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STATE OF NEW HAMPSHIRE
Department of Environmental Services
Air Resources Division



Temporary Permit

Permit No: **TP-0008**
Date Issued: March 9, 2009
Date Reissued: August 2, 2010 & July 8, 2011

This certifies that:

Northeast Utilities
Public Service of New Hampshire
780 North Commercial Street
Manchester, NH 03101

has been granted a Temporary Permit for a

Flue Gas Desulphurization System

at the following facility and location:

Public Service of New Hampshire
Merrimack Station
97 River Rd.
Bow, NH 03304-3314

Facility ID No: **3301300026**
Application No: **FY07-0103** received June 7, 2007 - Temporary Permit TP-0008
10-0136, received on June 30, 2010 - Request for the reissuance of Temporary Permit
11-0078, received on June 3, 2011 - Request for the reissuance of Temporary Permit

which includes devices that emit air pollutants into the ambient air as set forth in the permit application referenced above which was filed with the New Hampshire Department of Environmental Services, Air Resources Division (Division) in accordance with RSA 125-C of the New Hampshire Laws. Request for permit renewal is due to the Division at least 90 days prior to expiration of this permit and must be accompanied by the appropriate permit application forms.

This permit is valid upon issuance and expires on **September 30, 2012**.

[Handwritten Signature] **COPY**

Director, Air Resources Division

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ABBREVIATIONS

AAL	Ambient Air Limit
AEL	Alternative Emission Limit
AP-42	Compilation of Air Pollutant Emission Factors
ARD	Air Resources Division
ASTM	American Society for Testing and Materials
ATS	Allowance Tracking System
BACT	Best Available Control Technology
BHP (or bhp)	Brake Horse Power
BTU	British Thermal Units
CAA	Clean Air Act, 42 U.S.C. § 7401, et seq.
CAM	Compliance Assurance Monitoring
CAS	Chemical Abstracts Service
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
CNG	Compressed Natural Gas
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
COMS	Continuous Opacity Monitoring System
CTM	Conditional Test Method
DES	New Hampshire Department of Environmental Services
DER	Discrete Emission Reduction
Env-A	New Hampshire Code of Administrative Rules – Air Resources Division
Env-Wm	New Hampshire Code of Administrative Rules – Waste Management Division
ECS	Emission Control System
ERC	Emission Reduction Credit
ETS	Emissions Tracking System
FGD	Flue Gas Desulphurization
gal/hr	Gallons per hour
HAP	Hazardous Air Pollutant
HHV	High Heat Value
HCl	Hydrochloric acid
hr	Hour
kscfm	1,000 standard cubic feet per minute
kGal	1,000 gallons
KVDC	Kilovolt Direct Current
KW	Kilowatt
LAER	Lowest Achievable Emission Rate
lb/hr	Pounds per hour
LNB	Low NO _x Burner
LNG	Liquid Natural Gas
LPG	Liquid Petroleum Gas (Propane)
MACT	Maximum Achievable Control Technology
mmBtu	Million British Thermal Units
MMCF	Million Cubic Feet
MW	Megawatt

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ABBREVIATIONS (cont.)

NAAQS	National Ambient Air Quality Standard
NG	Natural Gas
NHDES (or DES)	New Hampshire Department of Environmental Services
NMOC	Non-Methane Organic Compound
NO _x	Oxides of Nitrogen
NSPS	New Source Performance Standard
NSR	New Source Review
PM	Particulate Matter
PM ₁₀	Particulate Matter less than 10 microns diameter
ppm	part per million
ppm _{dv}	part per million by dry volume
PSD	Prevention of Significant Deterioration
PSI	Pounds per Square Inch
PTE	Potential to Emit
RACT	Reasonably Available Control Technology
RTAP	Regulated Toxic Air Pollutant
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
TSP	Total Suspended Particulate Matter
TPY	Tons per Year
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

Facility Specific Temporary Permit Conditions

I. Facility Description of Operations

Public Service of New Hampshire - Merrimack Station is a fossil fuel-fired electricity generating facility, owned and operated by Public Service of New Hampshire (PSNH), a subsidiary of Northeast Utilities. The facility is comprised of two utility boilers, two combustion turbines operating as load shaving units, an emergency generator, an emergency boiler, and coal handling systems including primary and secondary coal crushers, coal piles, coal conveyor systems, and coal unloading from railcars. The facility operations also include various activities that are classified as insignificant or exempt activities.

The two utility boilers (MK1 and MK2) primarily burn bituminous coal, the two combustion turbines primarily burn No. 1 fuel oil or JP-4, the emergency generator burns No. 2 fuel oil or diesel fuel, and the emergency boiler burns No. 2 fuel oil or diesel fuel. PSNH – Merrimack Station ignites the utility boilers with No. 2 fuel oil.

Each boiler stack is equipped with continuous emissions monitoring systems (CEMS) and a continuous opacity monitoring system (COMS). PSNH – Merrimack Station has installed control equipment and implemented operational changes to reduce emissions, including trials of low sulfur coals to control sulfur dioxide (SO₂) emissions, selective catalytic reduction (SCR) systems to control nitrogen oxide (NO_x) emissions, and electrostatic precipitators (ESP) to control particulate matter (PM) emissions. PSNH has also initiated mercury reduction trials including carbon injection and the use of low mercury coals.

PSNH – Merrimack Station operates a fly ash reinjection system in each of the two Boilers.

II. Project Description

The Owner has filed a Temporary Permit application requesting to install a wet, limestone-based flue gas desulfurization (FGD) system to control mercury emissions from Electric Generating Units MK1 and MK2. The FGD system will also provide a co-benefit by removing sulfur dioxide emissions. The application was filed in accordance with RSA 125-O:13,I, which requires this facility to file an initial permit application by June 8, 2007. This permit establishes limits on mercury and sulfur dioxide emissions based on the requirements of RSA 125-O:13 and 40 CFR 51.308, respectively. This permit also contains applicable monitoring, performance testing, recordkeeping and reporting requirements for the purpose of ensuring that the facility can comply with the requirements of RSA 125-O:13 and 40 CFR 51.308.

Once the FGD system is constructed and operational, initial stack testing on MK1 and MK2 will be used to (1) determine whether the facility complies with the applicable mercury and sulfur dioxide limits; and (2) to establish any necessary operating parameters to ensure that the mercury and sulfur dioxide limits will be met on an ongoing basis. Periodic stack testing and/or continuous emission monitors will be used to verify that the parameters used to monitor and control mercury and sulfur dioxide emissions continue to be valid.

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The facility currently operates under the application shield provisions of Env-A 609.08, *Application Shield* and in accordance with permits FP-T-0054 (MK1), TP-B-0462 (MK2), PO-B-0034 (CT1), PO-B-0035 (CT2), PO-B-1788 (Emergency Generator), TP-B-0490 (Emergency Boiler), PO-B-2416 (Primary Coal Crusher) and PO-B-2417 (Secondary Coal Crusher), which are currently in the process of being streamlined into a Title V Operating Permit. These previously issued permits will be referenced as "Previous Permits" throughout this document. This Temporary Permit includes new conditions associated with this project, and where necessary, identifies conditions of the Previous Permits that will either be modified or superseded as a result of this project. All terms and conditions of the Previous Permits not specifically identified in this permit remain in effect unchanged. Upon issuance of this permit, the Owner shall comply with all unchanged terms and conditions of the Previous Permits and all terms and conditions of this permit.

III. Permitted Activities

In accordance with all of the applicable requirements identified in this permit, the Owner is authorized to operate the devices and or processes identified in Sections IV and V within the terms and conditions specified in this Permit.

IV. Significant Activities Identification and Stack Criteria

A. Significant Activity Identification

The activities identified in Table 1 below are subject to and regulated by this Permit:

Table 1 - Significant Activity Identification			
Emission Unit Number	Description of Emission Unit	Maximum Gross Heat Input Rating	Maximum Operating Conditions
MK1	Steam Generating Unit 1 (Installed in 1960) Front wall firing	Bituminous Coal: 1,238 MMBtu/hr	a. Maximum fuel consumption rate of bituminous coal shall be limited to 48.5 tons/hr, not to exceed 425,289 tons during any consecutive 12 month period ¹ . b. No. 2 fuel oil consumption shall be limited to 1,656 gallons per hour, not exceed 14.5 million gallons during any consecutive 12 month period ² .
MK2	Steam Generating Unit 2 (Installed in 1968) Opposed wall firing	Bituminous Coal: 3,473 MMBtu/hr	a. Maximum fuel consumption rate of bituminous coal shall be limited to 136.2 tons/hr, not to exceed 1,193,078 tons during any consecutive 12 month period ³ . b. No. 2 fuel oil consumption shall be limited to 1,656 gallons per hour, not exceed 14.5 million gallons during any consecutive 12 month period ⁴ .

¹ The heating value of bituminous coal is assumed to be 12,750 Btu/lb. The fuel consumption limits may vary based on the actual heat content of the fuel burned.

² No. 2 fuel oil is used to ignite individual fires before establishing the main coal fires. The heating value of No. 2 fuel oil is assumed to be 140,000 Btu/gal. The fuel consumption limits may vary based on the actual heat content of the fuel burned.

³ The heating value of bituminous coal is assumed to be 12,750 Btu/lb. The fuel consumption limits may vary based on the actual heat content of the fuel burned.

⁴ No. 2 fuel oil is used to ignite individual fires before establishing the main coal fires. The heating value of No. 2 fuel oil is assumed to be 140,000 Btu/gal. The fuel consumption limits may vary based on the actual heat content of the fuel burned.

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Table 1 - Significant Activity Identification			
Emission Unit Number	Description of Emission Unit	Maximum Gross Heat Input Rating	Maximum Operating Conditions
MKLC1	Limestone Processing and Handling System	Not Applicable	Limestone processing rate of the wet limestone ball mills of less than 25 tons per hour ⁵ .

B. Stack Criteria

The following devices at the Facility shall have exhaust stacks that discharge vertically, without obstruction, and meet the criteria in Table 2:

Table 2 – Stack Criteria				
Stack Number	Emission Unit Number	Emission Unit Description	Minimum Stack Height (Feet) Above Ground Level	Maximum Inside Stack Diameter (Feet)
STMK2 (Bypass Stack)	MK1	Steam Generating Unit No. 1	317	14.5
STMK3	MK1 and/or MK2 with MK2-PC7	Steam Generating Units No. 1 and/or No. 2 with FGD System	445	21.5

1. The Owner may change the stack criteria described in Table 2 with notification to DES provided that:
 - i. An air quality impact analysis is performed either by the facility or DES (if requested by the facility in writing) in accordance with Env-A 606 and the “Guidance and Procedure for Performing Air Quality Impact Modeling in New Hampshire,” and
 - ii. The analysis demonstrates that emissions from the modified stack will continue to comply with all applicable emission limitations and ambient air limits.
2. All air modeling data and analyses shall be kept on file for review by DES upon request.

V. Pollution Control Equipment/Method Identification

The devices and/or processes identified in Table 3 are considered pollution control equipment for each identified emissions unit:

⁵ Only one wet ball mill will be operated at a time. The second wet ball mill serves as a backup unit.

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Pollution Control Equipment Number	Description of Equipment/Method	Emission Unit Number Controlled
MK1-PC1	Electrostatic Precipitator (ESP) #1 on MK1	MK1
MK1-PC2	ESP #2 on MK1	MK1
MK1-PC3	Selective Catalytic Reduction (SCR) deNO _x System	MK1
MK2-PC4	ESP #1 on MK2	MK2
MK2-PC5	ESP #2 on MK2	MK2
MK2-PC6	SCR deNO _x System	MK2
MK2-PC7	Flue Gas Desulphurization (FGD) System	MK1 and MK2

VI. Applicable Requirements

A. Operational and Emission Limitations

The Owner shall be subject to the operational and emission limitations identified in Table 4 below.

Item No.	Regulatory Cite	Applicable Emission Unit	Applicable Requirement
1.	Env-A 1403	Devices subject to RSA 125-I and Env-A 1400	Devices or processes, subject to RSA 125-I and Env-A 1400, shall comply with Env-A 1400 (Regulated Toxic Air Pollutants).
2.	Env-A 1403.01(d)	Devices subject to RSA 125-I and Env-A 1400	Documentation for the demonstration of compliance shall be retained and shall be made available to DES for inspection upon request.
3.	Env-A 1404.01	Devices subject to RSA 125-I and Env-A 1400	a. The Owner of a new or modified device or process requiring a permit under this chapter shall submit an application for a temporary permit in accordance with Env-A 607.03. b. Pursuant to RSA 125 I:5,I, the owner shall not operate the device or process until a temporary permit is issued.
4.	Env-A 1405.01	Devices subject to RSA 125-I and Env-A 1400	The Owner of any device or process that emits an RTAP shall determine compliance with the AAL by using one of the methods provided in Env-A 1405. Upon request, the Owner of any device or process that emits an RTAP shall provide documentation of compliance with the AAL to DES.
5.	Env-A 1002.04 Fugitive Dust	MKLC1	The Owner shall prevent, abate, and control fugitive dust emissions using best management practices⁶.

⁶ To comply with this provision, PSNH – Merrimack Station shall use Best Management Practices to manage and minimize fugitive dust, as established in the PSNH Merrimack Station Environmental Management System Plan for Fugitive Emissions.

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Table 4 – Operational and Emission Limitations

Item No.	Regulatory Cite	Applicable Emission Unit	Applicable Requirement
6.	40 CFR 51.308(e)(1)	MK2	<p>a. Beginning on July 1, 2013, when MK2-PC7 (FGD system) is in operation, SO₂ emissions shall be controlled to 10 percent of the uncontrolled SO₂ emission rate (90 percent SO₂ removal). Compliance with this percent reduction shall be determined on a calendar month average by comparing the SO₂ emission rates as measured by CEMS on the inlet and outlet of the FGD system.</p> <p>b. The Owner shall submit a report no later than December 31, 2014 that includes the calendar month average SO₂ emission rates at the inlet and outlet of the FGD and the corresponding calendar month average emissions reductions during the preceding 12 months of operation, excluding the initial startup and commissioning period and any periods when the FGD system is not operating. DES will use this data to establish the maximum sustainable rate of SO₂ emissions reductions for MK2. The maximum sustainable rate is the highest rate of reductions that can be achieved 100 percent of the time.</p> <p>c. DES shall establish the maximum sustainable rate of SO₂ emissions reductions based on a statistical analysis of the data submitted to DES pursuant to paragraph b. above. This established rate shall be incorporated as a permit condition for MK2. Under no circumstances shall the SO₂ removal efficiency for MK2 be less than 90 percent.</p>
7.	40 CFR 51.308(e)(1)	MK2	Beginning on July 1, 2013, the Owner shall not operate MK2 unless MK2-PC7 is in operation.
8.	40 CFR 51.308 Regional Haze Plan	MK1	<p>a. Beginning on July 1, 2013, when MK2-PC7 (FGD system) is in operation, SO₂ emissions shall be controlled to 10 percent of the uncontrolled SO₂ emission rate (90 percent SO₂ removal). Compliance with this percent reduction shall be determined on a calendar month average by comparing the SO₂ emission rates as measured by CEMS on the inlet and outlet of the FGD system.</p> <p>b. The Owner shall submit a report no later than December 31, 2014 that includes the calendar month average SO₂ emission rates at the inlet and outlet of the FGD and the corresponding calendar month average emissions reductions during the preceding 12 months of operation, excluding the initial startup and commissioning period and any periods when the FGD system is not operating. DES will use this data to establish the maximum sustainable rate of SO₂ emissions reductions for MK1. The maximum sustainable rate is the highest rate of reductions that can be achieved 100 percent of the time.</p> <p>c. DES shall establish the maximum sustainable rate of SO₂ emissions reductions based on a statistical analysis of the data submitted to DES pursuant to paragraph b. above. This established rate shall be incorporated as a permit condition for MK1. Under no circumstances shall the SO₂ removal efficiency for MK1 be less than 90 percent.</p>
9.	40 CFR 51.308	MK1	Beginning on July 1, 2013, the Owner shall not operate MK1 through STMK2 (bypass stack) if MK2-PC7 is capable of stable operation.
10.	40 CFR 51.308	MK1	Beginning on July 1, 2013, the Owner shall not operate MK1 through STMK2 (bypass stack) for more than 840 hours in any consecutive 12-month period.

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Table 4 – Operational and Emission Limitations

Item No.	Regulatory Cite	Applicable Emission Unit	Applicable Requirement
11.	Env-A 1606.01(a)(1)	MK1 & MK2	For coal burning devices placed in operation before April 15, 1970, the sulfur content of the coal shall not exceed 2.8 pounds per million BTU gross heat content at any time.
12.	Env-A 1606.01(a)(2)	MK1 & MK2	For coal burning devices placed in operation before April 15, 1970, the sulfur content of the coal shall not exceed 2.0 pounds per million BTU gross heat content averaged over any consecutive 3-month period.
13.	RSA 125-O:13, II	Affected Sources as defined in RSA 125-O:12	Beginning on July 1, 2013, total mercury emissions from the affected sources shall be at least 80 percent less on an annual basis than the baseline mercury input, as defined in RSA 125-O:12, III.
14.	RSA 125-O:13, III	MK1 & MK2	Prior to July 1, 2013, the Owner shall test and implement, as practicable, mercury reduction control technologies or methods to achieve early reductions in mercury emissions below the baseline mercury emissions. The Owner shall report the results of any testing to DES and shall submit a plan for DES approval before commencing implementation.
15.	RSA 125-O:13-V	MK1 & MK2	a. Mercury reductions (achieved through the operation of the FGD system) greater than 80 percent shall be sustained insofar as the proven operational capability of the system, as installed, allows. b. DES, in consultation with the Owner, shall determine the maximum sustainable rate of mercury emissions reductions and incorporate such rate as a permit condition for MK1 and MK2. This requirement in no way affects the ability of the Owner to earn over-compliance credits consistent with RSA 125-O:16, II.
16.	RSA 125-O:13, VI	MK1 & MK2	The purchase of mercury emissions allowances or credits from any established emissions allowance or credit program shall not be allowed for compliance with the mercury reduction requirements of this permit or the requirements of RSA 125-O:13.
17.	RSA 125-O:13, VII	MK1 & MK2	If the mercury reduction requirement in Item 13 above is not achieved in any year after the July 1, 2013 implementation date, and after full operation of the FGD technology, then the Owner may utilize early emissions reduction credits or over-compliance credits, or both, to make up any shortfall, and thereby be in compliance.
18.	RSA 125-O:13, VIII	MK1 & MK2	If the mercury reduction requirement in Item 13 above is not achieved by the Owner in any year after the July 1, 2013 implementation date despite the Owner's installation and full operation of FGD technology, consistent with good operational practice, and the owner's exhaustion of any available early emissions reduction or over-compliance credits, then the owner shall be deemed in violation of this section unless it submits a plan to DES, within 30 days of such noncompliance, and subsequently obtains approval of that plan for achieving compliance within one year from the date of such noncompliance. DES may impose conditions for approval of such plan.

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Table 4 – Operational and Emission Limitations

Item No.	Regulatory Cite	Applicable Emission Unit	Applicable Requirement
19.	RSA 125-O:17	MK1 & MK2	<p>Variances from mercury emissions reduction requirements:</p> <p>a. The Owner may request a variance from the mercury emissions reduction requirements of this permit and RSA 125-O:13, by submitting a written request to DES. The request shall provide sufficient information concerning the conditions or special circumstances on which the variance request is based to demonstrate to the satisfaction of DES that variance from the applicable requirements is necessary.</p> <p>b. Where an alternative schedule is sought, the Owner shall submit a proposed schedule which demonstrates reasonable further progress and contains a date for final compliance as soon as practicable. If DES deems such a delay is reasonable under the cited circumstances, it shall grant the requested variance.</p> <p>c. Where an alternative reduction requirement is sought, the Owner shall submit information to substantiate an energy supply crisis, a major fuel disruption, an unanticipated or unavoidable disruption in the operations of the affected sources, or technological or economic infeasibility. DES, after consultation with the New Hampshire Public Utilities Commission, shall grant or deny the requested variance. If requested by the Owner, DES shall provide the owner with an opportunity for a hearing on the request.</p>
20.	RSA 125-O:16, I	MK1 & MK2	<p>Economic Performance Incentives/Generation and Use of Early Emissions Reduction Credits:</p> <p>a. DES shall issue to the Owner early emissions reduction credits in the form of credits or fractions thereof for each pound of mercury or fraction thereof reduced below the baseline mercury emissions, on an annual basis, in the period prior to July 1, 2013.</p> <p>b. Ratios of early reductions credits to pounds of mercury reduced shall be as follows:</p> <p>i. 1.5 credits per pound reduced prior to July 1, 2008;</p> <p>ii. 1.25 credits per pound for reductions between July 1, 2008 and December 31, 2010; and</p> <p>iii. 1.1 credits per pound for reductions between January 1, 2011 and July 1, 2013.</p> <p>c. Reductions shall be calculated based upon the results of stack tests conducted, measurement by continuous emission monitoring, or other methodology approved by DES to confirm emissions during the time of operation of mercury reduction technology.</p> <p>d. Early emissions reduction credits may be banked by the Owner or utilized after July 1, 2013 to meet the reduction requirement of RSA 125-O:13, II as allowed under RSA 125-O:13, VII.</p> <p>e. Early emissions reduction credits are not sellable or transferable to non-affected sources; however, upon the July 1, 2013 compliance date, the Owner may request a one for one conversion of early emissions reduction credits to over compliance credits.</p>

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Table 4 – Operational and Emission Limitations

Item No.	Regulatory Cite	Applicable Emission Unit	Applicable Requirement
			<p>f. Should a federal rule applicable to mercury emissions at one or more of the affected sources be enacted with an implementation date prior to July 1, 2013, then early reduction credits may only be earned for emissions reductions that exceed the level required by the federal rule of the affected sources in aggregate or the baseline mercury emissions level, whichever is lower, at the same ratios listed in subparagraph (b) above.</p> <p>g. Early emissions reduction credits shall not be used for compliance with the requirement of RSA 125-O:13, II prior to the installation of FGD technology, and shall not be used as a means to delay the installation of the FGD technology.</p>
21.	RSA 125-O:16, II	MK1 & MK2	<p>Economic Performance Incentives/ Use of Over-Compliance Credits</p> <p>a. DES shall issue to the Owner over-compliance credits in the form of credits or fractions thereof for each pound of mercury or fraction thereof reduced in excess of the emissions reduction requirement of RSA 125-O:13, II, on an annual basis, following the compliance date of July 1, 2013.</p> <p>b. The ratios of over-compliance credits to excess pounds of mercury reduced shall be as follows:</p> <p>i. 0.5 credits per pound reduced for reductions between 80 and 85 percent;</p> <p>ii. 1 credit per pound reduced for reductions between 85 and 90 percent reduction; and</p> <p>iii. 1.5 credits per pound reduced for reductions of 90 percent or greater.</p> <p>e. Over-compliance credits may be banked for future use. The requirements of RSA 125-O:13, V shall not alter the emissions levels at which over-compliance credits are earned.</p> <p>d. Should a federal rule applicable to mercury emissions at one or more of the affected sources be enacted, then over-compliance credits may only be earned for emissions reductions that exceed the level required by the federal rule of the affected sources in aggregate or the requirement of RSA 125-O:13, II, whichever is lower, at the same ratios listed in subparagraph (b) above.</p> <p>e. At the request of the Owner, over-compliance credits may be surrendered by the owner to the department and SO₂ allowances shall be transferred to the owner at a rate of 55 tons SO₂ allowances for every one over-compliance credit. Transfer shall be limited to a maximum of 20,000 total tons SO₂ allowances transferred in a given year, defined as the sum of all SO₂ allowances received by the affected sources under RSA 125-O:4, IV(a)(2) and IV(a)(3), and under this subparagraph SO₂ allowances shall be credited to the affected sources' accounts in the following year in accordance with RSA 125-O:4, IV(a)(4).</p>

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Table 4 – Operational and Emission Limitations			
Item No.	Regulatory Cite	Applicable Emission Unit	Applicable Requirement
22.	Env-A 604.02	MKLC1	The limestone processing rate of the wet limestone ball mills shall not exceed 25 tons per hour ⁷ .

B. Initial Compliance Demonstration Requirements

The Owner shall demonstrate initial compliance with the emission limitations specified in Table 4 for the parameters contained in Table 5 below, within 60 days after achieving stable FGD operation with both MK1 and MK2 exhausting through stack STMK3. The Owner shall perform the initial compliance demonstration requirements listed in Table 5 below. In addition, the Owner shall perform all monitoring and testing requirements in Table 6 to ensure compliance with emissions and operating limitations contained in Table 4.

Table 5: Initial Compliance Demonstration Requirements					
Item No.	Applicable Emission Unit	Parameter	Method of Compliance	Frequency of Method	Regulatory Basis
1.	MK1 & MK2 with MK2 PC7	Performance tests for mercury	<ul style="list-style-type: none"> a. The Owner shall conduct initial performance tests for mercury to demonstrate compliance with the respective mercury emissions limitation in Table 4, Item 13. b. Testing shall be conducted and the results reported in accordance with 40 CFR 60, Sections 60.8(a), (b), (d), (e), and (f), and Appendix A. The following test methods or DES approved alternatives shall be used for the pollutants specified: <ul style="list-style-type: none"> i. Method 1 or 2 to determine exit velocity of stack gases; ii. Method 3 or 3A to determine carbon dioxide, oxygen, excess air, and molecular weight (dry basis) of stack gases; iii. Method 4 to determine moisture content (volume fraction of water vapor) of stack gases; 	Within 60 days after achieving stable FGD operation with both MK1 and MK2 exhausting through stack STMK3	Env-A 802 & 40 CFR 60.8 (a), (b), (d) (f)

⁷ The limestone processing equipment subject to this requirement consists of two wet limestone ball mills. Only one wet limestone ball mill is operated at a time. The second wet limestone ball mill will serve as a backup unit.

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Table 5: Initial Compliance Demonstration Requirements

Item No.	Applicable Emission Unit	Parameter	Method of Compliance	Frequency of Method	Regulatory Basis
			iv. For mercury, in accordance with the mercury monitoring requirement of RSA 125-O:15 and Table 6, Item 3 of this permit.		
2.	MK1 & MK2	Performance Test for SO ₂	<p>a. The Owner shall conduct an initial performance test for SO₂ to demonstrate compliance with the respective SO₂ emissions limitation in Table 4, Items 6 and 8.</p> <p>b. Testing shall be conducted and the results reported in accordance with 40 CFR 60, Sections 60.8(a), (b), (d), (e), and (f), and Appendix A. The following test methods or DES approved alternatives shall be used for the pollutants specified:</p> <p style="margin-left: 20px;">i. Use of certified CEMS monitors. With the use of CEMS monitors, compliance will be determined based on a monthly average of CEMS data.</p>	Within 60 days after achieving stable FGD operation with both MK1 and MK2 exhausting through stack STMK3	Env-A 802 & 40 CFR 60.8 (a), (b), (d)-(f)
3.	MK1 & MK2	General Stack Testing Requirements	<p>Compliance testing shall be planned and carried out in accordance with the following schedule:</p> <p>a. At the request of DES, submit to DES a pretest protocol at least 30 days prior to the commencement of testing which includes the following information:</p> <p style="margin-left: 20px;">i. Calibration methods and sample data sheets;</p> <p style="margin-left: 20px;">ii. Descriptions of the test methods to be used;</p> <p style="margin-left: 20px;">iii. Pre-test preparation procedures;</p> <p style="margin-left: 20px;">iv. Sample collection and analysis procedures;</p> <p style="margin-left: 20px;">v. Process data to be collected; and</p> <p style="margin-left: 20px;">vi. Complete test program description.</p> <p>b. At the request of DES, participate in a pretest conference with a DES representative at least 15 days prior to the test date.</p> <p>c. Emission testing shall be carried out under the observation of a DES representative.</p> <p>d. Within 60 days after completion of testing or within 15 days of receipt of test report, submit a copy of the test report to DES.</p>	Initial performance test and subsequent testing	Env-A 802.03, 802.04, 802.05, & 802.11
4.	MK1 & MK2	General Stack Testing Requirements	<p><i>Operating Conditions During a Stack Emissions Test</i></p> <p>A compliance test shall be conducted under one</p>	Initial performance test and	Env-A 802.10

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Table 5: Initial Compliance Demonstration Requirements					
Item No.	Applicable Emission Unit	Parameter	Method of Compliance	Frequency of Method	Regulatory Basis
			of the following operating conditions: a. Between 90 and 100 % of maximum operating capacity; b. A production rate at which maximum emissions occur; or c. At such operating conditions agreed upon during a pre-test meeting conducted pursuant to Env-A 802.05.	subsequent tests	

C. Monitoring/Testing Requirements

1. The Owner is subject to the monitoring/testing requirements as contained in Table 6 below:

Table 6 – Monitoring/Testing Requirements					
Item No.	Device	Parameter	Method of Compliance	Frequency of Method	Regulatory Cite
1.	MK1 & MK2	Continuous Emissions Monitoring Systems	<i>Site-Specific Monitoring Plan - Continuous Emissions Monitoring Systems</i> a. The Owner shall submit a CEMS monitoring plan describing the proposed systems. The monitoring plan shall contain the information required under Env-A 808.04(c) and address all applicable monitoring requirements of Env-A 808, 40 CFR Part 60, and 40 CFR Part 75. b. The CEMS monitoring plan in item a above, shall at a minimum, address the following operating scenarios: i. CEMS monitoring for units MK1 and MK2 when both units MK1 and MK2 are operating and emissions are discharged through the common exhaust stack STMK3; ii. CEMS monitoring for compliance with the SO ₂ limitation specified in Table 4, Item 6 and 8; iii. Monitoring for unit MK1 when emissions are discharged through stack STMK2 (bypass stack).	At least 90 days prior to the installation of the CEM system	Env-A 808.04(a)
2.	MK1 & MK2	Continuous Emissions Monitoring Systems	<i>Quality Assurance/Quality Control Plan Requirements</i> The Owner of a source required by this part to install, operate, and maintain an opacity or gaseous	As specified within regulation	Env-A 808.06

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Table 6 – Monitoring/Testing Requirements

Item No.	Device	Parameter	Method of Compliance	Frequency of Method	Regulatory Cite
			<p>CEMS shall:</p> <ol style="list-style-type: none"> a. Prepare a quality assurance/quality control (QA/QC) plan, which shall contain written procedures for implementation of its QA/QC program for each CEMS; b. File the QA/QC plan with DES no later than the time specified in Env-A 808.05(e) after the initial startup of each CEMS; c. Review the QA/QC plan and all data generated by its implementation at least once each year; d. Revise or update the QA/QC plan, as necessary, based on the results of the annual review, by: <ol style="list-style-type: none"> ii. Documenting any changes made to the CEMS or changes to any information provided in the monitoring plan; iii. Including a schedule of, and describing, all maintenance activities that are required by the CEMS manufacturer or that might have an effect on the operation of the system; iiii. Describing how the audits and testing required by this part will be performed; and iv. Including examples of the reports that will be used to document the audits and tests required by this part; e. Make the revised QA/QC plan available for review by DES at any time; and f. Within 30 days of completion of the annual QA/QC plan review, certify in writing that the Owner will continue to implement the source's existing QA/QC plan or submit in writing any changes to the plan and the reasons for each change; g. Revision of the QA/QC plan is required if the results of emission report reviews, inspections, audits, review of the QA/QC plan, or any other information available to DES show that the plan does not meet the criteria specified in 40 CFR 60, Appendix F, Procedure 1, section 3; and h. The QA/QC plan shall be considered an update to the CEMS monitoring plan 		

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Table 6 – Monitoring/Testing Requirements					
Item No.	Device	Parameter	Method of Compliance	Frequency of Method	Regulatory Cite
			required by Env-A 808.04.		
3.	MK1 & MK2	Mercury Emissions	<p><i>Monitoring of Mercury Emissions</i></p> <p>a. Prior to the availability and operation of CEMS, and subsequent to the baseline emissions testing under RSA 125-O:14, II, stack tests or another methodology approved by DES shall be conducted twice per year to determine mercury emissions levels from the affected sources.</p> <p>b. Any stack tests performed shall employ a federally recognized and approved methodology, proposed by the Owner and employing a test protocol approved by DES.</p> <p>c. When a federal performance specification takes effect and a mercury CEMS capable of meeting the federal specifications becomes available, a mercury CEMS, approved by DES, shall be installed on STMK3 as deemed appropriate by DES.</p>	Twice per year or until a mercury CEMS is in operation and approved by DES	RSA 125-O:15
4.	MK1 & MK2	Stack flow, NO _x , SO ₂ , and CO ₂ (or O ₂), opacity	The new stack (STMK3 from the FGD) serving units MK1 and MK2 shall be equipped with flow monitoring, NO _x , SO ₂ , and CO ₂ or O ₂ CEMS and a continuous opacity monitor (COMS) ⁸ . The CEMS and COMS shall meet 40 CFR 75 requirements.	Continuously	Env-A 808.02(a) (new) and 40 CFR 75 §75.10(a)(2), §75.12, and Env-A 1211.03(f)
5.	MK2-PC7	FGD Operating Parameters	<p>a. The Owner shall continuously monitor the scrubber liquor pH and FGD absorber exit gas temperature.</p> <p>b. The Owner shall calibrate or validate the accurate operation of the instruments measuring the parameters a minimum of once annually in accordance with manufacturer's recommended procedures or alternative procedures as approved by DES. All records of the calibrations or validations shall be kept and made available upon request.</p>	Continuously	RSA 125-C:6, XI
6.	MK2-PC7	FGD Data Acquisition System	The Owner shall have a data acquisition system for the FGD absorber exit gas temperature and scrubber liquor pH monitors, which calculates and monitors hourly averages and daily averages.	Continuously	RSA 125-C:6, XI

⁸ Due to excessive moisture in the flue gas exiting the FGD system, the COMS will be installed prior to the stack.

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Table 6 – Monitoring/Testing Requirements					
Item No.	Device	Parameter	Method of Compliance	Frequency of Method	Regulatory Cite
7.	MK1 & MK2	Sulfur Test Method for Coal	The owner or operator shall use Method ASTM D 4239-00 to determine the sulfur content of coal in pounds of sulfur per million BTU gross heat content.	Each shipment of coal	Env-A 806.04

D. Recordkeeping Requirements

The Owner is subject to the Recordkeeping requirements as contained in Table 7 below:

Table 7 – Applicable Recordkeeping Requirements				
Item No.	Recordkeeping Requirement	Frequency of Recordkeeping	Applicable Emission Unit	Regulatory Cite
1.	<i>Record Retention and Availability</i> The Owner shall keep the required records on file. These records shall be available for review by DES upon request.	Retain for a minimum of 5 years	Emissions Units specified in Table 1 and Pollution Control Equipment specified in Table 3	Env-A 902
2.	<i>General Recordkeeping Requirements for Process Operations</i> The Owner shall keep monthly records of: a. The quantity of limestone used as documented by limestone delivery records; and b. The hours of operation of the wet limestone ball mills.	Monthly	MKLC1 MK2-PC7	Env-A 903.02
3.	The Owner shall maintain the standard operating and maintenance procedures for the air pollution control equipment in a convenient location (e.g., control room/technical library) and make them readily available to DES upon request.	Maintain at facility at all times	MK2-PC7	Env-A 906.01
4.	<i>CEMS and Other Approved Monitoring Methods Recordkeeping Requirements</i> a. The Owner shall record and maintain the information pursuant to 40 CFR Part 75, which includes the certification, quality assurance, and quality control records. b. The Owner shall record and maintain CEMS records according to the most stringent requirements of Env-A 808 and 40 CFR Part 75.	As specified by regulation	MK1, MK2, MK2-PC7	Env-A 903.04 Env-A 808 40 CFR Part 75

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Table 7 – Applicable Recordkeeping Requirements

Item No.	Recordkeeping Requirement	Frequency of Recordkeeping	Applicable Emission Unit	Regulatory Cite
5.	<p>The Owner shall record the hours of operation of MK1 and MK2 as follows:</p> <ul style="list-style-type: none"> a. Total hours of MK1 and MK2 each; and b. Total hours of MK1 when discharging through STMK2 (bypass stack) 	Monthly	MK1 and MK2	Env-A 906
6.	<p>The owner or operator shall maintain the following sulfur analysis records:</p> <ul style="list-style-type: none"> a. Records showing the maximum weight percentage sulfur and quantity of each fuel delivery shipment received; and b. Records showing either: <ul style="list-style-type: none"> 1. The analytical method used and the specified fuel analysis results of the shipment or consignment from which the shipment came; or 2. Delivery records sufficient to allow for traceability of the analytical results corresponding to each shipment received by the stationary source, showing: <ul style="list-style-type: none"> i. The date of delivery; ii. The quantity of delivery; iii. The type of fuel; iv. The maximum weight percentage sulfur; and v. The name, address, and telephone number of the company making the delivery. 	Each shipment of coal	MK1 & MK2	Env-A 806.05

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E. Reporting Requirements

The Owner is subject to the reporting requirements identified in Table 8 below:

Table 8 – Applicable Reporting Requirements				
Item No.	Reporting Requirement	Frequency of Reporting	Applicable Emission Unit	Regulatory Cite
1.	<p><i>Performance Test Reports</i> The Owner shall submit a report to DES documenting the results of the compliance stack emission test. The compliance stack emission test report shall contain the following information:</p> <ul style="list-style-type: none"> a. All the information required for the pre-test protocol as described in Env-A 802.04; b. All test data; c. All calibration data; d. Process data agreed by DES and the Owner to be collected; e. All test results; f. A description of any discrepancies or problems that occurred during testing or sample analysis; g. An explanation of how discrepancies or problems were treated and their effect on the final results; and h. A list and description of all equations used in the test report, including sample calculations for each equation used. 	No later than 60 days after a performance test	MK1, MK2 & MK2-PC7	Env-A 802.11
2.	<p><i>Quarterly Reports</i> The Owner shall submit to DES no later than 30 calendar days after the end of the calendar quarter, the information required in Table 7, Item 4.</p>	Quarterly – 30 calendar days after the end of the calendar quarter	MK1, MK2, MK2-PC7	40 CFR 75, Env-A 808.11
3.	<p><i>Semi-annual Report</i> The Owner shall submit to DES the following information on a semi-annual basis:</p> <ul style="list-style-type: none"> a. Hours of operation of MK1 and MK2 as required in Table 7, Item 5; and b. Limestone records as required in Table 7, Item 2. 	Semi-annual	MK1, MK2, MKLC1	Env-A 910
4.	<p><i>Annual Emissions Compliance Report for Mercury</i> The Owner shall submit to DES a report of annual mercury emissions from the affected sources to demonstrate compliance with Item 13 of Table 4. This report shall include all references and methodologies used to calculate the total mercury emissions from the affected sources.</p>	Annually by April 15th of each calendar year	Affected Sources as defined in RSA 125-O:12	Env-A 910

Table 8 – Applicable Reporting Requirements

Item No.	Reporting Requirement	Frequency of Reporting	Applicable Emission Unit	Regulatory Cite
5.	<p><i>Quarterly Coal Report</i> The Owner shall submit to DES no later than 30 calendar days after the end of the calendar quarter, the information required in Table 7, Item 6. Submittal of the “Monthly Report of Cost and Quality of Fuel for Electric Plants,” will satisfy the requirements of this condition.</p>	Quarterly – 30 calendar days after the end of the calendar quarter	MK1 & MK2	Env-A 910.01

VII. Administrative Permit Amendments

- A. Pursuant to Env-A 612.01, the Owner may implement the changes addressed in the request for an administrative permit amendment as defined in Part Env-A 100 immediately upon submittal of the request.
- B. Pursuant to Env-A 612.01, the Director shall take final action on a request for an administrative permit amendment in accordance with the provisions of Env-A 612.01(b) and (c).

VIII. Minor Permit Amendments

- A. Pursuant to Env-A 612.03, the owner or operator of a source or device shall submit to the department a request for a minor permit amendment for any proposed change to an existing permit condition which will not result in an increase in the amount of a specific air pollutant currently emitted by the source or device and will not result in the emission of any regulated air pollutant or regulated toxic air pollutant currently not emitted by the source or device.
- B. The request for a minor permit amendment shall:
 - 1. Be in the form of a letter to the department;
 - 2. Describe the proposed change; and
 - 3. Describe any new applicable requirements that will apply if the change occurs.
- C. The department shall take final action on a request for a minor permit amendment within 90 days of receipt of such a request.
- D. The owner or operator may implement the proposed change immediately upon filing a request for minor permit amendment with the department.

IX. Significant Permit Amendments

- A. Pursuant to Env-A 612.04, the owner or operator shall submit an application to the department for a significant permit amendment for any proposed change to the physical structure or operation of the source or device covered by the temporary permit which increases the amount of a specific air pollutant currently emitted by such source or device or which results in the emission of any regulated air pollutant currently not emitted by such source or device.

- B. A request for a significant permit amendment shall include the following:
1. A complete application form, as described in Env-A 1703 through Env-A 1708, as applicable and provided by the department, containing all pertinent information with regard to the amendment including, if applicable, the information specified in Env-A 1709.
 2. The fee(s) specified in Env-A 702 through Env-A 705, as applicable.
 3. A description of:
 - a. The proposed change;
 - b. The emissions resulting from the change; and
 - c. Any new applicable requirements that will apply if the change occurs: and
 4. Where air pollution dispersion modeling is required for a source or device pursuant to Env-A 606.02, the information required pursuant to Env-A 606.03.
- C. The department shall take final action on a request for a significant permit amendment within 90 days of receipt of such a request, provided that the public notice and hearing procedures specified in Env-A 621 have been satisfied.
- D. The owner or operator shall not implement the proposed change until the department issued the amended permit.

X. Emission-Based Fee Requirements

- A. The Owner shall pay an emission-based fee quarterly for this facility as calculated each calendar year pursuant to Env-A 705.03.
- B. The Owner shall determine the total actual annual emissions from the facility to be included in the emission-based multiplier specified in Env-A 705.03(a) for each calendar year in accordance with the methods specified in Env-A 616.
- C. The Owner shall calculate the annual emission-based fee for each calendar year in accordance with the procedures specified in Env-A 705.03 and the following equation:

$$FEE = E * DPT * CPI_m * ISF$$

Where:

- FEE = The annual emission-based fee for each calendar year as specified in Env-A 705.
E = The emission-based multiplier is based on the calculation of total annual emissions as specified in Env-A 705.02 and the provisions specified in Env-A 705.03(a).
DPT = The dollar per ton fee the DES has specified in Env-A 705.03(b).
CPI_m = The Consumer Price Index Multiplier as calculated in Env-A 705.03(c).
ISF = The Inventory Stabilization Factor as specified in Env-A 705.03(d).

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D. The Owner shall contact the DES each calendar year for the value of the Inventory Stabilization Factor.

E. The Owner shall contact the DES each calendar year for the value of the Consumer Price Index Multiplier.

F. The Owner shall submit, to the DES, payment of the emission-based fee and a summary of the calculations referenced in Sections X.B. and C. of this Permit for each calendar year. The total emission-based fee shall be paid in four equal installments on a quarterly basis. The quarterly payments shall be made in accordance with Env-A 705.04 on the 15th day of the following months:

1. July of the year to which the fee applies (e.g., January, February, March 2007 emission fees are due July 15, 2007);
2. October of the year to which the fee applies (e.g., April, May, June 2007 emission fees are due on October 15, 2007).
3. January of the following year (e.g., July, August, September 2007 emission fees are due on January 15, 2008);
4. April of the following year (e.g., October, November, December 2007 emission fees are due on April 15, 2008).

The Owner shall pay any remaining balance of the total annual emission-based fee no later than April 15th of the following year.

The emission-based fee and summary of the calculations shall be submitted to the following address:

New Hampshire Department of Environmental Services
Air Resources Division
29 Hazen Drive
P.O. Box 95
Concord, NH 03302-0095
ATTN.: Emissions Inventory

G. The DES shall notify the Owner of any under payments or over payments of the annual emission-based fee in accordance with Env-A 705.05.

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XI. Permit Deviation

In accordance with 40 CFR 70.6(a)(3)(iii)(B), the Owner shall report to the DES all instances of deviations from Permit requirements, by telephone, fax, or e-mail (pdeviations@des.state.nh.us) within 24 hours of discovery of such deviation. This report shall include the deviation itself, including those attributable to upset conditions as defined in this Permit, the probable cause of such deviations, and any corrective actions or preventative measures taken.

Within 10 days of discovery of the permit deviation, the Owner shall submit a written report including the above information as well as the following: preventive measures taken to prevent future occurrences; date and time the permitted device returned to normal operation; specific device, process or air pollution control equipment that contributed to the permit deviation; type and quantity of excess emissions emitted to the atmosphere due to permit deviation; and an explanation of the calculation or estimation used to quantify excess emissions.

Said Permit deviation shall also be submitted in writing to the DES in the semi-annual summary report of monitoring and testing requirements due July 31st and January 31st of each calendar year. Deviations are instances where any Permit condition is violated and has not already been reported as an emergency pursuant to 40 CFR 70.6(g).

Reporting a Permit deviation is not an affirmative defense for action brought for noncompliance.