Merrimack Unit 2 during the turbine outage, separated into capital and O&M.

Response:
In April and May 2008, Merrimack Unit 2 underwent its scheduled major unit inspection outage. The outage began on April 1 and ended on May 22 lasting just under 52 days. Capitalized projects and major operations and maintenance work completed during the outage are listed below. There were also numerous other corrective and preventative tasks performed throughout the unit.

Capitalized Projects

HP/IP turbine replacement:
Installation of a new HP/IP turbine including the HP/IP rotor, stationary blade rings, and inner and outer cylinder casings.

Generator rotor replacement:
Completed the replacement of the generator. This replacement incorporated improved design features and allowed for a shorter outage duration.

Air heater tube replacement:
The tubular air heater had been on a multi-year replacement program. The hot-end air heater replacement of the tubes began in 2007. The remaining tubes were installed during this outage.

Boiler floor replacement:
The boiler floor replacement project involved the replacement of the boiler floor sections, supports and headers.

Selective catalytic reducer (SCR) catalyst replacement:
The SCR was installed on the unit in 1995. The 4 catalyst layers are on a replacement schedule to maintain optimum NOx reductions. Layer 4 of the catalyst was replaced during the outage. This effort included vacuuming, sampling, thermocouples, staging removal, and demobilization.

Secondary superheater (SSH) inlet bank replacement:
During prior inspections 23 pendants in the SSH inlet tube bank were identified with reduced tube wall thickness, typical in this area of the boiler caused by ash erosion and corrosion. The replacement of pendants involved removing a side wall section to remove and replace the (23) pendant sections in the most cost effective manner.

Ash conditioning equipment:
Ash conditioning equipment was installed on an existing flyash storage tank. This conditioning equipment will provide the option for either dry or wet loading of flyash into the tanks.

Station batteries relocation and replacement:
Station batteries are required safety equipment to provide stand-alone power to critical systems such as emergency lighting and the several emergency pumps. The batteries were installed in a dedicated battery room with a forced ventilation system consistent with good industry practice.

Excitation switchgear voltage regulator replacement:
The older analog components were replaced with new digital components which have self diagnostics and more readily available spare parts.

Sootblowers removal and replacement:
Sootblower maintenance and replacement is an on-going annual outage effort. During this outage 13 sootblowers and associated supporting equipment were replaced.

Selective catalytic reducer sub-girt, insulation and lagging replacement for duct DO4C:
To eliminate a potential safety hazard, an area of the SCR duct had sub-girt, insulation and lagging replaced.

Computer System: Replaced the distributed control system (DCS) system.

Primary Superheater (PSH) Bypass Valve: Replaced the 202 PSH bypass control valves.

Secondary Superheater (SSH) Bypass Valve: Replaced the 207 SSH bypass valve.

Main boiler feed pump (MBFP) control valve: Replaced the MBFP FCV 5 control valve.

SCR Expansion Joints: Replaced a number of SCR expansion joints consistent with the expansion joint program.

Coal Bunker Gates: Replaced E, F & G coal bunker gates.

Projects Charged to Operation and Maintenance

Boiler Maintenance

Cyclones pin replacement and refractory installation: 468,000 pin studs were installed and refractory was applied by hand (ramming) to the slag necks and sprayed into the boiler floor section.

Secondary superheater inlet / intermediate / outlet alignment checks and shield repair / replacement: Additional boiler tube maintenance included vacuuming the furnace area, inspections, alignments, shield repairs, and selected replacements.

Vertical reheat superheater (VRSH) inspection of OXI stop and installation of additional OXI stop: 693 of 1207 VRSH tube shields were removed and areas sandblasted in order to apply the erosion inhibitor Oxi-Stop, as needed.

Air heater wall tie replacement: Sixteen wall ties that extend from north to south on the hot side of the air heater were replaced. In addition, tie supports were installed in two places from east to west to keep the ties in place.

Penthouse inspection and repairs of refractory walls: An inspection was performed and found the boiler penthouse was in good condition with only 1-2 inches of ash buildup, confirming the 2007 repairs were successful. The refractory walls were also inspected and in general found to be in good shape. Incidental repairs of the refractory wall were made as necessary.

Nondestructive examinations of the boiler: A variety of inspection and non-destructive testing was performed throughout the boiler.

Other Balance of Plant Maintenance

Stack maintenance: The inner stack liner was washed and inspected. Repairs were made as needed.

Precipitator: Repairs were made to the precipitator box casing, and the new and old precipitators, ducts, hopper rooms and gutter system were vacuumed and inspected.

Miscellaneous planned maintenance work included valve inspection and repair, the corrosion fatigue inspection program, and general system maintenance.

EXHIBIT 2

Public Service
of New Hampshire
The Northeast Utilities System

June 7, 2006

Mr. Robert R. Scott, Director
Air Resources Division
NH Dept of Environmental Services
29 Hazen Drive, PO Box 95
Concord, NH 03302-0095

Public Service Company of New Hampshire
Merrimack Station – Scrubber Project
2008 Merrimack Unit #2 Outage

Dear Mr. Scott,

This correspondence is a follow-up to discussions held on May 16, 2005 between representatives of Public Service of New Hampshire (PSNH) and NH Department of Environmental Services, Air Resources Division (DES), specifically Craig Wright, Michele Andy, Gary Milbury, and Jeff Underhill of DES and Bill Smagula, Lynn Tillotson, and Laurel Brown of PSNH.

Engineering Study and Assessment

As discussed at the May 16, 2006 meeting, PSNH is preparing for the installation of a scrubber at Merrimack Station. As required by the recently enacted House Bill 1673-FN, a scrubber must be installed and operational at Merrimack Station no later than July 1, 2013. In anticipation of a statutory requirement, PSNH retained Sargent & Lundy to complete a comprehensive, multi-phased engineering study to evaluate multi-pollutant control technology options for the Merrimack Station and to identify the most cost effective and operationally feasible option for mercury control as well as potential challenges. This evaluation included an assessment of the boiler, balance of plant equipment, turbine-generator systems, and site work. This assessment was done to ensure the existing station equipment will perform reliably and the unit's cost will remain competitive since the large investment necessary to install a scrubber necessitates the continued operation of Merrimack Unit #2 (MK2) well beyond 2013. Lastly, to maintain the generation output and value to customers, the large power consumption of a scrubber system – as much as 6 to 10 megawatts, justified the need to fully assess balance of plant improvements necessary to offset the additional load.

Phase I of this study confirmed that the installation and operation of a scrubber at Merrimack Station is a viable option that will result in reductions in mercury and sulfur dioxide (SO_2) emissions. However, the installation of a scrubber will require a new stack, material storage and handling system, wastewater treatment system, balance of plant work, MK2 high pressure/intermediate pressure (HP/IP) turbine and generator work, in addition to the installation of the scrubber vessel.

Planned Maintenance Outages

In order to meet the July 2013 deadline, it will be necessary for PSNH to complete as much of the balance of plant work as possible during planned maintenance outages in the years preceding 2013. This will require careful planning and coordination given Merrimack Station's anticipated outage schedules. Planned maintenance outages occur on MK2 every year. PSNH typically performs annual maintenance on MK2 in the spring to prepare for the higher summer demand periods; while maintenance on MK1 is completed in the fall. The length of a particular outage varies depending on the scope of work being completed and whether or not it is a "major" outage. A "major" outage, when turbine and/or generator work is done, may last 8 to 10 weeks. Routine turbine maintenance and generator inspections, as well as routine generator maintenance, are completed every 5 years. The next major outage on MK2 is scheduled for 2008, and then again in 2013.

Regulatory Review

Prior to 2002, maintenance outage work had been scheduled, budgeted, and completed without regulatory review by DES. Beginning in 2002, PSNH began meeting with representatives of DES, at their request, to discuss capital maintenance projects scheduled to be completed during each planned maintenance outage at Merrimack Station. Following this approach, the individual projects identified as necessary by Sargent & Lundy would be included in the review conducted immediately prior to the outage during which the work is scheduled to be completed. However, due to long lead time for equipment delivery and the need to complete the work during the next planned major outage, two projects – the MK2 HP/IP turbine and generator work – warrant immediate discussion and review.

Balance of Plant Projects Summary

The MK2 HP/IP project entails the replacement of one steam turbine rotating element and stationary blades with functionally equivalent components. In order to maintain MK2's generation output capability, the new blades will be energy efficient blades and of a more reliable design. These blades are designed for maximum efficiency using three-dimensional flow analysis to optimize the steam turbine design. State of the art blade tip seals will provide additional efficiency improvements. The HP/IP rotor, stationary blade rings and inner cylinder casing will be replaced. The outer cylinder casing may also be replaced.

The associated generator repair work involves the removal of cracks in the tooth-tops of the rotor, where retaining rings are shrunk onto the rotor to hold copper bars in place. Once the cracks are removed by grinding, a long retaining ring assembly with new, larger retaining rings will be used to re-assemble the generator rotor. The generator field winding must be rewound with new copper coils as part of this repair.

Following the completion of the HP/IP turbine and generator work, PSNH will be operating MK2 at the same fuel flow and emissions levels as it was operated prior to this equipment being repaired and/or replaced. The HP/IP turbine work will not change the amount of coal burned. Normal full load steam inlet conditions for flow, pressure and temperature will also be held constant, while producing an expected 6 to 13 additional megawatts. Because the coal flow remains constant, air emissions will not change or increase as a result of these projects.

Completion of the MK2 HP/IP turbine and generator projects is expected to maintain the reliability and output of MK2, and allow for the operation of a scrubber. Although the total combined cost of these two projects is estimated to be $9M – $15M, much of the budgeted expense is associated with the routine disassembly, inspection, and reassembly of both the high speed rotating equipment and the generator. The replacement of the HP/IP turbine work is being done as a lower cost option to expensive, more frequent, and time consuming repairs.

Anticipated Schedule

PSNH has identified the next major outage, in 2008, as the appropriate outage to complete the MK2 HP/IP turbine and generator maintenance. Completion of these two projects during the 2008 outage will allow PSNH to complete the necessary maintenance and balance of plant work in time to allow for the operation of the scrubber prior to June 2013. Completion of this work during 2008 will reduce the construction crews on site, eliminate conflicts with the construction of the scrubber system, and be more manageable for Merrimack Station resources.

In order to complete the MK2 HP/IP turbine and generator maintenance during the spring 2008 outage, PSNH will have to place an order for equipment by July 2006. The lead time required for equipment delivery is approximately 2 years. Traditionally, PSNH has placed orders for equipment prior to regulatory review; however, PSNH is proceeding cautiously in order to manage risks associated with the scrubber project (due entirely to the magnitude of the project) and balance of plant work (due to the cost of the HP/IP turbine and generator maintenance work).

Approach for Expedited Review

As previously stated, the HP/IP turbine and generator work will not result in an increase in emissions. As part of the scrubber project, emissions of mercury and sulfur dioxide will be reduced significantly when the scrubber becomes operational. These projects are maintenance activities that are routinely performed throughout the industry and are necessary to maintain

turbine and system efficiencies and reliability and, therefore, are not major modifications subject to Prevention of Significant Deterioration/New Source Review (PSD/NSR) permitting requirements. PSNH acknowledges that the issue of routine and non-routine physical changes is among the PSD/NSR applicability issues that continue to be debated at a national level and that a resolution of the issues may be years away. In order to satisfy the MK2 2008 outage work and schedule, PSNH has chosen an approach for the HP/IP turbine and generator projects that will expedite the regulatory review and does not require PSNH and DES to reach a resolution relative to the routine or non-routine nature of these projects. Due to the reasons stated previously, it would not be in the best interest of PSNH or PSNH customers to delay the regulatory review and completion of the HP/IP turbine and generator work.

In order to expedite the discussion and review process, PSNH has agreed to establish "baseline" emissions and substantiate "representative actual annual emissions" for Merrimack Station. Based on previous discussions with DES, it is our understanding that this approach allows an "actual" to "representative actual annual emissions" test for the purposes of quantifying an emissions increase and, therefore, eliminates the necessity for a NSR/PSD applicability determination. PSNH accepts this "actual to representative actual annual emissions" approach as a means of documenting its position that there will be no increase in emissions as a result of the HP/IP turbine and generator projects at Merrimack Station.

As discussed at the May 16th meeting, PSNH requests that DES concur, in writing, with this "actual" to "representative actual annual emissions" approach. With DES agreement of this approach, PSNH will provide the necessary documentation prior to the MK2 2008 planned maintenance outage, including a baseline determination, representative actual annual emissions, and supporting data to define normal source operations, if necessary.

If you would like to discuss the HP/IP turbine and generator work, or the approach outlined above, please contact me at 634-2851.

Sincerely,

William H. Smagula

William H. Smagula, P.E.
Director – Generation

cc: Craig A. Wright, DES ARD

Merrimack Station
97 River Road, Bow, New Hampshire 03304

FAX

Date: June 7, 2006
Number of pages including cover sheet: 5

To: Craig Wright
Phone:
Fax phone: 271-7053
CC:

From: Lynn Tillotson
or
Laurel Brown
Phone: (603) 224-4081 634-2440
Fax phone: (603) 634-2462

REMARKS: ☐ Urgent ☐ For your review ☐ Reply ASAP ☐ Please comment

Hard copy to follow.

Thanks

EXHIBIT 3

Public Service
of New Hampshire

PSNH Energy Park
780 North Commercial Street, Manchester, NH 03101

Public Service Company of New Hampshire
P.O. Box 330
Manchester, NH 03105-0330
(603) 634-2236
Fax (603) 634-2213
macdojm@psnh.com

The Northeast Utilities System

John M. MacDonald
Vice President - Energy Delivery and Generation

January 31, 2008

Mr. Robert R. Scott, Director
Air Resources Division
NH Dept. of Environmental Services
29 Hazen Drive, PO Box 95
Concord, NH 03302-0095

Public Service Company of New Hampshire
Merrimack Station – Clean Air Project
2008 Merrimack Unit #2 Outage

Dear Mr. Scott:

In response to your letter dated June 12, 2006, Public Service Company of New Hampshire submits baseline emissions data and projected actual emissions data for Merrimack Unit #2 (MK2). This submittal is being made as part of an approach, agreed upon by PSNH and the Department of Environmental Services, Air Resources Division (DES), to allow for an expedited regulatory review of balance of plant projects planned to be completed during MK2's 2008 outage. As requested, the emissions data provided in Attachment 1 is being submitted 60 days prior to the upcoming MK2 outage scheduled to begin on April 1, 2008. Please note, while this project has been generally referred to as the scrubber project during its young life, PSNH has adopted the name, The Clean Air Project, as its formal description. We will endeavor to use this new name going forward.

Project Overview

As indicated in my letter to you dated June 7, 2006, the balance of plant projects planned to be completed during the 2008 MK2 outage, including the HP/IP project and associated generator repair work, are necessary in order to maintain the output of MK2 and comply with RSA 125-O:13 which requires PSNH to install a wet scrubber at Merrimack Station, no later than July 2013. Given the large power consumption of the proposed scrubber system, the completion of this energy efficiency project is vital to Merrimack Station's long term operation.

The HP/IP project involves the replacement of one of the six steam turbine components with a functionally equivalent component. The new, state of the art turbine blades will be energy

efficient. As part of this project, the HP/IP rotor, stationary blade rings, and inner and outer cylinder casings will be replaced. The repair work to the generator involves an in-kind replacement of the generator rotor. The replacement of the generator rotor is the most cost effective approach to repairing the generator and is being completed as an alternate to the previously proposed repair approach which included installation of a long retaining ring assembly, rewinding with new copper coils, etc. The replacement of the generator requires a shorter critical-path outage duration and eliminates unknowns and risks associated with repair work.

Merrimack Unit #2 Operation

Merrimack Station is PSNH's prime base load electric generating station currently produces approximately 475 net megawatts of electricity, 321.75[1] of which is produced by MK2. Following the completion of the MK2 HP/IP turbine project and associated generator work MK2 is expected, per the contract guarantee, to produce an additional 6.5 megawatts of electricity. The actual net unit output will range between 6 and 13 megawatts – an increase that is necessary to support the large power consumption of the future, new scrubber system –due to the increased efficiency of the turbine blades. As a result of this energy efficiency project, MK2 will produce more energy without increasing fuel consumed.

Following the completion of the HP/IP turbine project and associated generator work, MK2 will be operated at the same fuel flow rates and emissions levels as it was operated prior to the MK2 2008 outage. Normal full load steam inlet conditions for flow, pressure and temperature will remain at their previous values. Because the coal flow will remain constant, there is no change or increase in air emissions associated with the HP/IP turbine and generator project.

Given the base load operation of Merrimack Station, PSNH anticipates that actual annual emissions from MK2 in the future will be very similar to historical emissions. A review of historical data for the period 1996 through 2007 reveals slight variability in MK2's annual average capacity factor, operating hours, and total fuel burned, largely the result of annual maintenance outage schedules which typically range between four and nine weeks and unplanned outages. Historical data is enclosed as Attachment 2.

Regulatory Review

The approach proposed by PSNH for regulatory review is based on EPA guidance documents, specifically those applicable to Detroit Edison's Monroe Power Plant and Otter Tail Power's Coyote Station where similar projects have been undertaken. The proposed approach is also based on existing federal PSD regulations which allow electric utilities to determine applicability using projected actual emissions. This approach, which has previously been called the "actual-to-representative-actual-annual" emissions test, allows utilities to compare projected future

[1] MK2's current winter claimed capability.

annual emissions that will occur following a non-routine physical or operational change to actual baseline emissions preceding the change. Baseline emissions, calculated using utilization rate, fuel use and applicable emission factors, are based on an average annual emissions rate in tons per year for each pollutant emitted. Projected actual emissions are based on the maximum annual rate, in tons per year, at which a regulated PSD pollutant is projected to be emitted, less any emissions that could have been accommodated during the baseline period and are not related to the change. The proposed approach allows PSNH to document that there is no emissions increase associated with the MK2 HP/IP turbine and generator project.

Baseline Emissions

PSNH understands that baseline is calculated based on the average emissions, representative of normal operation, during 2 consecutive years during the previous 5 year period. PSNH has calculated baseline emissions for MK2 based on the annual average of emissions during two consecutive calendar years, or twenty-four consecutive months, preceding the 2008 outage, specifically 2006-2007. In addition to the enclosed historical data, summaries of emissions for the previous 5 years (2003-2007) as well as baseline for TSP, CO, VOCs, SO2, and NOx are provided in Attachment 2. The baseline for NOx and SO2 was calculated using emissions data contained in PSNH's Quarterly Emissions Inventory Reports, as previously filed with DES and the NH Public Utilities Commission. Copies of these reports for the years 2006-2007 are also enclosed in Attachment 3. Baseline emissions for CO and VOCs were calculated using AP42 emissions factors published by DES and available on its web site. Baseline emissions for PM were calculated using the emissions rate documented during the most recent stack test. These calculations are identical to those used in PSNH's annual emissions reports and emissions based fees.

Projected Actual Emissions

Projected actual emissions for 2008 and 2009 have been calculated using forecasted annual capacity factors, fuel use, hours of operation and emissions rates. Projected emissions for 2008 are based on the average for the previous 5-year period, while projected emissions for 2009 are based on hours of operation, fuel use, and emissions similar to 2006. As previously stated, given the base load operation of Merrimack Station, PSNH anticipates that MK2's projected actual emissions will be comparable to its historical actual emissions. Projected actual emissions and forecasted capacity factors for MK2 are enclosed in Attachment 1. Historic capacity factors are contained in Attachments 1 and 2. In accordance with EPA guidance, the projection of post-change emissions does not include the portion of emissions that could have been accommodated before the change and is unrelated to the change. See letter from Francis X. Lyons, Regional Administrator, US EPA, to Henry Nickel, Counsel for the Detroit Edison Company, Hunton & Williams, dated May 23, 2000. Maximum potential emissions (i.e., emissions that can be accommodated prior to the change) currently allowed under TP-B-0462 and existing state and federal applicable requirements are contained in Attachment 4.

Future Recordkeeping and Reporting

As specified under 40 CFR 52.21(b)(21)(v) and 40 CFR 52.24(f)(13)(v), PSNH will maintain and submit to DES, on an annual basis for a period of 5 years, information demonstrating that there are no emissions increases as a result of the HP/IP turbine and generator project. This information may include annual utilization data, emissions data, fuel use, etc. PSNH may exclude emissions increases that are caused by other factors including, for example, increases associated with variability in control technology operation and performance or coal characteristics. Emissions increases may also exclude increases associated with increased use of MK2 due to the growth in electrical demand for the utility system as a whole since the baseline period. See Detroit Edison Applicability Determination Detailed Analysis, dated May 23, 2000.

In addition to documenting that there is no increase in emissions associated with the HP/IP turbine and generator project, the enclosed baseline and projected actual emissions fulfills the request for documentation contained in your letter dated June 12, 2007. Should you have any questions or require additional information relative to the MK2 HP/IP turbine and generator project or the enclosed data, please contact me at 634-2851 or Laurel L. Brown, Senior Environmental Analyst, at 634-2331.

Sincerely,

William H. Smagula

William H. Smagula, P.E.
Director – Generation

Enclosures

cc. Thomas S. Burack, Commissioner, DES
Harold E. Keyes, PSNH Merrimack Station

PSNH Merrimack Station
Merrimack Unit #2

Attachment 1

Historic Emissions Data

	SO2	NOx	CO	PM	VOCs
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
2003	17,387	2,685	196	218	43
2004	20,582	3,067	211	233	46
2005	22,948	3,283	220	234	48
2006	22,729	3,304	236	256	52
2007	25,062	2,250	228	249	50

Historic Operational Data

	Capacity	Coal	#2 Oil
	Factor %	tons/yr	gal/yr
2003	73.90	768,969	28,826
2004	80.50	841,129	22,867
2005	79.10	870,802	77,190
2006	83.90	937,595	29,070
2007	82.90	912,674	11,427

Baseline Period: January 2006 - December 2007

Baseline Emissions

SO2	NOx	CO	PM	VOCs
tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
23,896	2,777	232	253	51

Projected Capacity Factor and Representative Actual Emissions

	SO2	NOx	CO	PM	VOCs	Capacity
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	Factor %
2008	21,742	2,918	218	238	48	80.1
2009	25,062	3,304	236	256	52	83.9

PSNH Merrimack Station
Merrimack Unit #2

Attachment 2

Year	SO2 tons/yr	NOx tons/yr	CO tons/yr	PM tons/yr	VOCs tons/yr	Capacity Factor %	Nox lbs/mmBtu	SO2 lbs/mmBtu	Coal tons/yr	#2 Oil gal/yr
1996	23,579.51	13,818.20	187.46	1,595.40	41.23	69.9	0.95	2.44	746,923	18,215
1997	26,128.10	9,804.50	223.47	1,837.00	49.16	83.0	0.88	2.15	860,559	13,054
1998	21,669.00	4,745.00	191.62	1,886.70	42.14	70.2	0.48	2.10	752,201	23,826
1999	20,518.00	4,628.00	180.78	1,416.50	39.76	68.5	0.47	2.16	692,942	16,645
2000	26,152.00	4,202.00	219.70	231.90	48.32	78.6	0.38	2.27	849,914	31,723
2001	24,562.00	3,130.00	201.17	216.20	44.25	74.8	0.30	2.31	788,202	14,317
2002	20,902.00	2,872.00	200.15	210.48	44.03	75.7	0.27	1.90	757,879	13,459
2003	17,387.00	2,684.80	195.80	217.76	43.06	73.9	0.26	1.58	768,969	28,826
2004	20,582.00	3,067.00	210.92	232.67	46.39	80.5	0.28	1.71	841,129	22,867
2005	22,948.00	3,283.00	219.70	234.11	48.30	79.1	0.29	1.93	870,802	77,190
2006	22,729.00	3,304.00	235.64	256.19	51.83	83.9	0.26	1.79	937,595	29,070
2007	25,062.40	2,249.60	228.20	249.24	50.20	82.9	0.18	1.97	912,674	11,427

MERRIMACK STATION
2007 SO2 - NOx EMISSIONS CALCULATIONS

	COAL AS BURNED													#2 OIL AS BURNED					
Month	MK1 Tons	MK2 Tons	TOTAL Tons	% MK1 Sulfur	MK1 btu/lb	% MK2 Sulfur	MK2 btu/lb	% Avg Sulfur	MK1 CEM Tons NOx	MK2 CEM Tons NOx	MK1 CEM Tons SO2	MK2 CEM Tons SO2	TOTAL CEM Tons SO2	MK1 Gal.	MK2 Gal.	TOTAL Gal.	% Sulfur	btu/lb	lbs/gal
JAN	32,573	92,454	125,027	1.59	13,024	1.46	13,049	1.50	73	193	1,047	2,695	3,742	-	266	266	0.02	19,612	7.080
FEB	26,943	64,351	91,294	1.58	13,046	1.54	12,778	1.56	68	149	953	2,209	3,162	-	2,321	2,321	0.02	19,612	7.080
MAR	28,674	94,536	123,210	1.41	13,208	1.40	12,927	1.40	68	184	832	2,495	3,327	903	58	961	0.02	19,612	7.080
APR	31,333	49,307	80,640	1.71	13,263	1.50	13,001	1.58	70	104	1,072	1,271	2,344	95	-	95	0.01	19,369	7.030
MAY	33,359	13,150	46,509	1.35	13,370	1.16	13,442	1.29	74	53	961	351	1,312	-	2,161	2,161	0.01	19,369	7.030
JUN	29,329	83,669	112,998	1.32	13,162	1.38	13,148	1.36	67	198	921	2,286	3,207	83	3,726	3,809	0.01	19,369	7.030
JUL	34,065	91,622	125,687	1.31	13,154	1.28	13,050	1.29	92	194	962	2,308	3,270	-	630	630	0.01	19,364	7.090
AUG	32,411	90,645	123,056	1.55	13,112	1.48	13,132	1.50	100	252	1,045	2,555	3,601	-	109	109	0.01	19,364	7.090
SEP	28,712	69,741	98,453	1.51	13,221	1.41	13,055	1.44	87	185	855	1,817	2,672	891	-	891	0.01	19,384	7.090
OCT	31,245	79,340	110,585	1.43	13,158	1.50	13,009	1.48	93	225	916	2,142	3,057	140	1,489	1,629	0.02	19,424	7.080
NOV	31,215	89,815	121,030	1.48	12,992	1.28	12,905	1.33	88	248	915	2,408	3,322	92	92	184	0.02	19,424	7.080
DEC	33,332	94,244	127,576	1.50	12,946	1.35	12,892	1.38	91	264	943	2,526	3,469	62	575	637	0.02	19,424	7.080
*ADDJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
YR TOTALS	373,391	912,674	1,286,065						971	2,248	11,420	25,064	36,484	2,266	11,427	13,693			
YR AVERAGE				1.48	13,138	1.40	13,004	1.43									0.01	19,444	7.059
10^12 BTU	9.811158	23.73747	33.549											0.0003	0.0016	0.0019			

1.093 - COAL AVE lb SULFUR PER MMBTU
0.007 - #2 OIL - AVE lb SULFUR PER MMBTU
1.093 - OVERALL AVE lb SULFUR PER MMBTU

2.175 - AVERAGE LBS SO2 PER MMBTU
4.000 - NH STATE REG MAX

0.182 - MK1 AVERAGE LBS NOx/MMBTU
0.186 - MK2 AVERAGE LBS NOx/MMBTU

NOTES:
1) ALL ANALYSES USED ARE "AS RECEIVED" ON THE FUEL ANALYSIS SHEETS.
2) SULFUR VALUES ARE PERCENT BY-WEIGHT.
3) MONTHLY COMPOSITE ANALYSES USED FOR BOTH UNITS FOR REPORTING PURPOSES, EVEN DURING MONTHS WHEN TEST BURNS OCCURRED.
4) COAL TONS ARE PRORATED BURN.
* STARRED ENTRY IS AERIAL SURVEY ADJUSTMENT, FUEL ANALYSIS IS EQUAL TO STATION Y-T-D WEIGHTED AVERAGE (December was adjusted)
Emissions are based on Average emissions rate of the current year

Prepared by Leo Quinn 01/24/2008

MERRIMACK STATION
2006 SO2 - NOx EMISSIONS CALCULATIONS

	COAL AS BURNED													#2 OIL AS BURNED					
Month	MK1 Tons	MK2 Tons	TOTAL Tons	% MK1 Sulfur	MK1 btu/lb	% MK2 Sulfur	MK2 btu/lb	% Avg Sulfur	MK1 CEM Tons NOx	MK2 CEM Tons NOx	MK1 CEM Tons SO2	MK2 CEM Tons SO2	TOTAL CEM Tons SO2	MK1 Gal.	MK2 Gal.	TOTAL Gal.	% Sulfur	btu/lb	lbs/gal
JAN	30,088	90,657	120,745	1.21	13,066	1.15	13,097	1.16	209	434	809	2,194	3,003	4,813	4,179	8,992	0.04	19,474	7.020
FEB	24,956	66,161	91,117	1.31	13,333	1.08	13,281	1.14	179	327	808	1,374	2,182	3,708	5,721	9,429	0.04	19,474	7.020
MAR	31,789	88,337	120,126	1.53	13,330	1.23	13,345	1.31	227	424	999	1,979	2,966	1,193	1,780	2,973	0.04	19,474	7.020
APR	24,221	50,411	74,632	1.60	13,396	1.25	13,319	1.36	175	239	734	1,240	1,973	2,258	142	2,400	0.04	19,564	7.060
MAY	23,614	27,330	50,944	1.90	13,050	1.20	12,853	1.53	59	71	846	777	1,622	4,135	6,100	10,235	0.04	19,564	7.060
JUN	25,429	91,612	117,041	1.60	13,113	1.41	12,889	1.45	55	169	759	2,260	3,019	2,151	929	3,080	0.03	19,428	7.060
JUL	34,367	96,757	131,124	1.42	12,875	1.32	12,660	1.34	71	182	1,048	2,374	3,422	83	169	252	0.03	19,517	7.066
AUG	34,161	96,238	130,399	1.59	12,895	1.29	12,770	1.37	72	190	1,263	2,535	3,798	-	87	87	0.03	19,617	7.066
SEP	4,801	69,673	74,474	1.59	12,895	1.24	12,870	1.27	11	152	192	1,710	1,902	1,257	5,892	7,149	0.03	19,617	7.066
OCT	27,617	92,176	119,793	1.15	13,106	1.16	13,116	1.16	202	424	778	2,241	3,019	2,005	618	2,623	0.11	19,444	7.060
NOV	28,816	91,964	120,880	1.23	13,128	1.24	12,914	1.24	200	375	852	2,122	2,973	2,729	-	2,729	0.11	19,444	7.060
DEC	29,738	80,939	110,677	1.81	13,124	1.57	13,157	1.63	196	317	920	1,923	2,844	1,595	3,453	5,048	0.11	19,444	7.060
* ADDJ	(296)	(4,660)	(4,956)	1.48	13,114	1.27	13,910	1.32	-	-	-	-	-	-	-	-	-	-	-
YR TOTALS	319,301	937,595	1,256,896						1,656	3,304	9,998	22,728	32,726	25,927	29,070	54,997			
YR AVERAGE				1.48	13,114	1.27	13,910	1.32									0.05	19,506	7.047
10^12 BTU	8.374437	24.39685	32.771											0.0036	0.0040	0.0076			

1.015 - COAL-AVE lb SULFUR PER MMBTU
0.028 - #2 OIL - AVE lb SULFUR PER MMBTU
1.015 - OVERALL AVE lb SULFUR PER MMBTU

1.997 - AVERAGE LBS SO2 PER MMBTU
4.000 - NH STATE REG MAX

0.372 - MK1 AVERAGE LBS NOx/MMBTU
0.264 - MK2 AVERAGE LBS NOx/MMBTU

NOTES:
1) ALL ANALYSES USED ARE "AS RECEIVED" ON THE FUEL ANALYSIS SHEETS.
2) SULFUR VALUES ARE PERCENT BY WEIGHT.
3) MONTHLY COMPOSITE ANALYSES USED FOR BOTH UNITS FOR REPORTING PURPOSES, EVEN DURING MONTHS WHEN TEST BURNS OCCURRED.
4) COAL TONS ARE PRORATED BURN.
* STARRED ENTRY IS AERIAL SURVEY ADJUSTMENT, FUEL ANALYSIS IS EQUAL TO STATION Y-T-D WEIGHTED AVERAGE (December was adjusted)
Emissions are based on Average emissions rate of the current year

Prepared by Leo Quinn 01/26/2007

PSNH Merrimack Station
Merrimack Unit #2

Attachment 4

Current Permit Limits

max gross heat input	3,473	mmBtu/hr
max annual gross heat input	30,423,480	mmBtu
max sulfur content of coal burned	2.80	lb/mmBtu
max sulfur content of #2 fuel oil	0.40	% by weight
max fuel consumption (coal)	136.20	tons/hr
max fuel consumption (coal)	1,193,078.0	tons per 12-mo
max fuel consumption (#2 oil)	1,656.0	gal/hr
max fuel consumption (#2 oil)	14,500,000.0	gallons per 12-mo
NOx	15.40	tons per day
	5,621.00	tpy calculated = 15.4 tpd * 365
SO2		
	85,185.74	tpy calculated = 2.8 lb/mmBtu * 3473 mmBtu/hr * 8760 * 2 / 2000

EXHIBIT 4

ACTIVE - ADMINISTERED TRANSMISSION SYSTEM
Interconnection Requests to the Administered Transmission System
Generation and Elective Transmission Upgrade Requests, and requests for transmission service

Queue Position	Req. Status[1]	Req. Type[1]	Request Date[2]	Project Name	Unit Type	Fuel Type	MW	Summer Net MW	Winter Net MW	County	ST	Projected Commercial Operation Date	Projected Initial Sync. Date	Proposed Point of Interconnection	Inter. Service Type[1]	SIS Com.	I.3.9 Apprvl.	SIS Report or Any Other Studies Available From[3,4]	Any Deviation from Timeline for Current Study[5]	RSP ZONE
89	A	G	6/6/2001	Cape Wind Turbine Generators *	WT	WND	462	462	462	N/A	MA	11/30/2010	6/30/2009	Near Barnstable 115 kV Substation	MIS	Y	Y	ISO-NE		SEMA
95	A	G	11/21/2001	Kleen Energy Project	CC	NG, DFO	620	619.8	620.0	Middlesex	CT	11/30/2010	5/28/2010	Sectionalize 353 Line	MIS	Y	Y	ISO-NE		CT
104	A	G	3/06/2003	Waterside Power - 180 MW	GT	NG, DFO	180	203.9	207.2	Fairfield	CT	6/1/2010	3/6/2010	Waterside 115 kV	MIS	Y	Y	ISO-NE		NOR
108	A	G	5/12/2003	Hoosac Wind Project	WT	WND	28.5	30	30	Berkshire &	MA	12/31/2010	10/1/2010	Line Y25S	MIS	Y	Y	NGRID		WMA
125	A	G	11/2/2004	Norwalk Harbor Station Redevelopment	GT	KER		322.5	330	Fairfield	CT	1/31/2010	12/31/2009	Norwalk 345 kV Station	MIS			ISO-NE		NOR
135	A	G	8/19/2005	Biomass	ST	WDS		55	55	Hampden	MA	6/30/2011	2/28/2011	Blanford - Southwick - Elm 115 kV line	MIS	Y	Y	ISO-NE		WMA
137	A	G	9/23/2005	Hydro	HD	WAT		N/A	N/A	Oxford	ME	TBD	TBD	CMP 115 kV switchyard located on Falls Hill, Rumford, ME	MIS	Y	Y	ISO-NE		ME
138	A	G	9/26/2005	Kibby Wind Project	WT	WND		65	65	Franklin	ME	10/1/2009	9/30/2009	Bigelow Substation	MIS	Y	Y	ISO-NE		ME
138	A	G	9/26/2005	Kibby Wind Project	WT	WND		65.5	65.5	Franklin	ME	9/1/2010	8/1/2010	Bigelow Substation	MIS	Y	Y	ISO-NE		ME
139	A	G	10/14/2005	Lowell Power Generators	GT	NG		99	99	Middlesex	MA	6/1/2010	4/1/2010	J162 115kV line between Tewksbury and Perry Street	MIS	Y	Y	ISO-NE		CMA
148	A	G	3/6/2006	Comerford Hydro	HD	WAT		169	170	Grafton	NH	11/31/2006 - 11/31/2009	11/31/2006 - 11/31/2009	NGRID Comerford Substation	MIS	Y	Y	ISO-NE		NH
150	A	G	5/25/2006	Plainfield Renewable Energy Project	ST	WDS		37.5	38.5	Windham	CT	3/31/2010	11/30/2009	CL&P Fry Brook Substation	MIS	Y	Y	ISO-NE		CT
155	A	G	6/2/2006	Gas Turbine	CT	NG, DFO		120	130	Middlesex	MA	5/1/2011	3/1/2011	NSTAR Mystic Substation	MIS			ISO-NE		BOST
157	A	G	6/21/2006	Billerica Power	GT	NG, Oil		311	341	Middlesex	MA	6/15/2011	5/15/2011	J-162 line to Tewksbury Substation	MIS	Y	Y	ISO-NE		CMA
161	A	G	7/5/2006	Devon 15-18	GT	NG, KER		196.8	196.8	New Haven	CT	6/1/2010	4/1/2010	Devon Substation	MIS	Y	Y	ISO-NE		SWCT
161	A	G	7/5/2006	Gas Turbine	GT	NG, JF, KER		215	211	Middlesex	CT	6/1/2010	4/1/2010	CL&P Middletown Substation or CL&P Scovill Rock Substation	MIS	Y	Y	ISO-NE		CT
161	A	G	7/5/2006	Middletown 11	GT	NG, JF, KER		107.5	110	Middlesex	CT	6/1/2011	4/1/2011	CL&P Middletown Substation	MIS	Y	Y	ISO-NE		CT
161	A	G	7/5/2006	Combined Cycle	CC	NG		630	690	New London	CT	5/31/2013	2/1/2013	Montville Substation	MIS			ISO-NE		CT
163	A	G	7/24/2006	Mirant Kendall Jet 2	GT	JF		16	22	Middlesex	MA	4/15/2009	4/1/2009	Kendall Station in Cambridge	MIS	Y	Y	NSTAR		BOST
164	A	G	8/1/2006	Combined Cycle(see # 201)	GT	NG		158	196	Providence	RI	6/1/2012	12/31/2011	345 kV RISE Substation	MIS			ISO-NE		RI
165	A	G	8/3/2006	Combined Cycle(See # 226)	CC	NG		563	616	Rockingham	NH	6/30/2013	12/31/2012	345 kV Seabrook Substation	MIS			ISO-NE		NH
166	A	G	8/9/2006	Wind	WT	WND		100	100	Coos	NH	12/15/2009	9/15/2009	PSNH W-179 115 kV line	MIS			ISO-NE		NH
170	A	G	8/25/2006	Gas Turbine Capacity Increase (see #155)	CT	NG, DFO		40	55	Middlesex	MA	5/1/2011	3/1/2011	NSTAR Mystic Substation	MIS			ISO-NE		BOST
171	A	G	8/29/2006	Thomas A. Watson Generating Station	GT	NG, DFO		108	115	Norfolk	MA	4/15/2009	3/1/2009	115 kV Potter Substation	MIS	Y	Y	ISO-NE		SEMA
172	A	G	8/29/2006	Sheffield Wind	WT	WND		40	40	Caledonia	VT	11/30/2009	9/1/2009	Irasburg - St. Johnsbury 115 kV	MIS	Y	Y	ISO-NE		VT
174	A	G	10/13/2006	Combined Cycle	CC	NG, DFO		280	280	Hampden	MA	6/1/2012	4/1/2012	345 kV Stony Brook Substation	MIS			ISO-NE		WMA
175	A	G	10/20/2006	Gas Turbine	GT	NG, DFO		175	203.6	Fairfield	CT	6/1/2010	2/1/2010	345 kV line # 321	MIS			ISO-NE		SWCT
176	A	G	11/2/2006	Combined Cycle	CC	NG, DFO		350	425	Plymouth	MA	6/1/2012	12/1/2011	115 kV F19 and E20 lines	MIS	Y	Y			SEMA
181	A	ET	11/9/2006	Transmission Expansion	N/A	N/A		N/A	N/A	N/A	CT	N/A	N/A	Lake Road 345 kV Substation	N/A	Y		ISO-NE		CT
182	A	G	10/20/2006	Gas Turbine Capacity Increase (See queue position #175)	GT	NG, DFO		0	18.4	Fairfield	CT	6/1/2010	2/1/2010	345 kV line # 321	MIS			ISO-NE		SWCT
185	A	G	11/22/2006	Wind	WT	WND		39	39	Penobscot	ME	12/15/2009	11/15/2009	BHE Keene Road 115 kV substation	MIS	Y	Y	ISO-NE		BHE
186	A	G	12/1/2006	Gas Turbine	GT	DFO KER		78	93	New Haven	CT	12/31/2011	10/30/2011	CL&P Shepaug 115 kV substation	MIS			ISO-NE		SWCT
186	A	G	12/1/2006	Hydro	HD	WAT		48	48	New Haven	CT	12/31/2011	10/30/2011	CL&P Shepaug 115 kV substation	MIS			ISO-NE		SWCT
190	A	G	12/22/2006	Gas Turbine	GT	DFO,		156	200	Hampden	MA	1/31/2010	10/30/2009	W Mass. Mt. Tom 115 kV Substation	MIS					WMA
190	A	G	12/22/2006	Gas Turbine	GT	NG,		39	50	New London	CT	1/31/2010	10/30/2009	CL&P Tunnel 115 kV Substation	MIS			ISO-NE		CT
190	A	G	12/22/2006	Gas Turbine	GT	NG,		39	50	Litchfield	CT	1/31/2010	10/30/2009	CL&P Falls Village 69 kV Substation	MIS					CT
190	A	G	12/22/2006	Gas Turbine	GT	NG,		39	50	New Haven	CT	1/31/2010	10/30/2009	CL&P Stevenson 115 kV Substation	MIS			ISO-NE		SWCT
191	A	G	12/22/2006	Biomass Project	ST	WDS		26.25	26.75	Litchfield	CT	11/1/2010	8/1/2010	CL&P 115 kV line #1238	MIS	Y		ISO-NE		CT or SWCT
193	A	G	1/5/2007	Combined Cycle	CC	NG		60	67	New Haven	CT	6/1/2010	4/15/2010	UI Ansonia 115 kV substation	MIS					SWCT
195	A	G	1/9/2007	Gas Turbine	GT	NG KER		24	24	Bristol	MA	6/1/2009	5/1/2009	NSTAR 115 kV line #111	MIS					SEMA
196	A	G	1/16/2007	Pump Storage Capacity Upgrade	PS	WAT		1180	1180	Franklin	MA	6/30/2010	5/31/2010	W. Mass Northfield 345 kV substation	MIS					WMA
197	A	G	1/31/2007	Wind Project	WT	WND		55	55	Oxford	ME	7/1/2010	5/1/2010	115kV Rumford Substation	MIS					ME

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199	A	G	2/21/2007	Waterbury Generating Facility	GT	NG		95.7	98.1	New Haven	CT	7/1/2009	5/1/2009	CL&P Baldwin 115 kV substation	MIS	Y	Y	ISO-NE		SWCT
201	A	G	2/26/2007	Converts queue position 164 to combined cycle facility and increases capacity	CC	NG		162	162	Providence	RI	6/1/2012	12/31/2011	345 kV RISE Substation	MIS			ISO-NE		RI
202	A	G	2/27/2007	Combined Cycle	CC	NG		250	285	Windham	CT	5/31/2012	1/31/2012	CL&P 345 kV Lake Road substation	MIS					RI
207	A	G	4/3/2007	Combined Cycle	CC	NG, DFO		452	540	New Haven	CT	10/1/2010	4/1/2010	CL&P 115 kV lines between Baldwin Junction and Beacon Falls	MIS	Y	Y	ISO-NE		SWCT
212	A	G	5/15/2007	Biomass Project	ST	WDS		45	45	Hillsboro	NH	2/28/2010	12/31/2009	PSNH K-165 115 kV line	MIS					NH
213	A	G	5/15/2007	Gas Turbine	GT	NG		158.5	184.7	Worcester	MA	6/1/2010	2/1/2010	ANP Blackstone 345 kV substation	MIS					RI
215	A	G	5/24/2007	Wind Project	WT	WND		75	75	Oxford	ME	3/1/2010	12/1/2009	CMP 115 kV Rumford Substation	MIS					ME
216	A	G	6/8/2007	Combined Cycle	CC	NG, DFO		244	294	Bristol	MA	3/31/2012	2/28/2012	Cleary 115 kV substation	MIS					SEMA
217	A	G	6/13/2007	Pump Storage Equipment Replacement	PS	WAT		1160	1160	Franklin	MA	6/30/2010	5/31/2010	W. Mass Northfield 345 kV substation	MIS					WMA
221	A	G	7/16/2007	Wind Project	WT	WND		78	78	Penobscot	ME	10/31/2011	9/30/2011	115 kV line between Enfield and James River substation	MIS					BHE
222	A	G	7/16/2007	Combined Cycle	CC	NG, DFO		510	560	New Haven	CT	9/1/2009	6/1/2009	Haddam Neck-Southington 345 kV line	MIS					CT
224	A	G	8/10/2007	Gas Turbine	GT	NG, DFO		42.4	55.2	Franklin	VT	9/30/2009	8/31/2009	Swanson Village 46 kV System	MIS	Y	Y	ISO-NE		VT
225	A	G	8/13/2007	Combined Cycle Capacity Increase (See queue position 202)	CC	NG		161	127	Windham	CT	5/31/2012	1/31/2012	CL&P 345 kV Lake Road substation	MIS					RI
226	A	G	9/5/2007	Combined Cycle Capacity Increase/ - Generator Change (See queue position 165)	CC	NG		341	394	Rockingham	NH	6/30/2013	12/31/2012	345 kV Seabrook Substation	MIS					NH
227	A	G	9/26/2007	Pump Storage Capacity Upgrade	PS	WAT		333	333	Berkshire	MA	3/31/2011	3/17/2011	Bear Swamp 230 kV Substation	MIS					WMA
227	A	G	9/26/2007	Pump Storage Capacity Upgrade	PS	WAT		333	333	Berkshire	MA	3/30/2012	3/16/2012	Bear Swamp 230 kV Substation	MIS					WMA
228	A	G	10/9/2007	Wind	WT	WND		27	30	Penobscot	ME	12/31/2009	12/31/2009	BHE Keene Road Substation	MIS					BHE
229	A	G	10/15/2007	Biomass Project	ST	WDS		41	41	Coos	NH	5/31/2011	5/31/2011	PSNH 115 kV S136 line	MIS					NH
231	A	G	10/25/2007	Steam Turbine Capacity Uprate	ST	BIT		642	663	Bristol	MA	6/302012	5/31/2012	Brayton Point 345 kV Switchyard	MIS					RI
233	A	G	11/2/2007	Combined Cycle(See queue position #262)	CC	LFG		35.1	38.4	Providence	RI	9/1/2010	7/1/2010	NGRID 115 kV S171 line	MIS					RI
236	A	G	11/30/2007	Combined Cycle	CC	NG, DFO		353	421	Hampden	MA	6/1/2012	2/1/2012	115 kV line between Buck Pond and Pochassic substations-1302 line	MIS					WMA
237	A	G	12/5/2007	Combined Cycle	CC	NG		285	300	Newport	RI	6/1/2012	1/15/2012	115 kV Tiverton Substation	MIS					RI
238	A	G	12/7/2007	Barre Mass Landfill Gas	IC	LFG		1.6	2	Worcester	MA	12/1/2009	11/1/2009	13.8 kV distribution circuit	MIS	Y	Y	ISO-NE		WMA
240	A	G	12/18/2007	Gas Turbine	GT	NG, KER		94	98	New London	CT	6/1/2010	4/1/2010	Montville Substation	MIS					CT
241	A	G	12/31/2007	Combined Cycle Capacity Increase (See queue position 207)	CC	NG, DFO		489	557	New Haven	CT	1/1/2011	6/1/2010	CL&P 115 kV lines between Baldwin Junction and Beacon Falls	MIS					SWCT
242	A	G	1/3/2008	Biomass Project	ST	WDS		50	50	Cheshire	NH	6/30/2011	4/30/2011	PSNH 115 kV N186 circuit	MIS					NH
243	A	G	1/4/2008	Increase to Steam Turbine Capacity Uprate (See queue position 231)	ST	BIT		648	669	Bristol	MA	6/302012	5/31/2012	Brayton Point 345 kV Switchyard	MIS					RI
244	A	G	1/3/2008	Wind	WT	WND		148	148	Somerset	ME	12/1/2010	10/1/2010	CMP 115 kV Wyman substation or 115 kV 215 line	MIS					ME
245	A	G	1/11/2008	Wind	WT	WND		24	24	Washington	ME	12/31/2009	12/31/2009	BHE Keene Road Substation	MIS					BHE

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247	A	G	1/31/2008	Reconnect Existing Hydro	HD	WAT		4.1	4.1	Orleans	VT	5/1/2009	5/1/2009	VELCO Newport Substation 46 kV bus	MIS					VT
247	A	G	1/31/2008	Diesel generation	IC	DFO		10.3	10.3	Orleans	VT	5/1/2009	5/1/2009	VELCO Newport Substation 46 kV bus	MIS					VT
248	A	G	1/13/2008	Gas Turbine	GT	NG, DFO		178	200	New Haven	CT	6/1/2011	3/1/2011	UI East shore Substation 115 kV bus	MIS					CT
249	A	G	2/4/2008	Wind Capacity Increase- see # 245	WT	WND		30	30	Washington	ME	12/31/2009	12/31/2009	BHE Keene Road Substation	MIS					BHE
251	A	G	2/15/2008	Biomass Project	ST	WDS		61	64	Coos	NH	12/1/2009	11/15/2009	PSNH Eastside(Berlin) Substation	MIS					NH
253	A	G	3/11/2008	Combined Cycle	CC	DFO		269	310	Fairfield	CT	6/1/2011	2/1/2011	CL&P 115 kV 1876 line	MIS					SWCT
254	A	G	3/10/2008	Wind	WT	WND		19.5	19.5	Penobscot	ME	11/1/2010	11/1/2010	CMP 115 kV line # 203	MIS					ME
255	A	G	3/31/2008	Wind	WT	WND		50	50	Grafton	NH	12/31/2010	10/1/2010	TBD	MIS					NH
259	A	G	5/7/2008	Combined Cycle	CC	NG		551	616.3	Providence	RI	6/1/2009	6/1/2009	115 kV RISE Substation	MIS					RI
260	A	G	5/8/2008	Wind	WT	WND		450	450	N/A	RI	12/31/2013	6/30/2012	Brayton Point 115 kV bus or Dexter 115 kV bus	MIS					RI
260	A	G	5/8/2008	Wind	WT	WND		450	450	N/A	RI	12/31/2013	6/30/2012	Kent County 115 kV bus or Davisville 115 kV bus	MIS					RI
262	A	G	5/23/2008	Increase in capacity for queue # 233	CC	LFG		45.9	50.1	Providence	RI	9/1/2010	7/1/2010	NGRID 115 kV S171 line	MIS					RI
263	A	G	5/27/2008	Wind	WT	WND		347	347	Washington	RI	12/1/2012	6/1/2011	West Kingston Substation	MIS					RI
265	A	G	6/16/2008	Gas Turbine	GT	DFO, NG		12.5	14	Suffolk	MA	6/1/2011	5/1/2011	NSTAR Brighton Substation	MIS					BOST
266	A	G	6/19/2008	Wind	WT	WND		34	34	Orleans	VT	12/31/2011	9/15/2011	CVPS Lowell Substation	MIS					VT
267	A	G	6/24/2008	Gas Turbine Capacity Increase (See queue positions #175& #182)	GT	NG, DFO		175	222	Fairfield	CT	6/1/2011	2/1/2011	345 kV line # 321	MIS					SWCT
268	A	G	7/8/2008	Wind (increase in queue position 266)	WT	WND		8.5	8.5	Orleans	VT	12/31/2011	9/15/2011	CVPS Lowell Substation	MIS					VT
269	A	G	7/14/2008	Hydro	HD	WAT		1.2	1.2	Hampden	MA	10/31/2010	10/31/2010	WMELCO 23 kV circuit	MIS					WMA
270	A	G	7/17/2008	Pumped Storage Project	PS	WAT		1000	1000	Wiscassel	ME	6/1/2014	6/1/2014	Maine Yankee 345 kV substation	MIS					ME
271	A	ET	7/30/2008	Two terminal, 1000 MW , 500 kV, dc line	N/A	N/A		N/A	N/A	N/A	N/A	3/31/2014	N/A	Hertel S/S in Quebec or Clay S/S in NY and Norwalk S/S in CT.	N/A					N/A
271	A	ET	7/30/2008	Two terminal, 1000 MW , 500 kV, dc line	N/A	N/A		N/A	N/A	N/A	N/A	3/31/2014	N/A	Hertel S/S in Quebec or Clay S/S in NY and Glenbrook S/S in CT.	N/A					N/A
271	A	ET	7/30/2008	Two terminal, 1000 MW , 500 kV, dc line	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3/31/2014	N/A	Hertel S/S in Quebec or Clay S/S in NY and Singer S/S in CT.	N/A					N/A
271.5	A	TS	8/1/2008	MPS RNS Application	N/A	N/A		TDB	TBD	Aroostook	ME	10/1/2010	N/A	N/A	N/A					BHE & ME
272	A	G	8/1/2008	Wind	WT	WND		64	64	Franklin	ME	8/1/2012	6/1/2012	CMP Rumford or Bigelow Substation	MIS					ME
272	A	G	8/1/2008	Wind	WT	WND		150	150	Aroostook	ME	8/1/2011	5/1/2011	BHE Powersville Substation	MIS					BHE
272	A	G	8/1/2008	Wind	WT	WND		95	95	Somerset	ME	8/1/2012	6/1/2012	CMP 115 KV LINE 222	MIS					ME

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272	A	G	8/1/2008	Wind	WT	WND		128	128	Aroostook	ME	12/31/2013	10/31/2013	BHE 345 kV 396 line	MIS					BHE
272	A	G	8/1/2008	Wind	WT	WND		150	150	Aroostook	ME	8/1/2011	5/1/2011	BHE Keene Road Substation	MIS					BHE
273	A	G	8/3/2008	Biomass Project	ST	WDS		35	37	Hampden	MA	6/20/2011	5/20/2011	115 kV line near E. Springfield substation	MIS					WMA
274	A	G	8/7/2008	Gas Turbine	GT	DFO, NG		41.5	48.7	Chittenden	VT	6/1/2011	5/1/2011	GMP Gorge Substation	MIS					VT
274.5	A	TS	8/25/2008	Wind project point-to-point application-100 MW	N/A	N/A	N/A	N/A	N/A	Aroostook	ME	10/1/2011	N/A	N/A	N/A					BHE
276	A	G	9/2/2008	Wind Project	WT	WND		30	30	Bennington	VT	12/30/2010	10/1/2010	Y-25 North, 69 kV line between Searsburg and Bennington	MIS					VT
277	A	G	9/12/2008	Combined Cycle	CC	NG, DFO		695	695	Fairfield	CT	6/1/2013	1/15/2013	CL&P 345 KV 321 line	MIS					SWCT
278	A	ET	9/26/2008	Two terminal, 1000 MW , 500 kV, dc line	N/A	N/A		N/A	N/A	N/A	N/A	3/31/2014	N/A	Maine Yankee Substation, South Boston Substation	N/A					N/A
280	A	G	10/2/2008	Wind	WT	WND		180	180	Coos	NH	9/1/2011	7/1/2011	TBD	MIS					NH
281	A	G	10/6/2008	Wind	WT	WND		85	85	Rutland	VT	9/1/2011	7/1/2001	VELCO 115 kV K34 line	MIS					VT
282	A	G	10/15/2008	Biomass Project	ST	WDS		49.7	51.5	Franklin	MA	7/1/2013	4/1/2013	115 kV line near Montage or Fench King substations	MIS					WMA
283	A	ET	10/20/2008	HVDC Line	N/A	N/A		N/A	N/A	N/A	N/A	3/31/2014	N/A	Orrington ME and BostonMA	N/A					N/A
284	A	G	10/22/2008	Equipment Replacement	ST	NUC		1257	1257	Rockingham	NH	6/30/2013	12/31/2012	345 kV Seabrook Substation	MIS			ISO-NE		NH
285	A	G	10/24/2008	Biomass Project	ST	WDS		35	35	Penobscot	ME	9/30/2009	9/1/2009	BHE Powersville substation	MIS					BHE
286	A	G	12/5/2008	Alternative to queue position 177	GT	NG		187.5	199	Worcester	MA	6/1/2012	2/1/2012	115 kV bus at Millbury substation	MIS					CMA
287	A	G	12/18/2008	Wind	WT	WND		34.5	34.5	Franklin	ME	11/1/2010	10/1/2010	34.5 kV Rumford IP bus	MIS					
288	A	TS	12/18/2008	Local Service Application-87 MW	N/A	N/A		N/A	N/A	Somerset	ME	6/1/2009	N/A	N/A	N/A					ME
290	A	G	1/15/2009	Wind	WT	WND		15	15	Woodstock	ME	11/30/2010	9/30/2010	CMP Woodstock Substation	MIS					ME
291	A	G	1/21/2009	Steam Turbine Uprate	ST	BIT		340	353.5	Merrimack	NH	12/14/2009	N/A	PSNH Merrimack Substation	MIS					NH
292	A	G	1/30/2009	Biomass Project	ST	WDS		49.7	51.5	Berkshire	MA	6/1/2014	3/1/2014	Doreen 115 kV substation or F132 115 kV line	MIS					WMA

Code[1]	Definition

Other Endnotes

ACTIVE - ADMINISTERED TRANSMISSION SYSTEM
Interconnection Requests to the Administered Transmission System
Generation and Elective Transmission Upgrade Requests, and requests for transmission service

Queue Position	Req. Status[3]	Req. Type[1]	Request Date[2]	Project Name	Unit Type	Fuel Type	MW	Summer Net MW	Winter Net MW	County	ST	Projected Commercial Operation Date	Projected Initial Sync. Date	Proposed Point of Interconnection	Inter. Service Type[1]	SIS Com.	I.3.9 Apprvl.	SIS Report or Any Other Studies Available From[3,4]	Any Deviation from Timeline for Current Study[6]	RSP ZONE
	Request Status											[2] Application dates have been adjusted as a result of FERC order under Docket # EL 98-69-000								
	C	Commercial										[3] Check OASIS of indicated New England Transmission Owner for details on obtaining report								
	CT	Commercial under temporary approval										[4] Contact ISO-NE Customer Service if ISO-NE is indicated at 413-540-4220 or custserv@iso-ne.com								
	W	Withdrawn										[6] If yes, time to complete study will exceed study timeline in the ISO New England Inc. Open Access Transmission Tariff								
	A	Actively under study or developing interconnection										[7] Summer & Winter Net MW Ratings are the total capacity of the unit, MW is the capacity of the uprate studied								
	FCT	Formerly Commercial under temporary approval																		
												RSP Zone	Definition							
	Request Type																			
	G	Generator Interconnection Request										BHE	Northeast Maine							
	ET	Elective Transmission Upgrade Interconnection Request										ME	Western & Central Maine/Saco Valley, New Hampshire							
	TS	Request for transmission service										SME	Southeast Maine							
	Interconnection Service Type											NH	North, East & Central New Hampshire/Eastern Vermont							
	MIS	Minimum Interconnection Standard										VT	Vermont/Southwest New Hampshire							
												BOST	Greater Boston, including North Shore							
	General											CMA	Central Massachusetts & Northeast Massachusetts (CMA/NEMA)							
	N/A	Not Applicable										WMA	Western Massachusetts							
	TBD	To Be Determined										SEMA	Southeast Massachusetts/Newport, Rhode Island							
												RI	Rhode Island/bordering Massachusetts							
												CT	North & East Connecticut							
												SWCT	Southwest Connecticut							
												NOR	Norwalk/Stamford, Connecticut							