



The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES

Robert R. Scott, Commissioner

April 28, 2023

Elizabeth Tillotson, Vice President
Granite Shore Power, LLC
431 River Road
Bow, NH 03304

RE: On-Site Full Compliance Evaluation Report

Dear Ms. Tillotson,

The New Hampshire Department of Environmental Services, Air Resources Division (NHDES) has completed a full compliance evaluation of Granite Shore Power LLC – Merrimack Station located in Bow, New Hampshire. The purpose of the evaluation was to determine compliance with Title V Operating Permit TV-0055 and the NH Code Admin. Rules, Env-A 100 *et seq.* An on-site inspection was included in the evaluation and completed on March 29, 2023. This is a copy of the on-site full compliance evaluation report for your review and records.

Please note that this full compliance evaluation pertains only to NH Code Admin. Rules, Env-A 100 *et seq.* as they relate to your air permit. Any compliance determination made with respect to the air rules does not in any way imply compliance with any other applicable environmental rules or laws.

NHDES identified deficiencies during this compliance evaluation, as detailed in this report.

If you have any questions, please do not hesitate to give me a call at (603) 271-0907 or by email at Michael.R.Camacho@des.nh.gov.

Sincerely,

Michael Camacho
Senior Compliance Assessment Specialist
Air Resources Division

cc: David L. Stack, Town Manager, Town of Bow
cc: James Andrews, President, Granite Shore Power, LLC
cc: Elizabeth Tillotson, Vice President, Granite Shore Power, LLC

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ABBREVIATIONS

ARD	Air Resources Division
AAL	Ambient Air Limit
acf	actual cubic foot
ASTM	American Society of Testing and Materials
Btu	British thermal units
CAA	Clean Air Act
CAS	Chemical Abstracts Service
CEMS	Continuous Emissions Monitoring System
cfm	cubic feet per minute
CFR	Code of Federal Regulations
CO	Carbon monoxide
CO ₂	Carbon dioxide
CY	Calendar year
DER	Discrete Emissions Reduction
DES	New Hampshire Department of Environmental Services
EGU	Electric utility steam generating unit
Env-A	New Hampshire Code of Administrative Rules - Air Resources Division
ERC	Emission Reduction Credit
ESP	Electrostatic Precipitator
FGD	Flue gas desulfurization
ft	foot or feet
ft ³	cubic feet
gal	gallon
HAP	Hazardous Air Pollutant
HCl	Hydrogen chloride
Hg	Mercury
hp	horsepower
hr	hour
LEE	Low emitting electric utility steam generating unit
lb	pound
MACT	Maximum Achievable Control Technology
MATS	Mercury and Air Toxics Standards
MM	million
MW	megawatt
NAAQS	National Ambient Air Quality Standard
NATS	NO _x Allowance Tracking System
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NO _x	Oxides of Nitrogen
NNSR	Nonattainment New Source Review
NSPS	New Source Performance Standard
PM	Particulate matter
PM ₁₀	Particulate matter < 10 microns
PM _{2.5}	Particulate matter < 2.5 microns

ppm	parts per million
ppmv	parts per million volume
PSD	Prevention of Significant Deterioration
RACT	Reasonably Available Control Technology
RICE	Reciprocating Internal Combustion Engine
RSA	Revised Statuses Annotated
RTAP	Regulated Toxic Air Pollutant
scf	standard cubic foot
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
STMS	Sorbent trap monitoring system
tpy	tons per consecutive 12-month period
USEPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds

I. Facility Description

NHDES conducted an on-site full compliance evaluation of GSP Merrimack LLC – Merrimack Station (Merrimack Station) on March 29, 2023, and the results are presented herein. The compliance evaluation covers the period from February 27, 2021, to March 29, 2023.

Merrimack Station is a fossil fuel-fired electricity generating facility, owned and operated by GSP Merrimack LLC, a wholly owned subsidiary of Granite Shore Power LLC (GSP). The facility is comprised of two bituminous coal-fired 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 also operates a limestone processing and handling system. Utility boilers MK1 and MK2 are each equipped with two electrostatic precipitators (ESPs) operated in series to control the emissions of particulate matter (PM) and selective catalytic reduction (SCR) systems to control nitrogen oxides (NOx) emissions. A wet limestone-based flue gas desulfurization (FGD) system controls the emissions of mercury (Hg), sulfur dioxide (SO₂) and hydrogen chloride (HCl) from MK1 and MK2. An emergency engine is available to power the cooling water pump to provide cooling water to the FGD system during emergency situations such as loss of station power or circulating water system failure.

Both the utility boilers exhaust through a common stack (STMK3). MK1 boiler is also equipped with an emergency stack (STMK2). Venting of emissions from MK1 through stack STMK2 (thereby bypassing the FGD system) is only allowed during unplanned emergency events as necessary to safely vent residual boiler gases and prevent severe damage to equipment or potential injury to personnel. Each boiler duct is equipped with a continuous emissions monitoring system (CEMS) to measure NO_x, SO₂, diluent gas carbon dioxide (CO₂), stack flow and opacity. The common stack is equipped with CEMS to monitor NO_x, SO₂, CO₂, stack flow and a sorbent trap monitoring system (STMS) to monitor mercury.

Merrimack Station is a major source of PM₁₀, SO₂, NO_x, CO, volatile organic compounds and hazardous air pollutants (HAPs) and is therefore required to obtain a Title V Operating Permit.

Facility name and address	GSP Merrimack LLC Merrimack Station 431 River Rd Bow, New Hampshire 03304-3314
County	Merrimack
Telephone	(603) 634-2440
AFS#	3301300026
Source Type	Title V
Inspection Date/Time	March 29, 2023 / 9:00 AM
Weather	45°F, sunny, 0-5 mph winds from the northwest
Inspection Type	On-site Full Compliance Evaluation

Inspection Period	February 27, 2021, to March 29, 2023
Inspected by	Michael Camacho, Senior Compliance Assessment Specialist
Source Contact(s)	Elizabeth Tillotson, VP Dave Gagne, Operations and Maintenance Michael Bruni, EHS Engineer Mike Mantini, Operations Manager Robert Lussier, Station Manager Greg Griffin, Consultant
Last Full Compliance Inspection: February 26, 2021	
Results:	
<ul style="list-style-type: none"> Merrimack Station exceeded the 30-day rolling average Hg emission limit of 1.2lb/TBtu on four days from November 19 through December 16, 2020. Merrimack Station’s CEM systems did not meet the 90% or greater data availability requirements. 	
<p><i>Merrimack Station exceeded the 30-day rolling average Hg emission limit of 1.2lb/TBtu and did not meet the CEMS data availability requirements in a few quarters during this evaluation period due to the facility’s intermittent operation.</i></p>	

The table below lists the permitting timeline and the effective periods of each permit / application covering the evaluation period.

Permitting / Application Timeline				
Title V Operating Permit	TV-0055	Issued	July 30, 2020	Application timely
		Minor Modification	September 26, 2020	Incorporated the use of a dual sorbent trap monitoring system
		Expires	June 30, 2025	

The on-site inspection included an opening meeting to discuss the purpose of the inspection as well as the rules pertaining to claims of confidentiality and facility safety concerns. Merrimack Station agreed to the inspection and authorized access to the facility. Material provided and operations conducted by the Facility at the time of the inspection were not claimed as confidential.

II. Emission Unit Identification

Table 1 and 1A below, taken from Permit TV-0055, lists the permitted emission units as verified during the evaluation.

Table 1 - Significant Activities			
Emission Unit ID	Device Identification	Installation Date	Maximum Design Capacity and Permitted Fuel Type(s)
MK1	Steam Generating Unit 1 Cyclone Boiler with fly ash reinjection Manufacturer: Babcock & Wilcox Model # RB-337	1960	1,238 million British Thermal Units (MMBtu) per hour Bituminous coal - 48.5 tons/hr No. 2 fuel oil is used to ignite individual fires before establishing the main coal fires.
MK2	Steam Generating Unit 2 Cyclone Boiler with fly ash reinjection Manufacturer: Babcock & Wilcox Model # UP-42	1968	3,473 MMBtu/hr Bituminous coal - 136.2 tons/hr No. 2 fuel oil is used to ignite individual fires before establishing the main coal fires.
MKCT1	Combustion Turbine #1 Manufacturer: Pratt & Whitney Model # FT4A-8LF	1968	319 MMBtu/hr- Kerosene - 2,279 gal/hr
MKCT2	Combustion Turbine #2 Manufacturer: Pratt & Whitney Model # FT4A-8LF	1969	319 MMBtu/hr Kerosene - 2,279 gal/hr
MKPCC	Primary Coal Crusher System consisting of two crushers that operate in parallel; These crushers are located underground beneath the rail car track hopper. Manufacturer: Pennsylvania Crusher Model No. FCC Series Single Roll Crusher 30 X 60" Serial Nos. MKPCC-A: 6496 MKPCC-A1: 7074	May 2006 (MKPCC-A) May 2007 (MKPCC-A1)	600 tons/hr coal for each crusher
MKSCC1	Secondary Coal Crusher System consisting of two systems each employing two crushers (for a total of four crushers) Manufacturer: Steadman Model No. H-54D10-47-A-X (H series Cage Mills) Serial Nos. Unit 1A: D-3658 Unit 1B - D-3659 Unit 2A: D-3636 Unit 2B: D-3637 These crushers are located in an aboveground building.	Startup dates - November 29, 2016 for MKSCC1-1A & MKSCC1-1B November 25, 2015 for MKSCC1-2A & MKSCC1-2B	150 tons per hour per each crusher
MKEB	Temporary Boiler	-	Up to 96 MMBtu/hr Ultra low sulfur diesel (ULSD)/distillate oil

Table 1 - Significant Activities			
Emission Unit ID	Device Identification	Installation Date	Maximum Design Capacity and Permitted Fuel Type(s)
MKEC	Emergency Cooling Pump Engine EPA Tier III Certified Manufacturer: John Deere/Clarke Model # JU6H-UFAD88 Serial # PE6068L101142 237 hp engine output	2011	1.64 MMBtu/hr ULSD - 12 gal/hr
MKEG	Emergency Generator Manufacturer: Caterpillar Model # B406BD1 534 hp engine output	1988	4 MMBtu/hr ULSD - 28.7 gal/hr
MKLC1	Limestone Processing and Handling System	See Table 1A	See Table 1A

Table 1A - Limestone Processing and Handling System				
Equipment ID	Equipment Description	Year Installed	Design Capacity	Control Device
L-1	Limestone belt conveyor (30") to receiving hopper	2012	200 tons per hour (tph)	Dust suppression enclosure with dust suppression spray (LDS-1)
RS-C	Radial Stacker Conveyor C (48") to Limestone belt conveyor L-2 (via hopper)	Original 1961	1400 tph	Dust suppression enclosure limestone product delivered wet
L-2	Limestone belt conveyor (48") to Limestone Storage Silo	2011	1400 tph	Dust suppression enclosure with dust suppression spray (LDS-2)
L-2A	Limestone belt conveyor (48") to Limestone Storage Silo	2011	1400 tph	Dust suppression enclosure with dust suppression spray (LDS-2)
LSS-1	Limestone Storage Silo # 1	2011	7500 tons	Baghouse (N011)
LSS-2	Limestone Storage Silo # 2	2011	7500 tons	Baghouse (N005)
L-3A	Limestone Storage Silo unloading conveyor, indoors (30")	2011	150 tph	Dust suppression enclosure with dust suppression spray (LDS-2)
L-3B	Limestone Storage Silo unloading conveyor, indoors (30")	2011	150 tph	Dust suppression enclosure with dust suppression spray (LDS-2)
L-3C	Limestone belt conveyor (30") from silo storage to conveyor L-4 at Transfer Tower (TT-1)	2011	150 tph	Dust suppression enclosure and dust suppression spray at Transfer Tower #1 (LDS-2)
RC-1	Limestone Transfer Tower (TT-1) Maintenance Recirculation Chute to Dump Truck	2013	20 tph	Dust suppression enclosure and dust suppression spray at Transfer Tower #1 (LDS-2)
L-4	Limestone belt conveyor (30") from silo storage via TT-1 to Transfer Tower	2011	150 tph	Dust suppression enclosure and dust suppression spray at Transfer Tower

Table 1A - Limestone Processing and Handling System				
Equipment ID	Equipment Description	Year Installed	Design Capacity	Control Device
	(TT-2)			#2 (LDS-2)
L-5	Limestone belt conveyor (30") from TT-2 to Day Silos	2011	150 tph	Dust suppression enclosure and dust suppression spray at Transfer Tower #2 (LDS-3)
BF-2	Belt Feeder (30") for emergency limestone silo feed from truck to conveyor L-5	2011	50 tph	Dust suppression enclosure and spray at Transfer Tower #2 (LDS-3)
4000A	Limestone Day Silo A	2011	300 tons	Baghouse (4010A)
4000B	Limestone Day Silo B	2011	300 tons	Baghouse (4010B)
4030A	Limestone Feeder A	2011	18.5 tph	N/A - Water injection
4030B	Limestone Feeder B	2011	18.5 tph	N/A - Water injection
4060A	Ball Mill A	2011	18.5 tph	N/A - Water injection
4060B	Ball Mill B	2011	18.5 tph	N/A - Water injection

During the on-site inspection, NHDES observed the devices identified in Table 1. MKEB was being dismantled and will be off site by the end of the month.

The following hour meter readings are from the engines' non-resettable hour meters. The emergency generator and the emergency cooling pump engines did not operate more than 500 hours per year between the 2021 inspection and the 2023 inspection. The emergency generator and the emergency cooling engines each operated less than 100 hours per year for maintenance and testing.

Unit	Hour Meter Reading – 2021 evaluation (hours)	Hour Meter Reading – 2023 evaluation (hours)	Difference (hours)
Emergency Generator (MKEG)	1038	1068	30
Emergency Cooling Pump Engine (MKEC)	16.5	22.18	5.68

The device listed below is an insignificant activity however it is subject to federal requirements, which are included in the TV-0055 permit.

Insignificant Activities				
Emission Unit ID	Device Name	Manufacturer	Year Installed	Maximum Capacity/ Permitted Fuel Type
Smith Boiler	Crusher House Heating System - Steam Boiler	Smith 19 Series	2008	1.082 MMBtu/hr - Propane

Merrimack Station reported that no changes to these emission units were made nor has it added any emission units requiring a permit or permit modification during this evaluation period.

The table below lists the facility-wide reported emissions for the review period.

Merrimack Station Reported Annual Emissions (tons)							
	TSP	SO ₂	NO _x	CO	Non-Exempt VOC	HAPs/RTAPs	Total
Permitted Limits	---	---	---	---	---	---	---
2021	6.40	198.10	353.80	31.49	6.81	4.41	601.1
2020	2.95	96.10	171.35	14.82	3.16	2.02	290.39

III. Stack Criteria

Table 2 below, taken from Permit TV-0055, lists the permitted stack requirements for Merrimack Station. During the inspection, NHDES observed that the stacks were vertical and unobstructed.

Table 2 - Stack Criteria			
Stack #	Emission Unit	Minimum Height (feet above ground surface)	Maximum Exit Diameter (feet)
STMK2 (emergency stack)	MK1	317	14.5
STMK3	MK1 & MK2	445	21.5
STMKCT1	MKCT1	20	10.5 x 14 (exit area)
STMKCT2	MKCT2	20	10.5 x 14 (exit area)

IV. Pollution Control Equipment Identification

Table 3 below, taken from Permit TV-0055, lists the required air pollution control equipment for the Merrimack Station’s devices. Merrimack Station stated it did not upgrade or modify any of

the pollution control equipment this evaluation period.

Table 3 - Pollution Control Equipment Identification			
Pollution Control Equipment ID	Description	Purpose	Emission Unit Controlled
MK1-PC1	ESP #1 Original ESP consists of 3 transformer rectifiers (T-Rs), 3 fields and 12 sections	To control PM	MK1
MK1-PC2	ESP #2 Supplemental ESP consists of 10 T-Rs, 5 fields and 10 sections		
MK1-PC3	SCR deNO _x System	To control NO _x	MK1
MK2-PC4	ESP #1 Original ESP consists of 6 T-Rs, 3 fields and 12 sections.	To control PM	MK2
MK2-PC5	ESP #2 Supplemental ESP consists of 12 T-Rs, 4 fields and 24 sections		
MK2-PC6	SCR deNO _x System	To control NO _x	MK2
MK2-PC7	FGD System	To control Hg and acid gases (SO ₂ and HCl)	MK1 & MK2

V. Alternative Operating Scenarios

A. Trial Test Burns with Other Fuels for MK1 and MK2 (Temporary Permits FP-T-0054 & TP-B-0462)

Prior to the use of any fuel other than bituminous coal, No. 2 fuel oil or other fuels previously reviewed and approved by DES, GSP Merrimack shall submit a proposal to DES, which shall include, but not be limited to the following:

1. Type of fuel;
2. Analysis data of the fuel proposed, which shall include proximate and ultimate analysis, volatile and semi-volatile analyses (i.e., EPA Method 8240, 8250, 8260, or 8270) and metals analysis (i.e., Method 3050 and mercury).
3. Specification of baseline operating conditions for MK1 and/or MK2 including coal feed rate, percent moisture of coal feed, oil firing rate, FGD, ESP and SCR operating conditions, and emissions values of SO₂, NO_x, particulate matter (PM/PM₁₀/PM_{2.5}), CO, HCl, Hg and opacity;
4. A comprehensive test plan, which shall present the proposed operating conditions for the trial burn, to include but not be limited to the following:

- a.) Length of fuel trial;
 - b.) New fuel rate;
 - c.) Means of measuring new fuel feed rate;
 - d.) Description of new fuel feed process;
 - e.) New fuel preparations prior to burning;
 - f.) Percent moisture of new fuel feed;
 - g.) Time table for operation stability;
 - h.) Coal feed rate;
 - i.) Coal percent moisture;
 - j.) ESP, SCR and FGD operating conditions;
 - k.) Expected emission values of opacity, SO₂, NO_x, particulate matter (PM/PM₁₀/PM_{2.5}), CO and HCl;
 - l.) The test plan shall also address the continuous tracking of operational data prior to the fuel trial, during the fuel trial, and for a short time after the fuel trial. SO₂, NO_x, Hg, and opacity can be monitored using the existing CEMs.
 - m.) A compliance stack test protocol for PM and HCl emissions using US EPA Methods 1 through 4, Method 5 (for PM), Method 26A (for HCl), or a DES approved alternative, when requested by DES.
 - n.) Operational parameters to be monitored and recorded, which shall include, but not be limited to steam flows, boiler temperatures, ammonia flow, and diluent gas CO₂;
 - o.) The effects of the new fuel on flyash characteristics and resulting effect on the ESP, SCR and FGD operations;
 - p.) The effects of the new fuel on bottom ash characteristics;
 - q.) Specification and description of expected operational and combustion conditions when the trial burn has reached stable conditions with the new fuel feed; and
 - r.) A timetable or schedule with approximate dates of the trial test burn.
5. Based on information regarding the proposed trial fuel burn provided by GSP Merrimack, the DES may request additional information specific to the proposed trial burn operations. In addition, metal emission stack testing may be required dependent upon DES review of the new fuel metal analysis.
 6. If the new fuel is to be consumed on a regular basis, GSP Merrimack shall apply for a Temporary Permit or apply for an amendment to this Title V Operating Permit, as determined by DES. If the new fuel results in a major modification, NNSR or PSD program requirements may apply, as well as a public notice, and comment period.
 7. DES shall respond within 30 days of receipt of a proposal with approval, conditional approval, denial, or request for additional information.

8. DES Waste Management Division may have additional requirements and concerns and shall be contacted by GSP Merrimack prior to the initiation of any trial burn, if applicable.
9. A summary report shall be submitted to DES within 60 days after the end of the trial fuel burn, which should include a summary of operational results and trends, emission values to include CEM and stack test data, and proposed future use of the trial fuel.

Finding: Merrimack Station has not requested to use any fuels which would trigger this requirement.

VI. Compliance with Operating and Emission Limits

Table 4 below, taken from permit TV-0055, lists the State-only enforceable operating and emission limitations for the facility and any deficiencies noted during the evaluation.

Table 4 - State-only Enforceable Operational and Emission Limitations				
Item #	Applicable Requirements	Applicable Emission Unit	Regulatory Citation	Compliant
1.	<u>24-hour and Annual Ambient Air Limit</u> The emissions of any Regulated Toxic Air Pollutant (RTAP) shall not cause an exceedance of its associated 24-hour or annual Ambient Air Limit (AAL) as set forth in Env-A 1450.01, <i>Table of all Regulated Toxic Air Pollutants</i> .	Facility wide	Env-A 1400	Yes
2.	<u>Revisions of the List of RTAPs</u> In accordance with RSA 125-I:5 IV, if the department revises the list of RTAPs or their respective AALs or classifications under RSA 125-I:4, II and III, and as a result of such revision the owner or operator is required to obtain or modify the permit under the provisions of RSA 125-I or RSA 125-C, the owner or operator shall have 90 days following publication of notice of such final revision in the New Hampshire Rulemaking Register to file a complete application for such permit or permit modification.	Facility wide	RSA 125-I:5 IV	Yes
Finding: The February 3, 2022 revision to Env-A 1400, specifically Env-A 1404.07(c), revised how a compliance boundary is applied to a leased property. Due to this revision, Merrimack Station is required to perform modeling to determine compliance with the most recent adoption of Env-A 1400. On August 3, 2023, Merrimack Station submitted to NHDES an Env-A 1400 compliance plan. Merrimack Station is currently on track with its compliance plan.				
3.	<u>RTAP Emission Limitation</u> Ammonia slip emissions from the SCR units shall not exceed 10 parts per million dry volume (ppmdv) at 3% oxygen, as measured at the stack outlet.	MK1 & MK2	FP-T-0054 & TP-B-0462	Yes
Finding: Compliance with ammonia slip emissions is determined through stack testing, which is required to be conducted once every five years. Merrimack Station demonstrated compliance with ammonia slip on February 20, 2019.				
4.	<u>Multiple Pollutant Reduction Program – Mercury Emissions</u> Total mercury emissions from the affected sources shall be at least 80% less on	Affected sources as defined in	RSA 125-O:13	Yes

Table 4 - State-only Enforceable Operational and Emission Limitations				
Item #	Applicable Requirements	Applicable Emission Unit	Regulatory Citation	Compliant
	an annual basis than the baseline mercury input of 268 pounds.	RSA 125-O:12, namely GSP Merrimack Station units MK1 & MK2 and GSP Schiller Station units SR4 & SR6		

Table 5, below taken from permit TV-0055, lists the Federally enforceable operating and emission limitations for the facility and any deficiencies noted during the evaluation.

Table 5 - Federally Enforceable Operational and Emission Limitations				
Item #	Requirement	Applicable Unit	Regulatory Basis	Compliant
1.	<p><u>NOx Reasonably Available Control Technology (RACT) Requirements: Wet-Bottom Utility Boilers Firing Coal</u></p> <p>a.) For cyclone-fired boilers having a maximum nameplate capacity of less than 320 megawatts and equipped with a SCR system, NOx emissions shall be limited as follows:</p> <ol style="list-style-type: none"> 0.22 lb. per million Btu (lb/MMBtu), based on a 24-hour calendar day average, except as provided in a.2. below; or 4.0 tons per day on any calendar day during which a startup, shutdown or low-load operation occurs. 	MK1	Env-A 1303.06(b) (Effective 8-15-18)	See Finding
<p>Finding: Merrimack Station reported that on December 15, 2022, and February 3, 2023, NOx emissions were above the 24-hour calendar day average rate of 0.22 lb/MMBtu. In addition, Merrimack Station reported that on December 8, 2022, NOx emissions were above the daily limit of 4.0 tons.</p>				
	<p>b.) For cyclone-fired boilers having a maximum nameplate capacity of equal to or greater than 320 megawatts and equipped with a SCR system, NOx emissions shall be limited as follows:</p> <ol style="list-style-type: none"> 0.22 lb. per million Btu, based on a 24-hour calendar day average, except as provided in b.2. below; or 11.5 tons per day on any calendar day during which a startup, shutdown or low-load operation occurs. 	MK2	Env-A 1303.06(c) & Env-A 2302.01(b)	See Finding
<p>Finding: Merrimack Station reported that on January 15, 2022, and December 20, 2021, NOx emissions were above the daily</p>				

Table 5 - Federally Enforceable Operational and Emission Limitations

Item #	Requirement	Applicable Unit	Regulatory Basis	Compliant
<i>limit of 11.5 tons.</i>				
	c.) For purposes of this part, the following definitions shall apply: <ol style="list-style-type: none"> 1. "Startup" means the period beginning when fuel is first fired in a boiler and ending when the ammonia injection permissive temperature is met in the SCR; 2. "Shutdown" means the period beginning when the SCR temperature first drops below the ammonia injection permissive temperature and ending when fuel is no longer fired in the boiler; and 3. "Low-load operation" means the operation of a boiler at load levels that result in flue gas temperature at the SCR inlet below the SCR functioning temperature. 	MK1 & MK2	Env-A 1303.02	Acknowledged
<i>Finding: On March 21, 2023, NHDES amended Env-A 1300. Env-A 1303.02 (3) now reads "Low-load operation" means the operation of a boiler during relative accuracy test audits, conducted pursuant to 40 CFR 75, Appendix A, section 6.5, at load levels that result in flue gas temperature at the SCR inlet below the SCR functioning temperature.</i>				
2.	<u>Federal Acid Rain NO_x Emission Reduction Program</u> NO _x emissions from MK2 shall be limited to 0.86 lb/MMBtu of heat input based on an annual average.	MK2	40 CFR 76.6(a)(2)	Yes
3.	<u>NAAQS Attainment Demonstration - SO₂ Emission Limitation</u> Sulfur dioxide emissions from MK1 and MK2 combined shall not exceed 0.39 lb/MMBtu on a 7-boiler operating day rolling average.	MK1 & MK2	TP-0189	Yes
4.	<u>SO₂ Emission Limitation for Mitigation of Regional Haze</u> <ol style="list-style-type: none"> a.) Except as provided in b.) below, actual SO₂ emissions from MK1 & MK2 combined shall be reduced by at least 94.0% based on a 30-boiler operating day rolling average basis. The SO₂ percent reduction shall be calculated at the end of each boiler operating day in accordance with Table 7, Item 23. b.) If the SO₂ percent reduction of 94.0% (as calculated on a 30-boiler operating day rolling average basis) is not met on a boiler operating day, compliance shall alternatively be achieved if on the same day: <ol style="list-style-type: none"> 1. The actual combined SO₂ emissions from MK1 and MK2 are less than or equal to 0.24 lb/MMBtu, as calculated on a 30-boiler operating day rolling average basis; and 2. The actual combined SO₂ emissions from MK1 and MK2 are reduced by at least 93.4%, as calculated on a 30-boiler operating day rolling average basis. c.) The facility is limited to utilizing the alternate compliance option listed in b.) above to no more than 7 boiler operating days during any consecutive 30-boiler operating day period. 	MK1 & MK2	TP-0189 & Env-A 2302	Yes
5.	<u>Emergency Stack Operation</u>	MK1	TP-0189	Noted

Table 5 - Federally Enforceable Operational and Emission Limitations

Item #	Requirement	Applicable Unit	Regulatory Basis	Compliant
	a.) Emissions from MK1 shall be vented through the emergency stack (STMK2) only during emergency situations as necessary to prevent severe damage to equipment or potential injury to personnel. b.) No fuel shall be supplied to MK1 while emissions are vented through the emergency stack. c.) Emergency stack may also be used for ventilation during maintenance activities when the boiler is offline.			
Finding: Emissions from MK1 were not vented through the emergency stack during this evaluation period.				
6.	<u>Maximum Sulfur Content Allowable in Coal</u> For a coal-burning device placed in operation before April 15, 1970, the sulfur content of coal burned in the device shall not exceed 2.8 pounds per million Btu gross heat content.	MK1 & MK2	Env-A 1604.01(a)	Yes
7.	<u>Visible Emission Standard for Fuel Burning Devices Installed on or Prior to May 13, 1970</u> The average opacity from fuel burning devices installed on or prior to May 13, 1970 shall not exceed 40 percent for any continuous 6-minute period.	MK1 & MK2	Env-A 2002.01	See Finding
Finding: Merrimack Station reported that on February 24, 2023, there were four six-minute periods in exceedance of the 40 percent for any continuous 6-minute period opacity standard.				
8.	<u>Particulate Matter Emission Limits</u> a.) <u>PM Emission Limitation for Mitigation of Regional Haze for cyclone firing, wet-bottom boilers</u> Filterable PM emissions from each boiler shall be limited to 0.08 lb/MMBtu.	MK1 & MK2	Env-A 2302.01	Yes
	b.) <u>NESHAP for Hazardous Air Pollutants (NESHAP): Coal- and Oil-Fired Electric Utility Steam Generating Units (EGUs) - Particulate matter</u> 1.) Filterable PM emissions shall be limited to 0.030 lb/MMBtu. 2.) An EGU may qualify for low-emitting EGU (LEE) status for PM if the performance tests conducted in accordance with §63.10007 for 3 consecutive years demonstrate that the emissions are less than 50 percent of the emission limit specified in Item 8.b.1 above.	MK1 & MK2	40 CFR 63.9991 & 63.10005(h) Subpart UUUUU	Yes
Finding: Merrimack Station qualified for LEE status based on stack testing conducted from 2015 through 2017. Results from the most recent stack testing conducted on February 27, 2022, are due to be received by NHDES by May 1, 2023. Testing conducted on February 5, 2020, demonstrated PM emissions of 0.004 lb/MMBtu.				
9.	<u>NESHAP for Coal-Fired EGUs - Hydrogen Chloride</u> a.) Hydrogen chloride emissions shall be limited to 0.0020 lb/MMBtu. b.) An EGU may qualify for LEE status for HCl if the performance tests conducted in accordance with §63.10007 for 3 consecutive years demonstrate that the emissions are less than 50 percent of the	MK1 & MK2	40 CFR 63.9991 & 63.10005(h) Subpart UUUUU	Yes

Table 5 - Federally Enforceable Operational and Emission Limitations

Item #	Requirement	Applicable Unit	Regulatory Basis	Compliant
	emission limit specified above.			
<p>Finding: Merrimack Station qualified for LEE status based on stack testing conducted from 2015 through 2017. Results from the most recent stack testing conducted on February 27, 2022, are due to be received by NHDES by May 1, 2023. Testing conducted on February 5, 2020, demonstrated HCL emissions of 0.0008 lb/MMBtu.</p>				
10.	<p><u>NESHAP for Coal-Fired EGUs – Mercury</u></p> <p>a.) Mercury emissions shall be limited to 1.2 pounds per trillion British thermal units of heat input (lb/TBtu).</p> <p>b.) An EGU may qualify for LEE status for Hg emissions if the performance test conducted once every 12 calendar months in accordance with §63.10007 demonstrates that, either:</p> <ol style="list-style-type: none"> 1.) Average emissions less than 10% of the above specified emission limit; or 2.) Potential Hg mass emissions of 29.0 or fewer pounds per year and compliance with the emission limit specified in Item 10.a above. <p>c.) If a coal-fired EGU does not qualify as a LEE for mercury, compliance with the emission limit must be continuously demonstrated through the use of a Hg CEMS or a sorbent trap monitoring system, in accordance with Appendix A to Subpart UUUUU.</p> <p>d.) The Owner or Operator may choose to use separate sorbent trap monitoring systems to comply with Subpart UUUUU: one sorbent trap monitoring system to demonstrate compliance with the numeric mercury emissions limit during periods other than startup or shutdown and the other sorbent trap monitoring system to report average mercury concentration during startup periods or shutdown periods.</p> <p>e.) The Owner or Operator may choose to use one sorbent trap monitoring system to demonstrate compliance with the Hg emissions limit at all times (including startup periods and shutdown periods) and report average mercury concentration. The Owner or Operator must follow the startup or shutdown requirements as given in Table 3 to Subpart UUUUU for each coal-fired EGU.</p>	MK1 & MK2	40 CFR §§ 63.9991, 63.10000(c)(1)(vi), 63.10005(a)(2)(iii) & 63.10005(h) Subpart UUUUU	See Finding
<p>Finding: Merrimack Station did not limit Hg emissions to no more than 1.2 lbs/TBtu from MK1 and MK2 based on a 30-boiler operating day rolling average on multiple occasions during this evaluation period while using option e.) above. On July 21, 2022, Merrimack Station certified a startup/shutdown Hg monitor and began monitoring Hg emissions using option d.) above. Merrimack Station has not reported an exceedance of the Hg limit since installing a separate monitor which allows for the determination of compliance with the numeric Hg emissions limit using data from periods other than startup or shutdown.</p>				
11.	<p><u>General Compliance Requirements</u></p> <p>a.) Comply with the emission limits at all times except during periods of startup and shutdown.</p> <p>b.) Comply with the work practice requirements specified in Item 12 during the periods of startup or shutdown.</p> <p>c.) At all times operate and maintain the affected source, including associated air pollution control equipment and monitoring</p>	MK1 & MK2	40 CFR 63.10000(a) & (b) Subpart UUUUU	See Finding

Table 5 - Federally Enforceable Operational and Emission Limitations

Item #	Requirement	Applicable Unit	Regulatory Basis	Compliant
	equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the EPA Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.			
Finding: See Table 5, Item 10 finding.				
12.	<p><u>Work Practice Standards for EGUs</u></p> <p>a.) Comply with the work practice requirements during periods of startup or shutdown:</p> <ol style="list-style-type: none"> 1.) Operate all required continuous monitoring system (CMS) during startup and shutdown. 2.) For startup of a unit, use clean fuels as defined in §63.10042 for ignition. 3.) Upon converting to firing coal, engage all of the applicable control technologies except FGD and SCR. The FGD and SCR system(s) must be started appropriately to comply with relevant standards applicable during normal operation. 4.) While firing coal during shutdown, vent emissions to the main stack and operate all applicable control devices and continue to operate those control devices after the cessation of coal being fed into the EGU and for as long as possible thereafter considering operational and safety concerns. In any case, controls must be operated when necessary to comply with other standards made applicable to the EGU by a permit limit or a rule other than Subpart UUUUU and that require operation of the control devices. 5.) Collect monitoring data during startup and shutdown periods, as specified in § 63.10020(a). <p>b.) Keep records during startup and shutdown periods, as provided in §§ 63.10032 and 63.10021(h).</p> <p>c.) Provide reports concerning startup and shutdown periods, as specified in §§ 63.10011(g), 63.10021(i), and 63.10031.</p>	MK1 & MK2	40 CFR 63 Subpart UUUUU Table 3	Yes
13.	<p><u>NESHAP for Coal and Oil-Fired Electric Utility Steam Generating Units - Tune-up Requirements</u></p> <p>Conduct tune-up of each EGU as specified in Table 7, Item 37.</p>	MK1 & MK2	40 CFR §§ 63.10000(e) & 63.10005(e) Subpart UUUUU	Yes
Finding: The most recent tune-ups of MK1 and MK2 were conducted in February of 2023.				
14.	<p><u>Visible Emission Standard for Fuel Burning Devices Installed on or Prior to May 13, 1970</u></p> <p>The average opacity from fuel burning devices installed on or prior to</p>	MKCT1 & MKCT2	Env-A 2002 (formerly Env-A 1202	Unknown

Table 5 - Federally Enforceable Operational and Emission Limitations

Item #	Requirement	Applicable Unit	Regulatory Basis	Compliant
	May 13, 1970 shall not exceed 40 percent for any continuous 6-minute period. Compliance with visible emission limitations shall be determined, upon request by the Department, using 40 CFR 60, Appendix A, Method 9 or other Department approved method.		effective 12-27-90)	
Findings: MKCT1 and MKCT2 were not in operation during the on-site inspection. Therefore, NHDES did not perform a visible emission observation. Merrimack Station reported no deviations for MKCT1 and MKCT2 from this opacity standard, and there were no complaints filed for opacity exceedances during this compliance period.				
15.	<u>Particulate Emission Standards for Fuel Burning Devices Installed on or Before May 13, 1970</u> Particulate matter emissions from each turbine shall not exceed 0.34 lb/MMBtu.	MKCT1 & MKCT2	Env-A 2003.01	Yes
Finding: Compliance with the particulate emission standard is determined through stack testing, which NHDES has not required for these devices. However, at the time the permit was issued, NHDES had sufficient information to determine that under normal operating conditions, these devices would meet the particulate matter standard.				
16.	<u>Sulfur Content Limitations for Liquid Fuels</u> a.) The sulfur content of kerosene-1 oil shall not exceed 0.04% sulfur by weight. b.) The sulfur content of kerosene-2 oil shall not exceed 0.30% sulfur by weight.	MKCT1 & MKCT2	Env-A 1603.01(c) & (d)	Yes
	c.) Sulfur content of No. 2 oil (also referred to as distillate fuel oil) shall not exceed 0.0015% by weight.	Facility wide	Env-A 1603.03	Yes
17.	<u>NOx RACT Requirements for Stationary Combustion Turbines Used as Load Shaving Units</u> Stationary combustion turbines used as load shaving units shall not exceed a NOx RACT emission limit of 0.90 lbs per million Btu heat input based on an hourly average.	MKCT1 & MKCT2	Env-A 1306.04	Yes
Findings: Merrimack most recently completed stack testing on June 21, 2022, and demonstrated NOx emissions of 0.853 lb/MMBtu for MKCT1 and 0.779 lb/MMBtu for MKCT2.				
18.	Temporary boilers that have theoretical potential emissions of less than 50 tons of NOx during any consecutive 12-month period shall be exempt from NOx RACT.	MKEB	Env-A 1301.03	Yes
19.	<u>Visible Emission Standard for Fuel Burning Devices Installed After May 13, 1970</u> The average opacity from fuel burning devices installed after May 13, 1970 shall not exceed 20 percent for any continuous 6-minute period. Compliance with visible emission limitations shall be determined, upon request by the department, using 40 CFR 60, Appendix A, Method 9 or other department approved method.	MKEG, MKEB & MKEC	Env-A 2002.02 (formerly Env-A 1202 effective 12-27-90)	Unknown
Finding: These units were not in operation during the on-site inspection. Therefore, NHDES did not perform a visible emission observation.				

Table 5 - Federally Enforceable Operational and Emission Limitations

Item #	Requirement	Applicable Unit	Regulatory Basis	Compliant												
20.	<p><u>Particulate Emission Standards for Fuel Burning Devices Installed on or After January 1, 1985</u></p> <p>The particulate matter emissions from fuel burning devices installed on or after January 1, 1985 shall not exceed 0.30 lb/MMBtu.</p>	MKEG, MKEB & MKEC	Env-A 2003.03 (formerly Env-A 1202 effective 12-27-90)	Yes												
<p>Findings: Compliance with the particulate emission standard is determined through stack testing, which NHDES has not required for these devices. However, at the time the permit was issued, NHDES had sufficient information to determine that under normal operating conditions, these devices would meet the particulate matter standard.</p>																
21.	<p>The owner or operator shall limit the maximum fuel consumption rate of MKEB to 2,490,000 gallons of ultra low sulfur fuel oil per consecutive 12-month period such that the emissions do not exceed the New Source Review (NSR) significance levels contained in the Table below:</p> <table border="1" data-bbox="248 772 917 976"> <thead> <tr> <th>Pollutant</th> <th>Tons per consecutive 12-month period</th> </tr> </thead> <tbody> <tr> <td>NOx</td> <td>25.0</td> </tr> <tr> <td>SO₂</td> <td>40.0</td> </tr> <tr> <td>CO</td> <td>100.0</td> </tr> <tr> <td>PM₁₀</td> <td>15.0</td> </tr> <tr> <td>VOC</td> <td>25.0</td> </tr> </tbody> </table>	Pollutant	Tons per consecutive 12-month period	NOx	25.0	SO ₂	40.0	CO	100.0	PM ₁₀	15.0	VOC	25.0	MKEB	TP-B-0490	Yes
Pollutant	Tons per consecutive 12-month period															
NOx	25.0															
SO ₂	40.0															
CO	100.0															
PM ₁₀	15.0															
VOC	25.0															
22.	<p><u>Operating Limitations for Emergency Engines</u></p> <p>Each diesel generator engine shall be limited to 500 hours of total operation during any consecutive 12 month period.</p>	MKEG & MKEC	Env-A 606.02(c)(1)	Yes												
23.	<p><u>Operating Limitations for Emergency Engines</u></p> <p>Each emergency generator engine shall only operate:</p> <ol style="list-style-type: none"> a) As a mechanical or electrical power source only during an emergency which is defined in Env-A 1302.17 as an unforeseeable condition that is beyond the control of the owner or operator that: <ol style="list-style-type: none"> i. Results in an interruption of electrical power from the electricity supplier to the premises; ii. Requires an interruption of electrical power from the electricity supplier to the premises in order to enable the owner or operator to repair damage from fire, flood, or any other catastrophic event, natural or man-made; or iii. Requires operation of an emergency generator to minimize damage from fire, flood, or any other catastrophic event, natural or man-made; b) During scheduled maintenance checks and readiness testing, as recommended by federal, state or local government, the manufacturer, the vendor or the insurance company associated with the engine, for a maximum of 100 hours per calendar year. c) The term emergency generator does not include an engine for which the owner or operator of such engine is party to any other agreement to sell electrical power from such engine to an 	MKEG & MKEC	Env-A 101.671, Env-A 1302.17 & 40 CFR 63.6640(f) (Subpart ZZZZ) 40 CFR 60.4211(f) (Subpart IIII)	Yes												

Table 5 - Federally Enforceable Operational and Emission Limitations

Item #	Requirement	Applicable Unit	Regulatory Basis	Compliant
	electricity supplier or otherwise receives any reduction in the cost of electrical power for agreeing to produce power during periods of reduced voltage or reduced power availability.			
24.	<u>Standards of Performance for Stationary Compression Ignition Internal Combustion Engines - Fuel Requirement</u> The sulfur content of diesel fuel burned in MKEC shall not exceed 15 ppm (0.0015 percent sulfur by weight).	MKEC	40 CFR 60.4207 (Subpart IIII)	Yes
25.	<u>Emergency Engine Operating Requirements</u> The owner or operator of the emergency engine shall: a.) Operate and maintain the engine according to the manufacturer’s emission-related written instructions or change only the emission-related settings in a way that is permitted by the manufacturer; and b.) Operate and maintain the engine to meet the emission standards over the entire life of the engine.	MKEC	40 CFR §§60.4206 & 60.4211 (Subpart IIII)	Yes
26.	<u>Standards of Performance for Coal Preparation and Processing Plants</u> On and after the date on which the performance test is conducted or required to be completed under §60.8, whichever date comes first, an owner or operator of any coal processing and conveying equipment that commenced construction after October 27, 1974, and before April 28, 2008, must not cause to be discharged into the atmosphere from the affected facility any gases which exhibit 20 percent opacity or greater.	MKPCC	40 CFR 60.254(a) Subpart Y	Yes
27.	<u>Standards of Performance for Coal Preparation and Processing Plants</u> On and after the date on which the performance test is conducted or required to be completed under §60.8, whichever date comes first, an owner or operator of any coal processing and conveying equipment constructed, after April 28, 2008, must not cause to be discharged into the atmosphere from the affected facility any gases which exhibit 10 percent opacity or greater.	MKSCC1	40 CFR 60.254(b) Subpart Y	Yes
Finding: MKSCC1 was not in operation during the on-site inspection. Therefore, NHDES did not perform a visible emission observation. Merrimack Station most recently conducted Method 9 observation of the secondary coal crusher on January 30, 2023, and opacity was observed below the limit above.				
28.	<u>Compliance With Standards and Maintenance Requirements</u> a.) At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.	MKPCC, MKSCC1 & MKLC1	40 CFR 60.11(d) & (g) Subpart A	Yes

Table 5 - Federally Enforceable Operational and Emission Limitations

Item #	Requirement	Applicable Unit	Regulatory Basis	Compliant
	b.) For the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any standard in this part, nothing in this part shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.			
29.	<u>NSPS for Nonmetallic Mineral Processing Plants - Standard for Particulate matter</u> a.) <u>Fugitive emissions from affected facilities other than crushers that are not enclosed in a building:</u> The average opacity from any transfer point on a belt conveyor or from any other affected facility installed after April 22, 2008, shall not exceed 7%.	MKLC1 Transfer points from: RS-C to L-2 L-1 to L-2 L-2 to L-2A	40 CFR 60.672(b) (Subpart 000)	Yes
	b.) <u>Fugitive emissions from affected facilities other than crushers that are enclosed in a building:</u> If any transfer point on a conveyor belt or any other affected facility is enclosed in a building, then each enclosed affected facility must comply with the emission limit identified in Item 29.a or the building enclosing the affected facilities must comply with the following emission limits: 1. Fugitive emissions from the building openings (except for vents) must not exceed 7 percent opacity; and 2. Vents in the building must meet the particulate matter emission limit of 0.014 gr/dscf.	MKLC1 Transfer point from L-3C to L-4 located inside the transfer tower TT-1 Transfer point from L-4 to L-5 located inside the transfer tower TT-2 <u>Transfer points located inside the silo building:</u> Limestone silo LSS-1 to L-3A or L-3B Limestone silo LSS-2 to L-3A or L-3B L-3A to L-3C & L-3B to L-3C <u>Transfer points located inside the FGD building:</u> Day silo A to belt feeder A Day silo B to belt feeder B.	40 CFR 60.672(b) & 40 CFR 60.672(e)	Yes
	c.) <u>Fugitive emissions from crushers that are enclosed in a building:</u> The opacity of fugitive emissions from each crusher shall not exceed 12% or the building enclosing the affected facilities must comply with the emission limits identified in Item 29.b.1. and b.2.	MKLC1 (Ball Mills - 4060A & 4060B)	40 CFR 60.672(b)	Yes
	d.) <u>Emissions from a baghouse that controls individual, enclosed storage bins:</u> The opacity of emissions from any baghouse that controls emissions from an individual, enclosed storage bin shall not exceed 7%.	MKLC1 (LSS1 & LSS2)	40 CFR 60.672(f)	Yes

Table 5 - Federally Enforceable Operational and Emission Limitations

Item #	Requirement	Applicable Unit	Regulatory Basis	Compliant
	e.) The opacity of emissions from any baghouse that controls emissions from an individual, enclosed storage bin shall not exceed 7% or the building enclosing the affected facilities must comply with the emission limits identified in Item 29.b.1 and b.2.	MKLC1 (4000A & 4000B)	40 CFR 60.672(e) & (f)	Yes
Finding: MKLC1 was not in operation during the on-site inspection. Therefore, NHDES did not perform a visible emission observation. Merrimack Station most recently conducted visible observations of the limestone handling process on January 10, 2022, and opacity was observed below the limit above.				
30.	Truck dumping of nonmetallic materials into any screening operation, feed hopper, or crusher is exempt from the requirements of Subpart 000.	MKLC1	40 CFR 60.672(d)	Acknowledged
31.	<u>NSPS for Nonmetallic Mineral Processing Plants - Equipment Replacement</u> The Owner or Operator shall be allowed to replace a component of the facility with new equipment of equal or smaller capacity, having the same function as the existing equipment by complying with the reporting requirements of Table 9, Item 25, provided there is no increase in the amount of emissions. The Owner or Operator may implement the equipment replacement immediately upon filing the report.	MKLC1	40 CFR 60.670(d)	Yes
32.	<u>Permit Deviations</u> In the event of a permit deviation, the Owner or Operator of the affected device, process, or air pollution control equipment shall investigate and take corrective action immediately upon discovery of the permit deviation to restore the affected device, process, or air pollution control equipment to within allowable permit levels.	Facility wide	Env-A 911.03	Yes
33.	<u>Control of Fugitive Dust</u> The Owner or Operator shall take precautions, such as wetting, covering, shielding or vacuuming, to prevent, abate, and control fugitive dust emissions during any activity, which might create fugitive dust. Such activities include bulk hauling activities, including the transportation and transfer of mineral material over public roads and maintenance activities, including sweeping, vacuuming, or other activity involved with the upkeep of roads or parking lots.	Facility wide	Env-A 1002	Yes
34.	<u>Asbestos Management and Control</u> Comply with the asbestos requirements of Env-A 1800 and 40 CFR 61.145 during demolition and/or renovation.	Facility wide	40 CFR 61 Subpart M and Env-A 1800	Yes
35.	<u>Accidental Release Program Requirements</u> This facility stores anhydrous ammonia in quantities above the level specified in 40 CFR 68.130. The Owner or Operator shall operate the facility in accordance with the risk management plan.	Facility wide	CAAA 112(r)(1)	Yes

C.. Annual SO₂ Allowance Program

1. SO₂ Allowance Allocation.

In accordance with 40 CFR Part 73, SO₂ allowances pursuant to the Federal Acid Rain Program for this facility are allocated as indicated in the following table:

Emission Unit	Years 2010 and beyond
MK1	4,296
MK2	9,257

2. Compliance

- A. Pursuant to 40 CFR 73.35, the Owner or Operator shall comply with the SO₂ emission limitation requirements.
- B. At the end of each calendar year, the Owner or Operator shall hold sufficient SO₂ allowances equivalent to the SO₂ emissions during that calendar year.

3. General Provisions

- A. Emissions from the affected units shall not exceed any SO₂ allowances held by the affected unit;
- B. The number of SO₂ allowances held by the Owner or Operator shall not be limited;
- C. The Owner or Operator shall not use SO₂ allowances to avoid compliance with any other applicable requirement of either state or federal rules or of the provisions of the Clean Air Act; and
- D. Any SO₂ allowances held by the Owner or Operator shall be accounted for according to the procedures established in the applicable provisions of 40 CFR 72 and 40 CFR 73.

4. Excess Emissions

Pursuant to 40 CFR 72.9(e), if the affected source has excess emissions in any calendar year, the Owner or Operator shall:

- A. Submit a proposed offset plan as required under 40 CFR 77;
- B. Pay the required penalty without demand and pay upon demand the interest on that penalty, as required by 40 CFR 77; and
- C. Comply with the terms of an approved offset plan as required by 40 CFR 77.

5. Allowance Transfer

The Owner or Operator shall transfer allowances according to the procedures in 40 CFR 73.50.

6. Acid Rain Permit Application

The Acid Rain Permit application, dated March 31, 2016, is incorporated by reference into the permit. The Owner and Operator shall comply with the requirements set forth in the

Acid Rain Permit Application and the permit.

D. Ozone Season NOx Budget Trading Program (Env-A 3200)

1. NOx Allowance Allocation

NOx allowances shall be allocated to the Owner/Operator of the NOx budget source as per Env-A 3205.03, *Allowance Allocation Methodology*.

2. Ozone Season NOx Emissions Cap (Env-A 3206)

NOx emissions during any control period shall not exceed the amount of NOx allowances held in the budget source's NOx Allowance Tracking System (NATS) compliance account for that control period as of the allowance transfer deadline of November 30.

3. Conversion of Allowances to Discrete Emissions Reductions (Env-A 3205.04)

The Owner/Operator of the budget source may convert unused allowances to discrete emissions reductions (DERs) in accordance with procedures for DER generation pursuant to Env-A 3103. Upon conversion, the Owner/Operator shall surrender those converted allowances as if they had been used for actual emissions.

4. Allowance Transfer and Use (Env-A 3207)

- a. An allowance shall be a marketable emissions authorization that may be bought, sold, or traded at any time during any year, not just the current year.
- b. The Owner/Operator of the budget source shall comply with the NOx allowance transfer procedures of Env-A 3207.03.

5. Allowance Banking (Env-A 3208)

- a. The banking of allowances shall be permitted to allow the retention of unused allowances from one year to a future year in either a compliance account, an overdraft account, or a general account.
- b. Unused allowances as of the end of the allowance transfer deadline shall be retained in the compliance, overdraft, or general account and designated as banked allowances after the NATS administrator has made all deductions for a given control period from the compliance account or overdraft account pursuant to Env-A 3212.
- c. Banked allowances may be used in the current year on a one-for-one basis.
- d. Any allowances banked on or after January 1, 2012 shall be retired at the end of 3 years after their designated year of allocation.

6. End of Season Reconciliation (Env-A 3212)

- a. Each year prior to November 30, the AAR shall request the NATS administrator to deduct current year allowances from the compliance account or overdraft account equivalent to the number of available allowances to cover the NOx emissions during the current control period.

- b. This request shall be submitted by the AAR to the NATS administrator no later than the allowance transfer deadline, November 30.
 - c. This request shall identify the compliance account or overdraft account from which the deductions should be made.
 - d. This Request shall:
 - 1. Identify the serial numbers of the allowances to be deducted, if desired by the source; or
 - 2. Not identify serial numbers, in which case allowances usable for that compliance year shall be deducted in the order of their arrival into the unit's account, with allocated allowances being deducted first, followed by the deduction of transferred allowances.
 - e. Should the emissions of the budget source in the current control period exceed the allowances in the budget source's compliance account and overdraft account, the Owner/Operator of the budget source shall obtain additional allowances by the allowance transfer deadline so the total number of allowances in the budget source's compliance account and overdraft account, including allowance transfers properly submitted to the NATS administrator by the allowance transfer deadline, equals or exceeds the control period emissions of NO_x rounded to the nearest whole ton.
 - f. Failure to obtain and hold in its compliance account and overdraft account for any control period as of the allowance transfer deadline sufficient allowances equal to or exceeding emissions for the control period, shall result in enforcement action and penalties against the budget source pursuant to Env-A 3214.
7. Excess Emissions and Enforcement Provisions (Env-A 3214)
- a. If emissions from a budget source exceed allowances held in the budget source's compliance account or overdraft account for the control period as of the allowance transfer deadline, the NATS administrator shall automatically deduct allowances from the budget source's compliance account or overdraft account for the next control period at a rate of three allowances for every one ton of excess emissions.
 - b. In accordance with RSA 125-J:4-a, for purposes of enforcement of the NO_x Budget Program, in determining the number of days of violation, any excess emissions for the control period shall presume that each day in the control period of 153 days, constitutes a day in violation unless the Owner/Operator can demonstrate, through use of verifiable emissions data that a lesser number of days should be considered. Each ton of excess emissions shall constitute a separate violation.

E. Sulfur dioxide and Nitrogen oxides Annual Budget Trading and Banking Program (Env-A 2900)

- 1. Annual Emission Budgets & Allowance Allocation
 - A. The annual SO₂ budget for all affected sources combined shall be no more than 7,289 tons.
 - B. The annual NO_x budget for all affected sources combined, including the seasonal NO_x allowances allocated to each affected source pursuant to Env-A 3200, shall be no more than 3,644 tons.

- C. As per Env-A 2904.04 *Transfer of SO₂ Allowances*, each affected source shall transfer to the Department all annual SO₂ allowance allocations provided under the federal acid rain program.
 - D. Allowance allocations for each affected source for the following calendar year will be calculated by the Department as per Env-A 2904.05 *Allowance Allocation Methodology*.
2. Legal Attributes of Allowances (Env-A 2903)
- A. An allowance shall be a marketable emissions authorization that may be bought, sold, or traded at any time during any year, not just the current year.
 - B. An allowance shall not be a property right or create a property right for any person.
 - C. Future allocations shall not be a property right or create a property right for any person.
 - D. No allowance or future allocation shall constitute a security or other form of property.
3. Holding and Using Allowances (Env-A 2903.02)
- A. The Owner /Operator of each affected source shall, no later than the allowance transfer deadline, hold in the appropriate account for that affected source:
 - i. A quantity of SO₂ allowances equal to or greater than the total SO₂ emitted from that affected source during the previous year; and
 - ii. A quantity of NO_x allowances equal to or greater than the total NO_x emitted from the affected source during the previous year.
 - B. To use an allowance for compliance with Env-A 2900 in a designated compliance year, the allowance shall be:
 - i. Already in a compliance or overdraft account as of the allowance transfer deadline; or
 - ii. Transferred into the compliance account by an allowance transfer submitted by the allowance transfer deadline.
4. Conversion of NO_x Allowances to DERs (Env-A 2903.03)
- A. Allowances shall not be considered offsets as defined in RSA 125-J:1, XX, however NO_x allowances that are not used to satisfy the requirements of Env-A 2900 and that are not banked may be converted to non-ozone season NO_x DERs in accordance with Env-A 3100 .
 - B. Each affected source for which unused NO_x allowances are converted to NO_x DERs in accordance with Env-A 3103 shall surrender those converted allowances as if they had been used for actual emissions.
5. Allowance Transfer (Env-A 2905)
- A. The Owner/Operator shall comply with the allowance transfer provisions of Env-A 2905.01 *Initiating an Allowance Transfer*.
 - B. Pursuant to Env-A 2905.07 *Use of Allowances by Utilities* and RSA 125-J:5, XIII, the use of allowances by a utility, as defined in RSA 362:2, shall be subject to such additional conditions as are ordered by the New Hampshire public utilities commission pursuant to its authority.

- C. Pursuant to Env-A 2905.06 *Price Disclosure*, subject to a claim of confidentiality in accordance with Env-A 103, each affected source shall make available to any person, all information regarding transaction cost and allowance price.
6. Banking Unused Allowances (Env-A 2905.08)
- A. Any allowances remaining in an account after the Allowance Tracking System (ATS) administrator has made all deductions for a given year from the compliance account or overdraft account pursuant to Env-A 2908.03 shall be designated as unused allowances.
- B. Unused allowances may be retained, or banked, for use in a future year in a compliance, overdraft, or general account.
7. Authorized Account Representative (Env-A 2906.04)
- A. Each holder of a compliance account, overdraft account, or general account shall designate one individual to be the AAR for the account and one individual to be the alternate AAR for the account.
- B. The alternate AAR shall have the same authority to initiate allowance transfers and file reports as the AAR.
8. Request for Deduction of Allowances (Env-A 2908.02)
- A. No later than the allowance transfer deadline, the AAR shall request the ATS administrator to deduct allowances available for the previous year from the compliance account or overdraft account, or both, in an amount equivalent to the number of allowances required to cover the emissions during the previous year.
- B. The above request shall identify:
- i. The compliance account or overdraft account from which the deductions should be made; and
 - ii. The serial number of each allowance to be deducted.
9. Procurement of Additional Allowances (Env-A 2908.04)

If the emissions of the affected source in the previous year exceed the allowances in compliance account and overdraft account, the Owner/Operator shall obtain additional allowances by January 30 so the total number of allowances in the affected source's compliance account and overdraft account, including allowance transfers properly submitted to the ATS administrator by allowance transfer deadline, equals or exceeds the previous year annual emissions rounded to the nearest whole ton.

F. Carbon dioxide Budget Trading Program (Env-A 4600)

1. CO₂ Allowance Requirements (Env-A 4605.01)
- A. The Owner or Operator of each CO₂ budget source and each CO₂ budget unit at the source shall hold CO₂ allowances available for compliance deductions under Env-A 4605.04, as of the CO₂ allowance transfer deadline, in the source's compliance account, in an amount not less than the total CO₂ emissions from fossil fuel-fired

generation for the control period from all CO₂ budget units at the source, as determined in accordance with Env-A 4605, Env-A 4607, Env-A 4609.18, and VIII.F.1.C, below.

- B. CO₂ allowances shall be held in, deducted from, or transferred among CO₂ allowance tracking system accounts in accordance with Env-A 4606, Env-A 4607, and Env-A 4608.
 - C. For the purpose of determining compliance with Env-A 4600, total tons of CO₂ emissions for a control period shall be calculated as the sum of all recorded hourly emissions, or the tonnage equivalent of the recorded hourly emissions rates, in accordance with Env-A 4609, with any remaining fraction of a ton equal to or greater than 0.50 ton rounded up to equal one ton and any fraction of a ton less than 0.50 ton rounded down to equal zero tons.
2. CO₂ Allowance Limitations (Env-A 4605.02)
- A. A CO₂ allowance shall be a limited authorization to emit one ton of CO₂ in accordance with the CO₂ budget trading program.
 - B. A CO₂ allowance shall not be deducted, in order to comply with the requirements of Env-A 4605.01(a), for a control period that ends prior to the year for which the CO₂ allowance was allocated.
 - C. A CO₂ offset allowance shall not be deducted, in order to comply with the requirements of Env-A 4605.01(a), beyond the applicable percent limitations set out in Env-A 4605.04(b).
 - D. Subject to Env-A 4605.02(e) and (f), no provision of the CO₂ budget trading program, the CO₂ budget permit application, or the CO₂ budget permit shall be construed to limit the authority of the Department to terminate or limit such authorization.
 - E. A CO₂ allowance shall not constitute a property right.
3. Allowances Available for Compliance Deduction (Env-A 4605.04)
- A. CO₂ allowances that meet the following criteria shall be available to be deducted for compliance with the requirements of Env-A 4605 for a control period:
 - i. For CO₂ allowances other than CO₂ offset allowances, the allowances are from allocation years that fall within a prior control period or the same control period for which the allowances will be deducted; and
 - ii. The CO₂ allowances are:
 - (a.) Held in the CO₂ budget source's compliance account as of the CO₂ allowance transfer deadline for that control period; or
 - (b.) Transferred into the compliance account by a CO₂ allowance transfer correctly submitted for recordation under Env-A 4608.01 by the CO₂ allowance transfer deadline for that control period;
 - iii. As provided in RSA 125-O:22, II, a CO₂ budget source may use offset allowances for up to 3.3 percent of its compliance obligation.
 - B. CO₂ allowances shall not be available for current compliance if the allowances were deducted for excess CO₂ emissions for a prior control period under Env-A 4605.08.
 - C. Allowances deducted for the purpose of compliance shall not be available for any other purpose.

4. Excess CO₂ Emissions Requirements (Env-A 4605.07)

The owner or Operator of a CO₂ budget source that has excess CO₂ emissions in any control period shall:

- A. Forfeit the CO₂ allowances required for deduction under Env-A 4605.08, provided CO₂ offset allowances shall not be used to cover any part of such excess CO₂ emissions; and
- B. Pay any fine, penalty, or assessment or comply with any other remedy imposed under RSA 125-O:7 or RSA 125-O:22, V.

5. Deductions for Excess CO₂ Emissions (Env-A 4605.08)

- A. As provided by RSA 125-O:22, V, the deduction of CO₂ allowances for excess CO₂ emissions shall equal to 3 times the number of the source's excess CO₂ emissions.
- B. Within 14 calendar days of receipt of notice by from the regional organization that a shortage exists, the source shall transfer sufficient allowances into its compliance account to cover the shortage.
- C. No CO₂ offset allowances shall be deducted to account for the source's excess CO₂ emissions.
- D. Any CO₂ allowance deduction required under 5.A, above, shall not affect the liability of the owner(s) and operator(s) of the CO₂ budget source or the CO₂ units at the source for any fine, penalty, or assessment, and shall not affect the obligation of the owner(s) and operator(s) to comply with any other remedy, for the same violation, as ordered under applicable state law.

6. Determination of Violations and Deduction of Allowances (Env-A 4605.11)

- A. For purposes of determining the number of days of violation, if a CO₂ budget source has excess CO₂ emissions for a control period, each day in the control period shall constitute a day of violation unless the owner(s) and operator(s) of the unit demonstrate that a lesser number of days should be considered; and
- B. Each ton of excess CO₂ emissions shall constitute a separate violation.

7. Submission of CO₂ Allowance Transfers (Env-A 4608.01)

Any CO₂ AAR seeking recordation of a CO₂ allowance transfer shall submit the transfer request to the regional organization in accordance with Env-A 4608.01 (b).

Finding: A review of the requirements of these programs indicates that Merrimack Station has complied with the reporting requirements. The NHDES Emissions Trading Program Manager reviews this information as it is received. No compliance issues have been observed during this evaluation period.

VII. Compliance with Monitoring and Testing Requirements

Table 7 below, taken from permit TV-0055, lists the monitoring and testing requirements for the facility and any deficiencies noted during the evaluation.

Table 7 - Monitoring/Testing Requirements

Item #	Parameter	Method of Compliance	Frequency	Applicable Unit	Regulatory Basis	Compliant
1.	NOx and diluent gas	a.) Operate and maintain a NOx-diluent CEMS (consisting of a NOx pollutant concentration monitor and a CO ₂ diluent gas monitor) with an automated data acquisition and handling system for measuring and recording: <ol style="list-style-type: none"> 1. NOx concentration (in ppm); 2. CO₂ concentration (in % CO₂); and 3. NOx emission rate (in lb/MMBtu). 	Continuously	MK1 & MK2	Env-A 808.02, Env-A 3210, Env-A 2907, 40 CFR §§75.10(a)(2), 75.12(c) & 75.71	Yes
		b.) Account for total NOx emissions, both NO and NO ₂ , either by monitoring for both NO and NO ₂ or by monitoring for NO only and adjusting the emissions data to account for NO ₂ .				
		c.) Calculate hourly, quarterly and annual NOx emission rates (in lb/MMBtu) by combining the NOx concentration (in ppm), diluent concentration (in percent CO ₂), and percent moisture (if applicable) according to the procedures in 40 CFR 75 Appendix F.	d.) Except as provided in Item 1.e. below, calculate 24-hr calendar day average NOx emission rate in lb/MMBtu to demonstrate compliance with the rate-based emission limits in Table 5, Item 1.	Daily	Env-A 1314 & Env-A 808.14	See Finding
Finding: Merrimack Station calculated 24-hr calendar day average NOx emission rate in lb/MMBtu but did not demonstrate continuous compliance with the rate-based emission limits in Table 5, Item 1. See Table 5 Item 1 for more detail.						
		e.) Calculate NOx emissions in tons per day by summing all valid, quality-assured hourly CEM data to demonstrate compliance with the mass-based emission limits in Table 5, Item 1.	For any calendar day on which startup, shutdown or low-load operation occurs		Env-A 1314	See Finding
Finding: Merrimack Station calculated 24-hr calendar day average NOx emission rate in lb/MMBtu but did not demonstrate continuous compliance with the mass-based emission limits in Table 5, Item 1. See Table 5 Item 1 for more detail.						
2.	NOx Mass Emissions	Calculate NOx mass emissions as: <ol style="list-style-type: none"> a.) Hourly (in lb/hr) by multiplying the hourly NOx emission rate (in lb/MMBtu) by the hourly heat input rate (in MMBtu/hr) and the unit or stack operating time; and 	Hourly, quarterly and cumulative for the	MK1 & MK2	40 CFR 75.71, 40 CFR 75.72, Env-A 2910 & Env-A 3212	Yes

Table 7 - Monitoring/Testing Requirements

Item #	Parameter	Method of Compliance	Frequency	Applicable Unit	Regulatory Basis	Compliant
		b.) Quarterly, cumulative year-to-date and cumulative for the ozone season (in tons) by summing the hourly NOx mass emissions according to the procedures in App. F, Section 8 of 40 CFR 75.	ozone season and year-to-date			
3.	Ozone Season NOx Emission Rate	Calculate the ozone season NOx emission rate (in lb/MMBtu) by dividing ozone season NOx mass emissions by heat input.	During the ozone season	MK1, MK2, MKCT1 & MKCT2	Env-A 3212.01 & 40 CFR 75.75(b)	Yes
4.	NOx Mass Emissions Alternative Monitoring System for peaking units	a.) Calculate NOx mass emissions using 40 CFR 75 Appendix E. b.) If the unit exceeds the thresholds defining a “peaking unit”, the Owner of Operator shall meet the requirements of 40 CFR 75.71(c) no later than December 31 of the following calendar year. c.) Whenever the monitoring method is to be changed, apply and obtain approval from DES prior to changing the monitoring method.	Cumulative ozone season	MKCT1 & MKCT2	40 CFR §§ 75.74(c)(11), 75.71(d), 40 CFR 75, Appendix E & Env-A 3210	Yes
5.	NOx Mass Emissions - Annual and Ozone Season Monitoring	Meet the requirements of 40 CFR 75 Subpart H.	During the entire calendar year	MK1 & MK2	40 CFR 75.74(a) & (b)	Yes
			During the ozone season	MKCT1 & MKCT2		Yes
6.	Heat Input Rate	Determine the heat input rate (in MMBtu/hr) to each unit for every hour or part of an hour any fuel is combusted following the procedures in 40 CFR 75 Appendix F.	Hourly	MK1 & MK2	40 CFR §§ 75.10(c), 75.75(a), Env-A 2907.02 & Env-A 3212.02	Yes
7.	Net Electrical Output	Monitor net electrical output in MW-hr in accordance with 40 CFR 75.	Annually	MK1, MK2, MKCT1 & MKCT2	Env-A 2907.02 & Env-A 3207.04	Yes
8.	SO ₂	Operate and maintain a SO ₂ continuous emission monitoring system with an automated data acquisition and handling system for measuring and recording SO ₂ concentration (in ppm), volumetric gas flow (in scfh) and SO ₂ mass emissions (in lb/hr) discharged to the atmosphere.	Continuously	MK1 & MK2	Env-A 808.02(a)(1), Env-A 2907, 40 CFR §§75.10(a)(1) & 75.11	Yes
9.	Stack	Operate and maintain a flow monitoring system	Continuously	MK1 &	40 CFR 75,	Yes

Table 7 - Monitoring/Testing Requirements

Item #	Parameter	Method of Compliance	Frequency	Applicable Unit	Regulatory Basis	Compliant
	volumetric flow rate	to measure and record stack volumetric gas flow and meet the following requirements: a.) All differential pressure flow monitors shall have an automatic blow-back purge system installed and in wet conditions, shall have the capability for drainage of the sensing lines; and b.) The stack flow monitoring system shall have the capability for manual calibration of the transducer while the system is on-line and for a zero check.		MK2	Env-A 2907 & Env-A 808.03	
10.	CO ₂	Operate and maintain a CEMS for measuring and recording CO ₂ concentration (in ppm or percent) and CO ₂ mass emissions (in tons/hr) discharged to the atmosphere.	Continuously	MK1 & MK2	40 CFR §§75.10(a)(3) & 75.13	Yes
11.	Opacity	Operate and maintain a continuous opacity monitoring system with an automated data acquisition and handling system for measuring and recording the opacity of emissions (in percent opacity) discharged to the atmosphere.	Continuous	MK1 & MK2	40 CFR §§75.10(a)(4) & 75.14	Yes
12.	CEMS Operating Requirements	Each CEMS shall: a.) Meet the equipment, installation, and performance specifications in 40 CFR 75 Appendix A; b.) Be maintained according to the quality assurance and quality control procedures in 40 CFR 75 Appendix B; c.) Be in operation and monitoring emissions from the boiler at all times that the emission unit combusts any fuel except during periods of: 1. Calibration, quality assurance, or preventive maintenance, performed pursuant to §75.21 and Appendix B of 40 CFR 75; 2. Repair; 3. Backups of data from the data acquisition and handling system; or 4. Recertification performed pursuant to §75.20; f.) Measure and calculate hourly averages in accordance with the following: 1. Complete a minimum of one cycle of operation (sampling, analyzing and data recording) for each successive 15-minute	Hourly	MK1 & MK2	40 CFR 75.10	Yes

Table 7 - Monitoring/Testing Requirements

Item #	Parameter	Method of Compliance	Frequency	Applicable Unit	Regulatory Basis	Compliant
		<p>interval;</p> <ol style="list-style-type: none"> 2. Compute hourly averages using at least one data point in each fifteen minute quadrant of an hour, where the unit combusted fuel during that quadrant of an hour. Notwithstanding this requirement, an hourly average may be computed from at least two data points separated by a minimum of 15 minutes (where the unit operates for more than one quadrant of an hour) if data are unavailable as a result of the performance calibration, quality assurance, or preventive maintenance activities pursuant to §75.21 and Appendix B; 3. All valid measurements or data points collected during an hour shall be used to calculate the hourly averages; 4. All data points collected during an hour shall be, to the extent practicable, evenly spaced over the hour. 5. Failure of an SO₂, CO₂ emissions concentration monitor, flow monitor, or NO_x-diluent CEMS, to acquire the minimum number of data points for calculation of an hourly average shall result in the failure to obtain a valid hour of data and the loss of such component data for the entire hour. 6. For a NO_x-diluent monitoring system, an hourly average NO_x emission rate in lb/MMBtu is valid only if the minimum number of data points is acquired by both the NO_x pollutant concentration monitor and the diluent monitor (CO₂). 7. If a valid quality-assured hour of data is not obtained, follow the procedures in 40 CFR 75 Subpart D. <p>g.) Each CEMS must be capable of accurately measuring, recording, and reporting data and not incur an exceedance of the full scale range, except as provided in 40 CFR 75 Appendix A sections 2.1.1.5, 2.1.2.5, and 2.1.4.3.</p>				

Table 7 - Monitoring/Testing Requirements

Item #	Parameter	Method of Compliance	Frequency	Applicable Unit	Regulatory Basis	Compliant
13.	COMS Operating Requirements	a.) The COMS shall be capable of completing a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period. b.) All opacity data shall be reduced to 6-minute averages calculated in accordance with the provisions of 40 CFR 51 Appendix M. c.) The COMS shall include a means to display instantaneous values of percent opacity.	As specified	MK1 & MK2	40 CFR 75.10(d) & Env-A 808.03	Yes
14.	Minimum Specifications for CEMS	All gaseous CEMS shall meet the following minimum specifications, as applicable: a.) A gaseous CEMS shall average and record the data for each calendar hour. b.) A “valid hour” of data means a minimum of 42 minutes of gaseous or opacity CEM system readings taken in any calendar hour, during which time the CEM is not in an out of control period as defined in Env-A 808.01(g), and the facility on which the CEM is installed is in operation. c.) All gaseous CEMS shall: <ol style="list-style-type: none"> 1. Include a means to display instantaneous values of gaseous emission concentrations; and 2. Complete a minimum of one cycle of operation, which shall include measuring, analyzing, and data recording for each successive one-minute period for systems measuring gaseous emissions, unless a longer time period is approved in accordance with Env-A 809. 	Hourly	MK1 & MK2	Env-A 808.03	Yes
15.	General CEMS & COMS Audit Requirements	The Owner or Operator shall: a.) Conduct CEMS audits in accordance with Env-A 808.07 through 808.10 & 40 CFR 75 (as applicable). b.) Notify the Division at least: <ol style="list-style-type: none"> 1. 30 days prior to the performance of a relative accuracy test audit (RATA); and 2. 2 weeks prior to any other planned audit or test procedure. 	Quarterly	MK1 & MK2	Env-A 808.07 through 808.10 & 40 CFR 75.61(a)(5)	Yes

Table 7 - Monitoring/Testing Requirements

Item #	Parameter	Method of Compliance	Frequency	Applicable Unit	Regulatory Basis	Compliant
16.	Out-of-Control Periods for CEMS	a.) If an out-of-control period occurs to a monitor or CEMS, take corrective action and repeat the tests applicable to the out of control parameter as described in 40 CFR 75 Appendix B. b.) Out of control periods for CEMS include: 1. For daily calibration error tests, when the calibration error of a pollutant concentration monitor exceeds the applicable specification in Section 2.1.4 of App. B to 40 CFR 75. 2. For quarterly linearity checks, when the error in linearity at any of the three gas concentrations (low, mid-range, and high) exceeds the applicable specification in 40 CFR 75 Appendix A. 3. For RATAs, when the relative accuracy exceeds the applicable specifications in Appendix A of 40 CFR 75. c.) When a monitor or continuous emission monitoring system is out-of-control: 1. Any data recorded by the monitor or monitoring system are not quality-assured and shall not be used in calculating monitor data availabilities pursuant to 40 CFR 75.32; 2. The Owner or Operator shall take actions as per §75.24(c) until the monitor or monitoring system has successfully met the relevant criteria in Appendices A and B of 40 CFR 75 as demonstrated by subsequent tests. d.) Whenever both an audit of a monitoring system and a review of the initial certification or recertification application reveal that any system or component should not have been certified or recertified because it did not meet a particular performance specification or other requirement pursuant to Env-A 800 or the applicable provisions of Part 75 both at the time of the initial certification or recertification application submission and at the time of the audit, the Department shall	As specified by regulation	MK1 & MK2	40 CFR §75.21(e)(2), 75.24, Env-A 3210.08 & Env-A 2907.06	Yes

Table 7 - Monitoring/Testing Requirements

Item #	Parameter	Method of Compliance	Frequency	Applicable Unit	Regulatory Basis	Compliant
		issue a notice of disapproval of the certification status of such system or component. For the purposes of this section, an audit shall be either a field audit or an audit of any information submitted to the Department or the Administrator. e.) The data measured and recorded by the system or component shall not be considered valid quality-assured data from the date of issuance of the notification of the disapproval of certification status until the date and time that the Owner or Operator completes subsequently approved initial certification or recertification tests in accordance with Env-A 3210.05(s). f.) The Owner or Operator shall follow the initial certification or recertification procedures for each disapproved system.				
17.	Out of Control Periods for COMS	The out of control periods for COMS are defined as follows: a.) The time period beginning with the completion of the daily calibration drift check where the calibration drift (CD), as calculated pursuant to 40 CFR 60.13(d)(1), exceeds 2% opacity for 5 consecutive days, and ending with the CD check after corrective action has occurred that results in the performance specification drift limits being met; b.) The time period beginning with the completion of a daily CD check preceding the daily CD check that results in the CD being greater than 5% opacity and ending with the CD check after corrective action has occurred that results in the performance specification drift limits being met; c.) The time period beginning with the completion of a quarterly opacity audit where the CEM system fails any of the audits required by Env-A 808.10 and ending with successful completion of the same audit after corrective action has occurred; or d.) The time period beginning with the completion of the zero alignment check required by 40 CFR 60, Appendix F, Procedure 3, section 10.3 where the zero	N/A	MK1 & MK2	Env-A 808.01(g)(2)	Acknowledged

Table 7 - Monitoring/Testing Requirements

Item #	Parameter	Method of Compliance	Frequency	Applicable Unit	Regulatory Basis	Compliant
		alignment error exceeds 2 percent opacity and ending after corrective action is taken that results in a successful zero alignment check.				
18.	Recertification of CEMS and COMS	a.) Recertify CEMS and COMS whenever the Owner or Operator makes a replacement, modification, or change to the systems or to the facility that could significantly affect the ability of the systems to accurately measure and record the requisite data. b.) Use the reference test methods listed in 40 CFR 75.22 and included in Appendix A to 40 CFR 60 to conduct: <ol style="list-style-type: none"> 1. Monitoring system tests for certification or recertification of CEMS and excepted monitoring systems under 40 CFR 75 Appendix E; and 2. Quality assurance and quality control tests. 	As specified	MK1 & MK2	40 CFR §§75.20, 75.70(d), 75.22 Env-A 808.05, Env-A 3210 & Env-A 2907.04	Noted
Finding: Merrimack Station did not recertify any CEMS or COMS during this evaluation period.						
19.	QA/QC Requirements	The Owner or Operator shall: <ol style="list-style-type: none"> a.) Operate, calibrate and maintain each CEMS used to report emissions under the federal acid rain program according to the quality assurance and quality control procedures in 40 CFR 75 App. B; b.) Operate, calibrate and maintain the COMS according to procedures specified in Env-A 808. c.) Ensure that all calibration gases used to quality assure the operation of the CEM instrumentation shall meet the definition in 40 CFR 72.2. 	Continuously	MK1 & MK2	40 CFR §§75.21 & 75.70	Yes
20.	Substitute Emission Data	<u>Requirement for Substitute Emission Data</u> Any facility that uses the emissions data collected by a gaseous CEM system to calculate and report its annual emissions in accordance with Env-A 900 shall comply with the following: <ol style="list-style-type: none"> a.) For any facility operating hour during which the gaseous CEM system has not collected a valid hour of CEM system data, the Owner or Operator shall submit to the Division substitute emission data for those hours which has been generated using one of the following methods: <ol style="list-style-type: none"> 1.) The missing data substitution 	N/A	MK1 & MK2	Env-A 808.12	Yes

Table 7 - Monitoring/Testing Requirements

Item #	Parameter	Method of Compliance	Frequency	Applicable Unit	Regulatory Basis	Compliant
		<p>procedures specified in 40 CFR 75, Subpart D;</p> <p>2.) If the missing data occurred during a period of steady-state operation, and not during a period of start-up, shutdown, or malfunction:</p> <ul style="list-style-type: none"> i. An average of the emissions data for the hours prior to and after the period of missing data during which valid CEM data was collected, or ii. Representative emissions data for the device at the same heat input rate, electric generating rate, or steam load; <p>3.) If the missing data occurred during a start-up, shutdown, or malfunction of the device, substitute data collected by the CEM during a similar period of start-up, shutdown or malfunction, respectively; or</p> <p>4.) An alternative method of data substitution that meets the following criteria:</p> <ul style="list-style-type: none"> i. The alternative method was included in the monitoring plan submitted pursuant to Env-A 808.04; ii. The alternative method provides for representative emissions for the conditions of operation of the device during the period of missing data equivalent to the substitution methods described above; and iii. The alternative method was approved by DES as part of its approval of the monitoring plan pursuant to Env-A 808.04. <p>b.) For CEM systems and emissions subject to the missing data substitution procedures of 40 CFR 75 Subpart D, sources shall follow those requirements for substituting emissions data in order to calculate emission totals or emission averages as required by 40 CFR 75.</p> <p>c.) For CEM systems and emissions not subject to the missing data substitution procedures</p>				

Table 7 - Monitoring/Testing Requirements

Item #	Parameter	Method of Compliance	Frequency	Applicable Unit	Regulatory Basis	Compliant
		of 40 CFR 75 Subpart D, sources shall include substitute emissions data in the calculation of total daily, monthly, quarterly, and annual emissions generated by the permitted device to quantify total actual emissions. d.) Substitute emission data shall not be used in the calculation of emissions totals or averages in order to determine or demonstrate compliance with emissions standards. e.) Substitute data shall not be included in the calculation of data availability.				
21.	NOx Mass Emissions Provisions - Prohibitions	The Owner or Operator is prohibited from the following: a.) Using alternative monitoring system, reference method, or any other alternative for the required CEMS without approval through petition process in 40 CFR 75.70(h). b.) Discharging or allowing discharge of NOx emissions without accounting for all emissions in accordance with the provisions of Subpart H, except as provided in 40 CFR 75.74. c.) Disrupting the CEMS or any other approved emission monitoring method, and thereby avoid monitoring and recording NOx mass emissions, except for periods of re-certification or periods when calibration, quality assurance testing, or maintenance is performed in accordance with the provisions of 40 CFR 75 Subpart H applicable to the monitoring systems under 40 CFR 75.71, except as provided in 40 CFR 75.74. d.) Retiring or permanently discontinuing the use of the CEMS, or any other approved emission monitoring system except under one of the following circumstances: 1.) During a period that the unit is covered by a retired unit exemption that is in effect under the State or federal NOx mass emission reduction program that adopts the requirements of Subpart H; 2.) The Owner or Operator is monitoring NOx emissions from the affected unit with another certified monitoring	Not applicable	MK1 & MK2	40 CFR 75.70(c)	Yes

Table 7 - Monitoring/Testing Requirements

Item #	Parameter	Method of Compliance	Frequency	Applicable Unit	Regulatory Basis	Compliant
		<p>system approved, in accordance with the provisions of 40 CFR 75.70(d); or</p> <p>3.) The designated representative submits notification of the date of certification testing of a replacement monitoring system in accordance with 40 CFR 75.61.</p>				
22.	SO ₂	<p><u>Determination of Compliance with SO₂ Emission Limitations</u></p> <p>a.) Compliance with the SO₂ lb/MMBtu emission limitations in Table 5, Items 3 and/or 4 shall be determined as the sum of all SO₂ emissions from MK1 and MK2, i.e., emissions from MK1 and MK2 as measured by the CEMS located at the FGD outlet and any emissions from MK1 venting through the emergency stack (STMK2).</p> <p>b.) Demonstrate compliance by using all valid, quality-assured hourly data recorded by the CEMS and any emergency stack emissions to calculate the average emissions rate in lb/MMBtu on a 7- (or 30-) boiler operating day rolling average basis, updated at the end of each new boiler operating day.</p>	Each boiler operating day	MK1 & MK2	TP-0189	Yes
		<p>c.) For each boiler operating hour, calculate the hourly SO₂ emission rate (lb/MMBtu) as follows:</p> $Her = \frac{FGD\ Outlet\ SO_2 + Emergency\ Stack\ SO_2}{MK1HI + MK2HI} \quad - (Eq. 1a)$ <p>Where, FGD Outlet SO₂ = Controlled SO₂ emission rate (lb/hr) from FGD stack (STMK3) monitor Emergency Stack SO₂ = Uncontrolled MK1 SO₂ emissions rate in lb/hr from the emergency stack (STMK2), calculated as per Table 8, Item 16.c MK1HI = MK1 boiler hourly heat input rate (MMBtu/hr) MK2HI = MK2 boiler hourly heat input rate (MMBtu/hr)</p>				Yes
		<p>d.) At the end of each boiler operating day, calculate the 7-(or 30-) boiler operating day rolling averages using Eq. 1b.</p> $Average\ SO_2\ emission\ rate = \frac{\sum_{i=1}^n Her_i}{n} \quad - (Eq. 1b)$ <p>Where: Her_i is the hourly emission rate in lb/MMBtu for hour i and n is the number of hourly emissions rate values collected over the averaging period.</p>			Yes	

Table 7 - Monitoring/Testing Requirements

Item #	Parameter	Method of Compliance	Frequency	Applicable Unit	Regulatory Basis	Compliant
23.	SO ₂	<p><u>Determination of Compliance with SO₂ Percent Reduction</u></p> <p>a.) Compliance with the percent reduction requirement in Table 5, Item 4 shall be determined by comparing the sum of uncontrolled SO₂ emission rates for MK1 and MK2 (as measured by CEMS located in the respective boiler duct) and the sum of controlled SO₂ emission rate (as measured by CEMS located at the FGD outlet) and any MK1 SO₂ emissions venting through the emergency stack.</p> <p>b.) For each boiler operating hour, calculate the average emission rate in lb/hr for each measurement location by using all valid, quality-assured hourly data recorded by each CEMS.</p>	Each boiler operating day	MK1 & MK2	TP-0189	
		<p>c.) Hourly percent reduction (Hpr) shall be calculated as follows:</p> $Hpr = \frac{(MK1SO_2 + MK2SO_2) - (FGD Outlet SO_2 + Emergency Stack SO_2)}{(MK1SO_2 + MK2SO_2)} \times 100$ <p>- (Eq. 2)</p> <p>Where, MK1SO₂ = Uncontrolled SO₂ emission rate in lb/hr for MK1 boiler MK2SO₂ = Uncontrolled SO₂ emission rate in lb/hr for MK2 boiler FGD Outlet SO₂ = Controlled SO₂ emission rate in lb/hr from FGD stack (STMK3) monitor Emergency Stack SO₂ = Uncontrolled MK1 SO₂ emissions rate in lb/hr vented through emergency stack (STMK2)</p>				Yes
		<p>d.) At the end of each boiler operating day, calculate the 30- boiler operating day rolling average percent reduction using Equation 3:</p> $\text{Average percent reduction} = \frac{\sum_{i=1}^n Hpr_i}{n} - (\text{Eq. 3})$ <p>Where: Hpr_i is the hourly percent reduction for hour i and n is the number of hourly percent reduction values collected over 30-boiler operating days.</p>				Yes
24.	FGD Operating Parameters	<p>The Owner or Operator shall continuously monitor:</p> <p>a.) Scrubber liquor pH; and b.) FGD absorber exit gas temperature.</p>	Continuously	MK2-PC7	TP-0008 & 40 CFR 70.6(a)(3)	Yes
25.	FGD Operation & Maintenance	<p>a.) The FGD shall be operated as per manufacturer's recommended procedures.</p>	As specified	MK2-PC7	40 CFR 70.6(a)(3)	Yes

Table 7 - Monitoring/Testing Requirements

Item #	Parameter	Method of Compliance	Frequency	Applicable Unit	Regulatory Basis	Compliant
		b.) Service and maintenance calibration activities shall be performed as per manufacturer’s recommended schedule. c.) These activities must be recorded and be made available for review at Department’s request.				
26.	Flue gas temperature	The Owner or Operator shall continuously monitor the flue gas temperature at the outlet of each ESP to ensure that the ESP does not exceed the manufacturer recommended temperature.	Continuously	MK1-PC1 MK1-PC2 & MK2-PC4 MK2-PC5	40 CFR 70.6(a)(3)	Yes
27.	Inspection of ESPs	a.) The Owner or Operator shall conduct maintenance and inspection of each ESP as per manufacturer’s recommendations. b.) The operation and maintenance shall include normal rounds by a qualified operator for checking and cleaning of the hoppers and transport lines. c.) All critical maintenance activities performed and corrective actions taken on the ESP systems shall be recorded and be made available for review at Department’s request.	As per I/M Plan	MK1-PC1 MK1-PC2 & MK2-PC4 MK2-PC5	40 CFR 70.6(a)(3)	Yes
28.	SCR operating parameters	a.) The Owner or Operator shall continuously monitor the flue gas temperature at the SCR inlet to ensure that the ammonia injection is initiated upon reaching SCR permissive temperatures (> 638°F for MK1-PC3 and > 610°F for MK2-PC6). b.) Ammonia flow shall be continuously monitored and recorded, and shall be maintained until such time the SCR temperature drops below the permissive temperature during the shutdown process.	Continuous	MK1-PC3 & MK2-PC6	40 CFR 70.6(a)(3)	Yes
29.	Inspection & Maintenance of SCR(s)	a.) Inspection and maintenance of each SCR shall be conducted as per manufacturer’s recommended schedule. b.) SCR catalyst degradation shall be monitored through periodic sampling and analysis of the catalyst bed. c.) All critical maintenance activities and catalyst replacements performed shall be recorded and be made available for review at Department’s request.	As specified	MK1-PC3 & MK2-PC6	40 CFR 70.6(a)(3)	Yes

Table 7 - Monitoring/Testing Requirements

Item #	Parameter	Method of Compliance	Frequency	Applicable Unit	Regulatory Basis	Compliant
30.	Mercury	The Owner or Operator: a.) Must certify, operate, maintain and quality-assure the data from the Hg monitoring system in accordance with Appendix A to Subpart UUUUU. b.) Must calculate and record a 30- boiler operating day rolling average Hg emission rate, in units of the standard (i.e., lb/TBtu), updated for each new boiler operating day. Each 30- boiler operating day rolling average emission rate, calculated according to section 6.2 of Appendix A to Subpart UUUUU, is the average of all of the valid hourly Hg emission rates in the preceding 30- boiler operating days.	Continuous	MK1 & MK2	40 CFR §§63.10010(a)(2), 63.10010(g) & 63.10021(b)	See Finding
Finding: Merrimack Station reported that the Hg sorbent trap system audit was inadvertently not completed in Q2 of 2021 and Q3 of 2022. The required audits were completed in the following quarters.						
31.	Mercury	<u>Mercury - Continuous Compliance Requirements</u> a.) The Owner or Operator must monitor and collect Hg emission data according to §63.10020 and the site-specific monitoring plan required by §63.10000(d). b.) The Owner or Operator must operate the monitoring system and collect data at all required intervals at all times that the affected EGU is operating, except for periods of monitoring system malfunctions or out-of-control periods (see §63.8(c)(7)), and required monitoring system quality assurance or quality control activities, including, as applicable, calibration checks and required zero and span adjustments. c.) The Owner or Operator is required to affect monitoring system repairs in response to monitoring system malfunctions and to return the monitoring system to operation as expeditiously as practicable. d.) The Owner or Operator may not use data recorded during EGU startup or shutdown in calculations used to report emissions, except as otherwise provided in §63.10000(c)(1)(vi)(B) and 63.10005(a)(2)(iii). In addition, data recorded during monitoring system malfunctions or monitoring system out of control periods, repairs associated	Continuous	MK1 & MK2	40 CFR 63.10007 & 63.10020	Yes

Table 7 - Monitoring/Testing Requirements

Item #	Parameter	Method of Compliance	Frequency	Applicable Unit	Regulatory Basis	Compliant
		<p>with monitoring system malfunctions or monitoring system out-of-control periods, or required monitoring system quality assurance or control activities may not be used in calculations used to report emissions or operating levels.</p> <p>e.) The Owner or Operator must use all of the quality-assured data collected during all other periods in assessing the operation of the control device and associated control system.</p> <p>f.) Except for periods of monitoring system malfunctions or monitoring system out-of-control periods, repairs associated with monitoring system malfunctions or monitoring system out-of-control periods, and required monitoring system quality assurance or quality control activities including, as applicable, calibration checks and required zero and span adjustments), failure to collect required data is a deviation from the monitoring requirements.</p>				
32.	PM & HCl	<p><u>LEE Testing Provisions for PM and HCl</u></p> <p>a.) For affected units meeting the LEE requirements of §63.10005(h), the performance test must be conducted every three years in accordance with Table 5 of Subpart UUUUU and 40 CFR 63.10007.</p> <p>b.) LEE status for a pollutant is lost if a performance test on a PM or HCl LEE unit shows emissions in excess of 50 percent of the respective emission limit. In order to reapply for LEE status, conduct quarterly performance tests (except as otherwise provided in §63.10021(d)) for that pollutant, until all performance tests over a consecutive 3-year period show compliance with the LEE criteria.</p>	As specified	MK1 & MK2	40 CFR §§ 63.10000(c)(iii), 63.10005(h), 63.10006, 63.10007 & Env-A 2304.01	Yes
33.	Ammonia slip	Conduct stack testing using DES-approved method to determine the ammonia slip.	Every 5 years	MK1 & MK2	Env-A 802	Yes
34.	NOx	<p><u>NOx RACT Testing for Load Shaving Units</u></p> <p>Conduct stack testing for NOx using the test methods specified in Env-A 803.04.</p>	Every 3 years (within 12 calendar quarters)	MKCT1 & MKCT2	Env-A 803.03 & Env-A 803.04	Yes
35.	Stack Testing Scheduling &	Compliance testing shall be planned and carried out in accordance with the following schedule:	Each stack test	MK1, MK2, MKCT1 &	Env-A 802	Yes

Table 7 - Monitoring/Testing Requirements

Item #	Parameter	Method of Compliance	Frequency	Applicable Unit	Regulatory Basis	Compliant
	Protocol	a.) A pre-test protocol shall be submitted to the department at least 30 days prior to the commencement of testing in accordance with Env-A 802.04; b.) The Owner or Operator and any contractor retained by the owner or operator to conduct the test shall meet with a department representative in person or by telephone at least 15 days prior to the test date to finalize the details of the testing; c.) A pre-test meeting may be held less than 15 days prior to the test date so long as implementation of any testing or operation changes resulting from the meeting can be carried out prior to the scheduled test date and the scheduled test integrity is not jeopardized.		MKCT2		
36.	Stack Testing - Operating Conditions	Compliance stack testing shall be conducted under one of the following operating conditions: a.) Between 90 and 100 percent, inclusive, of maximum production rate or rated 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.	Each stack test	MK1, MK2, MKCT1 & MKCT2	Env-A 802.10	Yes
37.	EGU Tune-up	Conduct a tune-up of each EGU, as specified below: a.) As applicable, inspect the burner and combustion controls, and clean or replace any components of the burner or combustion controls as necessary upon initiation of the work practice program and at least once every required inspection period. Repair of a burner or combustion control component requiring special order parts may be scheduled as follows: 1. Burner or combustion control component parts needing replacement that affect the ability to optimize NOx and CO must be installed within three calendar months after the burner inspection; 2. Burner or combustion control component parts that do not affect the	Every 36 calendar months after the previous tune-up	MK1 & MK2	40 CFR §§ 63.10006(i)(1) & 63.10021(e) Subpart UUUUU	Yes

Table 7 - Monitoring/Testing Requirements

Item #	Parameter	Method of Compliance	Frequency	Applicable Unit	Regulatory Basis	Compliant
		<p>ability to optimize NOx and CO may be installed on a schedule determined by the operator;</p> <p>b.) As applicable, inspect the flame pattern and make any adjustments to the burner or combustion controls necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer’s specifications, if available, or in accordance with best combustion engineering practice for that burner type;</p> <p>c.) As applicable, evaluate windbox pressures and air proportions, making adjustments and effecting repair to dampers, actuators, controls, and sensors;</p> <p>d.) Inspect the system controlling the air-to-fuel ratio and ensure that it is correctly calibrated and functioning properly. Such inspection may include calibrating excess O₂ probes and/or sensors, adjusting overfire air systems, changing software parameters, and calibrating associated actuators and dampers to ensure that the systems are operated as designed. Any component out of calibration, in or near failure, or in a state that is likely to negate combustion optimization efforts prior to the next tune-up, should be corrected or repaired as necessary;</p> <p>e.) Optimize combustion to minimize generation of CO and NOx. This optimization should be consistent with the manufacturer’s specifications, if available, or best combustion engineering practice for the applicable burner type. NOx optimization includes burners, overfire air controls, concentric firing system improvements, control systems calibrations, adjusting combustion zone temperature profiles, and add-on controls; CO optimization includes burners, overfire air controls, concentric firing system improvements, control systems calibrations, and adjusting combustion zone temperature profiles;</p> <p>f.) While operating at full load or the predominantly operated load, measure the concentration in the effluent stream of CO and NOx in ppm, by volume, and oxygen in</p>				

Table 7 - Monitoring/Testing Requirements

Item #	Parameter	Method of Compliance	Frequency	Applicable Unit	Regulatory Basis	Compliant
		volume percent, before and after the tune-up adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Portable CO, NOx and O ₂ monitors may be used for this measurement.				
38.	Hours of Operation	Each emergency engine shall be equipped with a non-resettable hour meter (either mechanically geared or electronic sensor device).	Continuous	MKEG & MKEC	Env-A 609.05 & 40 CFR 60.4209 Subpart IIII	Yes
39.	Opacity	<p><u>Standards of Performance for Coal Preparation and Processing Plants - Performance Tests and Compliance Requirements</u></p> <p>a.) An owner or operator of each affected facility that commenced construction, reconstruction, or modification after April 28, 2008, must conduct performance tests using the methods identified in §60.257 to demonstrate compliance with the opacity standard in Table 5, Item 27.</p> <p>b.) For each affected facility subject to an opacity standard, upon completing the initial performance test, a new performance test must be conducted according to the following requirements:</p> <ol style="list-style-type: none"> i. If any 6-minute average opacity reading in the most recent performance test exceeds half the applicable opacity limit, a new performance test must be conducted within 90 operating days of the date that the previous performance test was required to be completed. ii. If all 6-minute average opacity readings in the most recent performance test are equal to or less than half the applicable opacity limit, a new performance test must be conducted within 12 calendar months of the date that the previous performance test was required to be completed. <p>c.) If any affected coal processing and conveying equipment (<i>e.g.</i>, crushers) are enclosed in a building, and emissions from the building do not exceed the 10% opacity standard, then the facility shall be deemed to be in</p>	As specified	MKSCC1	40 CFR 60.8 & 40 CFR 60.255 Subpart Y	See Finding

Table 7 - Monitoring/Testing Requirements

Item #	Parameter	Method of Compliance	Frequency	Applicable Unit	Regulatory Basis	Compliant
		<p>compliance with such standards.</p> <p>d.) As an alternative to meeting the requirements in b and c above, the Owner or Operator may elect to monitor visible emissions from each affected facility as per §60.255(f).</p>				
<p>Finding: Merrimack Station reported that the Method 9 observation required by b.) ii. above was not performed within 12 calendar months of the previous performance test. The performance test was conducted on January 13, 2022. The previous performance test was conducted on December 10, 2020.</p>						
40.	Opacity	<p><u>Standards of Performance for Coal Preparation and Processing Plants - Test methods and procedures</u></p> <p>The Owner or Operator must determine compliance with the applicable opacity standard as specified below:</p> <p>a.) USEPA Method 9 and the procedures in §60.11 must be used to determine opacity, with the following exceptions.</p> <ol style="list-style-type: none"> 1. The duration of the Method 9 performance test shall be 1 hour (ten 6-minute averages). 2. If, during the initial 30 minutes of the observation of a Method 9 performance test, all of the 6-minute average opacity readings are less than or equal to half the applicable opacity limit, then the observation period may be reduced from 1 hour to 30 minutes. 	For each test	MKSCC1	Env-A 802 & 40 CFR 60.257	Yes
41.	Visible emissions testing	<p><u>Standards of Performance for Nonmetallic Mineral Processing Plants - Test Methods and Procedures</u></p> <p>The Owner or Operator shall conduct periodic emissions testing to evaluate compliance with the visible emission limitations in Table 5, Item 29.a. Testing shall be conducted in accordance with §60.675(c).</p>	Within 5 years from the previous performance test	MKLC1 Transfer points from: RS-C to L-2 L-1 to L-2 L-2 to L-2A	40 CFR 60.675 & Table 3 Subpart OOO	Yes
42.	Visible emissions	<p><u>Standards of Performance for Nonmetallic Mineral Processing Plants - Monitoring of Operations</u></p> <p>a.) The Owner or Operator of any affected facility for which construction, modification, or reconstruction commenced on or after April 22, 2008, that uses a baghouse to</p>	Quarterly (if the affected facility is operated during the calendar quarter)	MKLC1 (4000A, 4000B, LSS1 & LSS2)	40 CFR 60.674(c)	See Finding

Table 7 - Monitoring/Testing Requirements

Item #	Parameter	Method of Compliance	Frequency	Applicable Unit	Regulatory Basis	Compliant
		<p>control emissions must conduct quarterly 30-minute visible emissions inspections using EPA Method 22.</p> <p>b.) The Method 22 test shall be conducted while the baghouse is operating. The test is successful if no visible emissions are observed.</p> <p>c.) If any visible emissions are observed, the owner or operator of the affected facility must initiate corrective action within 24 hours to return the baghouse to normal operation. The Owner or Operator must record each Method 22 test, including the date and any corrective actions taken, in the logbook required under Table 8, Item 10.</p>				

Finding: Merrimack Station reported that limestone was added to LSS-1 on January 10, 2022, to accommodate a M9 observation for conveyor RS-C to L-2. A M22 was not conducted for LSS-1 concurrently. LSS-1 was not otherwise used during the semiannual period. Merrimack Station reported that Method 22 was not performed for 4000A or 4000B during Q4 2022.

43.	CEMS Data Availability Requirements	<p>a.) The Owner or Operator of a source with a CEM shall operate the CEM at all times during operation of the source, except for periods of CEM breakdown, repairs, calibration checks, preventive maintenance, and zero/span adjustments.</p> <p>b.) The percent CEM data availability shall be maintained at a minimum of 90% on a calendar quarter basis for all opacity monitors, gaseous concentration monitors, and stack volumetric flow monitors, or any substitute monitoring methods approved as part of the CEM monitoring plan required by Env-A 808.04.</p> <p>c.) The percent CEM data availability shall be calculated as specified in Env-A 808.11(c) or (d).</p>	N/A	MK1 & MK2	Env-A 808.11	See Finding
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Finding: Merrimack Station reported that 90% data availability was not met for the following CEMS components and calendar quarters:

In Q2 2021, for the MK2 NOx CEM;

In Q4 2021, for the MK2 NOx CEM when using NHDES calculation criteria;

In Q2 2022, for the MK2 NOx CEM when using NHDES calculation criteria;

In Q3 2022, for the common stack NOx and CO2 CEM and MK1 opacity monitor, when using NHDES calculation criteria; and

In Q4 2022, for the Unit 2 SO2, NOx, and CO2 CEM, when using NHDES calculation criteria.

Merrimack Station stated that the deviations are primarily a function of the limited operating hours, rather than an indication of elevated CEM downtime.

Table 7 - Monitoring/Testing Requirements

Item #	Parameter	Method of Compliance	Frequency	Applicable Unit	Regulatory Basis	Compliant
44.	Sulfur Content of Liquid Fuels	Conduct testing in accordance with appropriate ASTM test methods or retain documentation in accordance with Table 8, Item 6 in order to demonstrate compliance with the sulfur content limitation provisions specified in this permit for liquid fuels.	For each delivery of fuel oil/diesel to the facility	Facility Wide	Env-A 806.02 & Env-A 806.05	Yes
45.	Sulfur & mercury content of coal	<u>Test Methods for Coal</u> Maintain documentation from the fuel supplier or conduct testing in accordance with appropriate ASTM test methods to determine the sulfur content of coal in pounds of sulfur per million Btu gross heat content and the mercury content of the coal in parts per million by weight on a dry basis.	Each delivery of coal	MK1 & MK2	Env-A 806.04	Yes
46.	Coal Feed Rate - Periodic Monitoring	E Belt scales for MK1 and MK2 shall be verified or calibrated once per year.	Annually	MK1 & MK2	40 CFR 70.6 (a)(3)(i)(B)	Yes
47.	Inspection of coal crushers	a.) The coal crusher systems shall be inspected and maintained regularly. If any visible emissions from the coal crusher enclosure or breaks in the structure of the enclosure are observed, repairs shall be made immediately. b.) A log of the repairs made shall be maintained. The repair log shall include the date the problem was observed, the date of the repair and a description of the problem and corrective actions taken.	As specified	MKPCC & MKSCC1	40 CFR 70.6 (a)(3)(i)(B)	Yes
48.	Boiler Tune-up	<u>NESHAP for Major Sources: Industrial, Commercial and Institutional Boilers and Process Heaters - Boiler Tune-up Requirement</u> The Owner or Operator shall conduct a performance tune-up of the boiler as per 40 CFR 63.7540.	Every five years	Smith boiler	40 CFR 63.7500 Subpart DDDDD	Yes
49.	To Be Determined	When conditions warrant, the Division may require the Owner or Operator to conduct stack testing in accordance with USEPA or other Division approved methods.	Upon request by the Division	Facility Wide	RSA 125-C:6, XI	Noted

Finding: NHDES did not require any additional testing not otherwise specified in the permit during this evaluation period.

Table 7A below, taken from Permit TV-0055, lists the Compliance Assurance Monitoring requirements for the Electrostatic Precipitator and any deficiencies noted during the evaluation.

Table 7A - Compliance Assurance Monitoring			
	ESPs MK1-PC1 & MK1-PC2 MK2-PC4 & MK2-PC5	FGD (MK2-PC7)	Compliant
I. Indicator	ESP sections out of service.	Number of FGD recycle pumps running and pump amperage.	See Finding
<p>Finding: Merrimack Station reported that from November 20, 2021, to December 21, 2021, the recycle pump amperage was not continuously monitored and recorded; 3 of 4 FGD recycle pumps were not being transmitted to the control system. However, other indicators including pump operating status was continuously available.</p>			
Measurement Approach	Number of sections out of service is manually recorded by the operator.	Recycle pump start/stop times are manually logged by the operator.	Yes
II. Indicator range [§64.3(a)(3)]	<ol style="list-style-type: none"> 1. All available ESP sections shall be in service upon firing coal in the boiler. 2. For MK1 boiler, an excursion occurs when a total of 7 or more sections in the two ESP units (MK1-PC1 & MK1-PC2) combined are out of service. 3. For MK2 boiler, an excursion occurs when a total of 8 or more sections in the two ESP units (MK2-PC4 & MK2-PC5) combined are out of service. 4. Excursions trigger an inspection, corrective action, and a reporting requirement. 	<ol style="list-style-type: none"> 1. When one unit (either MK1 or MK2) operates alone, two limestone slurry recycle pumps shall be in operation. When MK1 and MK2 are both operating, three recycle pumps shall be in operation. 2. The required number of pumps shall be online prior to the combustion of coal in the boiler(s). 3. An excursion occurs when the required number of recycle pumps are not running for three-consecutive hours. 	Yes
III. Performance Criteria [§64.3(b)]	The threshold number for the sections out of service serves as an indicator that the operator must make efforts to promptly return ESP sections to service to ensure most efficient operation of the ESPs.	The number of recycle pumps running is an indicator of FGD performance.	Yes
A. Data Representativeness			
B. Verification of Operational Status	Not applicable. Monitoring approach uses existing equipment.	Not applicable. Monitoring approach uses existing equipment.	N/A
C. QA/QC Practices and Criteria	Alarms are the primary indicator of when a section is out of service. Operators also perform routine rounds which include observation of the ESP local control panels. This practice provides secondary assurance that sections out of service are identified and recorded even if an alarm fails to engage.	Operator receives alarm if a recycle pump trips and the dedicated backup pump is immediately utilized.	Yes

Table 7A - Compliance Assurance Monitoring			
	<p style="text-align: center;">ESPs MK1-PC1 & MK1-PC2 MK2-PC4 & MK2-PC5</p>	<p style="text-align: center;">FGD (MK2-PC7)</p>	<p style="text-align: center;">Compliant</p>
D. Monitoring Frequency	Daily	Pump amperage is continuously monitored and recorded.	See Finding
Finding: See I. Indicator finding above.			
E. Data Collection Procedures	<p>The operator’s daily log shall include the following information related to sections out of service:</p> <ol style="list-style-type: none"> 1. Sections out of service for each ESP unit; 2. The time section stopped operating; 3. The reason for the section being out of service; 4. The time the section was returned to service; and 5. Corrective actions taken to return the section to service. 	Recycle pump start/stop times are manually logged by the operator and are quality assured/confirmed via automated records of pump amperage.	Yes
F. Averaging Period	None	None	N/A

VIII. Compliance with Recordkeeping Requirements

Table 8 below, taken from permit TV-0055, lists the required recordkeeping for the facility and any deficiencies noted during the evaluation.

Table 8 - Recordkeeping Requirements					
Item #	Recordkeeping Requirement	Records Retention/Frequency	Applicable Unit	Regulatory Basis	Compliant
1.	<p><u>Record Retention and Availability</u></p> <p>Keep the records required by this permit on file. These records shall be available for review by the Division upon request.</p>	Retain for a minimum of 5 years unless longer as specified	Facility wide	Env-A 902, Env-A 3211 & 40 CFR 70.6(a)(3)(ii)(B)	Yes
2.	<p><u>CO₂ Budget Source and Unit Records</u></p> <p>a.) Maintain the following records regarding the CO₂ budget source and each CO₂ budget unit:</p> <ol style="list-style-type: none"> 1. The account certificate of representation and all documents that demonstrate the truth of the statements in the account certificate of 	Maintain up-to-date records	MK1 & MK2	Env-A 4605.03	Yes

Table 8 - Recordkeeping Requirements

Item #	Recordkeeping Requirement	Records Retention/ Frequency	Applicable Unit	Regulatory Basis	Compliant
	representation prepared in accordance with Env-A 4604.05; 2. All emissions monitoring information, in accordance with Env-A 4609 and 40 CFR 75; 3. Copies of all reports, compliance certifications and other submissions and all records made or required under Env-A 4600; 4. Copies of all documents used to complete a CO ₂ budget permit application and any other submission under the CO ₂ Budget Trading Program or to demonstrate compliance with the requirements of Env-A 4600. b.) Records required in a. shall be retained beyond the 10-year minimum retention period until such documents are superseded because of the submission of a new account certificate of representation changing the CO ₂ AAR.				
3.	<u>Certificate of Representation</u> a.) Complete and retain a certificate of representation for a designated representative or an alternate designated representative including the elements pursuant to 40 CFR 72.24, <i>Certificate of Representation</i> . b.) The certificate of representation required in a. shall be retained beyond the 5-year minimum period until such documents are superseded because of the submission of a new certificate of representation changing the designated representative.	Maintain at the facility at all times	MK1 & MK2	40 CFR 72.9(f) & 40 CFR 72.24	Yes
4.	<u>General Recordkeeping Requirements for Combustion Devices</u> Maintain the records of the type (e.g., oil, coal etc.) and amount of fuel burned in each device.	Monthly	MK1, MK2, MKCT1, MKCT2, MKEB, MKEC & MKEG	Env-A 903.03 & 40 CFR 63.10032(d)(1)	Yes
5.	<u>Solid Fuel Recordkeeping Requirements</u> Maintain the following records for coal: a.) Ash content; b.) Btu content of fuel; and c.) Weight percent of sulfur.	Monthly	MK1 & MK2	Env-A 903.03	Yes
6.	<u>Liquid Fuel Oil Recordkeeping Requirements</u> In lieu of sulfur testing pursuant to Table 7, Item 44, the Owner or Operator may maintain a written statement from the fuel supplier that the sulfur content of the fuel as delivered does	Whenever there is a change in fuel	Facility wide	Env-A 806.05 & Env-A 903.03	Yes

Table 8 - Recordkeeping Requirements

Item #	Recordkeeping Requirement	Records Retention/ Frequency	Applicable Unit	Regulatory Basis	Compliant
	not exceed state or federal standards for that fuel.	supplier but at least annually			
7.	<u>General Recordkeeping Requirements for Process Operations</u> The Owner shall keep records of the quantity of: a.) Coal processed for each of the crusher systems; b.) Limestone used.	Monthly	MKPCC, MKSCC1 & MKLC1	Env-A 903.02	Yes
8.	<u>General NOx Recordkeeping Requirements</u> Maintain records of: a.) Identification of each fuel burning device. b.) Operating schedule during the high ozone season (June 1 through August 31) for each fuel burning device identified in a. above, including: 1. Typical hours of operation per calendar day; 2. Typical days of operation per calendar month; 3. Design heat input rate input rate in MMBtu/hr. c.) The following NOx emissions data for each combustion device identified above: 1. Actual NOx emissions per month; 2. Typical high ozone day NOx emissions, in pounds per day; and 3. The emission factors and the origin of the emission factors used to calculate the NOx emissions.	Maintain Data for Annual Report	MK1, MK2, MKCT1, MKCT2, MKEB, MKEC & MKEG	Env-A 905.02	Yes
9.	<u>Recordkeeping for Sources or Devices with Add-on NOx Air Pollution Control Equipment</u> Maintain records of the following information: a.) The air pollution control device identification number, type, model number, and manufacturer; b.) Installation date; c.) Unit(s) controlled; d.) Type and location of the capture system, capture efficiency percent, and method of determination; e.) Information as to whether or not the air pollution control device is always in operation when the fuel burning device or incinerator it is serving is in operation; and f.) The destruction or removal efficiency of the add-on air pollution control equipment, including the following information: 1. Destruction or removal efficiency, in percent;	Maintain at the facility at all times	MK1-PC3 & MK2-PC6	Env-A 905.03	Yes

Table 8 - Recordkeeping Requirements

Item #	Recordkeeping Requirement	Records Retention/Frequency	Applicable Unit	Regulatory Basis	Compliant
	2. Date tested; 3. The emission test results, if tested, including: i. The inlet NOx concentration in ppm; ii. The outlet NOx concentration in ppm; and iii. The method of determination of the concentrations in a. and b. above; and 4. The method of determining destruction or removal efficiency, if not tested.				
10.	The Owner or Operator must record each periodic inspection required under Table 7, Item 42, including dates and any corrective actions taken, in a logbook (in written or electronic format). The Owner or Operator must keep the logbook onsite and make hard or electronic copies (whichever is requested) of the logbook available to DES/EPA upon request.	Maintain on a continuous basis	MK LC1	40 CFR 60.676(b) Subpart OOO	Yes
11.	<u>VOC Emission Statements Recordkeeping Requirements</u> If the actual annual VOC emissions from all permitted devices located at the Facility are greater than or equal to 10 tpy, then record the following information: a.) Identification of each VOC-emitting process or device; b.) The operating schedule during the high ozone season (June 1 through August 31) for each VOC-emitting process or device identified in a. above, including: 1. Typical hours of operation per day; and 2. Typical days of operation per calendar month. c.) The following VOC emission data from all VOC-emitting processes or devices above, including: 1. Actual VOC emissions for: i. The calendar year, in tons; and ii. A typical high ozone season day during that calendar year, in pounds per day; and 2. The emission factors and the origin of the emission factors used to calculate the VOC emissions.	Maintain Data for Annual Report	Facility wide	Env-A 904	Noted
Findings: NHDES reviewed annual emission statements which state VOC emissions are not greater than or equal to 10 tons per year.					
12.	<u>CEM Monitoring Plan</u> a.) Prepare and maintain a CEM monitoring plan which contains: 1. Sufficient information to demonstrate that all unit SO ₂ , NO _x , CO ₂ emissions and opacity are monitored	Maintain on a continuous basis and update as necessary	MK1 & MK2	40 CFR 75.53, 40 CFR 75.73, Env-A 808.04, Env-A 2907.09, Env-A 3210.11 & Env-A 4609	Yes

Table 8 - Recordkeeping Requirements

Item #	Recordkeeping Requirement	Records Retention/ Frequency	Applicable Unit	Regulatory Basis	Compliant
	and reported. 2. The information specified in 40 CFR 75.53, Env-A 808.04. b.) Revise or update the monitoring plan whenever the Owner or Operator makes a replacement, modification or change that could affect the CEMS or COMS or other approved monitoring method.				
	c.) Site specific monitoring plan for Hg CEMS or STMS shall be developed and maintained.	As specified in Section 7.1 to App.A		40 CFR 63.10000(d) & Appendix A to Subpart UUUUU	Yes
13.	<u>Quality Assurance/Quality Control (QA/QC) Plan for Opacity or Gaseous CEMS</u> a.) Prepare and maintain the QA/QC plan which shall contain written procedures for implementation of a QA/QC program that meets the criteria specified in 40 CFR 60, Appendix F, Procedure 1, Section 3 for for each gaseous CEM system and 40 CFR 60, Appendix F, Procedure 3 for each opacity CEM system, and shall include the following: 1. A schedule of, and description of, all maintenance activities that are required by the CEM manufacturer or that might have an effect on the operation of the system, including a summary of the results of any performance specification testing that was performed in accordance with Env-A 808.05(e) or (f); 2. A description of how the audits and testing required by this part will be performed; and 3. Examples of the reports that will be used to document the audits and tests required by Env-A 800. b.) Review the QA/QC plan at least once a year and all data generated by its implementation; c.) Revise or update the QA/QC plan, as necessary, based on the results of the annual review. Make the revised plan available for on-site review by the Deaprtment at any time.	Maintain on site	MK1 & MK2	Env-A 808.06	Yes
14.	<u>General Acid Rain Recordkeeping Provisions</u> Maintain records of: a.) Opacity, operating parameters (operating time, heat input, volumetric flow rate & load), diluent monitor data, SO ₂ , NO _x & CO ₂ emissions and percent monitor availability; and b.) The causes of any missing data periods and the actions	Maintain on a continuous basis	MK1 & MK2	40 CFR 75.57	Yes

Table 8 - Recordkeeping Requirements

Item #	Recordkeeping Requirement	Records Retention/Frequency	Applicable Unit	Regulatory Basis	Compliant
	taken to correct such causes.				
15.	<p><u>Certification, Quality Assurance and Quality Control Records</u></p> <p>a.) Maintain records of the information required pursuant to 40 CFR 75.59 and 75.73(b) which includes the certification, quality assurance, and quality control records.</p> <p>b.) These shall include records of all daily & 7-day calibration error tests, daily interference checks, cycle time tests, linearity checks and relative accuracy test audits, as applicable.</p>	Maintain on a continuous basis	MK1 & MK2	40 CFR §75.59, §75.73 & Env-A 3212	Yes
16.	<p><u>Emergency Stack Operation</u></p> <p>Maintain records of emergency stack (STMK2) operation including:</p> <p>a.) Date(s) and time(s) during which MK1 emissions were discharged through the emergency stack;</p> <p>b.) Description of the reason for emergency stack operation, corrective action taken (if applicable), and estimates of emissions released during the emergency stack venting operation.</p> <p>c.) MK1 boiler’s uncontrolled SO₂ emissions vented through the emergency stack as per Table 5, Item 5 must be quantified using the following methodology:</p> <ol style="list-style-type: none"> 1. Use MK1 CEM data during the venting period, if it is available. 2. If CEM data during emergency stack venting is not available, use CEM data from the last valid hour prior to the emergency stack venting to estimate the emissions. The emission rate may be prorated for the length of time that the emergency venting actually occurred. 3. If current emission data from MK1 CEMS is not available, then estimate the emissions by using historic CEM data, compliance stack tests or AP-42 emission factors, whichever yields the highest emissions. 	For each use	MK1	TP-0189	Noted
Finding: The emergency stack did not operate during this evaluation period.					
17.	<p><u>SO₂ Emission Rate Limitation Monitoring Records</u></p> <p>Maintain monitoring records specified in Table 7, Items 22 and 23 including the following information:</p> <p>a.) Operating status (operating/not operating) for MK1 and MK2 for each calendar hour.</p>	Hourly and daily, as specified	MK1 & MK2	TP-0189	Yes

Table 8 - Recordkeeping Requirements

Item #	Recordkeeping Requirement	Records Retention/ Frequency	Applicable Unit	Regulatory Basis	Compliant
	b.) The following emissions data for each boiler operating hour: <ol style="list-style-type: none"> 1. Uncontrolled SO₂ emission rate in lb/hr for MK1; 2. SO₂ emission rate in lb/hr for MK1 emergency stack venting (if applicable); 3. Uncontrolled SO₂ emission rate in lb/hr for MK2; and 4. Controlled SO₂ emission rate in lb/hr & lb/MMBtu at the FGD outlet; c.) The following SO ₂ emission rates and percent reduction rates, for each boiler operating day; <ol style="list-style-type: none"> 1. 7-boiler operating day rolling average SO₂ emission rate in lb/MMBtu; 2. 30-boiler operating day rolling average SO₂ emission rate in lb/MMBtu; and 3. 30-boiler operating day rolling average SO₂ percent reduction. 				
18.	<u>Monitoring Records</u> Maintain records of data required to be monitored pursuant to Table 7 including: <ol style="list-style-type: none"> a.) Records of monitoring data for the pollution control devices, corrective action actions taken, any written QIP required pursuant to Condition VIII.H. of this permit and any activities undertaken to implement the QIP. b.) Maintenance and inspection conducted on the ESPs, SCRs and FGD. c.) Sections out of service in ESPs; d.) Net electrical output (MWh) for MK1 and MK2. 	Maintain on a continuous basis	MK1 & MK2	40 CFR 70.6(a)(3)(ii) & 40 CFR 64.9	Yes
19.	<u>Records for Coal-fired EGUs</u> Maintain the following records: <ol style="list-style-type: none"> a.) A copy of each notification and report that was submitted to comply with Subpart UUUUU, including all documentation supporting any initial notification or notification of compliance status or semiannual compliance report as per §63.10(b)(2)(xiv). b.) Records of performance stack tests, fuel analyses, or other compliance demonstrations and performance evaluations, as required in §63.10(b)(2)(viii); c.) For an EGU that qualifies as a low emitting EGU under §63.10005(h), keep annual records that document that EGU emissions in the previous stack test(s) continue to 	On a continuous basis	MK1 & MK2	40 CFR §§ 63.10032 & 63.10033 Subpart UUUUU	Yes

Table 8 - Recordkeeping Requirements

Item #	Recordkeeping Requirement	Records Retention/ Frequency	Applicable Unit	Regulatory Basis	Compliant
	<p>qualify the unit for LEE status for an applicable pollutant, and document that there was no change in source operations including fuel composition and operation of air pollution control equipment that would cause emissions of the pollutant to increase within the past year.</p> <p>d.) For Hg CEMS/STMS:</p> <ol style="list-style-type: none"> 1. Records described in §63.10(b)(2)(vi) through (xi). 2. Previous (i.e., superseded) versions of the performance evaluation plan as required in §63.8(d)(3). 3. Request for alternatives to relative accuracy test for CEMS as required in §63.8(f)(6)(i) 4. Records of the date and time that each deviation started and stopped, and whether the deviation occurred during a period of startup, shutdown, or malfunction or during another period; <p>e.) Records of the occurrence and duration of each startup or shutdown;</p> <p>f.) Records of the occurrence and duration of each malfunction of an operation (i.e., process equipment) or the air pollution control and monitoring equipment (as applicable);</p> <p>g.) Records of actions taken during periods of malfunction to minimize emissions in accordance with §63.10000(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.</p> <p>h.) Records of the type(s) and amount(s) of fuel used during each startup or shutdown of the EGU.</p> <p>i.) If non-hazardous secondary materials that have been determined not to be solid waste pursuant to 40 CFR 241.3(b)(1) are combusted in an EGU, keep records as per §63.10032(d)(2).</p> <p>j.) For Hg CEMS/STMS, records required under Appendix A to Subpart UUUUU.</p>				
20.	<p><u>Standards of Performance for Coal Preparation and Processing Plants - Recordkeeping Requirements</u></p> <p>The Owner or Operator of a coal preparation and processing plant that commenced construction, reconstruction, or modification after April 28, 2008, shall maintain in a logbook (written or electronic) on-site and make it available upon request. The logbook shall record the following:</p>	Maintain on a continuous basis	MKSCC1	40 CFR 60.258 Subpart Y	Yes

Table 8 - Recordkeeping Requirements

Item #	Recordkeeping Requirement	Records Retention/ Frequency	Applicable Unit	Regulatory Basis	Compliant
	a.) The manufacturer's recommended maintenance procedures and the date and time of any maintenance and inspection activities and the results of those activities. Any variance from manufacturer recommendation, if any, shall be noted. b.) The date and time of periodic coal preparation and processing plant visual observations, noting those sources with visible emissions along with corrective actions taken to reduce visible emissions. Results from the actions shall be noted. c.) Monthly amount and type of coal processed.				
21.	Maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the affected facility.	For each occurrence	MKSCC1	40 CFR 60.7(b)	Yes
22.	<u>Recordkeeping Requirements for Oil-fired Emergency Generators Manufactured after April 1, 2006</u> a.) Maintain documentation from the manufacturer certifying that the engine complies with the applicable emission standards stated in 40 CFR 60, subpart IIII; b.) Maintain the generator manufacturer's instructions at the Facility so that they are available for review; and c.) Record the time of operation of the engine and the reason the engine was in operation during that time.	Keep a running log	MKEC	40 CFR 60.4214 Subpart IIII	Yes
23.	The Owner or Operator shall keep records of: a.) The hours of operation of the engine that is recorded through the non-resettable hour meter, b.) The number of hours spent for emergency operation, including what classified the operation as emergency.	Keep a running log	MKEG	Env-A 906	Yes
24.	<u>Boiler Tune-up Records</u> Maintain on-site and submit if requested by Department and EPA, a report containing the details of tune-ups conducted in accordance with Table 7, Item 48, including: a.) The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler; b.) A description of any corrective actions taken as a part of the tune-up; and c.) The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and	Each boiler tune-up	Smith Boiler	40 CFR 63.7540(a)(10)(vi) Subpart DDDDD	Yes

Table 8 - Recordkeeping Requirements					
Item #	Recordkeeping Requirement	Records Retention/Frequency	Applicable Unit	Regulatory Basis	Compliant
	legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit.				
25.	<p><u>Regulated Toxic Air Pollutants</u> Compliance was demonstrated at the time of permit issuance as described in the department’s Application Review Summary for application #16-0056. The source must update the compliance demonstration using one of the methods provided in Env-A 1405 if:</p> <p>a.) There is a revision to the list of RTAPs lowering the AAL or de minimis value for any RTAP emitted from the Facility; b.) The amount of any RTAP emitted is greater than the amount that was previously evaluated; c.) An RTAP that was not evaluated in the Application Review Summary will be emitted; or d.) Stack conditions (e.g. air flow rate) change.</p>	Update prior to process changes and within 90 days of each revision of Env-A 1400	Facility Wide	Env-A 902.01 State-only Requirement	Yes
Finding: See Table 4 Item 2 finding.					
26.	<p><u>Alternative Operating Scenario Records</u> Maintain records of operation under alternative operating scenario including:</p> <p>a.) The date that operation in the alternative operating scenario began; and b.) The date that operation in the alternative operating scenario ceased.</p>	Whenever operation method changes from normal operation to a specific alternative operating scenario	MK1 & MK2	40 CFR 70.6(a)(9)	Noted
Finding: Merrimack Station did not operate under an alternative operating scenario during this evaluation period.					

IX. Compliance with Reporting Requirements

Table 9 below, taken from permit TV-0055, lists the reporting requirements for the facility and any deficiencies noted during the evaluation.

Table 9 - Applicable Reporting Requirements

Item #	Reporting Requirements	Frequency of Reporting	Applicable Emission Unit	Regulatory Citation	Compliant
1.	Any report submitted to the DES and/or EPA shall include the certification of accuracy statement outlined in Section XXI.B. of this Permit and shall be signed by the responsible official.	With each report	Facility wide	40 CFR 70.6(c)(1)	Yes
2.	<u>Semi-annual Permit Deviation and Monitoring Report</u> The Owner or Operator shall submit a semi-annual permit deviation and monitoring report, which contains: a.) Summaries of all monitoring and testing requirements contained in this permit; b.) A summary of all permit deviations and excursions that have occurred during the reporting period; and c.) Records maintained as per Table 8, Item 16 for emergency stack (STMK2) operation.	Semi-annually received by DES no later than July 31 st and January 31 st of each calendar year.	Facility wide	Env-A 911, 40 CFR 70.6(a)(3)(iii)(A) & 40 CFR 63.10031	Yes
3.	<u>Annual Emissions Report</u> Submit an annual emissions report which shall include the following information: a.) Actual calendar year emissions from each device of NOx, CO, SO ₂ , VOCs, HAPs (speciated by individual HAP or CAS number), CO ₂ e, filterable PM/PM ₁₀ /PM _{2.5} , condensable PM, ammonia, and lead. b.) The methods used in calculating such emissions in accordance with Env-A 705.02, <i>Determination of Actual Emissions for Use in Calculating Emission-Based Fees</i> . c.) The information recorded in accordance with Table 8, Item 4.	Annually (received by DES no later than April 15 th of the following year)	Significant activities identified in Table 1	Env-A 907.02	Yes
4.	<u>Payment of Annual Emission Fee</u> Payment of the annual emission fee shall be conducted in accordance with Section XXIII of this Permit.	Annually (received by DES no later than May 15 th of the following year)	Significant activities identified in Table 1	Env-A 705.04(b)	Yes
5.	<u>NOx Reporting Requirements</u> Include the following information in the annual emissions report required in Table 9, Item 3: a.) A breakdown of NOx emissions by month; and b.) All data recorded pursuant to Table 8, Item 8.	Annually (received by DES no later than April 15 th of the following year)	MK1, MK2, MKCT1, MKCT2, MKEB, MKEC & MKEG	Env-A 909.03	Yes

Table 9 - Applicable Reporting Requirements

Item #	Reporting Requirements	Frequency of Reporting	Applicable Emission Unit	Regulatory Citation	Compliant
6.	<p><u>Net Electrical Output</u> Report monthly net electrical output information to DES.</p>	Annually (no later than April 15 th of the following year)	MK1, MK2, MKCT1 & MKCT2	Env-A 2904.05(f) & Env-A 3205.03(f)	Yes
7.	<p><u>Data Availability Restoration Plan</u> If the Owner or Operator of the source discovers that it has failed to meet the percent data availability requirement in the previous calendar quarter or in the calendar quarter in which it is currently operating:</p> <p>a.) Notify DES by telephone, fax, or e-mail (pdeviations@des.nh.gov) within 10 days of discovery of the permit deviation.</p> <p>b.) Submit a plan to the Division, within 30 days of discovery, specifying in detail the steps it plans to take in order to meet the availability requirements for future calendar quarters.</p> <p>c.) Implement the plan to meet the data availability requirements no later than 30 days after the end of the quarter of failure.</p>	As specified	MK1 & MK2	Env-A 808.11 & Env-A 911.04	Yes
8.	<p><u>CO₂ Budget Trading Program Reports</u> Submit quarterly CO₂ budget reports which include:</p> <p>a.) The CO₂ mass emissions data for the CO₂ budget unit, in an electronic format prescribed by EPA unless otherwise prescribed by the regional organization, for each calendar quarter in the manner specified in Subpart H of 40 CFR 75 and 40 CFR 75.64;</p> <p>b.) For each CO₂ budget unit, all of the data and information required in Subpart G of 40 CFR 75, except for opacity, NO_x, and SO₂ provisions; and</p> <p>c.) A compliance certification with, and in support of, each quarterly report based on reasonable inquiry of those persons with primary responsibility for ensuring that all of the unit's emissions are correctly and fully monitored. The certification shall state that:</p> <ol style="list-style-type: none"> 1. The monitoring data submitted were recorded in accordance with the applicable requirements of both 40 CFR 75 and Env-A 4600, including the quality assurance procedures and specifications; and 2. The CO₂ concentration values substituted for missing data under Subpart D of 40 CFR 75 do not systematically underestimate CO₂ emissions. 	Quarterly (no later than 30 days following the end of each quarterly reporting period)	MK1 & MK2	Env-A 4609.16(c)	Yes

Table 9 - Applicable Reporting Requirements

Item #	Reporting Requirements	Frequency of Reporting	Applicable Emission Unit	Regulatory Citation	Compliant
9.	<u>CO₂ Budget Program Compliance Certification</u> For each control period in which a CO ₂ budget source is subject to the requirements of Env-A 4605, submit a compliance certification report which includes the information specified in Env-A 4605.09(b).	By March 1 (following the relevant control period)	MK1 & MK2	Env-A 4605.09	Yes
10.	<u>Certification by the CO₂ Authorized Account Representative</u> Any submission under the CO ₂ budget trading program shall be signed and certified by the CO ₂ Authorized Account Representative and shall include the certification statement pursuant to Env-A 4604.02(a).	With each CO ₂ Budget Program submittal	MK1 & MK2	Env-A 4604.02	Yes
11.	<u>NO_x Budget Program Compliance Certification</u> For each control period, submit an annual compliance certification containing the information listed in Env-A 3213.03.	By November 30 th of each year	MK1, MK2, MKCT1 & MKCT2	Env-A 3213	Yes
12.	<u>SO₂ & NO_x Annual Budget Trading and Banking Program Annual Compliance Certification</u> Submit an annual compliance certification for the prior year containing the information specified in Env-A 2909.02.	By January 30 th of each year	MK1 & MK2	Env-A 2909	Yes
13.	<u>Offset Plans for Excess Emissions of SO₂</u> If a unit has excess SO ₂ emissions, submit an offset plan which contains the information specified in 40 CFR 77.3(d).	60 days after the end of any calendar year in which the unit has excess SO ₂ emissions	MK1 & MK2	40 CFR 77.3	Noted
Finding: Merrimack Station was not required to submit an offset plan during this evaluation period.					
14.	<u>Certification by the Designated Representative or the Alternate Designated Representative</u> Any document submitted under the Acid Rain program shall be signed and certified by the designated representative or the alternate designated representative and include the statements pursuant to 40 CFR 72.21(a)(1) and (2).	With each Acid Rain submittal	MK1 & MK2	40 CFR 72.21	Yes
15.	<u>CEMS Recertification Notifications and Reports</u> a.) Notification of full recertification: 1.) Submit notifications of full recertification testing under 40 CFR 75.20(b)(2) to DES and EPA at least 30 days prior to the first scheduled day of recertification testing. 2.) In emergency situations when full recertification testing	As specified	MK1 & MK2	40 CFR 75.61 (a)(1), 75.63, 75.70, 75.73(d), Env-A 808, Env-A 2907.10 & Env-A 3210	Noted

Table 9 - Applicable Reporting Requirements

Item #	Reporting Requirements	Frequency of Reporting	Applicable Emission Unit	Regulatory Citation	Compliant
	<p>is required following an uncontrollable failure of equipment that results in lost data, notice shall be sufficient if provided within 2 business days following the date when testing is scheduled.</p> <p>3.) Testing may be performed on a date other than that already provided in a notice as long as notice of the new date is provided either in writing or by telephone or other means at least 7 days prior to the original scheduled test date or the revised test date, whichever is earlier.</p> <p>b.) Notification of partial recertification testing:</p> <p>1.) Submit notifications for retesting required following a loss of certification under 40 CFR 75.20(a)(5) or for partial recertification testing required under 40 CFR 75.20(b)(2), to DES and EPA either in writing or by telephone at least 7 days prior to the first scheduled day of testing,</p> <p>2.) Except that in emergency situations when testing is required following an uncontrollable failure of equipment that results in lost data, notice shall be sufficient if provided within 2 business days following the date when testing is scheduled.</p> <p>3.) Testing may be performed on a date other than that already provided in a notice long as notice of the new date is provided by telephone or other means at least 2 business days prior to the original scheduled test date or the revised test date, whichever is earlier.</p> <p>c.) Within 45 calendar days after completing all recertification tests submit to EPA and DES, the electronic and hardcopy information contained in 40 CFR 75.63.</p> <p>d.) Submit an application to DES within 45 days after completing all recertification tests including the information required under 40 CFR 75, Subpart H.</p>				
<p>Finding: Merrimack Station did not recertify any CEMS during this evaluation period.</p>					
16.	<p><u>Relative Accuracy Test Audit Reports</u></p> <p>a.) Submit a summary of the results of the RATA testing by the earlier of 45 calendar days following the completion of the RATA or the date established in the section of 40 CFR 60 or 40 CFR 75 that requires performance of the RATA.</p> <p>1.) For gaseous CEM audits, the report format shall conform to that presented in 40 CFR 60, Appendix F, Procedure 1 or §75.59(a)(9), as applicable; and</p>	As specified	MK1 & MK2	40 CFR 75.59(a)(9), 75.60(b)(6), 40 CFR 75.73(d), Env-A 3210 & Env-A 808.07(e)	Yes

Table 9 - Applicable Reporting Requirements

Item #	Reporting Requirements	Frequency of Reporting	Applicable Emission Unit	Regulatory Citation	Compliant
	2.) For opacity CEM audits, the report format shall conform to that presented in EPA-600/8-87-025, April 1992, "Technical Assistance Document: Performance Audit Procedures for Opacity Monitors". b.) If requested, submit a hardcopy RATA report to EPA within 45 days after completing the RATA or within 15 days of receiving the request, whichever is later. c.) Within 60 days after the date of completing Hg sorbent trap monitoring system performance evaluation test, the Owner or Operator must submit the relative accuracy test audit required by Subpart UUUUU to EPA.			40 CFR 63.10031(f)	
17.	<u>Monitoring Plan Submittals</u> a.) Electronic copy: Submit a complete, electronic, up-to-date monitoring plan file (except for hardcopy portion) to EPA as follows: 1.) At the time of recertification application submission; 2.) Prior to or concurrent with the submittal of the electronic quarterly report for a reporting quarter where an update of the electronic monitoring plan information is required under 40 CFR 75.53(b). b.) Hardcopy: Submit hardcopy information to EPA only if that portion of the monitoring plan is revised. The Owner or Operator shall submit the required hardcopy information as follows: with any certification or recertification application, if a hardcopy monitoring plan change is associated with the certification or recertification event; and within 30 days of any other event with which a hardcopy monitoring plan change is associated, pursuant to 40 CFR 75.53(b). Electronic submittal of all monitoring plan information, including hardcopy portions, is permissible provided that a paper copy of the hardcopy portions can be furnished upon request.	As specified	MK1 & MK2	40 CFR 75.62 & 40 CFR 75.73(e)	Yes
18.	<u>CEMS & COMS data QA/QC Plan Updates</u> a.) No later than April 15 th of each year, either: 1. Submit to DES the revised QA/QC plan and the reasons for each change, and certify in writing that the Owner or Operator is implementing the revised QA/QC plan; or 2. Certify in writing that no changes have been made to the plan and that the Owner or Operator will continue to implement the existing QA/QC plan. b.) If DES requests a revision to the QA/QC plan, the Owner or Operator shall submit a revised plan within 45 days of the date of the request.	Annually	MK1 & MK2	Env-A 808.06	Yes

Table 9 - Applicable Reporting Requirements

Item #	Reporting Requirements	Frequency of Reporting	Applicable Emission Unit	Regulatory Citation	Compliant
	c.) Whenever an update of the Hg CEMS or STMS is required as provided in paragraph 7.1.1.1 of Appendix A, an electronic monitoring plan information update must be submitted.	Either prior to or concurrent with the quarterly report for the calendar quarter in which the update is required		40 CFR 63 Subpart UUUUU, Appendix A, Paragraph 7.2.3.2	Yes
19.	<p><u>Acid Rain Program - Quarterly Reports</u></p> <p>a.) Submit to EPA quarterly reports which contain:</p> <ol style="list-style-type: none"> 1.) The data and information in 40 CFR 75.64(a), (b) & (c) and 75.73(f). 2.) NOx emissions in lb/hr for every hour during the control period and cumulative quarterly and seasonal NOx emission data in pounds. 3.) SO₂ and NOx emissions in lb/hr for every hour during the year and cumulative quarterly and annual SO₂ and NOx emissions data in pounds. 4.) A certification by the Designated Representative that the component and system identification codes and formulas in the quarterly electronic reports represent current operating conditions 5.) Explanatory text or comments, so long as the information is provided in a format that is compatible with the other data required to be reported under 40 CFR 75.64. 6.) Mercury emissions information specified in 40 CFR 63, Subpart UUUUU, Appendix A, paragraph 7.2.5. <p>b.) Reports shall be submitted in electronic format using EPA's electronic reporting (EDR) convention.</p>	Quarterly (no later than 30 days following the end of each quarterly reporting period)	MK1 & MK2	40 CFR 75.64, 40 CFR 75.73(f), 40 CFR 75.74, Env-A 2907, Env-A 3210 & 40 CFR 63, Subpart UUUUU Appendix A, paragraph 7.2.5	Yes
20.	<p><u>Quarterly Emission Reports</u></p> <p>Submit to DES emission reports containing the following information:</p> <p>a.) As applicable, the information required to be submitted by 40 CFR 60, 40 CFR 63, or 40 CFR 75, relative to installation, calibration, operation and maintenance of a certified gaseous or opacity CEM system;</p>	Quarterly (received by DES no later than 30 days following the end of each	MK1 & MK2	Env-A 808.13 & TP-0189	Yes

Table 9 - Applicable Reporting Requirements

Item #	Reporting Requirements	Frequency of Reporting	Applicable Emission Unit	Regulatory Citation	Compliant
	<p>b.) All information included in the emission report shall be clearly indicated, labeled, and formatted such that compliance with all emissions standards to which the source is subject, can be determined and any periods of excess emissions, substitution of missing or invalid CEM data, CEM calibration, CEM maintenance, or startup, shutdown, or malfunction can be easily identified;</p> <p>c.) The daily averages of gaseous and opacity CEM measurements and calculated emission rates in the units of the emission standards;</p> <p>d.) For those sources subject to any emission standard that is a rolling average of more than one operating day, the rolling average emission rate reported for each day during the reporting period;</p> <p>e.) Excess emission data recorded by the CEM system, including:</p> <ol style="list-style-type: none"> 1. The date and time of the beginning and ending of each period of excess emission; 2. The actual emissions measured by the CEM system during the excess emission; 3. The total amount of emissions above the emissions limit, or percent above the emissions limit, during the period of excess emissions; 4. The specific cause of the excess emission; and 5. The corrective action taken; <p>f.) If no excess emissions have occurred, a statement to that effect;</p> <p>g.) A statement as to whether the CEM system was inoperative, repaired, or adjusted during the reporting period;</p> <p>h.) If the CEM system was inoperative, repaired, or adjusted during the reporting period, the following information:</p> <ol style="list-style-type: none"> 1. The date and time of the beginning and ending of each period when the CEM was inoperative; 2. The reason why the CEM was inoperative; 3. The corrective action taken; <p>i.) For all “out of control periods” the following information:</p> <ol style="list-style-type: none"> 1. Beginning and ending times of the out of control period; 2. The reason for the out of control period; 3. The corrective action taken. <p>j.) The date and time of the beginning and ending of each period when the source of emissions which the CEM system is monitoring was not operating;</p> <p>k.) The span value, as defined in Env-A 101.178, and units of measurement for each analyzer in the CEM system;</p> <p>l.) When calibration gas is used, the following information:</p>	<p>quarterly reporting period)</p>			

Table 9 - Applicable Reporting Requirements

Item #	Reporting Requirements	Frequency of Reporting	Applicable Emission Unit	Regulatory Citation	Compliant
	1. The calibration gas concentration; 2. If a gas bottle was changed during the quarter: <ul style="list-style-type: none"> i. The date of the calibration gas bottle change; ii. The gas bottle concentration before the change; iii. The gas bottle concentration after the change; iv. The expiration date for all calibration gas bottles used. m.) The percent data availability calculated in accordance with Env-A 808.11 for each gaseous, opacity, and flow rate monitor in the CEM system; n.) Average SO ₂ emission rates and percent reduction rates recorded in accordance with Table 8, Item 17 for each boiler operating day.				
21.	<u>Semi-annual MATS Compliance Report</u> a.) A compliance report containing the following information shall be submitted to EPA and DES: <ul style="list-style-type: none"> 1. The information required by the summary report located in 40 CFR 63.10(e)(3)(vi). 2. The total fuel use by each affected source subject to an emission limit, for each calendar month within the semi-annual reporting period, including a description of the fuel, whether the fuel has received a non-waste determination by EPA or basis for concluding that the fuel is not a waste, and the total fuel usage amount with units of measure. 3. Indicate whether new types of fuel were burned during the reporting period. If a new type of fuel was burned, include the date of performance test where that fuel was in use. 4. Include the date of the most recent tune-up for each unit. 5. If stack tests are conducted once every 3 years to maintain LEE status consistent with §63.10006(b), the date of each stack test conducted during the previous three years, a comparison of the emission level achieved in each stack test conducted during the previous 3 years to the 50 percent emission limit threshold required in § 63.10005(h)(1)(i) and a statement as to whether there have been any operational changes since the last stack test that could increase emissions. 6. Emergency bypass information; 7. A certification; 	Semi-annually received no later than July 31 st and January 31 st of each calendar year	MK1 & MK2	40 CFR 63.10031 & Table 8 to Subpart UUUUU	Yes

Table 9 - Applicable Reporting Requirements

Item #	Reporting Requirements	Frequency of Reporting	Applicable Emission Unit	Regulatory Citation	Compliant
	<p>b.) If there are no deviations from any applicable emission limitation and there are no deviations from the requirements for work practice standards, a statement that there were no deviations from the emission limitations and work practice standards during the reporting period. If there were no periods during which the CMSs, including continuous emissions monitoring system, and operating parameter monitoring systems, were out-of-control as specified in § 63.8(c)(7), a statement that there were no periods during which the CMSs were out-of-control during the reporting period;</p> <p>c.) If a deviation from any emission limitation (emission limit and operating limit) or work practice standard occurred during the reporting period, the report must contain the information in § 63.10031(d). If there were periods during which the CMSs, including continuous emissions monitoring systems and continuous parameter monitoring systems, were out-of-control, as specified in §63.8(c)(7), the report must contain this information.</p> <p>d.) For each excess emission occurring at an affected source where a CMS is used to comply with that emission limit, include the information required in § 63.10(e)(3)(v) in the compliance report specified in (a) above.</p> <p>e.) If a malfunction occurred during the reporting period, the compliance report must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded.</p>				
22.	<p><u>EGU Tune-up Report</u> Maintain on-site and submit, if requested by DES or EPA, a report containing the details of tune-ups conducted in accordance with Table 7, Item 37, including:</p> <p>a.) The concentrations of CO and NOx in the effluent stream in ppm by volume, and oxygen in volume percent, measured before and after an adjustment of the EGU combustion systems;</p> <p>b.) A description of any corrective actions taken as a part of the combustion adjustment; and</p> <p>c.) The type(s) and amount(s) of fuel used over the 12 calendar months prior to an adjustment, but only if the unit was physically and legally capable of using more than one type of fuel during that period.</p>	Maintain on site	MK1 & MK2	40 CFR 63.10021(e)(8)	Yes
23.	<p><u>Semi-annual Excess Emission Reports</u></p>	Semi-	MKSCC1	40 CFR 60.7(c)	Yes

Table 9 - Applicable Reporting Requirements

Item #	Reporting Requirements	Frequency of Reporting	Applicable Emission Unit	Regulatory Citation	Compliant
	The owner operator shall report semiannually periods of excess emissions of all 6-minute average opacities that exceed the standard specified in Table 5, Item 27.	annually		& 40 CFR 60.258(b)	
24.	<p><u>Performance Test Reports</u></p> <p>a.) Within 60 days after the date of completing each performance test, the Owner or Operator must submit a report to the Department that contains the information specified in Env-A 802.11(b);</p> <p>b.) Performance test reports required by Subpart UUUUU must be submitted to USEPA as specified in §63.10031(f).</p> <p>c.) Within 60 days after the date of completing each performance test conducted to demonstrate compliance with Subpart Y, the Owner or Operator must mail a summary copy to DES and USEPA. The address for USEPA is: United States Environmental Protection Agency Energy Strategies Group 109 TW Alexander Dr. Mail code: D243-01 RTP, NC 27711</p> <p>The Owner or Operator who elects to comply with the reduced performance testing provisions of §60.255(c) shall include in the performance test report identification of each affected facility that will be subject to the reduced testing.</p>	As specified	MK1, MK2, MKSCC1, MKCT1 & MKCT2	Env-A 802.11	Yes
			MK1 & MK2	40 CFR 63.10031(f)	Yes
			MKSCC1	40 CFR 60.8 & 40 CFR 60.258(d)	Yes
25.	<p><u>NSPS for Nonmetallic Mineral Processing Plants - Equipment Replacement Reporting Requirements</u></p> <p>Each Owner or Operator seeking to comply with Table 5, Item 31 shall submit to DES the following information about the existing facility component being replaced and the replacement piece of equipment.</p> <p>a.) For a conveyor belt:</p> <ol style="list-style-type: none"> 1. The width of the existing belt being replaced; and 2. The width of the replacement conveyor belt. <p>b.) For a storage bin:</p> <ol style="list-style-type: none"> 1. The rated capacity in tons of the existing storage bin being replaced; and 2. The rated capacity in tons of the replacement storage bin. <p>c.) For a grinding mill or bucket elevator:</p> <ol style="list-style-type: none"> 1. The rated capacity in tons per hour of the existing facility being replaced; and 2. The rated capacity in tons per hour of the replacement 	As necessary	MKLC1	40 CFR 60.676(a)	Yes

Table 9 - Applicable Reporting Requirements

Item #	Reporting Requirements	Frequency of Reporting	Applicable Emission Unit	Regulatory Citation	Compliant
	equipment.				
26.	<u>Annual Compliance Certification</u> Annual compliance certification shall be submitted in accordance with Section XXI of this Permit.	Annually (received by DES no later than April 15 th of the following year)	Facility wide	40 CFR 70.6(c)(1)	Yes
27.	<u>Annual Emissions Compliance Report for Mercury</u> The Owner shall submit to DES a report of annual mercury emissions from the affected sources to demonstrate compliance with Table 4, Item 5. This report shall include all references and methodologies used to calculate the total mercury emissions from the affected sources.	Annually (received by DES no later than April 15 th of the following year)	Affected Sources as defined in RSA 125-O:12	TP-0008	Yes
Finding: The requirement above should reference Table 4, Item 4.					
28.	<u>VOC Reporting Requirements</u> If the actual annual VOC emissions from all permitted devices located at the Facility are greater than or equal to 10 tpy, then include the information recorded in Table 8, Item 11 with the annual emissions report.	Annually (received by DES no later than April 15 th of the following year)	MK1, MK2, MKCT1, MKCT2, MKEB, MKEC & MKEG	Env-A 908	Noted
Finding: NHDES reviewed annual emission statements which indicate VOC emissions are not greater than or equal to 10 tons per year.					
29.	<u>Air Pollution Control Equipment Monitoring Plan</u> If the owner or operator determines that the information and procedures documented in the air pollution control equipment monitoring plan submitted with Application 16-0056 need to be changed at any time to accurately represent the activities performed to maintain the control equipment, the owner or operator shall submit a revised monitoring plan, as applicable, to the department in writing.	Submit to the department within 30 days of any change to the plan	MK1-PC3 & MK2-PC6	Env-A 810.01(e)	Yes
30.	<u>Update to Air Pollution Dispersion Modeling Impact Analysis</u> If an update to the facility's air pollution dispersion modeling impact analysis is required pursuant to Env-A 606.02, submit the information required pursuant to Env-A 606.04: a.) With the permit application submitted for the change which triggered the analysis; or	As specified	MK1, MK2, MKCT1, MKCT2 & MKEB	Env-A 910.01	Noted

Table 9 - Applicable Reporting Requirements					
Item #	Reporting Requirements	Frequency of Reporting	Applicable Emission Unit	Regulatory Citation	Compliant
	b.) Within 15-days of completion of the change which triggered the analysis, if a permit application is not required.				
Finding: Merrimack Station did not update its air pollution dispersion modeling impact analysis pursuant to Env-A 606.02 during this evaluation period.					
31.	<p><u>Monitoring Parameter Excursion</u></p> <p>In the event of an excursion of the any monitored parameter specified in Table 7A, lasting more than 48 hours in duration:</p> <p>a. Notify the department of the permit deviation and excess emissions by telephone (603-271-1370), fax (603-271-7053) or e-mail (pdeviations@des.nh.gov), within 24 hours of discovery of the permit deviation, unless it is a Saturday, Sunday, or state legal holiday, in which event, the department shall be notified on the next day which is not a Saturday, Sunday, or state legal holiday;</p> <p>b. Submit a written report of the deviation on paper or by electronic means to the department within 10 days of discovery of the permit deviation reported above. The report shall include all of the following information:</p> <ul style="list-style-type: none"> • Facility name; • Facility address; • Name of the responsible official; • Facility telephone number; • A description of the permit deviation, including the applicable permit number and permit condition(s); • The probable cause of the permit deviation; • The date and time of the discovery of the permit deviation; • The actual date(s) and time(s) of the permit deviation; • The duration of the permit deviation, including the date and time that the device, process or air pollution control equipment returned to operation in compliance with an enforceable emission limitation or operating condition; • The specific device, process or air pollution control equipment that contributed to the permit deviation; • Any corrective measures taken to address the permit deviation; • Preventative measures taken to prevent future permit deviations; • The type and amount of any excess emissions that occurred as a result of the permit deviation, if applicable; and • If applicable, the calculation or estimation used to quantify the excess emissions. 	As specified	MK1 & MK2	Env-A 911.04 State-only enforceable	Noted

Table 9 - Applicable Reporting Requirements					
Item #	Reporting Requirements	Frequency of Reporting	Applicable Emission Unit	Regulatory Citation	Compliant
<p>Finding: For the FGD, an excursion occurs when the required number of recycle pumps are not running for three consecutive hours. For MK1 boiler, an excursion occurs when a total of seven or more sections in the two ESP units (MK1-PC1 & MK1-PC2) combined are out of service. For MK2 boiler, an excursion occurs when a total of eight or more sections in the two ESP units (MK2-PC4 & MK2-PC5). Merrimack Station did not report experiencing any of those scenarios during this evaluation period.</p>					
32.	<p><u>Boiler MACT Compliance Report</u> Submit to DES and EPA a compliance report containing the following information:</p> <p>a.) Company and Facility name and address. b.) Process unit information, emissions limitations, and operating parameter limitations, as applicable. c.) Date of report and beginning and ending dates of the reporting period. d.) Include the date of the most recent tune-up for the unit and the date of the most recent burner inspection if it was not done on a 5-year period and was delayed until the next scheduled or unscheduled unit shutdown. e.) Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.</p>	<p>Every 5 years (received by January 31st following the 5-yr reporting period)</p>	<p>Smith Boiler</p>	<p>40 CFR 63.7550(c)(1)</p>	<p>Yes</p>

X. Permit Deviations

Merrimack Station is aware of the recordkeeping and reporting requirements for permit deviations. Since the time of the last evaluation Merrimack Station reported the following permit deviations:

- On February 24, 2023, Merrimack Station exceeded the six-minute periods in exceedance of the 40 percent opacity standard on four occasions.
- On December 15, 2022, and February 3, 2023, Merrimack Station experienced NOx emissions from MK1 above the daily rate limit of 0.22 lb/MMbtu.
- On January 15, 2022, and December 20, 2021, Merrimack Station experienced NOx emissions from MK2 above the daily limit of 11.5 tons.
- On December 8, 2021, Merrimack Station experienced NOx emissions from MK1 above the daily limit of 4.0 tons.
- On July 21, August 10-13, 18, 23-25, November 2, 10, 16, 17, December 4, 7-9, 17-21

2021, and January 6-12, 2022, Merrimack Station experienced mercury emissions above the 30-boiler operating day rolling average limit of 1.2 lb/Tbtu when using a single sorbent trap monitoring system for all hours of operation including startup and shutdown.

XI. Other Findings

- On April 7, 2022, Merrimack Station submitted a request for an alternate compliance boundary in accordance with New Hampshire Code of Administrative Rules Env-A 1404.07(d). On May 6, 2022, NHDES denied the request. On August 3, 2023, Merrimack Station submitted an Env-A 1400 Compliance Plan. In the plan, Merrimack Station states that it will submit a compliance demonstration report to NHDES (if applicable) by July 1, 2023. If modeling analysis does not demonstrate compliance, Merrimack Station will submit a progress report to NHDES describing additional proposed actions and the revised timeline by September 30, 2023.
- Installation of the start-up/shut down sorbent trap mercury monitoring system was completed on March 11, 2022. A RATA of the system was completed on July 21, 2022.

XII. Enforcement History and Status

On June 30, 2022, NHDES issued a Notice of Past Violation to Merrimack Station for conducting MKSCC1 opacity performance testing late.

XII. Compliance Assistance, Recommendations and Corrective Actions

Based on the findings of this compliance evaluation, NHDES recommends the following actions to maintain facility compliance with operating, monitoring and recordkeeping requirements:

- Operate the coal fired boilers in a manner that prevents Hg, NOx and opacity exceedances.
- Complete Hg sorbent trap system audits in a timely manner.
- Complete VEs for MKLC1 equipment in a timely manner.
- Complete M9 observations of MKSCC1 in a timely manner.
- Monitor and record the FGD recycle pump amperage continuously.
- Continue to improve and perform preventative and corrective maintenance activities to maintain the CEMS in proper working order with a focus on minimizing calibration downtime to increase CEMS data availability.

Also, NHDES recommends that Merrimack Station explore the Energy Efficiency Incentive Program at www.nhsaves.com. For major renovations and end of life replacement of electrical devices, up to 75% of the incremental cost to install highly efficient equipment is covered. The retrofit program offers incentives up to 50% of the installed cost to replace older equipment with new, energy efficient equipment.

In addition, Merrimack Station can receive email notifications of rule changes by subscribing to

E-News found at the following link: [Rule Changes](#)

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Signed:	