#AP-11-038
DEC#RU10-0288

State of Vermont
Agency of Natural Resources
Department of Environmental Conservation

Air Pollution Control Division
Waterbury, Vermont

AIR POLLUTION CONTROL PERMIT TO CONSTRUCT

Date Permit Issued: April 19, 2013

Owner/Operator:
North Springfield Sustainable Energy Project, LLC
36 Precision Drive
North Springfield, VT 05150

Source:
Wood Fired Electrical Generation Unit
36 Precision Drive
North Springfield, VT 05150

FINDINGS OF FACT

(A) FACILITY DESCRIPTION

North Springfield Sustainable Energy Project, LLC. (also referred to herein as "Permittee") owns a property on 36 Precision Drive in the town of North Springfield, Vermont. The Permittee has proposed to construct a 37 MWe (net, average) biomass fuel electric generating facility (also referred to herein as "Facility") at the 36 Precision Drive property in North Springfield, Vermont.

Wood-fired power boiler:

The project will utilize an advanced bubbling fluidized bed (BFB) boiler that incorporates combustion air pre-heating, an economizer, four cycles of feedwater heating, and heat recovery from the boiler blowdown to maximize its thermal efficiency. Operating at a maximum heat input capacity of 502 MMBtu/hr (based on 55% moisture content wood fuel), it will burn a maximum of approximately 132,650 lb/hr of green natural wood chip fuel (hereafter natural wood) to generate 345,000 lbs/hr of 1570 psig steam at 960°F. The average wood fuel moisture content will be approximately 45% so the average heat input will be 464 MMBtu/hr and the maximum annual fuel requirement will be approximately 452,000 tons/yr of green wood.

The high pressure steam is directed to a multi-stage condensing steam turbine-generator, with a maximum gross electrical output of approximately 42.5 MWe. Due to internal energy demands, the Facility is designed to produce an average of approximately 37 MWe (net) for sale, which will be transformed to 46 kV for delivery to the regional electrical distribution grid. Up to 20 MMBTU/hr of low pressure steam will be extracted from the turbine prior to condenser and used to produce hot water which will be sent to a thermal energy heating loop. The extraction of this low pressure steam from the turbine will slightly reduce the electric power generation. An air cooled condenser will be used to condense steam from the steam turbine. The approximately 3.5 acre main fuel storage piles will be covered by translucent fabric arched structures.

Ultra low sulfur distillate oil (ULSD) may be fired in a burner system with a capacity of up to 160 MMBtu/hr for start-up until the steam output reaches approximately 50% load. Expected starts include 4 cold starts and 4 warm starts per year. A cold start requires approximately 11 hrs to reach full load; with ULSD-firing typically being required for the initial 9 hours. A warm start requires approximately 8 hours to reach full load, with ULSD-firing occurring during the initial 6 hours.

The Air Pollution Control System following the boiler will include a fabric filter and a Selective Catalytic Reduction (SCR) device. The system will be designed to control nitrogen oxides (NO_X), and particulate matter including fine particles ($PM_{2.5}$) and heavy metals (arsenic, chromium, lead, etc). Aqueous ammonia (19%) is used in conjunction with the selective catalytic reduction (SCR) functionality to control the emission of NO_X. The BFB boiler has inherently low emissions of carbon monoxide (CO), volatile organic compounds (VOC), and organic products of incomplete combustion (including dioxins/furans and other hazardous air pollutants (HAPs)). Acid gases (SO_2, H_2SO_4, and

HCl) are limited by inherently very low sulfur and chlorine levels in the wood fuel, and further reductions in the boiler and fabric filter from natural alkalinity in the wood ash.

Diesel Engines:

The facility's fire protection system will include a diesel engine providing shaft power for a water pump for emergency water needs. The engine will be 450 hp and will only operate during emergency situations, maintenance, and periodic testing.

The facility will have a diesel powered emergency generator rated at 3 MW electrical output. The emergency generator will only operate during emergency situations, maintenance and periodic testing.

Upon issuance of this Permit, the approved operations at the Facility include the following air pollution related operations, equipment and emission control devices:

Equipment Specifications				
Equipment/Make/Model	Capacity/ Size	Fuel or input material	Air Pollution Control Equipment	Stack Height (feet)
Boiler: wood fired advanced fluidized bed boiler	Maximum annual average heat input (45%moisture content wood): 464 MMBtu/hr [1] Maximum short term [6] heat input (55%moisture content wood): 502 MMBtu/hr [1]	Natural Wood	Fabric filter and Selective Catalytic Reduction (SCR)	140
Four (4) auxiliary/start-up burners for the boiler	40 MMBtu/hr (each) 160 MMBtu/hr [1] (total)	ULSD [2]		
One (1): Emergency Diesel Engine Generator	3,000 kW [4]	ULSD [2]	Tier 2 per 40 *CFR* Part 89	-
Diesel Engine Fire Pump	450 bhp [5]		Tier 3 per 40 *CFR* Part 89	-

[1] MMBtu/hr – million British Thermal Units of heat input per hour (higher heating value, HHV)
[2] ULSD – ultra low sulfur diesel (0.0015% or 15 ppm sulfur content).
[3] gpm – gallons per minute
[4] kW – rated kilowatt output
[5] bhp – rated brake horse power output
[6] Maximum short term heat input has been used to establish pollutant emission rates for review of short term NAAQS (≤24-hr standards).

(B) FACILITY CLASSIFICATION

The Facility is classified as a source of air contaminants pursuant to Title 10 of the *Vermont Statutes Annotated* ("10 *VSA*") §555 and §5-401 of the *Vermont Air Pollution Control Regulations* (hereinafter "*Regulations*"). In addition, §5-101 of the *Regulations* defines a *stationary source* as any structure(s), equipment, installation(s), or operation(s), or combination thereof, which emit or may emit any air contaminant, which is located on one or more contiguous or adjacent properties and which is owned or operated by the same person or persons under common control. Based on this definition, all of the equipment, operations, and structures at the Facility are grouped together by the Agency of Natural Resources, Department of Environmental Conservation, Air Pollution Control Division (hereinafter "Agency") as one stationary air contaminant source for purposes of review under the *Regulations*.

(C) PRIOR AGENCY ACTIONS/APPROVALS

The Facility does not currently operate under either a "Permit to Construct" approval pursuant to 10 *VSA* §556 and §5-501 of the *Regulations* or a "Permit to Operate" approval pursuant to 10 *VSA* §556a and Subchapter X of the *Regulations*.

(D) FACILITY PERMIT APPLICABILITY

As noted above, the Facility is classified as a source of air contaminants under §5-401 of the *Regulations*. Pursuant to 10 *VSA* §556 and §5-501 of the *Regulations* a Permit to Construct, or an amendment to any existing Permit to Construct, must be obtained before commencing the construction, installation, modification or operation of an air contaminant source.

Pursuant to 10 *VSA* §556a and Subchapter X of the *Regulations* a Permit to Operate is required for any air contaminant source with allowable emissions of all air contaminants combined of ten (10) tons per year ("tpy") or more, or that is otherwise subject to Title 40 *Code of Federal Regulations* ("40 *CFR*") Part 70.

Allowable emissions from the Facility are estimated to be greater than ten (10) tpy combined and emissions of carbon monoxide (CO) are estimated to be in excess of the one-hundred (100) tpy threshold for the applicability of Title V of the federal Clean Air Act.

Therefore, pursuant to §§5-1002, 5-1003, and 5-1005 of the *Regulations* the Facility is classified as a "Title V Subject Source" and must obtain a Permit to Operate consistent with the requirements of Subchapter X of the *Regulations* and Title 40 *Code of Federal Regulations* ("40 *CFR*") Part 70. In accordance with these Regulations, an application for a Permit to Operate will be required to be submitted within one year from commencement of operation.

The allowable emissions for the Facility are summarized below:

Future Allowable Air Contaminant Emissions (tons/year)[1]							
Total PM/ $PM_{2.5}$/PM_{10}	SO_2	NO_X	CO	VOCs	Total Criteria	HAPs[2]	GHG [3]
38.6	40.6	62.4	153.3	10.2	>10	<10/25	448,714

[1] Total PM/PM_{10}/$PM_{2.5}$ – total particulate matter, particulate matter of 10 micrometers in size or smaller and particulate matter of 2.5 micrometers in size or smaller; SO_2 - sulfur dioxide; NO_X - oxides of nitrogen measured as NO_2 equivalent; CO - carbon monoxide; VOCs - volatile organic compounds; HAPs - hazardous air pollutants as defined in §112 of the federal Clean Air Act.

[2] Emissions of individual HAPs each < 10 tpy and emissions of total HAPs combined <25 tpy.

[3] GHG – greenhouse gases. GHGs from the combustion of wood and fuel oil include: CO_2, CH_4, and N_2O. Based on the global warming potentials listed in 40 *CFR* 98, CO_2e is calculated as: (lb CO_2 * 1) + (lb CH_4 * 21) + (lb N_2O * 310) = lb CO_2e.

Total PM emissions from the Facility, including both filterable and condensable components, are conservatively assumed to also be categorized as $PM_{2.5}$ and thus also PM_{10}. Filterable PM represents the PM that is in solid form in the heated exhaust gas at the point of sampling. Condensable PM represents pollutants that are in gaseous form in the heated exhaust at the point of sampling but will become PM upon cooling and condensing and includes high molecular weight organic compounds. PM emissions resulting from secondary formation in the atmosphere from other precursors emitted from the facility are not currently included here or subject to further review under existing regulations.

(E) REVIEW FOR THE PERMIT TO CONSTRUCT

(a) New Source Review Designation

Any proposed facility with allowable emissions of fifty (50) tons per year or greater of any air contaminant, or five (5) tons per year or greater of lead, is designated as a major stationary source and is subject to review under §5-501 and §5-502 of the *Regulations*. The proposed project identified in Findings of Fact (A) above will result in a major increase in emissions. Consequently, the proposed project is designated as a major stationary source and is subject to the requirements of §5-502 of the *Regulations*.

(b) Most Stringent Emission Rate

Pursuant to §5-502 of the *Regulations*, the owner/operator of each new major stationary source or major modification must apply control technology adequate to achieve the Most Stringent Emission Rate ("MSER") with respect to those air contaminants for which there would be a major or significant actual emissions increase, respectively, but only for those currently proposed physical or operational changes which would contribute to the increased emissions.

The proposed project is designated as a major stationary source and therefore is subject to review under the MSER requirements in §5-502 of the *Regulations*.

Refer to the Technical Support Document for further information on the MSER review for this permit. The following table summarizes the Agency's MSER determinations:

Most Stringent Emission Rate Determinations		
Date of Determination/ Permit #	**Pollutant**	**Description/Emission limit**
April 19, 2013 #AP-11-038	NO_X	Boiler: MSER is the use of combustion controls with a BFB and SCR and the following NOx emission limits: hourly average of 0.060 lb/MMBtu of heat input and a 12 month rolling average of 0.030 lb/MMBtu of heat input.
	Total PM [1] / PM_{10}	Total PM (including filterable and condensable components): Boiler: MSER for total PM is an hourly average limit of 0.019 lb/MMBtu.
		Filterable PM (excluding the condensable component): Boiler: MSER for filterable PM is an hourly average limit of 0.010 lb/MMBtu.
	CO	Boiler: MSER is the use of combustion controls with BFB boiler and a limit of 0.075 lb/MMBtu of heat input as a 24 hour rolling average.
	SO_2	Boiler: MSER is the use of wood as a low sulfur content fuel and a limit of 0.02 lb/MMBtu of heat input. If the facility is not required by the Acid Rain Program to operate an SO_2 CEMS, then the limit is an hourly average; otherwise the limit is based on an annual average.
	GHG	Boiler: MSER for GHG is implementing energy efficiency and good operating and maintenance practices for CO_2 control and a thermal heat loop in the North Springfield Industrial Park. For the first 2 years of operation MSER is a CO_2e emission limit of 2668 lb CO_2e/MW-hr net electrical and thermal loop heat output based on a 12 month rolling average. Starting with the 3rd year of operation, MSER is a CO_2e emission limit of 2675 lb CO_2e/MW-hr net electrical and thermal loop heat output based on a 12 month rolling average. This limit includes 3% degradation in plant performance over the life of the project. Diesel Engines: MSER for GHG is the use of new engines that are Tier certified in accordance with 40 *CFR* Part 60 Subpart IIII.

[1] Total PM includes $PM_{2.5}$ and PM_{10}.

(c) Ambient Air Quality Impact Evaluation

An ambient air quality impact evaluation (AQIE) is performed to demonstrate whether or not a proposed project will cause or contribute to violations of the ambient air quality standards and/or significantly deteriorate existing air quality.

Based on the level of emissions from this Facility, the Agency required the Permittee to conduct an ambient air quality impact evaluation for NO_2, SO_2, PM_{10}, $PM_{2.5}$, and CO.

The Technical Support Document for this permit and the permit application contain further information regarding the details of the air dispersion modeling. Shown below is a summary of the AQIE.

The Permittee conducted the AQIE using the U.S. EPA's AERMOD air dispersion model. Four (4) different operating load scenarios were reviewed to help ensure that the maximum potential impacts were evaluated. In addition to the operating load scenarios, the Permittee also reviewed the impacts (for 1-hr CO, 1-hr SO_2 and 3-hr SO_2) from a boiler startup scenario.

Based on the above scenarios, the emissions from the facility were modeled to establish the significant impact area (SIA). The SIA is used to help identify nearby sources of air pollution with significant emission rates that should be included in the AQIE as interactive sources. The SIA is based on the distance from the facility to the maximum point at which predicted impacts fall below the Significant Impact Level (SIL). The SIA is a circle around the facility with a radius equal to this distance. If there are no predicted impacts greater than the SIL for a pollutant then there is no SIA and interactive modeling is not necessary for that pollutant/averaging time. The following pollutants/averaging times were had predicted concentrations that were greater than their respective SIL: PM_{10} 24-hr, $PM_{2.5}$ 24-hr, $PM_{2.5}$ annual, SO_2 1-hr, SO_2 24-hr and NO_2 1-hr. The interactive source modeling included the following two sources: APC Paper in Claremont, NH (SO_2 & NO_2) and Wheelabrator Claremont in Claremont, NH (SO_2 & NO_2). No nearby sources with significant emission rates of PM_{10} or $PM_{2.5}$ were identified.

For the pollutants that were not predicted to exceed the SIL, and the pollutants for which there were no nearby interactive sources, modeling was conducted to predict the maximum impacts and compared to their respective NAAQS.

For the pollutants requiring interactive modeling, the emissions from the proposed Facility along with the emissions from the two facilities noted above were modeled to predict the maximum impacts to determine if there are any NAAQS violations.

The results are summarized in the following two tables:

NAAQS Review Maximum Predicted Impact Concentrations for Pollutants Not Requiring Cumulative Source Modeling						
Pollutant	**Averaging Time [1]**	**Operating Load Scenario [2]**	**Modeled Conc. ($\mu g/m^3$)**	**Background ($\mu g/m^3$)**	**Total Impact ($\mu g/m^3$)**	**NAAQS ($\mu g/m^3$)**
PM_{10}	24-hr (H6H)	100/45	3.83	35.0	38.8	150
	Annual (H)	100/55	0.55	13.3	13.9	50
$PM_{2.5}$	24-hr [4]	60/35	4.44	19.1	23.5	35
	Annual [5]	100/45	0.51	7.8	8.3	15
SO_2	3-hour (H2H)	100/45	17.1	73.3	90.4	1,300
	Annual (H)	100/55	0.58	7.6	8.2	80
NO_2 [3]	Annual (H)	60/35	0.90	16.4	17.3	100
CO	1-hour (H2H)	100/45	117.7	3,435	3553	40,000
	8-hour (H2H)	100/55	36.3	1,832	1868	10,000

[1] H = highest annual average; H2H = highest second high value; H6H = Highest 6th high value over 5 years of meteorological data.
[2] 100/55 = 100% load / 55% moisture; 100/45 = 100% load / 45% moisture; 60/35 = 60% load / 35% moisture.
[3] For annual NO_2 modeling, used ambient ratio method of 0.75 for NO/NO_2 conversion.
[4] High 1st High (100%) maximum concentration averaged over 5 years.
[5] Averaged over 5 years per applicable EPA guidance.

With the exception of the 1-hr NO_2 and SO_2 standards, comparison of the total impacts to the NAAQS indicates that the Facility's emissions will not cause or contribute to a violation of the NAAQS.

For the 1-hr NO_2 and SO_2 standards it was necessary to identify the Facility's contribution to impacts at the receptors that had a total impact that is greater than the NAAQS. This analysis was done and it was determined that the predicted impacts from this proposed project at those receptors were well below the significant impact level. This review concluded that the Facility does not contribute to these predicted violations of the NAAQS.

NAAQS Review Predicted Impacts Concentrations for Pollutants Requiring Cumulative Source Modeling						
Pollutant	**Averaging Time**	**Maximum Overall Cumulative Impact (µg/m³) [1]**	**Number of Receptors Exceeding NAAQS**	**NAAQS (µg/m³)**	**NSSEP Contribution (µg/m³) [2]**	**SIL (µg/m³)**
NO_2 [3]	1-hr	246	12	188	1.93	7.5
SO_2	1-hr	805	263	195	0.11	7.8
	24-hr	149.3	0	365	N/A [4]	N/A [4]

[1] Overall Cumulative Impact is = NSSEP + APC + Wheelabrator + Background
[2] The highest NSSEP contribution for the receptors with overall cumulative impacts over the NAAQS.
[3] For 1-hour NO_2 modeling, used ambient ratio method of 0.8 for NO/NO_2 conversion.
[4] N/A – Since below NAAQS, no further analysis is required.

Major new sources of air pollution must also demonstrate that the proposed project will not significantly deteriorate the existing air quality in regions that have been established as being in attainment of federal air quality standards. All of Vermont has been determined to be in attainment of the federal air quality standards. Significant deterioration is considered to have occurred if a comparison of the air quality impact concentration, produced by the total estimated increase in emissions in the project area, exceeded the remaining PSD increment value. Nearby sources that consume increment are to be included in the PSD increment analysis for the proposed project. A review of the sources near the proposed Facility has determined that there are no nearby sources that consume increment for NO_2, SO_2, $PM_{2.5}$, or PM_{10}.The following table summarizes the maximum predicted impacts and the available increment for Class I & Class II Areas.

PSD Increment Impacts							
Pollutant	Averaging Time	Max Impact ($\mu g/m^3$)		PSD Increment Standard ($\mu g/m^3$)		Available Increment in Vermont ($\mu g/m^3$)[1]	
		Class I	Class II	Class I	Class II	Class I	Class II
PM_{10}	24-hour	0.12	3.8	8	30	6	22.5
	Annual	0.016	0.55	4	17	1	4.25
$PM_{2.5}$	24-hour	0.15	4.4	2	9	1.5	6.75
	Annual	0.014	0.51	1	4	0.25	1
SO_2	3-hour	0.79	17.1	25	512	18.76	384
	24-hour	0.14	5.8	5	91	3.75	68.25
	Annual	0.017	0.58	2	20	0.5	5
NO_2	Annual	0.018	0.90	2.5	25	0.625	6.25

[1] Vermont allows major new sources to consume only 25% of the annual increment and 75% off the short term increment.

Class I Air Quality Related Values Analyses

All PSD permit applicants must prepare additional impact analysis for each pollutant subject to the regulation based on increase in emissions from the source or modification under review, and from associated growth. Any growth associated with this project is not expected to result in secondary emissions which need to be included in the NAAQS review or the PSD increment review. So the NAAQS and PSD review shown above meets this PSD review requirement.

To evaluate potential Class I Area visibility impairment, the Permittee conducted a Level 1 Screening Procedure as outlined in EPA's Workbook for Plume Visual Impact Screening and Analysis using EPA's VISCREEN model. Based on the results, the proposed Facility's plume visual impact will not cause an adverse impact.

The Permittee performed a modeling analysis to estimate the deposition of total nitrogen and total sulfur to the Lye Brook Wilderness Area. The deposition results were below the respective Deposition Analysis Thresholds for SO_2 and NO_X.

Additional Impact Analysis

As required by federal PSD regulations, 40 *CFR* 52.21(o), the Permittee included in the permit application additional impact analysis of: (a) the impairment to visibility, soils and vegetation that would occur as a result of the new major

source and general, commercial, residential, industrial, and other growth associated with the new major source, except that an analysis of the impact on vegetation having no significant commercial or recreational value is not required; (b) the air quality impact projected for the area as a result of the general commercial, residential, industrial, and other growth associated with the facility.

Growth: As noted above, no new significant emissions from secondary growth during either operations, or the construction phase, are anticipated.

Soil and Vegetation: Evaluation of impacts of air pollutant emissions on sensitive vegetation was performed by comparison of predicted project impacts with screening levels presented in *A Screening Procedure for the Impacts of Air Pollution Sources on Plants, Soils and Animals* (EPA, 1980). There were two types of screening. The first was for air impacts for SO_2, NO_2, CO, beryllium, and lead. The modeled concentrations from the Facility, in combination with representative background values, are less than the vegetation sensitivity concentrations. The second screening procedure was for predicted deposition concentration in impacted soils for a list of elements. The potential deposition concentrations for the listed elements were less than the respective screening levels. The air pollutant emissions from the Facility will not adversely impact vegetation in the area.

Visibility: To evaluate potential visibility impairment at sensitive areas other than the Lye Brook Wilderness Area, the Permittee conducted a Level 2 Screening Procedure as outlined in EPA's Workbook for Plume Visual Impact Screening and Analysis using EPA's VISCREEN model. Mount Ascutney (elevation greater than 2500 feet) is the closest sensitive area to the Facility. Based on the results of the Level 2 Screening, the proposed Facility's plume visual impact will not cause an adverse impact.

Based on these analyses, the Permittee demonstrated that the proposed project will not cause or contribute to violations of the National Ambient Air Quality Standards (NAAQS), will not exceed Vermont's Prevention of Significant Deterioration (PSD) increments, will not significantly impact any Class I areas, nor will it significantly deteriorate existing air quality.

(d) Applicable Requirements

The operations at the Facility are subject to the following state and federal laws and regulations, the requirements of which are embodied in the conditions of this Permit.

(i) *Vermont Air Pollution Control Regulations*:

Applicable Requirements from the Vermont Air Pollution Control Regulations
Section 5-201 – Prohibition of Open Burning
Section 5-211(2) and (3) - Prohibition of Visible Air Contaminants, Installations Constructed Subsequent to April 30, 1970. Exceptions – Wood Fuel Burning Equipment.
Section 5-221(1) - Prohibition of Potentially Polluting Materials in Fuel, Sulfur Limitation in Fuel.
Section 5-231(1) - Prohibition of Particulate Matter; Industrial Process Emissions.
Section 5-231(3) - Prohibition of Particulate Matter; Combustion Contaminants.
Section 5-231(4) - Prohibition of Particulate Matter; Fugitive Particulate Matter.
Section 5-241 – Prohibition of Nuisance and Odor.
Section 5-261(3) – Control of Hazardous Air Contaminants - Hazardous Most Stringent Emission Rate.
Section 5-271 – Control of Air Contaminants from Stationary Reciprocating Internal Combustion Engines.
Section 5-402 – Written Reports When Requested.
Section 5-403 – Circumvention.
Section 5-406 – Required Air Modeling
Section 5-502 – Major Stationary Sources and Major Modifications
Subchapter VIII – Registration of Air Contaminant Sources.
Subchapter X – Operating Permits.

(ii) Existing Air Pollution Control Permit to Construct and/or Operate

The Facility does not currently operate under the confines of a Permit to Construct or Operate.

(iii) Federal Requirements:

Applicable Requirements from Federal Regulations and the Clean Air Act
40 *CFR* Part 60, New Source Performance Standards, Subpart A - General Provisions.
40 *CFR* Part 60, Subpart Db - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units: §60.42b Standards for sulfur dioxide; §60.43b Standards for particulate matter; §60.44b Standards for nitrogen oxides; §60.49b Reporting and recordkeeping requirements. Applicable to all units of 100 MMBtu per hour or greater constructed after June 19, 1984.
40 *CFR* Part 60 - Appendix B to Part 60—Performance Specifications
40 *CFR* Part 60 - Appendix F to Part 60—Quality Assurance Procedures
40 *CFR* Part 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE). Applies to CI RICE model year 2007 and later as well as those ordered after July 11, 2005 and with an engine manufacture date after April 1, 2006. This standard also applies to stationary CI RICE that are modified or reconstructed after July 11, 2005. This regulation established emission rates for affected engines, requires routine engine maintenance and sets maximum sulfur content for the diesel fuel. Beginning October 1, 2010 applicable engines shall only use diesel fuel with a maximum sulfur content of 15 ppm (ULSD).
40 *CFR* Part 63, Subpart JJJJJJ - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers. This regulation will apply to new and existing fuel oil and solid fuel fired boilers located at area sources (major sources are subject to Subpart DDDDD). It does not apply to natural gas or propane fired boilers. The final rule became effective 3/21/2011.
40 *CFR* Part 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines. Applies to <u>new</u> engines that commenced construction (installed) on or after June 12, 2006 at area sources of HAPs. Requires such engines to comply with NSPS Subpart IIII or JJJJ, as applicable
Clean Air Act §§114(a)(3), 502(b), and 504(a)-(c); 40 *CFR* Part 70 §§70.6(a)(3)(i)(B) and 70.6(c)(1); and 40 *CFR* Part 64 - Compliance Assurance Monitoring (CAM). Upon issuance of a Title V Permit to Operate, a facility must comply with enhanced monitoring and CAM requirements for any emission unit with uncontrolled emissions in excess of the Title V major source threshold and which is subject to an emission standard and which is equipped with an emission control device. *The CAM requirements apply to this Facility for the emissions of PM, NOx, and CO from the wood fired boiler, and they will be part of the Title V Permit to Operate. An application for a Title V Permit to Operate must be submitted within 12 months of commencing operation.*
40 CFR Parts 72, 73, 75, 76, and 77 Acid Rain Program *A permit application for an Acid Rain Permit must be submitted at least 24 months before the facility commences operation.*
40 *CFR* Part 98, Mandatory Greenhouse Gas Reporting. §98.2(a)(1) – reference to Table A-3: Electricity generation units that report CO_2 mass emissions year round through 40 CFR part 75 (subpart D).

(e) Non-Applicable Requirements

Pursuant to §5-1015(a)(14) of the *Regulations*, an owner or operator of a Facility may request a permit shield from specific state or federally enforceable regulations and standards which are not applicable to the source. The applicant has not requested such a permit shield in accordance with the requirements of §5-1015(a)(14) of the *Regulations*.

(f) Enforceability

This section delineates which permit conditions are federally enforceable and which conditions are state only enforceable. All federally enforceable conditions are subject to federal citizen suit provisions. All conditions of this Permit are enforceable by both state and federal authorities.

(g) Compliance Certification

The Permittee is required by this Permit to certify compliance with the Agency pursuant to the requirements of §5-402(1) of the *Regulations*. Additionally, this Permit requires the submission of quarterly reports of monitoring records used to demonstrate compliance with the limitations contained in this Permit.

(G) HAZARDOUS MOST STRINGENT EMISSION RATE

Pursuant to §5-261 of the *Regulations*, any stationary source whose current or proposed actual emission rate of a hazardous air contaminant ("HAC") is equal to or greater than the respective Action Level (found in Appendix C of the *Regulations*) shall achieve the Hazardous Most Stringent Emission Rate ("HMSER") for the respective HAC.

The Agency has determined that the Facility will have regulated emissions of multiple HACs in excess of their respective Action Levels. The Agency has divided these HACs into 5 categories and then determined HMSER for each of these categories. These HMSER evaluations shall be subject to re-evaluation five (5) years from the date of its determination and shall remain in effect until revised by the Agency. The HMSER determinations for this Facility are presented below.

Hazardous Most Stringent Emission Rate Determinations		
Date of Determination /Permit #	Pollutant	Description/Emission limit
April 19, 2013 #AP-11-038	Non-mercury metallic HACs: arsenic, barium, beryllium, cadmium, chromium (total), chromium (hexavalent), cobalt, copper (dusts & mists), iron oxides (dusts & fumes), lead compounds, manganese, nickel compounds, vanadium pentoxide and zinc oxide.	Boiler: HMSER for non-mercury metallic HACs from the Boiler is the use of a fabric filter or ESP and a filterable PM surrogate emission limit of 0.010 lb/MMBtu (hourly average).
	Organic HACs: 1,2-dichloroethane (ethylene dichloride), 1,2-dichloropropane (propylene dichloride), acetaldehyde, acrolein, benzene, benzo(a)pyrene, bromodichloromethane, chloroform, dichloromethane (methylene chloride), dinitrotoluene-2,4, formaldehyde, hexachlorobenzene, naphthalene, tetrachloroethylene (perchloroethylene), trichloroethylene, and vinyl chloride.	Boiler: HMSER for organic HACs is good combustion control and the use of a BFB, and a CO surrogate emission limit of 0.075 lb/MMBtu (24 hour rolling average), and a VOC surrogate emission limit of 0.005 lb/MMBtu (hourly average).
	Acid gases: sulfuric acid mist, hydrogen chloride and chlorine	HMSER the Boiler is the use of natural wood which has an inherently low level of sulfur and chlorine and a HCl emission limit of 0.000834 lb/MMBtu.
	Ammonia	HSMER is an ammonia slip limit of 10 ppm NH3 @ 7% O_2 for the wood fired boiler (24 hour rolling average).
	CDD/CDF: chlorodibenzodioxins/ chlorordibenzofurans	HMSER for CDD/CDFs to be good combustion practices and properly operated air pollution control equipment.

(H) EQUIVALENCY DETERMINATIONS

Visible Emission Standards: There are three limits which regulate visible air contaminant emissions for the source. The state limit is contained in §5-211(2) of the *Regulations.* This limit prohibits visible emissions of greater than 20% opacity for more than a period or period(s) aggregating six (6) minutes in any hour and at no time may visible emissions exceed 60% opacity. The federal limit in 40 *CFR* Part 60, Subpart Db §60.42b(f) limits visible emissions to 20% opacity or less, except for one 6-minute period in any hour where emissions may not exceed 27% opacity. The federal opacity limits do not apply during periods of startup, shutdown, or malfunction. There is also a federal limit in 40 *CFR* Part 63, Subpart JJJJJJ §63.11222 which limits the boiler opacity to 10% based on a daily block average. Compliance with the state and federal limits is measured differently. The federal standard is based upon the use of Reference Method 9 (40 *CFR* Part 60 Appendix A), while the state limit is assessed using Methods 203B and 203C (40 *CFR* Part 51, Appendix M).

The Agency considers the state limit to be equivalent to the applicable federal limit 40 *CFR* Part 60, Subpart Db. Therefore, the Permittee will be required to comply with the state opacity limit. This determination is based upon the following: (1) all periods of source operation are covered by the state opacity limits, and (2) the six-minute averaging technique in federal Reference Method 9 may result in under-enforcement of an opacity regulation.

Due to significantly different averaging time, the Agency does not consider the state limit to be equivalent to the opacity limit in 40 *CFR* Part 63, Subpart JJJJJJ. Both of these limits apply to the facility. As a result, this permit has requirements for each of these visual emission limits: see Conditions (13)(c)(i) and (19).

Particulate Matter Emission Standards: There are five applicable PM emission limits that apply to the Boiler:

1. Filterable PM limit of 0.030 lbs/MMBtu required by 40 *CFR* Part 60, Subpart Db, §60.43b(h)(1)
2. Filterable PM limit of 0.03 lb/MMBtu required by 40 *CFR* Part 63, Subpart JJJJJJ §63.11201
3. Total PM limit of 0.10 gr/dscf corrected to 12% CO2 contained in §5-231(3)(b)(iii) of the *Regulations.* (roughly equivalent to 0.2 lb/MMBtu)
4. Total PM limit based on the MSER of 0.019 lb/MMBtu.
5. Filterable PM limit based on the MSER of 0.010 lb/MMBtu.

The MSER limits are the most stringent. The Permittee will be required to comply with the total PM and filterable PM MSER emission limits.

Compliance with the MSER emission limit shall be determined consistent with the procedures identified within 40 *CFR* Part 60 Subpart Db for determining compliance with the federal emission standard (filterable PM as determined by Reference Method 5, total PM as determined by Reference Methods 5 & 202). §5-231(3)(b)(iii) of the *Regulations*, 40 *CFR* Part 60 §60.43b(h)(1), and 40 *CFR* Part 63 §63.11201 are subsumed by MSER as set forth in this subsection.

Applicable Particulate Matter Emission Standards, Boiler		
Most Stringent	Regulatory Authority	Standard or Limit
	40 *CFR* Part 60 Subpart Db §60.43b(h)(1)	0.030 lb/MMBtu Filterable PM
	40 *CFR* Part 63 Subpart JJJJJJ	0.03 lb/MMBtu Filterable PM
	§5-231(3)(b)(iii) of the *Regulations*	0.10 gr/dscf Total PM
X	MSER: AP-11-038, April 19, 2013	0.010 lb/MMBtu Filterable PM
X	MSER: AP-11-038, April 19, 2013	0.019 lb/MMBtu Total PM

Based on the Agency's review of the Facility's application and the above Findings of Fact, the Agency concludes that the Facility, subject to the following Permit conditions, complies with all applicable state and federal air pollution control laws. Therefore, pursuant to 10 *VSA* §§556, as amended, the Agency hereby issues a Permit approving the Facility, as described in the above Findings of Fact, subject to the following:

PERMIT CONDITIONS

- Construction and Equipment Specifications -

(1) The Permittee shall construct and operate the Facility in accordance with the plans and specifications submitted to the Agency and in accordance with the conditions set forth herein, including the equipment specifications as listed in Findings of Fact (A) or their equivalent as approved by the Agency. [10 *V.S.A.* §556(c)] [§5-501(1) of the *Regulations*]

(2) The Permittee shall construct the wood fired boiler and its associated equipment with an energy efficient design as described in their permit application and subsequent submissions to the Agency. These energy efficient design features include, but are not limited to: preheating of fluidizing bed air and overfire air using air heaters, four cycles of feedwater heating, heat recovery from boiler blowdown and a district heat loop (thermal heat loop). The maximum capacity of the thermal heat loop will be designed to deliver no less than 20 MMBtu/hr of net heat energy. The actual quantity of thermal energy delivered through the thermal heat loop will depend upon the actual demand for heat from the businesses and residences on the loop. [§5-502 of the *Regulations*]

(3) Air Pollution Control Equipment – Boiler

(a) The Boiler shall be equipped with a particulate matter control system consisting of a fabric filter. The fabric filter shall be maintained in good working order and properly operated whenever the Boiler is combusting fuel, except as provided below. During periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate the fabric filter in a manner consistent with good air pollution control practice for minimizing emissions.

(b) The Boiler shall be equipped with a selective catalytic reduction (SCR) system for controlling nitrogen oxides. All elements of the SCR system shall be maintained in good working order and shall be operating whenever the Boiler is running, except during the startup of the Boiler. The startup period for the Boiler ends when the SCR catalyst has reached full operating temperature. A numeric value for the full operating temperature of the SCR catalyst shall be established in the Facility's Operating Permit.

[10 *V.S.A.* §556(c)][Application for AP-11-038 [40 *CFR* §60.11d]

(4) The Boiler fabric filter collector shall be equipped with a pressure drop measurement device which continuously measures, displays and permanently records the pressure drop across the fabric filter collector. The Permittee shall use the pressure drop

measurement device to maintain the pressure drop across the fabric filter within acceptable ranges as specified by the manufacturer. [10 *V.S.A.* §556(c)]

(5) The Permittee shall install a bag leak detection system on the fabric filter serving the power boiler. The Permittee shall operate and maintain such systems in good working order and as specified below:

(a) The bag leak detection system must be designed, installed, operated, calibrated, and maintained following written procedures in a manner consistent with the manufacturer's written specifications and recommendations and in accordance with the U.S. EPA's "Fabric Filter Bag Leak Detection Guidance:" EPA–454/R–98–015.

(b) The bag leak detection system must be operated continuously recording particulate matter levels whenever the fabric filter is in operation.

(c) The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 1 milligram per actual cubic meter or less.

(d) The bag leak detection system sensor must provide a continuous analog output of relative or absolute particulate matter levels.

(e) The bag leak detection system must be equipped with a device to permanently record the output signal from the sensor electronically.

(f) The bag leak detection system must be equipped with an audible and visual alarm system that will activate automatically when an increase in relative particulate matter emissions over a preset normal operating background level is detected. The alarm must be located where it is easily heard and seen by plant operating personnel.

(g) For positive pressure fabric filter systems that do not duct all compartments of cells to a common stack, a bag leak detection system must be installed in each fabric filter compartment or cell.

(h) Where multiple bag leak detectors are required, the system's instrumentation and alarm may be shared among detectors.

(i) A dedicated permanent log book will be maintained for each bag leak detection system which will be used to document all system related activities, including at a minimum, sensor inspection and preventive maintenance, monthly drift and response checks and annual setup. The log book will be readily available for onsite inspections.

[10 *V.S.A.* §556(c)]

(6) Stack heights: The exhaust gases from the Boiler shall be discharged at elevations measured above grade, greater than or equal to 140 feet. No stack shall be equipped with any device that would obstruct the vertical discharge of the exhaust gases. [10 *V.S.A.* §556(c)] [§5-406 of the *Regulations*]

- Operational Limitations -

(7) The Permittee shall submit a complete Title V Operating Permit application within 12 months of the initial startup of the Boiler. For the purposes of this Permit, the date of initial start-up for the boiler shall be defined as the date on which fuel is first burned in the boiler. [Subchapter X of the *Regulations*] [40 *CFR* Part 70]

(8) The Permittee shall submit a complete Acid Rain Permit application at least 24 months before commencing the operation of the Boiler. As defined in 40 *CFR* Part 72, Subpart A, Section 72.2: *commence operation* means to have begun any mechanical, chemical, or electronic process, including start-up of an emissions control technology or emissions monitor or of a unit's combustion chamber. [Subchapter X of the *Regulations*] [40 *CFR* Part 72 and 75]

(9) Wood Fuel: When wood fuel is used, only natural wood as defined in the *Regulations* may be used as fuel in the wood fuel burning equipment. In addition, the wood fuel burning equipment shall only be used when there is a need for space or process heat and shall not be used as an *incinerator* where the primary purpose is the reduction in volume and/or weight of an unwanted material. [10 *V.S.A.* §556(c)] [§§5-101 and 5-231(2) of the *Regulations*] [Application for #AP-11-038]

(10) Fuel Oil: When fuel oil is used, only No. 2 fuel oil or lighter grade fuel oils with a maximum sulfur content not to exceed 15 ppm by weight may be used as fuel in the Boiler, or any of the diesel engines unless the Permittee obtains prior written approval from the Agency to use another type of fuel. [10 *V.S.A.* §556(c)] [§§5-501 and 5-221(1)(a) of the *Regulations*] [Application for #AP-11-038]

(11) The heat input to the boiler shall not exceed 4,064,640 MMBtu per rolling 12 month period. [10 *V.S.A.* §556(c)] [Application for #AP-11-038]

(12) Open Burning: Open burning is prohibited except as provided for in §5-202 of the *Regulations*. Prior to conducting open burning of any material, other than leaves, brush, or tree cuttings from normal grounds maintenance, the Permittee shall contact the Air Pollution Control Officer and obtain approval for such burning, if required. [§5-202 of the *Regulations*]

(13) In accordance with 40 *CFR* Part 63 Subpart JJJJJJ (National Emission Standards for Hazardous Air Pollutants: Industrial, Commercial and Institutional Boilers at area sources), the Permittee shall comply with the following applicable requirements for oil and wood fired boilers as well as all other applicable requirements of this regulation. This condition applies to the Boiler..

(a) Work Practice Standards, Emission Reduction Measures, and Management Practices:
  (i) Biennial tune-ups of the Boiler as required by 40 *CFR* §63.11223.
  (ii) [§63.11201 – Table 2, item 1] Minimize the Boiler's startup and shutdown periods following the manufacturer's recommended procedures.

(b) Emission Limits:
  (i) [§63.11201 – Table 1] For the Boiler: particulate matter emission limit of 0.03 lb/MMBtu of heat input must be achieved at all times, except during

periods of startup and shutdown. Note that PM emission limit in Condition (17) is more restrictive and supersedes the PM limit in 40 *CFR* Part 63 Subpart JJJJJJ.

(c) Operating Limits:
  (i) [§63.11201 – Table 3, items 1] The opacity from the Boiler stack must be less than or equal to 10 percent opacity (daily block average).
  (ii) [§63.11201 – Table 3, Item 7] The operating load of the Boiler shall not exceed 110 percent of the average operating load recorded during the most recent particulate matter performance stack test.

(d) Demonstrating Continuous Compliance –Boiler:
  (i) [§63.11222 – Table 7, item 1] The Permittee must demonstrate continuous compliance with opacity by:
    a. Collecting the opacity monitoring system data according to §63.11224(e) and §63.11221; and
    b. Reducing the opacity monitoring data to 6-minute averages; and
    c. Maintaining opacity to less than or equal to 10 percent (daily block average).

(e) Notification, reporting and recordkeeping requirements as specified in §63.11225. This includes:
  (i) §63.11225(a)(2): Initial Notification –Boiler:
    a. For boilers installed on or after June 4, 2010 the initial notification must be sent to the EPA no later than 120 days after installation.
  (ii) §63.11225(a)(4): Notification of Compliance Status:
    a. Notification of the initial tune-up of the boiler must be submitted no later than 60 days after completing the tune-up.
  (iii) §63.11225(b): By March 1 of each year, prepare and, upon request, submit an annual compliance certification report. For boilers only subject to a requirement to conduct biennial tune-up and not subject to emission limits or operating limits, the Permittee may prepare only a biennial compliance report.

[40 *CFR* Part 63 Subpart JJJJJJ] [40 *CFR* Part 63]

(14) Engines: The Permittee shall not install or operate a stationary reciprocating internal combustion engine, as defined in the *Regulations*, unless the engine complies with §5-271 of the *Regulations* as may be applicable as well as any federal regulations including NSPS Subpart IIII and NESHAP ZZZZ, as may be applicable. All engines greater than 450 bhp, including emergency engines, installed on or after July 1, 2007 must comply with the applicable emission standards (Tier 2) of §5-271 immediately upon installation. Installation of any size engine, even those below 450 bhp, may still require approval from the Agency in the form of an amended permit prior to installation. Stationary reciprocating internal combustion engines include those used to power electric generator sets or to provide shaft power for other equipment such as compressors but does not include engines used to power motor vehicles. [§§5-271 and 5-501 of the *Regulations*] [40 CFR Part 60 Subpart IIII and Part 63 Subpart ZZZZ]

(15) Diesel Engines: For stationary diesel engines that are subject to 40 *CFR* Part 60 Subpart IIII, the Permittee must:

(a) Comply with the emission standards in §60.4204 and/or §60.4205 as applicable.
(b) As required in §60.4206, operate and maintain the engines according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer.
(c) As required in §60.4207, only Ultra Low Sulfur Diesel fuel with a maximum sulfur content not to exceed 0.0015% by weight (15 ppm) may be used in the affected diesel engines.
(d) The stationary emergency diesel engine(s) shall be equipped with a non-resettable hour meter

[10 *V.S.A.* §556(c)] [§5-501 of the *Regulations*][40 *CFR* Part 60 Subpart IIII]

(16) Emergency Engines: To comply with the requirement of the State of Vermont, the emergency engines may only be used as follows:

(a) During emergency power failures. Emergency power failures are defined as those times when the normal power source is temporarily unavailable due to circumstances beyond the reasonable control of the Permittee.
(b) When requested by the Independent Systems Operator for New England (ISO New England) for an OP 4 event or OP 7 event, and;
(c) For periods of engine operation necessary for routine testing and maintenance:
  (i) Routine testing and maintenance of each engine is limited to 65 hours per year.
  (ii) Unless required for system testing, the engines shall not be operated simultaneously.
  (iii) The testing or maintenance of the engines shall not be conducted on days that have a forecast air quality index of 101 or higher: "Unhealthy for Sensitive Groups."

In the event the Permittee must take action to restore the normal power source, the Permittee must take such action in a reasonable period of time. Emergency engines shall not be operated as part of any other ISO or utility peaking or load shedding activities.

Note that under 40 *CFR* Part 60 Subpart IIII diesel engines that operate during an OP 4 or OP 7 event may be considered as a non-emergency engine and be subject to additional requirements.

[10 *V.S.A.* §556(c)] [§§5-401(6)(c) and 5-501 of the *Regulations*]

- Emission Limitations -

(17) Boiler – emission limits

(a) The emission limits for the boiler are shown in the following table:

Boiler Emission Limitations				
Pollutant	Emission Limitations			Compliance Test Method [1]
	Emission Limit		Averaging period	
NO_X	0.060 lb/MMBtu [2]	30.1 lb/hr	Hourly average	Reference Method 7E and PS-2 NO_X CEMS
	0.030 lb/MMBtu	61 ton/yr [3]	12 month rolling average	
CO	0.075 lb/MMBtu [2]	37.7 lb/hr	24-hr rolling average	Reference Method 10 and PS-4A CO CEMS
	0.075 lb/MMBtu	152.4 ton/yr [3]	12 month rolling average	
Total PM	0.019 lb/MMBtu	9.5 lb/hr	Hourly average	Reference Method 5 and 202
Filterable PM	0.010 lb/MMBtu	5.0 lb/hr	Hourly average	Reference Method 5
SO_2	0.02 lb/MMBtu	10.0 lb/hr	Hourly average	Reference Method 6C and, if required by the Acid Rain Program, an SO_2 CEMS compliant with 40 CFR Part 75, Appendix A
HCl	0.000834 lb/MMBtu	-	Hourly average	Reference Method 26
VOC	0.005 lb/MMBtu[2]	2.5 lb/hr	Hourly average	Reference Method 25A with methane/ethane correction
	0.005 lb/MMBtu	10.2 ton/yr [3]	12 month rolling average	
NH_3	10 ppm @ 7% O_2	-	24-hr rolling average	CTM-027 and NH3 CEMS compliant with Appendix F and Vermont CEM Requirements
GHG	2668 lb CO_2e/ MW-hr (net) electrical and thermal output Starting the 3rd year of operation: 2675 lb CO_2e/MW-hr net electrical and thermal output		12 month rolling average	Reference Method 3A and PS-3 CO_2 CEMS and Condition (17)(c)

[1] All test methods and performance specifications are from 40 *CFR* part 60 unless otherwise specified. Any emission testing conducted to demonstrate compliance with the above emission limits shall be performed in accordance with methods shown in this condition, or an alternative method which has been published in 40 *CFR*, provided the federally approved alternative method has been accepted in writing by the Agency before testing.

[2] These limits apply at all times except during the startup of the Boiler when the Boiler and the SCR has not reached full operating temperature. As noted in Condition (3)(b) the full operating temperature of the SCR shall be established in the Facility's operating permit.

[3] These limits apply at all times including startup and shutdown of the boiler.

(b) Continuing compliance with the CO lb/MMBtu, CO lb/hr, NOx lb/MMBtu, NOx lb/hr and NH_3 ppm (corrected to 7% O_2) emission standards specified in this Permit shall be determined by means of a CEMS as required by Condition (29).

(c) The emission of greenhouse gases (CO_2e) shall calculated as follows:

(i) The mass emission of CH_4 and N_2O shall be based on the heat input to the boiler multiplied by their respective default emission factors in 40 *CFR* Part 98, Subpart C Table C-2 for the fuel type "biomass fuels – solid." At the time of issuance of this permit the default emission factor for CH_4 is 3.2×10^{-2} kg/MMBtu and the default emission factor for N_2O is 4.2×10^{-3} kg/MMBtu.

(ii) The CO_2e emission from CH_4 and N_2O shall be based on the mass emission of CH_4 and N_2O multiplied by their respective global warming potential listed in 40 *CFR* Part 98, Subpart A Table A-1. At the time of issuance of this permit, the default global warming potential values are 21 for CH_4, and 310 for N_2O

(iii) The direct CO_2 emissions shall be based upon the emission data from the boiler's CO_2 CEMS.

(iv) The total CO_2e from the boiler shall be based on the sum of the CO_2e for CH_4, N_2O and CO_2.

[10 V.S.A. §556(c)] [§5-502 of the *Regulations*] [Application for #AP-11-038]

(18) Diesel Engines: To meet the requirements of Vermont's regulations, the emissions of the following pollutants from the engine generators shall not exceed the following limits:

Diesel Engine - Pollutant Emission Limitations	
Diesel Engine Generator – 3,000 kW (EPA Tier 2 Emission Certified Engine)	Emission Limitations (g/bhphr [1])
Nitrogen oxides (as NO_2)	4.8
Carbon monoxide	2.6
Particulate matter	0.15
Fire Pump – less than 450 hp (EPA Tier 3 Emission Certified Engine)	Emission Limitations (g/bhphr [1])
Nitrogen oxides (as NO_2)	3.0
Carbon monoxide	2.6
Particulate matter	0.15

[1] g/bhphr equals grams of pollutant emitted per brake horsepower hour at rated load and speed.

The diesel engine generators must also meet the applicable emission standards required by 40 *CFR* Part 60 Subpart IIII. Depending upon the year the engine is manufactured and if the engine is operated as an emergency engine in accordance with Subpart IIII, Subpart IIII may require an engine with lower emission rates than those shown above.

Any emission testing conducted to demonstrate compliance with the above emission limits shall be performed in accordance with 40 *CFR* Part 60, Appendix A, Reference Methods 5, 7E, and 10 or equivalent methods approved in writing by the Agency at the rated load and speed of the engine. Alternatively, compliance may be demonstrated by verifying that the engine has met the engine certification requirements of 40 *CFR* Part 89 for the Tier 2 emission standards or better for the 3000 kW engine. [10 *V.S.A.* §556(c)] [§§5-271(b) and 5-404 of the *Regulations*] [40 *CFR* Part 60 Subpart IIII §60.4202]

(19) Visible Emissions [Facility Wide]: Emissions of visible air contaminants from any installation at the Facility, except where otherwise noted in this Permit, shall not exceed twenty (20) percent opacity for more than a period or periods aggregating six (6) minutes in any hour and at no time shall visible emissions exceed sixty (60) percent opacity.

Any emission testing conducted to demonstrate compliance with the above emission limits shall be performed in accordance with 40 *CFR* Part 51, Appendix M, Methods 203B and 203C, respectively, or equivalent methods approved in writing by the Agency. [§§5-211(2), 5-211(3) and 5-404 of the *Regulations*]

(20) Volatile Organic Compounds: Emissions of volatile organic compounds from the Facility shall not equal or exceed fifty (50) tons per year based on any rolling twelve (12) consecutive calendar month period. [§5-502 of the *Regulations*]

(21) Hazardous Air Pollutants: Emission of federally regulated hazardous air pollutants (HAPs) from the Facility shall not equal or exceed ten (10) tons per year of any single HAP or twenty-five (25) tons per year of all HAPs combined per calendar year per year based on any rolling twelve (12) consecutive calendar month period. [40 *CFR* Part 63]

(22) Hazardous Air Contaminants: Emissions of state hazardous air contaminants (HACs) from the applicable operations at the Facility shall not equal or exceed their respective Action Level (found in Appendix C of the *Regulations*) unless the Agency has reviewed and approved such HAC emission under §5-261(3) of the *Regulations.* [§5-261 of the *Regulations*]

(23) Fugitive Emissions: The Permittee shall take reasonable precautions at all times to control and minimize emissions of fugitive particulate matter from the operations at the Facility. Reasonable precautions to be taken shall include, but may not be limited to, the following measures or other equally effective measures:

(a) Taking precautions to prevent emissions of fugitive particulate matter (i.e. wood dust) during the handling of wood fuel as well as handling and disposal of the wood waste material collected from the wood processing operations. Any drop loading of wood waste material from a silo, storage bin or similar unit into a receiving vehicle or trailer for subsequent removal shall be done in an area enclosed on at least three sides in order to prevent wind currents from re-entraining the material. The Agency may require additional dust control measures, such as requiring an enclosed chute or stocking be used to limit the drop distance, based on Agency inspections of the actual operations;

(b) Primarily during the construction phase but not necessarily limited to such times, unpaved traffic and parking areas at the Facility shall be maintained by the

application of water and/or generally accepted chemical treatments, such as calcium chloride unless otherwise restricted, which are applied at a rate and frequency to effectively limit visible dust emissions

(c) The paved traffic and parking areas at the Facility shall be periodically maintained as necessary to prevent buildup of material that may generate fugitive dust emissions. Sweeping shall be performed in a manner to minimize fugitive dust air emissions, and may include lightly wetting the paved surface immediately before sweeping, or preferably by the use of a vacuum, regenerative, or high-efficiency sweeper

(d) All trucks owned, operated or under the control of the Permitttee/s shall be securely covered when operated on public roadways when loaded with materials that may generate fugitive dust.

[10 *V.S.A.* §§556(c)] [§5-231(4) of the *Regulations*]

(24) Nuisance and Odor: The Permittee shall not discharge, cause, suffer, allow, or permit from any source whatsoever such quantities of air contaminants or other material which will cause injury, detriment, nuisance or annoyance to any considerable number of people or to the public or which endangers the comfort, repose, health or safety of any such persons or the public or which causes or has a natural tendency to cause injury or damage to business or property. The Permittee shall not discharge, cause, suffer, allow, or permit any emissions of objectionable odors beyond the property line of the premises. [§5-241(1) and (2) of the *Regulations*]

- Compliance Testing and Monitoring -

(25) Boiler:

(a) The Permittee shall perform emission testing on the boiler for NOx, CO, total PM, filterable PM, SO_2, VOC and the HAPs identified in Condition (25)(f) and shall furnish the Agency with a written report of the results within sixty (60) days after achieving the maximum production rate at which the boiler will be operated, but not later than one-hundred eighty (180) days after the initial startup of the boiler. For the purposes of this Permit, the date of initial start-up for the boiler shall be defined as the date on which fuel is first burned in the boiler. The emission testing shall be performed in order to demonstrate compliance with the emission limitations specified in Conditions (17) and (21) of this Permit. At least thirty (30) days prior to performing the emission testing required above, the Permittee shall submit to the Agency a pretest report prepared in accordance with the Agency's "Source Emission Testing Guidelines".

(b) After the initial stack test, ongoing compliance for NO_X, NH_3, and CO shall be demonstrated based on the data from the continuous emissions monitoring system required by Condition (29).

(c) After the initial stack test, ongoing compliance for SO_2 shall be demonstrated based on either:

(i) A periodic compliance stack test conducted every five (5) years, or

(ii) The data from a SO_2 CEMS if required by the Acid Rain Program.

(d) After the initial stack test, ongoing compliance for total PM and filterable PM shall be demonstrated by a periodic compliance stack test:
  (i) If the test result from any of the three most recent complete stack compliance tests was greater than or equal to half the permit limit, or if three compliance tests have not yet been completed, then the next stack compliance test is required within 12 months.
  (ii) If each of the test results from the three most recent complete stack compliance tests are less than half the permit limit, then the next stack test is required within 24 months.

(e) After the initial stack test, ongoing compliance for VOC shall be demonstrated by a periodic compliance stack test:
  (i) If the previous test result was greater than or equal to half the permit limit, then the next stack test is required within 12 months.
  (ii) If the previous test result was less than half the permit limit, then the next stack test is required within 24 months.

(f) An initial stack test shall be conducted for the following HAPs: formaldehyde, benzene, hydrogen chloride, methanol, chlorine, styrene, methylene chloride and hexane. This testing is to help confirm that the Facilities total HAP emissions are less than 25 tons/yr.

(g) Monitoring of Fabric Filter: Until the Permittee develops a Compliance Assurance Monitoring (CAM) plan as will be required in its Title V permit, the Permittee shall utilize the bag break detection system required in Condition (5) of this permit to monitor the condition of the filter fabric and prevent emission limit violations.

[§§5-402(1), 5-404(1) and 5-405(1) of the *Regulations*] [40 *CFR* 60.8]

(26) Boiler Operation and Maintenance Plan: The Permittee shall develop, submit for Agency review and obtain Agency approval of an Operation and Maintenance Plan for the Boiler and its associated air pollution control equipment within 180 days after the initial startup date of the unit. For the purposes of this Permit, the date of initial start-up for the boiler shall be defined as the date on which fuel is first burned in the boiler.

(a) Said plan shall detail the inspection and maintenance procedures to be followed to ensure proper operation of the Facility and continuing compliance with the emission standards specified in this Permit.

(b) Said plan shall also detail the practices and procedures to be followed during periods of startup, shutdown and upset conditions in order to prevent emissions in excess of the standards specified in this permit.

(c) Said plan shall include proposed startup and shutdown emission limitations for NOx, CO and VOC, developed from operational emission data from stack tests and/or CEMs data collected during startup and shutdown periods.

(d) Said plan shall include, but not be limited to, consideration of preventive maintenance schedules, spare parts inventories, procedures and protocols for unscheduled outages, and provisions for equipment replacement and measures to be taken to protect air pollution control equipment in the event of any control equipment failure or shutdown.

(e) All operators of the Facility shall be trained in the operation and maintenance of both the Boiler and its associated air pollution control equipment by qualified personnel.

Said O&M Plan shall be updated as necessary, and present at the facility at all times and shall be made available to representatives of the Agency upon request. The Permittee shall revise said O&M Plan at the Agency's request or on its own motion based on operating experience or to reflect equipment or operational changes. Unless otherwise directed by the Agency, all revisions to the O&M Plan shall be submitted to the Agency for review and approval. [10 *V.S.A.* §§556(c)] [§5-502 of the *Regulations*]

(27) Operation and Maintenance Plan [Fabric Filter Dust Collection System]: The Permittee shall develop, submit for Agency review and obtain Agency approval of an operation and maintenance plan (O&M Plan) for the Boiler fabric filter within 180 days after the initial start-up date of the unit. The purpose of said O&M Plan shall be to ensure the proper operation and maintenance of the fabric filter in order to ensure optimum performance and continuous compliance with the respective conditions and emission limits of this Permit. The O&M Plan shall include, but not be limited to:

(a) A description of the planned response(s) to an alarm from the bag leak detection system required in Condition (5);
(b) A description of the methods used to install, operate, calibrate, and maintain the bag leak detection system(s).
(c) A description of routine maintenance and inspection procedures;
(d) Provisions for maintaining records of such maintenance and inspections as well as findings of those inspections and any corrective actions which were taken.

Said O&M Plan shall be updated as necessary, and present at the facility at all times and shall be made available to representatives of the Agency upon request. The Permittee shall revise said O&M Plan at the Agency's request or on its own motion based on operating experience or to reflect equipment or operational changes. Unless otherwise directed by the Agency, all revisions to the O&M Plan shall be submitted to the Agency for review and approval. [10 *V.S.A.* §556(c)] [§5-405(1) of the *Regulations*]

- Continuous Emissions Monitoring -

(28) Acid Rain Program – Monitoring: the Permittee shall comply with all applicable requirements of 40 *CFR* Part 75.

(29) Prior to commencing facility operations, the Permittee shall install a continuous emission monitoring system (CEMS) and continuous opacity monitoring system (COMS) approved by the Agency, to measure and permanently record emissions of NO_x, ppm, lb/hr, lb/MMBtu, CO ppm, lb/hr, lb/MMBtu, NH_3 ppm corrected to 7% O_2, CO_2 concentration (%), stack gas volumetric flow rate in standard cubic feet per hour (scfh) and visible emissions (% opacity) discharged to the atmosphere from the Boiler exhaust. The Permittee shall operate and maintain such systems in good working order, within manufacturer's specifications and as specified below:

(a) Except for NH_3, the CEMS and COMS shall be designed, installed, calibrated, maintained and operated in such a manner as to meet the requirements of *40 CFR Part 60, Standards of Performance for New Stationary Sources, Subpart A, Subpart Db, 40 CFR Part 60, Appendix B, Performance Specification 1, 2, 3, 4A, and 6, 40 CFR Part 60, Appendix F- Procedure 1 Quality Assurance Requirements for Gas Continuous Emission Monitoring Systems Used for Compliance Determination* and the latest revision of the Agency's *Continuous Emission Monitoring Requirements* (CEM Requirements).

(b) The NH_3 CEMS shall be designed, installed, calibrated, maintained operated and audited in such a manner as to meet the requirements of *40 CFR Part 60, Appendix F- Procedure 1 Quality Assurance Requirements for Gas Continuous Emission Monitoring Systems Used for Compliance Determination*, and the latest revision of the Agency's *Continuous Emission Monitoring Requirements* (CEM Requirements).

(c) Prior to the initial installation of the CEMS and COMS, the Permittee shall submit a CEMS and COMS Monitoring Plan (CEM Plan) to the Agency for approval. The CEM Plan must identify how the Permittee proposes to meet Permit Condition (29). The CEM Plan must be in accordance with the Agency's CEM Requirements and shall include at a minimum: general information on facility/source and monitoring program, (contacts, system components, installation/certification timelines, etc.); design and installation description and specifications of all components of the proposed CEMS and COMS measurement and data acquisition equipment; proposed procedures for calibration, performance and certification testing; and data acquisition/handling.

(d) The CEMS and COMS shall be operated, calibrated and maintained continuously, independent of the Boiler operations. The Permittee must measure and record valid continuous emission data for the parameters listed in this condition during all periods of the Boiler's operation including periods of boiler startup, shutdown, malfunction or emergency conditions, except for periods of CEMS and COMS quality assurance/quality control (QA/QC) activities identified in the approved Quality Assurance Plan, specified in (f) below, routine maintenance, out–of-control operation or uncontrolled malfunction. Nevertheless, the Permittee must obtain valid emissions data for all CEMS parameters listed in this condition and COMS for a minimum of 90% of the Boiler's operating hours, based on the calendar quarter.

(e) To cover the period of operations from the initial startup of the Boiler to development of a full CEMS/COMS Quality Assurance Plan, the Permittee shall develop an Interim Quality Assurance Plan (Interim QA Plan) for the above CEMS and COMS that is in accordance with the latest version of CEM Requirements and acceptable to the Agency.

(f) The Permittee shall develop a Quality Assurance Plan (QA Plan) for the above CEMS and COMS that is in accordance with the CEM Requirements and

acceptable to the Agency. Said QA Plan shall incorporate components of both the CEM Plan and Interim QA Plan specified in this condition (c) and (e) and shall satisfactorily document instrumentation, installation, monitoring procedures, calibration procedures, QA/QC procedures, preventive maintenance, data acquisition and reporting procedures as required to demonstrate compliance with this Permit. The Permittee shall formally review the QA Plan annually. The Permittee shall revise and update the QA Plan as necessary, based on the results of this review, or at the request of the Agency or at any other appropriate time to accurately document CEMS and COMS operations. The Permittee shall notify the Agency in writing of the results of the annual QA Plan review. All QA Plan modifications are subject to Agency review and shall not be implemented until approval has been received from the Agency.

(g) The Permittee shall submit a summary report for each calendar quarter, within thirty (30) days after the close of the quarter, in accordance with the Agency's CEM Requirements and in a format acceptable to the Agency. The report shall include at a minimum, all NO_x and CO, lb/MMBtu, NO_x and CO lb/hr, NH_3 ppm corrected to 7% O_2, CO_2 lb/hr and visible emissions (% opacity) in excess of the emissions limits specified in this Permit, as well as a frequency distribution summary of all valid NO_x and CO lb/MMBtu, NO_x and CO lbs/hr and NH_3 ppm corrected to 7% O_2 data collected, a summary of valid CEMS and COMS data capture, periods of CEMS and COMS downtime and invalid data, and CEMS and COMS calibration, and QA/QC results.

(h) The NO_x CEMS data shall be recorded in ppm and converted to units of lb/MMBtu (of heat input) and lb/hr, (as NO_2) in terms of 1-hour block averages for reporting.

(i) The CO CEMS data will be recorded in ppm and converted to units of lb/MMBtu (of heat input) and lb/hr for reporting and the NH_3 data will be recorded and reported in units of ppm, corrected to 7% O_2. The CO and NH_3 CEMS data will both be in terms of 24-hour rolling averages. Valid CO and NH_3 24-hour rolling averages recorded during operation of the Boiler must be calculated on an hourly basis from valid CEMS 1-hour block average data representing at least 75% of the previous 24-hour Boiler operating period.

(j) COMS shall measure and record visible emissions at least every 10-seconds. COMS data shall be reported in whole numbers in units of % Opacity in terms of 1-minute block averages. Valid COMS 1-minute block averages during source operation must be calculated from at least 5, 10-second measurements. Valid one (1)-minute block averages shall be used for determining compliance with the daily ten (10) % opacity limit, the hourly twenty (20) % opacity time-exception and the instantaneous sixty (60) % opacity limits in Conditions (13)(d)(i) and (19).

(k) The Permittee shall maintain records of all measurements, calibrations, QA/QC, maintenance, malfunction, corrective action and downtime associated with the CEMS and COMS monitoring system in a permanent form suitable for inspection as well as copies of all information reported in the quarterly summaries for a

period of 5 years following the date of collection of such data or record of submission of such summaries.

[§5-405 of the *Regulations*][40 *CFR* Part 60]

- Record Keeping and Reporting –

(30) The Permittee shall notify the Agency and the U.S. EPA in writing of the date construction of the Boiler commenced, postmarked no later than thirty (30) days after such date. [10 *V.S.A.* §556(c)] [40 *CFR* §60.7(a)(1)]

(31) The Permittee shall notify the Agency and the U.S. EPA in writing of the actual date of initial start-up of the Boiler postmarked no later than fifteen (15) days after such date. For the purposes of this Permit, the date of initial start-up for the boiler shall be defined as the date on which fuel is first burned in the boiler. The Permittee shall include the following information with this notification:

(a) The design heat input capacity of the boiler(s);
(b) Identification of the fuel(s) to be burned in the boiler(s); and
(c) The annual capacity factor at which the Permittee anticipates operating the boiler based on all fuels fired and based on each individual fuel fired.

[10 *V.S.A.* §556(c)] [40 *CFR* §60.7(a)(3)] [40 *CFR* Part 60 Subpart Db §60.49b(a)]

(32) Record Keeping and Reporting: the Permittee shall maintain records of the following data and submit periodic reports as indicated:

Record Keeping and Reporting Summary				
Record	Recording frequency	Reporting Frequency	Report to:	Authority
Boiler wood fuel usage (tons)	Daily	Semi-annually	Agency	40 *CFR* Part 60 Subpart Db, §5-405(1) of the *Regulations*
Boiler wood fuel moisture content	Monthly			
Boiler fuel oil (ULSD) usage in gallons	Daily			
Boiler biennial tune-up	Biennial	Upon Request	U.S. EPA & Agency	40 CFR Part 63 Subpart JJJJJJ
Boiler fuel certification that only very low sulfur fuel oil (<0.3% S) or wood was used for fuel as required in Condition (37)	-	Semi-annually	U.S. EPA & Agency	40 *CFR* Part 60 Subpart Db, §5-405(1) of the *Regulations*

Record Keeping and Reporting Summary				
Record	Recording frequency	Reporting Frequency	Report to:	Authority
ULSD fuel used during each calendar month in each of the following units: • Emergency generator • Diesel fire pump;	Monthly	Annually	Agency	§5-405(1) of the *Regulations*
Records of sulfur content/certification of ULSD fuel as required by Condition (35)	Each delivery	None	Maintain on site	§5-405(1) of the *Regulations*
Total hours of operation of the emergency generator	Monthly	None	Maintain on site	
The pressure drop across the Boiler fabric filter	Continuous	None	Maintain on site	
The bag leak detection system signal of relative level of PM	Continuous	None	Maintain on site	
Bag leak detection system inspection and maintenance activities required in Condition (5)(5)(i)	As needed	None	Maintain on site in log book	
Date, time and description of any corrective action taken in response to the indication of a fabric filter bag leak.	As needed	Semi-annually	Agency	
Date, time and description of any Boiler startup that exceeds 24 hours to reach full operating temperature of the SCR catalyst.	Per occurrence	Within 72 hours of event	Agency	
CEMS periodic reporting required in Condition (29).	Varies	Quarterly	Agency	
Reporting and Recordkeeping required by the Acid Rain Program.	Varies	Varies	U.S. EPA & Agency	
Net electrical production generated when operating the boiler	Daily	Annually	Agency	
GHG emissions from Boiler and diesel engines.	Monthly	Annually	U.S. EPA & Agency	40 *CFR* Part 98
Annual Registration information as required by Condition (38)	Annually	Annually	Agency	§5-802 of the *Regulations*

A report, signed by a responsible official of the Facility and containing summaries of such records shall be submitted to the Agency for each periodic report within thirty (30) days after the close of each reporting period. [10 *V.S.A.* §556(c)] [§5-405(1) of the *Regulations*] [40 *CFR* Part 60 Subpart Db §60.49b(d)(1)]

(33) Records of Wood Fuel Source: The Permittee shall maintain records of the source of supply of wood fuel for the boiler and submit to the Agency an annual report summarizing the total tons of wood fuel brought to the Facility for each of the following four (4) categories:

(a) Wood from tree maintenance or removal from residential, commercial, industrial and institutional property.

(b) Wood from harvesting associated with land use change. Change includes, but is not limited to, the removal of trees to establish agricultural use of the land.

(c) Forest residues including tops and limbs from pre-existing commercial round wood harvesting.

(d) New round wood harvesting of live trees that would otherwise continue growing.

All wood fuel combusted in the boiler shall comply with the requirements of permit condition (9) above.

[10 *V.S.A.* §556(c)] [§5-405(1) of the *Regulations*]

(34) Records of Emergency Diesel/Generator Usage: The Permittee shall maintain records in a log book of all hours of operation of each emergency generator and shall make such records available to the Agency upon request. The records shall include: the dates on which each engine was operated; the number of hours the engine was operated on the respective date, including the starting and ending time shown on the engine's elapsed hour meter; the purpose of the operation be it emergency, testing or maintenance; and, if the purpose of the operation was for an emergency, the records shall include a brief description of the emergency and its cause. [10 *V.S.A.* §556(c)] [§5-405(1) of the *Regulations*]

(35) Records of Fuel Oil Certifications: The Permittee shall obtain from the fuel supplier, for each shipment of fuel oil received at the Facility for use in the diesel engines and boiler, a certification or invoice regarding the sulfur content of the fuel oil. The certification or invoice shall include the date of delivery, name of the fuel oil supplier, fuel type, quantity of fuel oil delivered, and a statement from the fuel oil supplier that the oil complies with the specifications for Ultra Low Sulfur Diesel per 40 CFR Part 80 80.510(b) or a statement as to the sulfur content of the fuel oil in percent sulfur by weight. [10 *V.S.A.* §556(c)] [§5-405(1) of the *Regulations*] [40 *CFR* Part 60 Subpart IIII] [40 *CFR* Part 60 Subpart Db §§60.45b(j), 60.47b(f) and 60.49b(r)(1)]

(36) Records of all required compliance testing shall include the following:

(a) the date, place, and time of sampling or measurements;
(b) the date analyses were performed;
(c) the company or entity that performed the analyses;
(d) the analytical techniques or methods used;
(e) the results of all such analyses; and
(f) the operating conditions existing at the time of sampling or measurement.

[§5-402(1) and 5-405(1) of the *Regulations*]

(37) 40 *CFR* Subpart Db reporting of fuel oil sulfur content: the Permittee shall submit semi-annual reports to the Agency and the U.S. EPA postmarked by the 30th day following the end of each reporting period. The reporting periods shall cover operations from January 1st through June 30th and July 1st through December 31st. Such semi-annual reports shall include the following information:

(a) Calendar dates covered in the reporting period;
(b) A certified statement signed by a responsible official of the Facility that only very low sulfur diesel fuel and wood were combusted in the Boiler during the reporting period.

[10 V.S.A. §556(c)] [40 CFR Subpart Db §§60.49b(k)(1), 60.49b(r)(1) and 60.49b(w)]

(38) Annual Registration: The Permittee shall calculate the quantity of emissions of air contaminants from the Facility annually. If the Facility emits more than five (5) tons of any and all air contaminants per year, the Permittee shall register the source with the Secretary of the Agency (hereinafter "Secretary"), and shall renew such registration annually. Each day of operating a source which is subject to registration without a valid, current registration shall constitute a separate violation and subject the Permittee to civil penalties. The registration process shall follow the procedures set forth in Subchapter VIII of the *Regulations*, including the payment of the annual registration fee on or before May 15 of each year. [Subchapter VIII §§5-802, 5-803, 5-807, 5-808 of the *Regulations*]

(39) The Permittee shall notify the Agency in writing of any proposed physical or operational change at the Facility which may increase the emission rate of any air contaminant to the ambient air regardless of any concurrent emission reductions that may be achieved. This notification requirement includes, but is not limited to, the proposed installation of any new equipment that is a source of air pollution, including the replacement of an existing permitted air pollution source. If the Agency determines that a permit amendment is required, a new application and the appropriate application fee shall be submitted. The permit amendment shall be obtained prior to commencing any such change except as may otherwise be allowed by the *Regulations*. [10 *V.S.A.* §556(c)] [§§5-402(1) and 5-501 of the *Regulations*]

(40) The Permittee shall notify the Agency in writing within ten (10) days of any violation, of which it is aware, of any requirements of this Permit. This notification shall include, at a minimum, the cause for the violation and corrective action or preventative maintenance taken to correct the violation. [§§5-402(1) and 5-1015(a)(6) of the *Regulations*]

(41) All records shall be retained for a minimum period of five (5) years from the date of record and shall be made available to the Agency upon request. [§§5-402(1) and 5-405(1) of the *Regulations*]

(42) All records, reports, and notifications that are required to be submitted to the Agency by this Permit shall be submitted to:

Agency of Natural Resources
Air Pollution Control Division
103 South Main Street, Bldg 3 South
Waterbury, Vermont 05671-0402.

[§5-402(1) of the *Regulations*]

(43) All records, reports and notifications that are required to be submitted to the U.S. EPA by this Permit shall be submitted to:

Air Compliance Clerk
U.S. EPA-New England
5 Post Office Sq. Suite 100 (OES04-2)
Boston, MA 02109-3912

[§5-402(1) of the *Regulations*]

- Standard Permit Conditions -

(44) 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 Agency which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. [10 V.S.A. §556(c)]

(45) Approval to construct or modify under this Permit shall become invalid if construction or modification is not commenced within eighteen (18) months after issuance of this Permit, if construction or modification is discontinued for a period of eighteen (18) months or more, or if construction is not substantially completed within a reasonable time. The Agency may extend any one of these periods upon a satisfactory showing that an extension is justified. The term "commence" as applied to the proposed construction or modification of a source means that the Permittee either has:

(a) Begun, or caused to begin, a continuous program of actual on-site construction or modification of the source, to be completed within a reasonable time; or

(b) Entered into binding agreements or contractual obligations, which cannot be cancelled or modified without substantial loss to the Permittee, to undertake a continuous program of actual on-site construction or modification of the source to be completed within a reasonable time.

[10 *V.S.A.* §556(c)] [§5-501 of the *Regulations*]

(46) These Permit conditions may be suspended, terminated, modified, or revoked for cause and reissued upon the filing of a written request with the Secretary of the Agency (hereinafter "Secretary") or upon the Secretary's own motion. Any modification shall be granted only with the written approval of the Secretary. If the Secretary finds that modification is appropriate, only the conditions subject to modification shall be re-opened. The filing of a request for modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated non-compliance does not stay any terms or conditions of this Permit. The Secretary may provide opportunity for public comment on any proposed modification of these conditions. If public comments are solicited, the Secretary shall follow the procedures set forth in 10 *V.S.A.* §556, as amended. [10 *V.S.A.* §§56(d)]

(47) The Permittee shall furnish to the Agency, within a reasonable time, any information that the Agency may request in writing to determine whether cause exists to modify, revoke, reissue, or terminate the Permit or to determine compliance with this Permit. Upon request, the Permittee shall also furnish to the Agency copies of records required to be kept by this Permit. [10 *V.S.A.* §§556(c) and 556a(d)] [§5-402(1) of the *Regulations*]

(48) By acceptance of this Permit, the Permittee agrees to allow representatives of the State of Vermont access to the properties covered by the Permit, at reasonable times, to

ascertain compliance with Vermont environmental and health statutes and regulations and with this Permit. The Permittee also agrees to give the Agency access to review and copy any records required to be maintained by this Permit, and to sample or monitor at reasonable times to ascertain compliance with this Permit. [10 *V.S.A.* §§556(c) and 557] [§§5-402(1) and 5-404 of the *Regulations*]

(49) All data, plans, specifications, analyses and other information submitted or caused to be submitted to the Agency as part of the application for this Permit or an amendment to this Permit shall be complete and truthful and, for Title V permit applications, certified by a responsible official whose designation has been approved by the Secretary. Any such submission which is false or misleading shall be sufficient grounds for denial or revocation of this Permit, and may result in a fine and/or imprisonment under the authority of Vermont statutes. [10 *V.S.A.* §556(c)] [§5-505 of the *Regulations*]

(50) For the purpose of establishing whether or not a person has violated or is in violation of any condition of this Permit, nothing in this Permit 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. [10 *V.S.A.* §556(c)]

(51) Any permit noncompliance could constitute a violation of the federal Clean Air Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. [10 *V.S.A.* §556(c)]

(52) It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity to maintain compliance with the conditions of this Permit. [10 *V.S.A.* §556(c)]

(53) No person shall build, erect, install or use any article, machine, equipment or other contrivances, the use of which, without resulting in a reduction in the total release of air contaminants to the atmosphere, reduces or conceals an emission which otherwise would constitute a violation of these *Regulations.* [§5-403 of the *Regulations*]

(54) The provisions of this Permit are severable. If any provision of this Permit, or its application to any person or circumstances is held invalid, illegal, or unenforceable by a court of competent jurisdiction, the invalidity shall not apply to any other portion of this Permit which can be given effect without the invalid provision or application thereof. [10 *V.S.A.* §556(c)]

(55) This Permit does not convey any property rights of any sort or any exclusive privilege, nor does it authorize any injury to private property or any invasion of personal rights. [10 *V.S.A.* §556(c)]

(56) All subsequent owners and/or operators of this Facility must request an amendment and transfer of this Permit prior to commencing any operations covered by this Permit. All subsequent owners and/or operators shall submit to the Agency as part of the request for amendment all such information the Agency deems necessary to establish legal ownership and/or interest in the property and all such information the Agency deems necessary to ensure the new owners and/or operators will construct and operate the

Facility in compliance with the *Regulations* and this Permit. The terms and conditions of this Permit shall remain in full force and effect after submittal of the request for amendment and until the issuance of an amended Permit or denial. Should the Secretary deny the request, the new owner and/or operator must take whatever action is necessary to comply with the denial. [10 *V.S.A.* §556] [§5-501 of the *Regulations*]

(57) Renewable Energy Projects – Right to Appeal to Public Service Board. If this decision relates to a renewable energy plant for which a certificate of public good is required under 30 V.S.A. §248, any appeal of this decision must be filed with the Vermont Public Service Board pursuant to 10 V.S.A. §8506. This section does not apply to a facility that is subject to 10 V.S.A. §1004 (dams before the Federal Energy Regulatory Commission), 10 V.S.A. §1006 (certification of hydroelectric projects) or 10 V.S.A. Chapter 43 (dams). Any appeal under this section must be filed with the Clerk of the Public Service Board within 30 days of the date of this decision; the appellant must file with the Clerk an original and six copies of its appeal. The appellant shall provide notice of the filing of an appeal in accordance with 10 V.S.A. 8504(c)(2), and shall also serve a copy of the Notice of Appeal on the Vermont Department of Public Service. For further information, see the Rules and General Orders of the Public Service Board, available on line at www.psb.vermont.gov. The address for the Public Service Board is 112 State Street, Montpelier, Vermont, 05620-2701 (Tel. # 802-828-2358).

(58) All Other Projects – Right to Appeal to Environmental Court. Pursuant to 10 V.S.A. Chapter 220, any appeal of this decision must be filed with the clerk of the Environmental Court within 30 days of the date of the decision. The Notice of Appeal must specify the parties taking the appeal and the statutory provision under which each party claims party status; must designate the act or decision appealed from; must name the Environmental Court; and must be signed by the appellant or their attorney. In addition, the appeal must give the address or location and description of the property, project or facility with which the appeal is concerned and the name of the applicant or any permit involved in the appeal. The appellant must also serve a copy of the Notice of Appeal in accordance with Rule 5(b)(4)(B) of the Vermont Rules for Environmental Court Proceedings. For further information, see the Vermont Rules for Environmental Court Proceedings, available on line at www.vermontjudiciary.org. The address for the Environmental Court is 2418 Airport Road, Suite 1, Barre, VT 05641 (Tel. # 802-828-1660).

The Agency's issuance of this Air Pollution Control Permit relies upon the data, judgment, and other information supplied by the Permittee. The Agency makes no assurances that the air contaminant source approved herein will meet performance objectives or vendor guarantees supplied to the source Permittee. It is the sole responsibility of the Permittee to operate the source in accordance with the conditions herein and with all applicable state and federal standards and regulations.

Dated this 19th day of April, 2013.

Agency of Natural Resources

David K. Mears, Commissioner
Department of Environmental Conservation

By: Richard A. Valentinetti
Richard A. Valentinetti, Director
Air Pollution Control Division

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A2 File – North Springfield Sustainable Energy Project, LLC – North Springfield