## Technical Support Document for Proposed Approval of NH's RACT Certifications for the 2008 and 2015 Ozone NAAQS and Revisions to Env-A 1300, NOx RACT

This technical support document provides analysis of New Hampshire's September 6, 2018 submittals of RACT certifications for the 2008 and 2015 ozone NAAQS, and of revisions to the state's NOx RACT rule, Env-A 1300, to supplement information within EPA's notice of proposed rulemaking. It consists of two sections. Section 1 contains an analysis in table format of New Hampshire's CTG-based VOC control regulations that compares the state's requirements to those within the corresponding CTG, requirements from similar regulations adopted by two neighboring states, Maine and Vermont, and other resources such as EPA's RACT/BACT/LAER clearinghouse (RBLC) and the agency's Menu of Control Measures (EPA Menu). It also identifies similar New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAPs) where applicable. Section 2 contains an analysis of the alternative emissions limits (AELs) applicable during periods of startup and shutdown that New Hampshire adopted for municipal waste combustor (MWCs) and coal-fired electrical generating units (EGUs).

<b>Relevant EPA CTG</b> (with year)	NH Regulation	Summary of CTG Recommendations	Summary of New Hampshire's Requirements	Summary of requirements from other states, and other information examined
1 - Design Criteria for Stage I Vapor Control Systems – Gasoline Service Stations (1977) EPA Note – This document is regarded as a CTG although it was never published with an EPA document number.	Env-A 1217.08, Env-A 1217.09 Bulk gasoline plants	Stage I vapor recovery controls, submerged fill, leak tight conditions, vapor collection systems	Stage 1 vapor balance controls during load and unloading operations; submerged fill, leak inspections; vapor tight fittings, automatic close upon disconnection	Maine (ME) Chapter 133: essentially similar requirements; fewer requirements for smaller tanks Vermont (VT) APCR 5-253.3; essentially similar requirements; exemption for tanks with less than 3,000 gal/month throughput 40 CFR Part 63, Subpart CCCCCC
2 - CTG for Control of Volatile Organic Emissions	Env-A 1206, Metal Can Coating; Env-A 1211 Metal Coils Coating;	Cans – coating VOC content limit 2.8 to 5.5 lb/gal;	Cans – limits for various coating types range from 2.8 to 5.5 lb/gal; alternative	ME Chapter 129 – essentially similar requirements; exempts coating lines using less than 50 gal/month; also

### Section 1: Review and Comparison of NH's VOC CTG RACT Requirements

Relevant EPA CTG	NH Regulation	Summary of CTG	Summary of New	Summary of requirements
(with year)		Recommendations	Hampshire's	from other states, and other
			Requirements	information examined
from Existing Stationary Sources, Volume II: Surface Coating of Cans, Coils (1977)		available control options: incineration, water-borne/high solids/powder coatings, carbon adsorption, ultraviolet curing	compliance options available if approved by state and EPA; Coils – 2.6 lb/gal; alternative compliance options available if approved by state and	exempts facilities using only powder or other non-VOC emitting coatings. VT submitted a negative declaration for this category.
		Coils – coating VOC content limit 2.6 lb/gal; available control options: incineration, waterborne/ high solids coatings Auto and light duty trucks: Prime application, flash-off	EPA; Auto and light duty trucks – not applicable in New Hampshire	40 CFR Part 60, Subparts TT, WW 40 CFR Part 63, Subparts KKKK, SSSSS
		area and oven, 1.9 lb/gal; Topcoat application, flash- off area oven, 2.8 lb/gal; Final repair application, flash-off area and oven, 4.8 lb/gal		RBLC: cans – 40 CFR Part 60, Subpart WW, compliant coatings, thermal oxidation, cleaning solvent and ink VOC content
3 - Control of Volatile Organic Emissions from Solvent Metal Cleaning (1977)	Env-A 1221, Industrial Cleaning Solvents	Equipment specifications, operating requirements, minimize solvent loss, repair leaking equipment, control devices	Equipment specifications for cold cleaning, open top, and conveyorized cleaners; operating requirements include spillage minimization measures, requirements for nozzle sprayers, covered storage, leak repair, draft minimization, and other measures. Prohibition against using solvents w vapor pressure > 1 mm Hg. Control requirements include refrigerated chillers, carbon adsorption, and incineration.	ME Chapter 130 – Essentially similar requirements, including prohibition against using solvents w vapor pressure > 1 mm Hg. VT APCR 5-253.14 – Essentially similar requirements; does not have the vapor pressure requirement

Relevant EPA CTG	NH Regulation	Summary of CTG	Summary of New	Summary of requirements
(with year)		Recommendations	Hampshire's	from other states, and other
4 - Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals (1977)	Env-A 1217.0507	Vapor collection systems, leak tight conditions, submerged fill	RequirementsCollection and controlrequirements during fillingoperations; leak tightconditions for equipmentassociated with tank truckloading; submerged fillrequirement; vaportightness documentation fortank trucks; periodic leakcheck requirements	information examined ME Chapter 112 – essentially similar requirements; contains a requirement prohibiting discharge of gasoline to sewers or storage in open containers. VT APCR 5-253.2 – essentially similar requirements; 40 CFR Part 60 Subpart XX 40 CFR Part 63 Subparts R, BBBBBB RBLC: submerged fill, minimize spills,
5 - Control of Volatile Organic Emissions from Existing Stationary Sources – Volume III: Surface Coating of Metal Furniture (1977)	Env-A 1209;	Coating VOC content limit 3.0 lb/gal	Coating VOC content limits for baked and air-dried coatings range from 2.3 to 2.5 lbs/gal; option to control and achieve 90% control efficiency; application methods including electrostatic and high- volume, low-pressure spray; work practice standards including closed containers, spill minimization, and waste	<ul> <li>vapor recovery unit</li> <li>ME – no comparable regulation (negative declaration).</li> <li>VT – no comparable regulation (negative declaration).</li> <li>40 CFR Part 60, Subpart EE 40 CFR Part 63, Subpart RRRR</li> </ul>
6 - Control Techniques Guidelines for Metal Furniture Coatings (2007)		Coating VOC content limit 2.3 to 3.5 lb/gal; Optional add-on control Device; Application methods; Cleaning material work practices – closed containers, minimize spills	material handling requirements.	

Relevant EPA CTG (with year)	NH Regulation	Summary of CTG Recommendations	Summary of New Hampshire's Requirements	Summary of requirements from other states, and other information examined EPA Menu: CTG, reduced solvent utilization, permanent total
				enclosure
7 - Control of Volatile Organic Emissions from Storage of Petroleum Liquids in Fixed-Roof Tanks (1977; ACT 1994)	Env-A 1217.0102	Equipment specifications, internal floating roof or equivalent, maintenance requirements, inspections	Requirements for floating roof, closures seals between the roof edge and tank wall and maintenance of the seals; visual inspection requirements;	ME Chapter 111 – essentially similar requirements but can use alternative if approved by state and EPA; more frequent inspection requirement for hatch covers; slightly lower applicability level. VT APCR 5-253.1 – essentially similar requirements; 40 CFR Part 60, Subparts K, Kb 40 CFR Part 63, Subparts CC, EEEE, BBBBB EPA Menu: seals RBLC: submerged fill, aluminum or white color, vapor balancing, fuel specification, MACT CC, internal
8 - Control of Volatile Organic Emissions from Use of Cutback Asphalt (1977)	Env-A 1218	Substitute emulsions for cutback asphalt	Limits use of cutback asphalt during summer; limits VOC solvent content of emulsified asphalt	floating roof, RTO, good design, operating practices, enclosed combustor, stage I and II ME Chapter 131 – essentially similar requirements; provides additional test methods for demonstrating VOC content of cutback and emulsified asphalts.

Relevant EPA CTG (with year)	NH Regulation	Summary of CTG Recommendations	Summary of New Hampshire's Requirements	Summary of requirements from other states, and other information examined
				VT APCR 5-253.15 – essentially similar requirements, but in effect year round. EPA Menu: reformulation, process
9 - Control of Volatile Organic Emissions from Existing Stationary Sources – Volume VI: Surface Coating of Miscellaneous Metal Parts and Products (1978)	Env-A 1212	Coating VOC content limit 3.0 to 4.3 lb/gal; available control options: incineration, waterborne/high solids/powder coatings, carbon adsorption	Limits for 25 coating types ranging from 2.3 to 4.2 Ib/gal except high performance architectural limit of 6.2 Ib/gal; application and work practice standards; capture and control option available if capable of overall 90% efficiency.	<ul> <li>modification</li> <li>ME Chapter 129 – essentially similar requirements; limits provided for 4 specific categories and then all other coatings; control device option available if meets 95% control efficiency.</li> <li>VT APCR 5- essentially similar requirements, with limits for 29 coating types ranging from 2.3 to 4.2</li> </ul>
10 - Control Techniques for Miscellaneous Metal Parts Coatings (2008)		Coating VOC content limit 2.3 to 6.2 lb/gal; application methods; alternative use of add-on control; work practices (closed containers, minimize spills)		<ul> <li>Ib/gal, and 6 limits above that range.</li> <li>40 CFR Part 63, Subpart MMMM</li> <li>RBLC: consumption limits, VOC content 3.5-7.25 lb/gal, HVLP, closed containers, carbon adsorption</li> </ul>
				Menu: VOC content limits, add-on control, CTG
11 - Control of Volatile Organic Emissions from Petroleum Liquid Storage in External Floating Roof Tanks (1978; ACT 1994)	Env-A 1217.0304	Equipment specifications, seals, maintenance requirements, inspections	Equipment specs for rim- mounted secondary seals or equivalent; maintenance requirements for seal closures; performance specs for vapor-mounted primary seals; annual measurement of secondary seal gap; semi- annual inspection requirements	ME Chapter – essentially similar requirements; slightly lower applicability level; monthly inspection requirement for roof hatches VT APCR 5-253.1 – essentially similar requirements; annual inspection frequency for single seal systems,

Relevant EPA CTG (with year)	NH Regulation	Summary of CTG Recommendations	Summary of New Hampshire's Requirements	Summary of requirements from other states, and other information examinedonce every 5 years for double-seal systems.40 CFR Part 60, Subparts K, KbEPA Menu: sealsRBLC: submerged fill, aluminum or white color, vapor recovery, seals, drain dry design bottoms, NSPS Kb, MACT BBBBB, limited roof landings,
12 - Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems (1978)	Env-A 1217	Leak tight conditions, vapor collection systems	Leak tight conditions as demonstrated by EPA- 450/3-79-018; vapor collection system requirements; requirements for vapor tightness documentation;	<ul> <li>good engineering practices, LDAR, dome, MACT CC</li> <li>ME Chapter 120 – essentially similar requirements; small tank truck exemption.</li> <li>VT APCR 5-253.4 - essentially similar requirements; small tank truck exemption.</li> <li>40 CFR Part 60, Subpart XX</li> <li>40 CFR Part 63, Subparts R, BBBBBB</li> <li>RBLC: vapor tight vessels, submerged</li> </ul>
13 - Control Techniques Guidelines for Paper, Film, and Foil Coatings (2007)	Env-A 1207	Control VOC emissions 90% where facility > 25 tpy VOC or use low-VOC content materials (0.40 lb VOC/lb solids); cleaning materials work practices (closed containers, minimize spills) where facility > 15 lb/day VOC	Same control efficiency and VOC content limit as CTG for facilities > 25 tpy; work practice and storage requirements; less stringent requirements for facilities between 10-25 tpy VOC; work practice standards for facilities that emit 3 tpy or greater.	<ul> <li>NDEC: Vapor tight vessels, submerged</li> <li>fill, RTO, vapor combustor</li> <li>ME Chapter 123 – 95% control efficiency requirement, or 2.9 lb VOC/gallon of coating; work practice standards.</li> <li>VT APCR 5- No comparable regulation (negative declaration).</li> <li>40 CFR Part 60, Subpart RR 40 CFR Part 63, Subpart JJJJ</li> </ul>

<b>Relevant EPA CTG</b> (with year)	NH Regulation	Summary of CTG Recommendations	Summary of New Hampshire's Requirements	Summary of requirements from other states, and other information examined
				EPA Menu: CTG RBLC: no control, VOC content, permanent total enclosure, thermal oxidizer
14 - Control of Volatile Organic Compound Emissions from Wood Furniture Manufacturing Operations EPA Note – Wood Furniture (CTG-MACT) – Draft MACT out 5-1994; Final CTG issued 4-1996. See also 61 FR-25223, May 20, 1996 and 61 FR- 50823, September 27, 1996.	Env-A 1213	Combustion or recovery device, low VOC coatings (0.8-2.3 kg VOC/kg solids), pollution prevention, work practices (e.g., closed containers)	Option for add-on controls that achieve an equivalent level of control; low-VOC coating ranging from 0.8 to 2.3 kg VOC/kg solids; application technique requirements, work practice, training, and leak detection requirements.	<ul> <li>ME – No comparable regulation (negative declaration).</li> <li>VT APCR 5-253.16 - essentially similar requirements, including work practice, training, and inspection requirements.</li> <li>40 CFR Part 63, Subpart JJ</li> <li>EPA menu: CTG</li> <li>RBLC: coating reformulation, proper spraying techniques, paint filter</li> </ul>
15 - Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing (2006; ACT 1993, 1994)	Env-A 1216	Reduce emissions from fountain solution by limiting alcohol to <5%, cleaning materials with VOC composite vapor pressure <10 mm Hg or < 70% VOC (excluding 110 gal noncompliant cleaning materials), work practices (closed containers), reduce emissions from heatset dryers >25 tpy VOC with control devices 90-95% (no recommended control from sheet-fed or coldset web)	70% VOC content max or <10 mm HG vapor pressure max for fountain solution (with 110 gal. noncompliant exclusion); closed container requirement; VOC content limits for non-heat set and sheet-fed fountain solutions; 90-95% control efficiency option.	ME Chapter 161 – essentially similar cleaning material limits; limits for heatset, sheet-fed, and coldest fountain solutions; VT APCR 5-253.9 – essentially similar requirements; 99% control efficiency for heatset dryers; EPA Menu: CTG RBLC: fountain solution VOC content, work practices, thermal oxidizer, water based material VOC content, equipment design
16 - Control Techniques Guidelines for Industrial Cleaning Solvents (2006; ACT 1994)	Env-A 1221	Work practice standards, cleaning materials VOC content limit 0.42 lb/gal, optional alternative limit	VOC limit of 0.42 lb/gal; work practice standards, add-on control efficiency between 80 – 90%;	ME Chapter 166 – essentially similar requirements; 85% control efficiency for add-on equipment; higher vapor pressure limit

Relevant EPA CTG	NH Regulation	Summary of CTG	Summary of New	Summary of requirements
(with year)		Recommendations	Hampshire's	from other states, and other
			Requirements	information examined
		on composite vapor pressure of cleaning materials, add-on controls emission reduction 85%	prohibition on use of solvents with vapor pressure > 1 mm HG	VT APCR 5- essentially similar requirements; a number of exemptions such as for janitorial, R&D, and medical device mfg.
				EPA Menu: CTG
				RBLC: vapor condensing/recovery system, operating time limit
17 – Surface Coating of Insulation of Magnet Wire (1977)	Env-A 1204.13; Env-A 1210	Emission limit of 1.7 lb/gal or use add-on controls to achieve 90% reduction	1.7 lb/gal VOC content limit; applicable to facilities w/PTE of 10 tons/year or greater;	ME – no comparable regulation (negative declaration )
			add-on control option	VT – no comparable regulation (negative declaration )
18 – Graphic Arts –	Env-A 1204.18;	Rotogravure: add-on control	Rotogravure: both types of	Maine Chapter 132 – essentially
Rotogravure and Flexography (1978)	Env-A 1204.36; Env-A 1215	equipment such as adsorbers or incinerators to achieve a 65 to 75%	add-on controls must achieve a 90% reduction; Flexography: add-on	similar provisions; daily weighted averaging option;
()		reduction. Flexography: incineration to achieve a 60% reduction; for both	controls must achieve a 60 to 75% reductions depending on process type;	VT APCR 5- no comparable regulation (negative declaration )
		types, if feasible, water- borne inks w/ solvent	both types, 25% or lower VOC solvent content	40 CFR Part 60, Subpart QQ 40 CFR Part 63, Subpart KK
		content 25% or lower		RBLC – BACT determination for rotogravure facility requiring 98% control efficiency
				Menu – CTG, add-on controls for 96% for rotogravure, 67% for flexography
19 – CTG for Flexible	Env-A 1215.0507	Overall control ranging from	Same overall control range	Maine Chapter 154 – essentially
Package Printing (2006)		65 to 80% depending on installation date, or	as CTG and VOC content limits as CTG.	similar requirements.

Relevant EPA CTG (with year)	NH Regulation	Summary of CTG Recommendations equivalent VOC content	Summary of New Hampshire's Requirements	Summary of requirements from other states, and other information examined VT APCR – no comparable regulation
		limits of 0.8 kg VOC/kg solids, or 0.16 kg VOC/kg material applied.		(negative declaration ) Menu – 67% control efficiency for add-on controls.
20 – CTG for Flatwood Paneling Coatings (2006)	Env-A 1214	VOC content limits of 2.1 lb VOC/gal, or 2.9 lb VOC/gal of solids. Option for add-on controls achieving 90% control efficiency.	Same VOC content limits and control efficiency as CTG.	Maine Chapter 129 – essentially similar requirements. VT APCR 5-253.12 – essentially similar requirements Menu – CTG
21 – CTG for Fiberglass Boat Manufacturing (2008)	Env-A 1219	Monomer VOC content limits and alternative monomer VOC emission rate limits for resin and gel coats used in open molding operations; monomer VOC content limits are paired with specific methods (either atomized or non- atomized) for resin application; non-monomer VOC content limit for resins and gel coats used in open molding operations. Averaging and add-on control options.	Monomer VOC content limits for resin and gel coats ranging from 28 to 40 percent per CTG; averaging and add-on control equipment options.	Maine Chapter 162 – essentially similar requirements. VT APCR 5- no comparable regulation (negative declaration ) 40 CFR Part 63, Subpart VVVV Menu - CTG
22 – CTG for Miscellaneous Industrial Adhesives (2008)	Env-A 1220	29 VOC content limits for general and specialty adhesive application processes and adhesive primers from Table 1; recommended application techniques; add-on control option at 85% control	Adopted all 29 VOC content limits as recommended by CTG; application method requirements; work practice standards; add-on control option at 85% control efficiency.	Maine Chapter 159 – essentially similar requirements with some differences in limits selected from Table 1 and Appendix B of CTG. VT APCR 5-253.8 – essentially similar requirements with some differences in limits selected from Table 1 and Appendix B.

Relevant EPA CTG (with year)	NH Regulation	Summary of CTG Recommendations	Summary of New Hampshire's Requirements	Summary of requirements from other states, and other information examined
		efficiency; work practice recommendations.		Menu - CTG

#### Section 2: Analysis of AELs for MWCs and Coal-fired EGUs

#### Evaluation of the Seven Recommended Approvability Criteria under EPA's SSM Policy for AELs

On May 22, 2015, EPA issued a final rule to ensure states have plans in place that require sources across the country to follow air pollution rules during times when the facility is starting up or shutting down, or when a malfunction occurs (or "SSM"). Part of that rule describes the following seven recommended criteria that state SSM provisions involving alternative emissions limits (AELs) should meet in order to be approvable by EPA. *See* page 33914 of 80 FR 33840 (June 12, 2015). These seven criteria and our evaluation of New Hampshire's (NH) requirements for controlling NOx emissions from municipal waste combustors (MWCs) and coal-fired cyclone boilers appears below.

# (1) The revision must be limited to specific, narrowly defined source categories using specific control strategies (e.g., cogeneration facilities burning natural gas and using selective catalytic reduction).

<u>MWCs</u>: The NH requirement in question is within the state's NOx RACT regulation at Env-A 1309.03(b)(2) and is limited specifically to incinerators, of which MWCs are one type. The regulation specifies an emissions limit that must be met during startup or shutdown, but does not specify the type of control equipment that must be used to meet it. In this particular case, however, the MWC in question operates the same type of NOx control equipment, selective non-catalytic reduction (SNCR), that just about all of the MWCs in the country operate, and the AELs are based on the assumption that this equipment will continue to be the basis of the NOx control strategy.

<u>Cyclone boilers</u>: The NH requirement in question is within the state's NOx RACT regulation at Env-A 1303.06(b)(2) and (c)(2) and is only applicable to wet bottom utility boilers that are coal-fired and of the cyclone boiler type. The provision specifies mass-based emissions limits that must be met during startup and shutdown but does not specify the type of control equipment that must be used to meet it. In this particular case, however, the two electric utility boilers in question operate the same type of NOx control equipment,

selective catalytic reduction, (SCR), that is a highly effective means of controlling NOx. Other types of NOx control equipment are not likely to be capable of reducing NOx enough to meet the state's emissions limit for these two units, and the AELs are based on the assumption that this equipment will continue to be the basis of the NOx control strategy.

2) Use of the control strategy for this source category must be technically infeasible during startup or shutdown periods.

For both cases (MWCs controlled by SNCR and cyclone boilers controlled with SCR, it's an accepted fact cited, for example, within EPA fact sheets describing SNCR and SCR control equipment, that these systems can only effectively control NOx emissions at very high temperatures that are not present as a unit starts up or shuts down.

(3) The frequency and duration of operation in startup or shutdown mode must be minimized to the maximum extent practicable.

<u>MWCs</u>: The only MWC facility operating in the state has a permit condition limiting start up and shut down events to no more than 3 hours per event.

<u>Cyclone boilers:</u> These boilers are electrical generating units that supply electricity to New England's power grid and are dispatched to operate, or not operate, by the region's Independent System Operator, ISO-New England. The 24-hour mass-based start-up and shutdown emissions limits minimize emissions due to the following approach the state used to determine these rates: for the SCR-operational part of the 24-hour period, the state calculated the emissions that would occur if the units emitted at the 0.22 lbs/mmBTU rate for the number of hours the SCR was operational, and combined that with the average actual emissions observed to occur during startup and shutdown events over the three years that preceded the state's submittal (2015 to 2017) which were assumed to represent current expected operations.

(4) As part of its justification of the SIP revision, the state should analyze the potential worst-case emissions that could occur during startup and shutdown.

<u>MWCs</u>: The response to comments document that New Hampshire prepared for its revision to Env-A 1300 includes an analysis of the higher emissions that are expected to occur from MWCs during startup and shutdown events. The state requires that during such events the emissions rate must be limited to 205 ppm (as compared to the normal operating rate of 150 ppm). The state notes that the 205 ppm limit is from Table 1 to Subpart Cb of Part 60, which contains EPA's new source performance standards (NSPS) limit for large MWCs.

<u>Cyclone boilers:</u> The numerical values of the mass-based emissions caps that are applicable during startup and shutdown events represent the highest level of emissions permissible under the state's requirement. Emissions higher than these mass-based caps,

which could occur, for example, if the SCR unit is not operating at a highly efficient level, would be in violation of the state's startup and shutdown requirements.

(5) All possible steps must be taken to minimize the impact of emissions during startup and shutdown on ambient air quality.

<u>MWCs:</u> New Hampshire's requirements minimize emissions during startup and shutdown by imposing an emissions limit that must be met during these times and limiting the number of hours for each event.

Cyclone boilers: New Hampshire's requirements provide definitions for startup and shutdown at Env-A 1303.02 (1) and (2), as follows:

- (1) "Startup" means the period beginning when the fuel is first fired in a boiler and ending when the ammonia injection permissive temperature is met in the selective catalytic reduction (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

New Hampshire also requires recordkeeping requirements for startup and shutdown events at Env-A 1303.04 (c) that require recording of: (1) The start and end date(s) of each occurrence; (2) The amount of time spent in each mode of operation, and; (3) The actual NOx emissions in tons per day, to demonstrate compliance with Env-A 1303.06.

Additionally, the derivation of the startup and shutdown mass-based emissions limits were constructed such that prolonged operation without operating the SCR controls would jeopardize the unit's ability to comply with startup and shutdown emissions limits.

(6) At all times, the facility must be operated in a manner consistent with good practice for minimizing emissions, and the source must have used best efforts regarding planning, design, and operating procedures to meet the otherwise applicable emission limitation.

<u>MWCs</u>: Lowering the operating NOx emissions limit from 205 to 150 ppm makes NH's limit among the most stringent of any states within the Ozone Transport Region and will require the SNCR control system to operate at a high level of efficiency to achieve and maintain this rate. Additionally, the unit is required to monitor its emissions with a NOx continuous emission monitoring system (CEMS), which is the most reliable form of compliance monitoring available.

<u>Cyclone boilers</u>: New Hampshire's operating emissions limit for cyclone boilers of 0.22 lbs NO/mmBTU based on a 24-hour average requires aggressive operation of the unit's SCR control systems to achieve this rate, as it represents the 95<sup>th</sup> percentile ranked peak performance in terms of NOx control efficiency. Additionally, the unit is required to monitor its emissions with a NOx CEMS, which is the most reliable form of compliance monitoring available.

(7) The owner or operator's actions during startup and shutdown periods must be documented by properly signed, contemporaneous operating logs, or other relevant evidence.

For both cases this is addressed by a requirement in their SIP approved Testing and Monitoring rule, Env-A 800, at 808.13(a)(2), which requires, among other things, that facilities operating CEMS report to the NH-DES when startup and shutdown events occurred.