

RIPUC Use Only

RIPUC Docket No.: RES-25-58
Date Application Received: Oct 21, 2025

GIS Certification #:
MSS2433

RENEWABLE ENERGY RESOURCES ELIGIBILITY FORM

Required of all Applicants for the Certification of Eligibility as a Renewable Energy Resource Pursuant to the Rhode Island Renewable Energy Standard (RES) Act, [R.I. Gen. Laws Section 39-26-1-10](#) and Rules Governing the Implementation of a Renewable Energy Standard, [810-RICR-40-05-2 \(RES Rules\)](#).

Notice to Applicant:

- Your application for eligibility as a Renewable Energy Resource has been submitted and assigned a docket number. The docket number is identified at top right of this application.
- Keep a copy of the completed Application for your records.
- The Rhode Island RES Administrative Team will contact the Authorized Representative directly regarding your application during the review process.
- Pursuant to RES Rules Section 2.6(A)(3), the Public Utilities Commission (Commission or PUC) shall provide a thirty (30) day period for public comment following the assignment of a docket number to the application. All information submitted with the application is considered to be a public record unless the Commission deems some portion of the application confidential after consideration under [Rules of Practice and Procedure 810-RICR-00-00-1](#), Section 1.3(H)(3).
- All eligibility applications are posted on the PUC's website at <https://ripuc.ri.gov/RES-Applications>.
- Questions related to this Renewable Energy Resources Eligibility Form or application process can be submitted to admin@rhodeislandres.com and res.filings@puc.ri.gov.
- Other resources regarding the administration of the Renewable Energy Standard Program can be access at <https://rhodeislandres.com/>.

SECTION I: Identification Information

- 1.1 Name of Generation Unit (sufficient for full and unique identification, and consistent with the Generation Unit name listed on the NEPOOL GIS, if currently listed):
Stored Solar J&WE, LLC
- 1.2 Type of Certification being requested (note: if the Generation Unit has not yet achieved Commercial Operation, check Prospective Certification/Declaratory Judgement):
☒ Standard Certification
☐ Prospective Certification (Declaratory Judgment)
- 1.3 This Application includes: (Check *all and only* those that apply)
☐ Appendix A: Authorized Representative Certification for Individual Owner
☒ Appendix B: Authorized Representative Certification for Non-Corporate Entities Other Than Individuals, including Limited Liability Companies (LLC) *Note: Please refer to Section 6.1, Corporations, for required evidence certifying Authorized Representative.*
☐ Appendix C: Existing Renewable Energy Resources
☐ Appendix D: Special Provisions for Aggregators of Customer-sited, Off-grid Generation, or RI-sited Remote Net Metered Facilities
☐ Appendix E: Special Provisions for a Generation Unit Located in a Control Area Adjacent to NEPOOL
☐ Appendix F: Fuel Source Plan for Eligible (including Unlisted) Biomass Fuels
- 1.4 Primary Contact Person
Name and title: **Elizabeth Karter, President**
Address: **247 weesner road East Ryegate, VT 05042**
Phone: **2032937820**
Email: **lkarter@mizzencapital.com**
- 1.5 Backup Contact Person
Name and title: **Darice, Bochniak**
Address: **263 Tresser Blvd Stamford, CT 06901**
Phone: **2032937820**
Email: **dbochniak@mizzencapital.com**
- 1.6 Authorized Representative (the individual responsible for certifying the accuracy of all information contained in this form and associated appendices, and whose signature will appear on the application):
Name and title: **Elizabeth Karter, President**
Company: **Ryegate**
Address: **247 weesner road ryegate, VT 05042**
Phone: **2032937820**
Email: **lkarter@mizzencapital.com**
Appendix A or B, or Corporate Authorization (as appropriate) completed and attached?
☒ Yes ☐ No

1.7 Owner

Name and title: **Elizabeth Karter, President**

Company: **Ryegate**

Address: **247 weesner road ryegate, VT 05042**

Phone: **646-289-0599**

Email: **lkarter@mizzencapital.com**

1.8 Owner business organization type (check one):

☐ Individual

☒ Partnership (including Limited Liability Company and other Non-Corporate Entities)

☐ Corporation

☐ Other:

1.9 Operator

Name and title: **Larry Anderson, Plant Manager**

Company: **Ryegate**

Address: **247 weesner road ryegate, VT 05042**

Phone: **8026333500**

Email: **larry@ryegatepower.com**

1.10 Operational business organization type (check one):

☐ Individual

☒ Partnership (including Limited Liability Company and other Non-Corporate Entities)

☐ Corporation

☐ Other:

SECTION II: Generation Unit Information, Fuels, Energy Resources and Technologies

- 2.1 NEPOOL GIS Identification Number (if assigned yet, along with appropriate MSS, NON or IMP designation): **MSS2433**

For facilities enrolled in the RI Renewable Energy Growth Program: National Grid will provide the participant with an MSS ID.

- 2.2 Nameplate Capacity (list AC, and DC if applicable): **21500.00** kW AC **N/A** kW DC
- 2.3 Maximum Demonstrated Capacity (list AC, and DC if applicable): **20600.00** kW AC **N/A** kW DC

- 2.4 Please indicate which of the following Eligible Renewable Energy Resources are used by the Generation Unit: (Check ALL that apply) – *per RES Rules Section 2.5*

- ☐ Direct Solar Radiation
- ☐ The wind
- ☐ Movement of or the latent heat of the ocean
- ☐ The heat of the earth
- ☐ Small hydro facilities
- ☒ Biomass facilities using Eligible Biomass Fuels (*per RES Rules Section 2.3(A)(7)*)
- ☐ Biomass facilities using unlisted biomass fuel (*per RES Rules Section 2.3(A)(7)(a)*)
- ☐ Fuel cells using a renewable resource referenced in this section

- 2.5 For small hydro facilities, please certify that the facility's aggregate capacity does not exceed 30 MW. – *per RES Rules Section 2.3(A)(32)*

- ☐ <-- check this box to certify that the above statement is true
- ☒ N/A

- 2.6 For small hydro facilities, please certify that the facility does not involve any new impoundment or diversion of water with an average salinity of twenty (20) parts per thousand or less. – *per RES Rules Section 2.3(A)(32)*

- ☐ <-- check this box to certify that the above statement is true
- ☒ N/A

- 2.7 For biomass facilities: Appendix F completed and attached?

- ☐ Yes (Please specify fuel or fuels used or to be used in the unit: **whole tree chips**)
- ☒ N/A

- 2.8 Has the Generation Unit been certified as a Renewable Energy Resource for eligibility in another state's renewable portfolio standard?

- ☒ Yes
- ☐ No

If "Yes," a copy of each state's certifying order is attached?

- ☒ <-- check this box to certify that the above statement is true

SECTION III: Commercial Operation Date>

Please provide documentation to support all claims and responses to the following questions:

- 3.1 Date Generation Unit first entered Commercial Operation or, if not yet in operation, the anticipated Commercial Operation Date:

11/01/1992

If the Commercial Operation date is after December 31, 1997, please provide independent verification, such as the utility log or metering data, showing that the meter first spun after December 31, 1997. For facilities located in Rhode Island, a copy of National Grid's Authorization to Interconnect letter would also be sufficient. This documentation is needed in order to verify that the facility qualifies as a New Renewable Energy Resource.

Documentation of Commercial Operation Date attached?

☐ Yes

☐ No

☒ N/A

- 3.2 Is there an Existing Renewable Energy Resource located at the site of Generation Unit?

☒ Yes

☐ No

- 3.3 If the date entered in response to question 3.1 is on or earlier than December 31, 1997 or if you checked "Yes" in response to question 3.2 above, please complete Appendix C. Appendix C completed and attached?

☐ Yes

☒ No

☒ N/A

- 3.4 Was all or any part of the Generation Unit used on or before December 31, 1997 to generate electricity at any other site?

☒ Yes

☐ No

- 3.5 If you checked "Yes" to question 3.4 above, please specify the power production equipment used and the address where such power production equipment produced electricity (attach more detail if the space provided is not sufficient):

Riley biomass power boiler and a GE steam turbine/generator set. Our address is 247 Weesner Drive East Ryegate, VT 05042

SECTION IV: Metering

4.1 Please indicate how the Generation Unit's electrical energy output is verified:

☒ ISO-NE Market Settlement System

☐ Other, including Self-Reported to the NEPOOL GIS Administrator (please specify below and complete Appendix D):

For "Other," Appendix D completed and attached?

☐ Yes

☐ No

☒ N/A

For facilities enrolled in the RI Renewable Energy Growth Program: National Grid will be reporting output to the ISO-NE Market Settlement System.

4.2 Please check one of the following that apply to the Generation Unit:

☒ Grid Connected Generation

- Connected directly to a utility transmission or distribution system with only station load at the unit site
- Units participating in the RI Renewable Energy Growth Program fall in this category.

☐ Off-Grid Generation

- Not connected to a utility transmission or distribution system

☐ Customer-Sited Generation

- Connected on the end-use customer side of a retail electricity meter in such a manner that it displaces all or part of the metered consumption of the end-use customer, other than station load
- Traditional behind-the-meter net metering falls in this category.

☐ Remote Customer-Sited Generation

- Connected directly to the local electric utility distribution grid with only station load
- All or some of the electrical energy from the unit is designated for use in displacing all or part of the retail electricity metered consumption of one or more end-use customers (including through a transfer of bill credits)
- "Virtual" and "remote" front-of-the-meter net metering falls in this category.

SECTION V: Location

- 5.1 Generation Unit address:
247 weesner road ryegate, VT 05042
- 5.2 Please provide the Generation Unit's geographic location information:
A. Universal Transverse Mercator Coordinates: **18TYP3508999941**
B. Longitude/Latitude: **44.214787/72.05716**
- 5.3 The Generation Unit is located: (please check the appropriate box)
☒ In the NEPOOL control area
☐ In a control area adjacent to the NEPOOL control area
☐ In a control area other than NEPOOL which is not adjacent to the NEPOOL control area <-- *If you checked this box, then the generator is ineligible.*
- 5.4 If you checked "In a control area adjacent to the NEPOOL control area" in Section 5.4 above, please complete Appendix E.
Appendix E completed and attached?
☐ Yes
☐ No
☒ N/A

SECTION VI: Certification

- 6.1 Please attach documentation, using one of the applicable forms below, to demonstrate the authority of the Authorized Representative provided in Section 1.6.

Corporations

The Authorized Representative of the Corporation shall provide **either**:

- (a) Evidence of a Board of Directors' vote granting authority to the Authorized Representative to execute the Renewable Energy Resources Eligibility Form, **or**
 - (b) A certification from the Corporate Clerk or Secretary of the Corporation that the Authorized Representative is authorized to execute the Renewable Energy Resources Eligibility Form or is otherwise authorized to legally bind the Corporation in like matters.¹
- Evidence of Board Vote provided?

☐ Yes

☐ No

☒ N/A

Corporate Certification provided?

☐ Yes

☐ No

☒ N/A

Individuals

If the Owner is an Individual, that Individual shall complete and attach Appendix A, or a similar form of certification from the Owner, duly notarized, that certifies that the Authorized Representative has authority to execute the Renewable Energy Resources Eligibility Form.

Appendix A completed and attached?

☐ Yes

☐ No

☒ N/A

Non-Corporate Entities

(Limited Liability Companies - LLCs, Proprietorships, Partnerships, Cooperatives, etc.) If the Owner is neither an Individual nor a Corporation, it shall complete and attach Appendix B or execute a resolution indicating that the Authorized Representative named in Section 1.6 has authority to execute the Renewable Energy Resources Eligibility Form or to otherwise legally bind the non-corporate entity in like matters.

Appendix B completed and attached?

☒ Yes ☐ No ☐ N/A

¹ If the Corporation has only one sole Officer, it is acceptable for that Officer to provide signatory certification of same as Authorized Representative.

6.2 Authorized Representative Certification and Signature:

I hereby certify, under pains and penalties of perjury, that I have personally examined and am familiar with the information submitted herein and based upon my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties, both civil and criminal, for submitting false information, including possible fines and punishment. My signature below certifies all information submitted on this Renewable Energy Resources Eligibility Form. The Renewable Energy Resources Eligibility Form includes the Standard Application Form and all required Appendices and attachments. I acknowledge that the Generation Unit is obligated to and will notify the Commission promptly in the event of a change in a generator's eligibility status (including, without limitation, the status of the air permits) and that when and if, in the Commission's opinion, after due consideration, there is a material change in the characteristics of a Generation Unit or its fuel stream that could alter its eligibility, such Generation Unit must be re-certified in accordance with RES Rules Section 2.6(E). I further acknowledge that the Generation Unit is obligated to and will file such quarterly or other reports as required by the Rules and the Commission in its certification order. I understand that the Generation Unit will be immediately de-certified if it fails to file such reports.

SIGNATURE: **Signed Electronically**

DATE: **2025-10-21 18:46:12**

Elizabeth Karter

(Printed Name of Signatory)

President

(Title)

Ryegate

(Company)

GIS Certification #:
13599

APPENDIX B
(Revised 4/19/2021)
**(Required When Owner is a Non-Corporate Entity
Other Than An Individual)**

RESOLUTION OF AUTHORIZATION

Resolved: that **Elizabeth Karter, President of Ryegate**, named in Section 1.6 of the Renewable Energy Resources Eligibility Form as Authorized Representative, is authorized to execute the Application on the behalf of **Ryegate**, the Owner named in Section 1.7 of the Generation Unit named in Section 1.1 of the Application.

SIGNATURE:

Elizabeth H. Karter

(Printed Name of Signatory)

DATE:

10/21/25

(Title) PRESIDENT

(Company) RYEGATE ASSOCIATES

State: CONNECTICUT

County: NEW LONDON

(TO BE COMPLETED BY NOTARY) I, FRANCIS R. SABLONE JR. as a notary public, certify that I witnessed the signature of the above named ELIZABETH H. KARTER, and said individual verified his/her identity to me on this date: OCTOBER 21, 2025

SIGNATURE:

[Signature]

My commission expires on: _____

NOTARY SEAL:

FRANCIS R. SABLONE JR.
COMMISSIONER SUPERIOR COURT

A. Purpose:

Ryegate Associates, RA, is building and proposes to operate a 20 MW wood fired power plant in East Ryegate, Vermont. The facility will be fueled with whole tree wood chips as the primary fuel. The chips will be stored in both covered storage silos and an uncovered outside storage pile. Roundwood logs will also be stored at the facility for long term storage.

The purpose of this plan is to provide assurance to the State that the outside storage of wood chips will be done in such a way to minimize potential adverse environmental effects.

B. Background:

The proposed facility will be fired with wood fuel delivered in standard chip vans. The fuel will be mixed hardwood and softwood whole tree chips with a high heating value of 8.5 million Btu's per green ton, and an average moisture content of 50% (wet basis). Demolition waste, railroad ties, and other wastes will not be stored or burned at the facility.

Depending on the species, the chemical characteristics of the wood fuel will vary slightly. The design basis fuel analysis is as follows:

Hydrogen	3.0%
Carbon	25.0%
Oxygen	20.0%
Water	50.0%
Nitrogen	0.0% (0.15% maximum)
Sulfur"	0.0% (0.07% maximum)
Ash	2.0%

The fuel chips will be stored in both covered storage silos and an uncovered outside storage pile before being mechanically conveyed to the boiler. Primary storage will be the fuel silos. The outside chip piles and the roundwood piles provide for secondary storage. The storage silos provide 72 hours of covered storage at maximum plant operating capacity. The main purpose of the outside piles will be to allow continuous plant operation in spite of supply interruptions. Typical interruptions include such things as a labor strike or foul weather, which are expected to cause a reduction in wood fuel availability. Also, use of outside piles will allow the operators to take advantage of short term or seasonal excess availability of fuel wood supplies.

The pile will be built on sloped asphalt. Runoff from the pile will be discharged *in* accordance with an approved discharge permit to the Connecticut River through piping sized for a 10 year 24 hour storm. The pile will be rotated at a maximum interval of 120 days in order to prevent significant decomposition, acid formation, odors, or spontaneous combustion.

Roundwood logs will also be stored at the facility for periods up to 365 days. This fuel will be used to carry the plant through periods of long term shortages of fuel. The roundwood storage pile *will* not be subject to decomposition, odor generation, or spontaneous combustion. The current plan is for a contractor to provide services for roundwood chipping. However, RA may install and operate a permanent roundwood chipper on site if proven to be more economical and provide better operating flexibility.

The wood will be burned at a rate of approximately 30 tons/hr. This converts to approximately 10,000 tons for two weeks of fuel storage. The uncovered chip storage pile will occupy a ground area of approximately 2.0 acres.

The project has a base load power contract and therefore will operate continuously consuming steady quantities of wood. There will not be startups and shutdowns dictated by fuel costs and ISO New England requirements. This will allow procurement of fuel deliveries to be carefully planned in order to avoid large stockpiles of chips on site. This was a major cause of early problems at Burlington Electric Department's (BED) wood fired power plant. At BED plant operating hours were significantly reduced while wood fuel deliveries continued. This resulted in extremely large storage piles with heights of 60' to 80' and storage times greater than 12 months. That is when the spontaneous combustion and offensive odors caused by natural fermentation occurred. BED has since rectified the problems.

C. Potential Chip Storage Problems:

The potential problems that can result from outside chip storage include the following:

1. spontaneous combustion
2. offensive odors
3. fermentation
4. Contaminated leachate production
5. Increased wood fuel moisture content
6. Loss of heating value

This chip pile management plan is developed to decrease the potential for these problems to occur.

D. Chip pile Management Plan:

The following plan is proposed for Ryegate Power station:

1. The plant will be base loaded with a steady power contract. Fuel deliveries will be carefully planned in order to avoid large stockpiles of chips on site. A weekly inventory and age determination will be recorded utilizing weekly fuel delivery scale tickets and plant fuel consumption. The total pile inventory will not exceed 25,000 tons, which is the quantity of fuel that can be consumed in 30 days of operation when all deliveries are halted.
2. The outside chip pile serves as the secondary fuel source.
3. Whole tree logs will be stored onsite for long term storage. These logs will be chipped on site as necessary, but it is likely that the roundwood will turn over

every Year. Problems discussed above are not associated with the storage of roundwood logs.

4. A two-pile system will be used. Wood chips in the storage pile will be used based on the first-in first-out method. Wood chip piles will not exceed a height of 35' -40' tall.

5. Whole tree chips will not be stored on the site for more than 120 days at a time.

6. Chip piles greater than 120 days old will be monitored for excessive temperatures at several locations weekly for tracking purposes. In the event any temperature reaches 180 degrees (F) the pile will be monitored daily. Piles reaching a temperature of 200 degrees (F) or greater will be consumed immediately before internal heat causes spontaneous combustion.

Piles will be constructed with minimal horizontal surface area exposed. This will encourage shedding rainwater and help prevent moisture pick-up from rainfall.

8. Chips will be stored on a sloped paved surface with storm water runoff leading directly to the Connecticut River as approved by discharge permit. This will help prevent moisture build-up and a favorable environment for rapid fermentation in the chip pile. It will also prevent an environment for the generation of significant leachate from the chip pile. Annual storm water runoff from the chip pile is expected to be less than 823,000 gallons.

9. The storage area will be kept free from oil, chemical residues, litter, cigarette butts, tramp metal or any other miscellaneous refuse that can act as a external heat sink potentially leading to fires.

10. As research and experimentation on the mechanisms of chip storage are developed, the chip pile management plan can be modified to address the results that are encountered.

11. In the event the Ryegate facility is unable to consume *in* a timely manner a pile which is beginning to produce offensive odors, the Air Pollution Control Division and Ryegate town selectmen will be informed immediately. If necessary to consume the pile in a timely manner, the pile will be transported to another facility controlled by the operator of Ryegate Power Station for immediate consumption.

E. Summary:

The outside storage piles will be primarily used to ensure a continuous fuel supply for the base-loaded electric power plant.

The storage piles will be managed based on the first-in first-out basis and will be continuously rotated. Chips will remain in storage for no longer than 120 days. Piles will be limited to a height of 35 to 40 feet and good housekeeping will prevent external heat sources from causing fires.

The pile will be built on an asphalt sloped surface to allow storm water to drain from the storage area.

Factors that are conducive to spontaneous combustion, offensive odors, fermentation, and leachate production will not occur at the Ryegate facility. Short rotation periods, small piles, good housekeeping, and adequate drainage will assure that the environment will not be adversely affected by the outside chip storage pile. Also, the plan will be flexible to incorporate the findings of future research and experimentation.

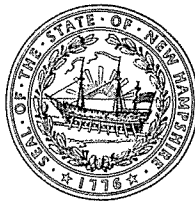
There is an additional incentive for RA to properly manage the chip pile. During prolonged outside storage there is a loss in the wood chip's available energy, i.e. Btu heating value. Proper pile management by Ryegate Associates and minimal outside storage time will help optimize the fuel's heating value and thereby save overall annual fuel costs.

THE STATE OF NEW HAMPSHIRE

CHAIRMAN
Amy L. Ignatius

COMMISSIONERS
Robert R. Scott
Martin P. Honigberg

EXECUTIVE DIRECTOR
Debra A. Howland



PUBLIC UTILITIES COMMISSION
21 S. Fruit Street, Suite 10
Concord, N.H. 03301-2429

TDD Access: Relay NH
1-800-735-2964

Tel. (603) 271-2431

FAX (603) 271-3878

Website:
www.puc.nh.gov

March 4, 2014

Eric A. DeBarba
Director, New England Origination
GDF SUEZ Energy North America, Inc.
200 Glastonbury Boulevard, Suite 303
Glastonbury, CT 06033

Re: DE 14-007, GDF SUEZ Energy North American, Inc.,
Application for Certification as a REC Eligible Facility - Ryegate Associates

Dear Mr. DeBarba:

On January 8, 2014, the Commission received an application from GDF SUEZ requesting Class III New Hampshire renewable energy certificate (REC) eligibility for the 20 megawatt (MW) Ryegate Associates – Ryegate Power Station (Ryegate) biomass facility located in East Ryegate, Vermont, pursuant to RSA 362-F: 11, III provides that the Commission may conditionally certify a biomass facility pending New Hampshire of Department of Environmental Services (DES) verification of compliance for nitrogen oxide (NO_x) and particulate matter (PM) emission rates and monitoring requirements.

On January 31, 2014, the Commission received a letter from DES recommending the Commission grant Ryegate conditional approval for Class III REC eligibility as DES anticipates that NO_x emissions from the facility will meet the requirements of RSA 362-F:2 VIII(a) and Puc 2502.16 in the third quarter of 2014. At that time, a new system will be installed that will reduce NO_x emissions from 0.15 lbs/mmBTU to no greater than 0.075 lbs/mmBtu.

Ryegate began operation in October 1992. The facility burns approximately 266,000 tons of biomass wood per year including wood chips and other low-grade clean wood fuels. The Ryegate wood procurement process, developed in cooperation with state forestry officials, promotes sound forest management principles. Electricity generated is delivered to Green Mountain Power's system. The NEPOOL GIS facility code has been verified as MSS 2433.

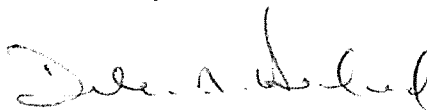
In addition to DES' recommendation for conditional approval, Ryegate provided the following regulatory approvals, and other supporting documentation:

- a. State of Vermont Agency of Natural Resources, Department of Environmental Conservation, Wastewater Management Division Discharge Permit, March 24, 2010;
- b. Ryegate Power Station Chip Management Plan;
- c. State of Vermont Agency of Natural Resources, Department of Environmental Conservation, Title V Air Pollution Control Permit to Construct and Operate, May 16, 2011; and,
- d. Ryegate Power Station Emission Compliance Test Program, July 16, 2013.

The Commission has reviewed the Ryegate application and the DES letter recommending conditional approval and determined that all necessary documentation has been provided to demonstrate that the project meets all the requirements of Puc 2502.02. Therefore, the Commission hereby grants Ryegate conditional approval for Class III eligibility. The facility will be eligible to produce RECs effective the date that the Commission receives DES verification that the facility is operating in conformance with Puc 2502.16.¹ This approval will be conditioned upon DES providing the Commission with information on a quarterly basis that the facility complies with applicable emissions standards.

The New Hampshire Renewable Portfolio Standard certification code for the Ryegate facility is NH-III-14-006.

Sincerely,



Debra A. Howland
Executive Director

cc: Joseph Fontaine, NHDES

¹ In DE 08-051, Pinetree Power – Tamworth, Inc., the Commission determined that the appropriate effective date for biomass facilities is the date on which the Commission receives notification from DES that the facility meets the emission requirements, thereby completing an application in accordance with NH Code Admin. Rules Puc 2505.01 (c) and 2505.02.

SERVICE LIST - EMAIL ADDRESSES - DOCKET RELATED

Pursuant to N.H. Admin Rule Puc 203.11 (a) (1): Serve an electronic copy on each person identified on the service list.

Executive.Director@puc.nh.gov
amanda.noonan@puc.nh.gov
barbara.bernstein@puc.nh.gov
eric.debarba@gdfsuezna.com
Jack.ruderman@puc.nh.gov
steve.mullen@puc.nh.gov
suzanne.amidon@puc.nh.gov
tom.frantz@puc.nh.gov

Docket #: 14-007-1 Printed: March 05, 2014

FILING INSTRUCTIONS:

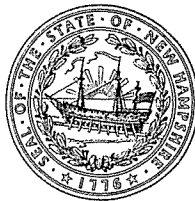
- a) Pursuant to N.H. Admin Rule Puc 203.02 (a), with the exception of Discovery, file 7 copies, as well as an electronic copy, of all documents including cover letter with: DEBRA A HOWLAND
EXEC DIRECTOR
NHPUC
21 S. FRUIT ST, SUITE 10
CONCORD NH 03301-2429
- b) Serve an electronic copy with each person identified on the Commission's service list and with the Office of Consumer Advocate.
- c) Serve a written copy on each person on the service list not able to receive electronic mail.

THE STATE OF NEW HAMPSHIRE

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March 4, 2014

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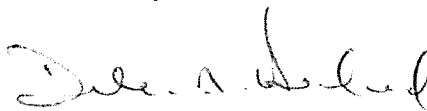
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- c. State of Vermont Agency of Natural Resources, Department of Environmental Conservation, Title V Air Pollution Control Permit to Construct and Operate, May 16, 2011; and,
- d. Ryegate Power Station Emission Compliance Test Program, July 16, 2013.

The Commission has reviewed the Ryegate application and the DES letter recommending conditional approval and determined that all necessary documentation has been provided to demonstrate that the project meets all the requirements of Puc 2502.02. Therefore, the Commission hereby grants Ryegate conditional approval for Class III eligibility. The facility will be eligible to produce RECs effective the date that the Commission receives DES verification that the facility is operating in conformance with Puc 2502.16.¹ This approval will be conditioned upon DES providing the Commission with information on a quarterly basis that the facility complies with applicable emissions standards.

The New Hampshire Renewable Portfolio Standard certification code for the Ryegate facility is NH-III-14-006.

Sincerely,



Debra A. Howland
Executive Director

cc: Joseph Fontaine, NHDES

¹ In DE 08-051, Pinetree Power – Tamworth, Inc., the Commission determined that the appropriate effective date for biomass facilities is the date on which the Commission receives notification from DES that the facility meets the emission requirements, thereby completing an application in accordance with NH Code Admin. Rules Puc 2505.01 (c) and 2505.02.

SERVICE LIST - EMAIL ADDRESSES - DOCKET RELATED

Pursuant to N.H. Admin Rule Puc 203.11 (a) (1): Serve an electronic copy on each person identified on the service list.

Executive.Director@puc.nh.gov
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Docket #: 14-007-1 Printed: March 05, 2014

FILING INSTRUCTIONS:

- a) Pursuant to N.H. Admin Rule Puc 203.02 (a), with the exception of Discovery, file 7 copies, as well as an electronic copy, of all documents including cover letter with: DEBRA A HOWLAND
EXEC DIRECTOR
NHPUC
21 S. FRUIT ST, SUITE 10
CONCORD NH 03301-2429
- b) Serve an electronic copy with each person identified on the Commission's service list and with the Office of Consumer Advocate.
- c) Serve a written copy on each person on the service list not able to receive electronic mail.

RYEGATE ASSOCIATES

RYEGATE POWER STATION

Harvesting Policy for Whole Tree Chipping and Roundwood Operations in Vermont

It will be the policy of Ryegate Power Station to accept delivery of whole tree chips and roundwood only from harvesting operations in Vermont certified by a professional forester as meeting the criteria of "good forestry practice" as outlined below. Ryegate Associates (RA) forester(s) or their agent(s) will conduct periodic on-site inspections to insure compliance with the following practices to the satisfaction of RA and/or applicable State authorities. Unresolved violation of these practices will result in the termination of chip and/or roundwood purchases from the offending producer.

1. The use of necessary and applicable erosion control practices will be required

Every harvesting contractor will become familiar with the publication ***Acceptable Management Practices for Maintaining Water Quality on Logging Jobs in Vermont*** (also known as "The Orange Book"). Contractors will implement procedures outlined in the guide to the satisfaction of RA foresters and/or applicable State authorities.

2. Consideration for visual quality will be required

- a. All refuse will be removed from the logging site prior to termination of the operation.
- b. Appropriate techniques will be used adjacent to major hiking trails to protect the integrity of the trail and the hiking experience. Trail treadways will be kept clear of logging debris. Crossing of the trails by logging vehicles will be at right angles and kept to the minimum number necessary. Cutting within 50 feet of either side of major trails will be limited to the removal of high risk trees or removal of less than 30% of the basal area of existing trees greater than 5 inches DBH, whichever is less.
- c. Landings will be laid out so as to reduce adverse visual impact. Newly constructed landings along public highways will be screened by a strip of undisturbed vegetation at least 25 feet wide when such vegetation exists. Where open areas or abandoned landings are suitable for use as landings, they will be so used in spite of the lack of buffer strip in order to reduce the amount of area cleared for such use.

3. Wildlife and fisheries habitat protection will be provided

- a. Landowners will be made aware of any impacts to wildlife or fisheries relating to a proposed chip or roundwood harvest operation on their property.

- b. For all sites within Vermont from which wood fuel will be purchased by **RA**, an **RA** forester will visit the site with the landowner and/or harvesting contractor and confer in developing a harvesting procedure which meets the forester's approval. In turn, the **RA** forester will develop a "Whole Tree Chip/Roundwood Harvest Notification" to be sent to the appropriate Vermont Department of Fish & Wildlife biologist. This notification will include: a map showing the location of the proposed operation and the location of all streams, rivers, lakes & ponds; information regarding the nature of the harvest (including the type of cut and acreage); name of the prospective contractor(s) and approximate dates during which the harvest will be conducted. The biologist will have 15 days in which to respond to the **RA** forester with an approval or modification of the proposed operation. If the biologist determines that a modification of the harvest plan will be necessary to protect deer wintering areas, wetlands or the habitat of threatened or endangered species, such modifications will be included in the response to the **RA** forester within the 15 day time period. No harvesting operation will begin before approval by the Vermont Department of Fish & Wildlife biologist.
- c. When landowner goals require silvicultural manipulation for wildlife management purposes, guidance may be sought from the Vermont Department of Fish & Wildlife or other qualified sources as well as the publication ***Model Habitat Management Guidelines for Deer, Bear, Hare, Grouse, Turkey and Non-game Wildlife*** by the Vermont Department of Fish & Wildlife.
- d. Protection of fisheries resources will be provided through the use of acceptable erosion and sedimentation control practices including the use of filter (or "buffer") strips and protection of streamside shade. Harvesting contractors will implement applicable procedures outlined in the publication ***Acceptable Management Practices for Maintaining Water Quality on Logging Jobs in Vermont***. Additional measures will be implemented when so specified by **RA** foresters and/or applicable State authorities.

4. Protection of archeological sites will be required

- a. Ryegate Associates foresters will seek guidance in protecting significant archeological sites. Such guidance will be provided by the Vermont Division for Historic Preservation in the form of State-sponsored training to aid in on-the-ground identification of such sites and/or in the form of guidance from the Division of Historic Preservation in the determination of the likelihood of occurrence of significant archeological deposits within areas scheduled for harvesting. **RA** will require the modification or termination of harvesting areas thought to be archeologically significant by the Division for Historic Preservation until such time as examination of the area has been completed. **RA** will also make the landowner aware of significant archeological sites on the property and aid him/her in adjusting the management decisions to protect such sites.

5. Timber Harvesting Requirements

- a. The development of **management goals** will involve the consideration of:
 1. The objectives of the landowner and alternatives available to him/her.
 2. The characteristics of the site and forest stand(s).
 3. The impacts on related resources (water quality, wildlife, scenic, recreation).
- b. The landowner or land manager and/or the harvesting contractor will confer with a professional forester representing RA in developing a harvesting procedure which meets the forester's approval. In all cases, harvesting will incorporate (to the extent reasonably possible) the protection of residual trees, minimization of waste and assurance of rapid and adequate regeneration. Every effort will be made to put harvested products to their most valuable use. In developing specific silvicultural techniques for meeting management goals, reliance will be placed on a combination of the forester's professional judgment and recognized silvicultural guides, including (but not limited to):
 1. *A Silvicultural Guide for Northern Hardwood Types in the Northeast* by Leak, Solomon and DeBald;
 2. *A Silvicultural Guide for White Pine in the Northeast* by Lancaster and Leak;
 3. *A Silvicultural Guide for Spruce-fir in the Northeast* by Frank and Bjorkholm;
 4. *A Silvicultural Guide for Developing a Sugarbush* by Lancaster et.al;
 5. *Uneven-aged Management of Northern Hardwoods in New England* by Leak & Filip;
 6. *Model Habitat Management Guidelines for Deer, Bear, Hare, Grouse, Turkey, Woodcock and Non-Game Wildlife* by the Vermont Department of Fish & Wildlife;
 7. *Manager's Handbook for Red Pine in the North Central States* by North Central Forest Experiment Station, USDA Forest Service;
 8. *A Guide to Hardwood Timber Stand Improvement* by Northeastern Area State & Private Forestry, USDA Forest Service;
 9. *Establishing Even-age Northern Hardwood Regeneration by the Shelterwood Method – Preliminary Guide* by North Cen. Forest Exp. Station, USDA Forest Service.
- c. Specific types of cutting will include (but not limited to):
 - The Selection System: A silvicultural system involving the removal of trees of all sizes singly or in groups, at regular intervals resulting in an uneven-aged stand. This system involves a continuous forest cover and favors shade-tolerant species.
 - The Seed Tree System: A silvicultural system involving the retention of a very light stocking of selected trees after an initial cut. The role of the residual trees is to furnish seed for the next crop and results in an even-aged stand.
 - The Shelterwood System: A silvicultural system that involves the removal of the overstory in several stages. Partial overstory removal provides favorable conditions for the establishment of regeneration. The residual overstory is removed after the new stand is well established. Shelterwood cutting results in an even-aged stand.

The Clearcutting System: A silvicultural system which involves the harvesting in one cut of all trees larger than two (2) inches in diameter and results in an even-aged stand. The size and configuration of the cut area is variable (as small as a fraction of an acre). Clearcutting is recognized to be useful in certain silvicultural and wildlife management situations. However, due to public sensitivity, only modified forms of clearcutting will be allowed by **RA** (narrow progressive strips and small blocks up to 25 acres in size). Land clearing operations involving land use conversions may employ larger openings; however, the objective in such cases is not future timber production. For land use conversion operations, the landowner must submit a letter of intent to **RA** stating the number of acres to be cleared, the name of the harvest contractor and the purpose of the clearing.

Improvement Cut: An improvement cut is an intermediate cut which can be prescribed by a forester as part of either the previously mentioned silvicultural systems and can be carried out at various times during the rotation (in even-aged stands) or as part of the regeneration cut (in the Selection System). The objective of an improvement cut is the reduction of low-value and low potential-value stand components through the removal of poorly formed stems and less-valuable species.

Thinning: Thinning is an intermediate cut prescribed by a forester to reduce the level of tree stocking to a recommended level in order to concentrate tree growth on fewer, selected stems.

Due to variability in forest stands as a result of site conditions and past treatments, it will often be necessary to incorporate more than one of the above-mentioned types of system within a single woodlot. In addition, dependent upon the intensity of past high-grading, it will often be necessary to leave numerous poor quality trees uncut in order to maintain recommended stocking levels.

6. **Adherence to applicable local, State and Federal regulations, including (but not limited to):**

- a. Occupational safety and insurance coverage;
- b. Forest fire prevention and control;
- c. Protection of property of others;
- d. Water quality protection;
- e. Harvesting and transportation of forest products.

7. **Stumpage sale contract**

Landowners will be made aware of the desirability of having a stumpage sale contract outlining the details of the harvest operation. If the landowner elects to utilize such a document, the harvesting contractor will be required to meet the terms of that contract in addition to the terms of this harvesting policy.

#AOP-24-001
DEC#SJ95-0114

Operating Permit Expiration Date: August 8, 2029

State of Vermont
Agency of Natural Resources
Department of Environmental Conservation



Air Quality & Climate Division
Montpelier, Vermont

TITLE V
AIR POLLUTION CONTROL PERMIT
TO CONSTRUCT AND OPERATE

Date Permit Issued: August 8, 2024

Owner/Operator: Ryegate Holdings LLC and Capergy US LLC dba Ryegate Associates
254 Commercial St. Suite 103
Portland, Maine 04101-4664

Source: Wood-fired Electric Generating Station
Ryegate Associates
247 Weesner Drive
East Ryegate, Vermont

FINDINGS OF FACT

(A) FACILITY DESCRIPTION

Ryegate Holdings LLC and Capergy US LLC dba Ryegate Associates (also referred to herein as "Permittee") owns and operates a twenty (20) megawatt (net) Wood-fired Electric Generating Station on Weesner Drive in the town of East Ryegate, Vermont (also referred to herein as "Facility"). The Facility is operated as a base load electrical generation plant at or near to 100% capacity at all times, excluding plant outages. The electricity generated at the Ryegate Power Station is sold under the terms of a power purchase agreement (PPA) issued by the Public Service Board (PSB) on March 29, 2013. The original PPA was valid for a 10-year period from November 1, 2012 to November 1, 2022. On May 21, 2021, legislation was approved that granted a 2-year extension of this 10-year PPA. The new PPA expiration date is November 1, 2024. Subsequently in May 2022, legislation (Act 155) was approved that granted an additional 10-year extension of the PPA, pending efficiency improvements at the Facility. The expiration date for the PPA under Act 155 is November 1, 2032. Operations performed at the Facility are classified within the Standard Industrial Classification Code - 4911 (Electrical Services), or under the North American Industrial Classification System Code 221117 (Biomass Electric Power Generation).

The Facility is fired with whole tree wood chips delivered in standard chip vans. The fuel is primarily mixed hardwood and softwood, with some lesser amounts of sawdust, mill chips, and bark. The fuel chips are stored in silos and outside storage pile(s) before being mechanically conveyed to the boiler. Wood fuel is fed into a single, high-pressure, boiler designed to burn green wood fuel (Main Boiler). Steam produced by the Main Boiler is passed through a condensing turbine generator set with extraction steam utilized for feedwater heating. Condenser heat is removed via an open loop circulating water system to a cooling tower structure.

The Main Boiler is fitted with a liquefied petroleum gas (LPG) auxiliary burner having a maximum rated heat input of 50 million British thermal units per hour (MMBtu/hr). This burner is used primarily for plant start-up and for supplemental fuel. The Facility also has a 430 horsepower LPG-fired engine generator (Emergency Generator) set for use during electric power outages, and an auxiliary LPG-fired boiler (Auxiliary Boiler) that supplies hot water for space heating purposes during plant outages.

Air contaminant emissions produced by the wood-fired boiler are controlled as follows: electrostatic precipitator, flue gas reinjection, selective non-catalytic reduction system (SNCR) using urea injection, selective catalytic reduction system (SCR) using urea injection, and combustion air control with oxygen trim and underfire/overfire air ratio. In 2014, the Permittee voluntarily installed the selective catalytic reduction (SCR) system in order to reduce the Facility's emissions of NO_x. The reduced NO_x emissions are required for the Facility to qualify for Class 1 renewable energy credits (RECs) in New England. While the installation of the SCR system was voluntary, now that the capital costs have been expended and the system is operational, a new RACT evaluation based only on the operating costs has determined the Permittee must continue to operate the system to meet new NO_x RACT limits contained in this Permit, or file an amendment application for

reconsideration of this NO_x RACT determination.

To comply with the efficiency improvement requirements of Act 155, the Permittee has proposed to construct and operate heat recovery equipment to recover heat from the Biomass Plant exhaust stack and direct it to a low-temperature dryer (Belt Dryer) that will dry natural wood chips. The dried chips will then be directed to wood pelletizing equipment (Pelletizer). The heat recovery, wood drying and pelletizing equipment (Proposed Project) will utilize approximately 3 MW of energy from the Biomass Plant. In addition to these physical changes at the Facility, the Permittee has also proposed the following changes to the Permit to Operate the Facility:

- Increase the Facility-wide emissions limit for total particulate matter (PM) from 34 tons per year to 53.3 tons per year for any consecutive twelve (12) month rolling period,
- Increase the Facility-wide emissions limit for Volatile Organic Compounds (VOC) from 39 tons per year to 45.8 tons per year for any consecutive twelve (12) month rolling period,
- Reduce the Main Boiler filterable PM emissions limit from 0.0070 grains per dry standard cubic foot (gr/dscf) to 0.00091 gr/dscf. and
- Reduce the Main Boiler VOC emissions limit from 0.03 pound per million British thermal units (lb/MMBtu) to 0.0049 lb/MMBtu.

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

Equipment Specifications			
Equipment/Make/Model	Rating ^{1, 2, 3, 4, 5}	Fuel Type ⁶	Date of Manufacture (installation)
Main Boiler Manufacturer: Riley Stoker Corp.	300 MMBtu/hr 20 MWe (net)	Wood	1992
Main Boiler Auxiliary Burner Manufacturer: Coen Model: 230/DAZ-22	50 MMBtu/hr	LPG	1992
Auxiliary Boiler Manufacturer: Weil-McLain Boiler Model: 1688R-W Burner Model: WCR3-G-25B	5 MMBtu/hr	LPG	1992
Emergency Generator Cummins Engine Model #: GTA19 Serial Number: 25178626 Engine Manufacture Date: 11 December, 1991 Marathon Electric Generator Model #: 432RSL4015BP-310W rs	430 bhp (300kWe)	LPG	1992
Low-Temperature Belt Dryer (EP2)	12 ODT/hr	Heat from Boiler exhaust	Proposed 2024

Equipment Specifications			
Equipment/Make/Model	Rating ^{1, 2, 3, 4, 5}	Fuel Type ⁶	Date of Manufacture (installation)
Pelletizing equipment consisting of: One (1) Wet Hammermill (EP1) Two (2) Dry Hammermills (EP4 & EP6) Two (2) Pelletizer/Cooler Systems (EP5 & EP7) One (1) Packaging line One (1) Pellet Storage Silo (EP8) Various enclosed material transfer and handling equipment (EP3)	Combined capacity: 11.02 ODT/hr	N/A	Proposed 2024

¹ MMBtu/hr - Million British Thermal Units per hour maximum rated heat input.

² MWe (net) – Net electrical output in Megawatts

³ bhp – brake horsepower rated output as specified by the manufacturer.

⁴ kWe – kilowatt electrical output.

⁵ ODT – oven-dry ton.

⁶ LPG –Liquefied Petroleum Gas.

Pollution Control Equipment Specifications	
Equipment	Specifications
Main Boiler – Mechanical Dust Collectors / Fly ash Reinjection System	Manufacturer: Zurn Mechanical Type of Unit: Cyclone Separator
Main Boiler – ESP	Manufacturer: PPC Industries Estimated Collection Efficiency: 99.5% Pressure Drop: 0.5 inch w.c. max Type of Unit: Plate and weighted wire Cleaning Method: Rapping Inlet Temperature: 300°F Collecting surface area: 77,175 ft ² Air Flow Rate: 115,000 acfm
Main Boiler - SNCR	Manufacturer: Nalco/Fuel Tech Estimated Collection Efficiency: 30% Pressure Drop: N/A Dimensions: 12 injection nozzles – located approximately 30 feet above the furnace grate. Air Flow Rate: 335,000 lb/hr (flue gas) Other Pertinent Information: Injection of a 15/85 solution of urea and water.
Main Boiler - SCR	Manufacturer: CCA / Peerless Pressure Drop: N/A Dimensions: 6,500 square feet.
Pelletizing Operation – Wet Hammermill Cyclone & Fabric Filter (EP1)	Manufacturer: Prodesa Type of Unit: Cyclone followed by Fabric Filter Airflow: 10,595.15 acfm Air-to-cloth ratio: 5.32

Pollution Control Equipment Specifications	
Equipment	Specifications
Pelletizing Operation – Dry Hammermills Cyclone & Fabric Filter (EP4 & EP6)	Manufacturer: Prodesa Type of Unit: Cyclone followed by Fabric Filter Airflow: 4,708 acfm Air-to-cloth ratio: 3.90
Pelletizing Operation –Truck Loading Fabric Filter (EP3)	Manufacturer: Prodesa Type of Unit: Fabric Filter Airflow: 1,177 acfm Air-to-cloth ratio: 0.98
Pelletizing Operation –Pellet Mill Fabric Filter (EP5 & EP7)	Manufacturer: Prodesa Type of Unit: Fabric Filter Airflow: 6,850 acfm Air-to-cloth ratio: 2.21
Pelletizing Operation –Pellet Silo Fabric Filter (EP8)	Manufacturer: Prodesa Type of Unit: Fabric Filter Airflow: 2,648 acfm Air-to-cloth ratio: 2.20

Insignificant Fuel Combustion Equipment			
Equipment	Size ^{1,2}	Fuel Type ³	Date of Installation
Diesel Fire Pump Cummins 6BTA 5.9 F1 Serial Number: 44698521	208 bhp	No. 2 Fuel Oil	1992
Fuel Yard Maintenance Building Heater	< 3 MMBtu/hr	LPG	
Main Maintenance Building Heater	< 3 MMBtu/hr		
LPG System Vaporizer Make: Algas-SDi Model Q1650V Serial Number 08116660	1.825 MMBtu/hr	LPG	2009

¹ MMBtu/hr - Million British Thermal Units per hour maximum rated heat input.

² bhp – brake horsepower rated output as specified by the manufacturer.

³ LPG –Liquefied Petroleum Gas.

(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(3) [Electrical power generating facilities] 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 Quality & Climate Division (hereinafter "Agency") as one stationary air contaminant source for purposes of review under the *Regulations*.

(C) PRIOR AGENCY ACTIONS/APPROVALS

The Facility has been issued the following "Permit to Construct" approvals pursuant to 10 VSA §556 and §§5-501 and/or 5-502 of the *Regulations* and the following "Permit to Operate" approvals pursuant to 10 VSA §556a and Subchapter X of the *Regulations*.

Prior Agency Permit Approvals and Actions	
Date of Action	Description of Agency Approval/Action
January 11, 1988	Original Agency approval to construct the Facility.
July 11, 1990	#AP-90-029a – Amendment issued to extend the deadline of construction of the Facility and added requirement for SNCR for NO _x .
August 15, 1991	#AP-90-029a2 – Amendment issued to address design changes in the Facility (e.g., switch auxiliary fuel from No. 2 oil to LPG, increase in stack height, etc.).
October 30, 1991	#AP-90-029b – Amendment issued requiring compliance with a revised NO _x MSER limit 0.15 pounds per million British thermal units (lb/MMBtu) at start-up instead of three years following start-up.
January 24, 1992	#AP-90-029c – Amendment issued approving the use of urea and/or ammonia for the selective non-catalytic control device.
April 29, 1992	#AP-90-029d – Amendment issued in order to make clerical revisions to the conditions of the approval.
June 18, 1992	#AP-90-029e – Amendment issued in order to revise the language of various reporting requirements.
February 23, 1993	#AP-90-029f – Amendment issued in order to extend the deadline for emission testing.
February 25, 1997	#AP-90-029g – Amendment issued eliminating the requirement to continuously monitor VOC emissions and the prohibition on simultaneous operation of the Main Boiler and Auxiliary Boiler.
September 15, 1997	#AOP-95-031 – Agency approval for initial Title V Permit to Operate.
May 16, 2011	#AOP-01-037 – Renewal of previous Title V Permit to Operate combined with previous Permit to Construct.
September 11, 2017	#AOP-15-005 – Renewal of previous Title V Permit to Operate combined with previous Permit to Construct.
April 23, 2020	#AOP-20-022 – Transfer of Title V Permit to Operate from ATC Ryegate, LLC to Stored Solar Services LLC dba Ryegate Associates.

Prior Agency Permit Approvals and Actions	
Date of Action	Description of Agency Approval/Action
August 30, 2022	#AOP-21-048 – Renewal of previous Title V Permit to Operate combined with previous Permit to Construct.

(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. The proposed installation of additional wood pellet manufacturing equipment along with the associated increase in emissions is considered a modification to the Facility under the *Regulations* and consequently a Permit to Construct must be obtained.

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 the ten (10) tpy combined threshold for applicability with Subchapter X of the *Regulations*, and emissions of nitrogen oxides (NO_x) and carbon monoxide (CO) are estimated to be in excess of the one-hundred (100) tpy threshold for applicability to 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 10 VSA §556(e) the Agency has combined the Permit to Construct modification and the Permit to Operate modification and renewal for this Facility into one combined Permit to Construct and Operate. The allowable emissions for the Facility are summarized below:

Allowable Air Contaminant Emissions (tons/year) ¹					
PM/PM ₁₀ /PM _{2.5}	CO	NO _x	SO ₂	VOCs	HAPs ²
53.1 / 22.2 / 22.2	394	100.3	< 25	< 50	<10/25

1 PM/PM₁₀/PM_{2.5} – total particulate matter, total particulate matter of 10 micrometers in size or smaller and total particulate matter of 2.5 micrometers in size or smaller, respectively. Unless otherwise specified, all PM is assumed to be PM_{2.5}; SO₂ - sulfur dioxide; NO_x - oxides of nitrogen measured as NO₂ equivalent; CO - carbon monoxide; VOCs - volatile organic compounds; HAPs - hazardous air pollutants as defined in §112 of the federal Clean Air Act.

2 For purposes of designation the Facility as a major or minor source of federal hazardous air pollutants (HAPs), the emissions of individual HAPs from the Facility are each <10 tpy and emissions of total HAPs combined are <25 tpy.

(E) REVIEW OF CRITERIA POLLUTANT EMISSIONS FOR THE PERMIT TO CONSTRUCT

(a) New Source Review Designation

The Facility, prior to the construction of the proposed modification, is designated as a major stationary source of air contaminants since it has allowable emissions of a single air contaminant of fifty (50) tons per year or greater. Consequently, any *modification* of the source that would result in a significant increase in emissions of any air contaminant, as defined in §5-101 of the *Regulations*, is designated as a major modification and is subject to review under §5-501 and §5-502 of the *Regulations*. The proposed project identified in Findings of Fact (A) above, together with all previous minor modifications constructed at the Facility since July 1, 1979, and which have not been previously reviewed under §5-502 of the *Regulations*, will result in a significant increase in emissions. Consequently, the proposed modification is designated as a major modification subject to §5-501 of the *Regulations* and also is subject to the major source permitting 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 criteria pollutants 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 modification of a stationary source and therefore is subject to review under the MSER requirements in §5-502 of the *Regulations*.

Prior MSER Evaluations: The Facility was previously reviewed under §5-502 of the *Regulations* for modifications to the Facility approved on the dates and for the pollutants and methods presented in the following table. The following MSER determinations have been made at this Facility:

Most Stringent Emission Rate Determinations		
Determination Date & Permit #	Pollutant	Description/Emission limit ¹
Original Permit to Construct No Permit Number Issued: January 11, 1988	PM	<u>Main Boiler</u> : Installation and operation of mechanical collectors in series with a 670 SCA, five field electrostatic precipitator. Minimization of emissions above 0.00070 gr/dscf corrected to 12 % CO ₂ , but emissions not to exceed 0.0070 gr/dscf corrected to 12% CO ₂ or 5.0 lbs/hr.
	SO ₂	<u>Main Boiler</u> : Combustion of #2 fuel oil with a maximum sulfur content of 0.5 percent by weight, as the auxiliary fuel and the maximum combustion limit of 357,000 gallons/yr.

Most Stringent Emission Rate Determinations		
Determination Date & Permit #	Pollutant	Description/Emission limit ¹
	NO _x	<u>Main Boiler</u> : Modern combustion design devised to minimize nitrogen oxides emissions and the low flame temperature resulting from the utilization of wood as the primary fuel. Emission Limit: 0.250 lb/MMBtu.
	CO	<u>Main Boiler</u> : Modern combustion design devised to assure complete combustion of fuels. Emission Limit: 0.30 lb/MMBtu.
July 11, 1990 #AP-90-029a	NO _x	<u>Main Boiler</u> : Installation and operation of a non-catalytic reduction system wherein ammonia is injected into the boiler combined with modern combustion design of the boiler and the low flame temperature resulting from utilization of wood as the primary fuel. Emission Limits: 0.25 lb/MMBtu (first year of operation) 0.20 lb/MMBtu (second year of operation) 0.15 lb/MMBtu (third year of operation)
August 15, 1991 #AP-90-029b	PM	<u>Auxiliary Boiler</u> : Use of LPG fuel. Emission Limit: 0.005 lb/MMBtu <u>Emergency Generator</u> : Use of LPG fuel. Emission Limit: 0.001 g/bhp-hr
	NO _x	<u>Auxiliary Boiler</u> : Modern combustion design and use of LPG fuel. Emission Limit: 0.14 lb/MMBtu <u>Emergency Generator</u> : Modern combustion design and the use of LPG fuel. Emission Limit: 8.5 g/bhp-hr
	CO	<u>Auxiliary Boiler</u> : Modern combustion design. Emission Limit: 0.035 lb/MMBtu <u>Emergency Generator</u> : Modern combustion design. Emission Limit: 28 g/bhp-hr
October 30, 1991 #AP-90-029c	NO _x	<u>Main Boiler</u> : Installation and operation of a non-catalytic reduction system wherein ammonia is injected into the boiler combined with modern combustion design of the boiler and the low flame temperature resulting from utilization of wood as the primary fuel. Emission Limit: 0.15 lb/MMBtu (8 hour rolling average) to be met upon start-up of boiler.
August 8, 2024 #AOP-24-001	PM	<u>Belt Dryer</u> : Good Operating Practices. Emission limit: 0.748 lb/ODT based on a 3-hour average. <u>Pelletizer – hammermills, cooling, loading</u> : Good Operating Practices. Emission limit of 0.00226 gr/dscf based on a 3-hour average. <u>Pelletizer – Silo</u> : Good Operating Practices. Emission limit of 0.00678 gr/dscf based on a 3-hour average. <u>Pelletizer – Conveyors</u> : Good Operating Practices and enclosed conveyors. Emission limit of 0.00015 lb/ton based on a 3-hour average.

(c) Ambient Air Quality Impact Evaluation

An ambient air quality impact evaluation for criteria pollutants is performed to demonstrate whether or not a proposed project will cause or contribute to violations of the national ambient air quality standards and/or significantly deteriorate existing air quality for the regulated criteria pollutants.

Emissions from the Facility are estimated to exceed the Significant Emission Rate (SER) for Particulate Matter. Therefore, an air quality impact evaluation was required by the Agency for the proposed project in accordance with §5-502 of the *Regulations*.

Ambient Air Quality Impact Evaluations - NAAQS				
Permit #	Pollutant(s)	Averaging Time	Result (µg/m ³)	NAAQS (µg/m ³)
#AOP-24-001	PM ₁₀	24-hour ¹	23.9	150
		Annual ³	7.2	9.0
	PM _{2.5}	24-hour ²	18.0	35
		Annual ³	7.2	9.0
	SO ₂	1-hour ⁴	17.3	196
		3-hour ⁵	9.8	1,300
	NO ₂	1-hour ⁶	145.2	188
		Annual ⁷	12.9	100
	CO	1-hour ⁵	2,144.8	40,000
		8-hour ⁵	481.7	10,000

¹ Not to be exceeded more than once per year on average over 3 years (5 years for modeling demonstrations).

² 98th percentile, averaged over 3 years (5 years for modeling demonstrations).

³ Annual mean, averaged over 3 years (5 years for modeling demonstrations). Revised by EPA on February 7, 2024.

⁴ 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years (5 years for modeling demonstrations).

⁵ Not to be exceeded more than once per year

⁶ 98th percentile of 1-hour daily maximum concentrations, averaged over 3 years (5 years for modeling demonstrations).

⁷ Annual Mean

Ambient Air Quality Impact Evaluations – PSD Increment				
Permit #	Pollutant(s)	Averaging Time	Result (µg/m ³)	Class II PSD Increment (µg/m ³)
#AOP-24-001	PM ₁₀	24-hour ¹	10.9	30
		Annual ²	2.7	17
	PM _{2.5}	24-hour ¹	7.6	9.0
		Annual ²	1.9	4.0

¹ 24-hr maximum concentration.

² Arithmetic mean.

Prior Air Quality Impact Evaluations: Ambient air quality impact analyses were performed in 1987 as part of the original review for the Facility and again as part of the review for #AP-90-029a2 issued August 15, 1991. The pollutants PM, SO₂, CO and NO_x were modeled and it was determined that the proposed impacts would not cause a violation of any National Ambient Air Quality Standard (NAAQS), exceed any PSD increment or significantly contribute to an existing violation of an NAAQS.

(F) REVIEW OF CRITERIA POLLUTANT EMISSIONS FOR THE PERMIT TO OPERATE

(a) 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) - Prohibition of Visible Air Contaminants, Installations Constructed Subsequent to April 30, 1970.
Section 5-221(1) - Prohibition of Potentially Polluting Materials in Fuel, Sulfur Limitation in Fuel.
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 5-251 – Control of Nitrogen Oxide Emissions.
Section 5-252 – Control of Sulfur Dioxide Emissions.
Section 5-261(2) – Control of Hazardous Air Contaminants - Hazardous Most Stringent Emission Rate.
Section 5-271 – Control of Air Contaminants from Stationary Reciprocating Internal Combustion Engines.
<i>Applies to the Cummins LPG-fired emergency electric generator at the Facility.</i>
Section 5-402 – Written Reports When Requested.

Applicable Requirements from the Vermont Air Pollution Control Regulations
Section 5-403 – Circumvention.
Section 5-404 – Methods for Sampling and Testing of Sources.
Section 5-405 – Required Air Monitoring.
Section 5-406 – Required Air Modeling.
Section 5-407 – Prevention of Air Contaminant Emissions.
Section 5-408 – Change in Ownership or Operational Control.
Section 5-409 – False or Misleading Information.
Subchapter VIII – Registration of Air Contaminant Sources.
Subchapter X – Operating Permits.

(ii) Reasonably Available Control Technology - §5-1010 of the *Regulations*

Pursuant to 10 VSA §556a(d) and §5-1010 of the *Regulations* the Agency may establish and include within any Permit to Operate emission control requirements based on Reasonably Available Control Technology ("RACT"). Based on the Facility's existing levels of emissions and emission controls, the Agency has not imposed any further requirements on this Facility under this authority at this time.

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

The Facility currently operates under the confines of a Permit to Construct and Operate issued on August 30, 2022 (#AOP-21-048). The conditions within that existing permit are considered applicable requirements pursuant to §5-1002 of the *Regulations*. The requirements of that permit which are not being modified herein are incorporated into this new combined Permit to Construct and Operate (#AOP-24-001).

(iv) Federal Requirements:

Applicable Requirements from Federal Regulations and the Clean Air Act
40 <i>CFR</i> 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. The affected facility to which this Subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 19, 1984 and that has a maximum design heat input capacity of greater than 29 megawatts (MW) (100 million BTU per hour). <i>The Main Boiler at the Facility is subject to the requirements of this regulation. The sulfur dioxide standards of this regulation (§60.42b) are not applicable, as the Facility does not combust coal or oil. The particulate matter standards of this regulation (§60.43b), are applicable, but the MSER for the Facility imposes a stricter PM standard. The NOx standards of this regulation (§60.44b) are not applicable, as the Main boiler does not fire natural gas, coal, distillate oil, or residual oil.</i>
40 <i>CFR</i> Part 63, Subpart JJJJJJ - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers. Applies to new and existing fuel oil and solid fuel fired boilers located at area sources (major sources are subject to Subpart DDDDD). Natural gas or propane fired boilers are not subject. The natural gas and propane exemption allows use of backup fuel during periods of gas curtailment, gas supply emergencies, and for periodic testing not to exceed 48 hours combined during any calendar year. Oil fired hot water boilers less than 1.6 MMBTU/hr are not subject. The rule requires a tune-up for each boiler once every two years, except boilers with oxygen trim and oil boilers less than 5 MMBTU/hr may conduct tune-ups every five years. Existing facilities with any single boiler greater than 10 MMBTU/hr were required to conduct an site wide energy assessment audit to identify potential heat use efficiencies. New boilers greater than 10 MMBTU/hr are subject to PM emission limits. Boilers that commenced construction on or before June 4, 2010 are considered an existing source. New or reconstructed boilers that commenced construction or reconstruction on or before September 14, 2016, when demonstrating initial compliance with the PM emission limit must conduct a performance stack test in accordance with §63.11212 and Table 4 of this Subpart. These units must retest every three years if greater than 50% of the applicable PM standard, or every five years if less than 50% of the standard. An initial performance test must be conducted by September 14, 2021. New or reconstructed oil-fired boilers that commenced construction on or before September 14, 2016 that combust only oil that contains no more than 0.50 weight percent sulfur are not subject to the PM emission limit in Table 1 of this Subpart until September 14, 2019, provided that the Facility monitors and records on a monthly basis the type of fuel combusted. Boilers that combust only oil that contains no more than 0.0015 weight percent sulfur are not subject to the PM emission limit in Table 1. <i>Table 1 of Subpart JJJJJJ indicates that the boiler is not considered a new boiler under this subpart, nor is it an existing coal-fired boiler, and as such is not subject to any emission standards under Subpart JJJJJJ.</i> <i>The LPG-fired Auxiliary Boiler is not subject to Subpart JJJJJJ, as it is fired with gaseous fuel. Since the Facility is not a major source of HAPs, the Facility is not subject to Subpart DDDDD.</i>

**Applicable Requirements from
Federal Regulations and the Clean Air Act**

40 CFR Part 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines. Applies to new 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. Also applies to existing engines that commenced construction (installed) prior to June 12, 2006 at area sources of HAPs. By May 3, 2013 requires non-emergency engines equal and greater than 300 bhp to meet CO emission standards, which may necessitate catalytic controls, and must install closed crankcase ventilation system or equivalent. Non-emergency engines <300 bhp must meet maintenance requirements including changing oil & filter and inspecting, and replacing if necessary, air filter, hoses and belts. Emergency units are subject to maintenance requirements and must install an elapsed hour meter and report electronically to EPA. Does not apply to existing emergency units at an area source residential/commercial/institutional facility unless they are enrolled in peak shaving or demand response (DR) programs. Emergency engines are unrestricted for actual emergency operation but restricted to 100 hours per year of testing and maintenance, of which 50 hours may be local DR (no qualifying programs currently known to exist) and 50 hours may be for non-compensated non-emergency operation. Most utility programs do not qualify as allowed emergency engine operation. 4Z ULSD requirements vary, however state regulations mandate ULSD across the board. For engines firing landfill or digester gas comprising 10% or more of the heat input, the engines are subject to management practices only (change oil & filter, inspect plugs, and inspect hoses and belts every 1440 hours or annually, whichever occurs first) as well as operating in accordance with manufacturer's recommendations and minimizing time at idle.

The Emergency Generator engine and Fire Pump engine at this Facility are subject to only the emergency engine requirements of this regulation, as they are intended for emergency use only.

40 CFR Parts 72, 73, 75, 76, 77, 78, Acid Rain Program

The Facility was previously not subject to the requirements of the Acid Rain Program as a New Independent Power Production Facility under 40 CFR Part 72.6(b)(6).

With the expiration of the contracts previously held by the Permittee, the Facility is now subject to the requirements of the Acid Rain Program. However, the Facility complies with the new unit exemption requirements of 40 CFR §72.7(b)(1), as it has not been previously allocated any allowances under Subpart B of 40 CFR, Part 73, has a nameplate capacity less than or equal to 25 MWe, and combusts wood or LPG fuel, both of which have a sulfur content of less than 0.05%.

To obtain this exemption, the Facility was required to submit a statement to the permitting authority by December 31 of the first year for which the unit is to be exempt under this section. This statement was to be signed by the designated or, if no designated representative has been authorized, a certifying official of each owner of the unit. The statement identified the unit, the nameplate capacity of each generator served by the unit and the fuels currently burned or expected to be burned by the unit and their sulfur content by weight, and stated that the owners and operators of the unit will comply with 40 CFR §72.7 (f). This statement was received by the Agency on December 17, 2012. The Permit for this Facility contains fuel sulfur monitoring provisions to ensure the wood fuel qualifies as a low sulfur fuel.

**Applicable Requirements from
Federal Regulations and the Clean Air Act**

Clean Air Act §§114(a)(3) Inspections, Monitoring and Entry; 502(b) Permit Programs; and 504(a)-(c) Permit Requirements and Conditions; 40 *CFR* Part 64 Compliance Assurance Monitoring (CAM); 40 *CFR* Part 70 §§70.6(a)(3)(i)(B) and 70.6(c)(1) State Operating Permit Programs - Permit content. Upon renewal of a Title V Permit to Operate, a facility must comply with enhanced monitoring and compliance assurance monitoring requirements if applicable. the CAM rule applies to each Pollutant Specific Emission Unit (PSEU) at a major source that is required to obtain a part 70 or part 71 permit if the unit satisfies all of the following criteria: 1) The unit is subject to an emission limitation or standard for the applicable regulated air pollutant other than an emissions limitation or standards proposed by the Administrator after November 15, 1990 pursuant to Section 111 or 112 of the Act], 2) The unit uses a control device to achieve compliance with any such limit or standard; and 3) The unit has pre-control device emissions of the applicable regulated pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.

The Compliance Assurance Monitoring requirements apply to the particulate matter and nitrogen oxide emissions from the wood-fired Main Boiler at this Facility since (1) potential uncontrolled emissions of these pollutants from the wood-fired Main Boiler exceeds the major source threshold, (2) the wood-fired Main Boiler is subject to an emission standards for each of these pollutants, and (3) the wood-fired Main Boiler is equipped with an emission control device for each of these pollutants.

Air contaminant emissions produced by the wood-fired boiler are controlled as follows: electrostatic precipitator, flue gas reinjection, selective non-catalytic reduction system (urea injection), selective catalytic reduction system (SCR) and combustion air control with oxygen trim and underfire/overfire air ratio.

Clean Air Act §112r Prevention of Accidental Release; 40 *CFR* Part 68 Chemical Accident Prevention Programs. Facilities that have more than the threshold quantity of a regulated substance in a process are subject to these provisions including the requirements to conduct a hazard assessment, establish a prevention program and develop a risk management plan.

The Permittee has stated that the Facility does not store more than the threshold quantity of a regulated substance and thus is not subject to these requirements.

Applicable Requirements from Federal Regulations and the Clean Air Act

40 <i>CFR</i> Part 98 Mandatory Greenhouse Gas Reporting. Requires reporting of GHG emissions annually to EPA for 1) facilities in source categories listed in §98.2(a)(1) including electric utility units subject to Acid Rain, MSW landfills that generate CH₄ in amounts equivalent to 25,000 metric tons of CO₂e or more per year and electrical transmission and distribution equipment at facilities where the total nameplate capacity of SF₆ and PFC containing equipment exceeds 17,820 pounds, 2) facilities in source categories listed in §98.2(a)(2) including electronics manufacturing, iron and steel production and pulp and paper manufacturing that emit 25,000 metric tons of CO₂e or more per year from such source categories as well as all stationary combustion, 3) facilities with stationary combustion sources that aggregate to 30 MMBtu/hr or more and which emit 25,000 metric tons of CO₂e or more per year from all stationary combustion sources combined, and 4) fuel suppliers including all local natural gas distribution companies.

<i>The U.S. EPA has retained the implementing authority for this regulation and is responsible for determining applicability. This regulation under Part 98 is not considered to be an applicable requirement per 40 CFR Part 70.2 and as noted in 74 FR 56260 (October 30, 2009). Part 98 is anticipated to apply to the Facility.</i>
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Emissions of CO₂ from biogenic sources are not included in the estimation of Facility CO₂ emissions. The emissions of CO₂ from non-biogenic sources, plus the CO₂ equivalent emissions of CH₄ and N₂O from the Facility do not exceed the 25,000-metric ton CO₂ equivalent emission threshold for reporting under 40 <i>CFR</i> Part 98.
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(b) 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*.

(c) Enforceability

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

(d) Compliance Certification

The Permittee is required by this Permit to certify compliance as part of its annual registration with the Agency pursuant to the requirements of Subchapter X of the *Regulations*. Additionally, this Permit requires the submission of semi-annual reports of monitoring records used to demonstrate compliance with the limitations contained in this Permit.

(G) CONTROL OF HAZARDOUS AIR CONTAMINANTS

Pursuant to §5-261 of the *Regulations*, any stationary source subject to the rule¹ with current or proposed actual emissions of a hazardous air contaminant (HAC) equal to or greater than the respective Action Level (found in Appendix C of the *Regulations*) shall be subject to the Regulation and shall achieve the Hazardous Most Stringent Emission Rate (HMSER) for the respective HAC. HMSER is defined as a rate of emissions which the Secretary, on a case-by-case basis, determines is achievable for a stationary source based on the lowest emission rate achieved in practice by such a category of source and considering economic impact and cost. HMSER may be achieved through application of pollution control equipment, production processes or techniques, equipment design, work practices, chemical substitution, or innovative pollution control techniques.

The emission of HACs from the cooling tower drift are subject to §5-261, but no Action Levels are estimated to be exceeded. Therefore, the cooling tower emissions were not reviewed under the requirements of §5-261 of the *Regulations* at this time.

The Agency has determined that the Facility emissions of ammonia from the SNCR and SCR systems are in excess of the Action Level for ammonia (CAS #7664-41-7). Therefore, the Facility must achieve HMSER, as determined by the Secretary, pursuant to §5-261(2) of the *Regulations*.

The Agency has determined HMSER to be a not-to-exceed limit on the ammonia emission rate from the wood-fired Main Boiler following the SNCR and SCR systems of 20 ppmvd. This HMSER evaluation 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, unless the source is modified or reconstructed during the five year period.

The Agency has determined that the Facility proposed to have emissions of acetaldehyde, acrolein, benzene and formaldehyde from the belt dryer in excess of their respective Action Levels. Therefore, the Facility must achieve HMSER, as determined by the Secretary, pursuant to §5-261(2) of the *Regulations*.

The Agency has determined HMSER to be a maximum dryer inlet temperature limit of 150 degrees Fahrenheit, adherence to an annual maximum dryer throughput limit of 92,632 oven-dry-tons per year, and periodic stack testing of HAC emissions from the dryer exhaust. This HMSER evaluation 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, unless the source is modified or reconstructed during the five year period.

This and prior HMSER determinations for this Facility are presented below.

¹ APCR §5-261(1)(c)(ii) provides that solid fuel burning equipment (not including incinerators) installed or constructed prior to January 1, 1993, and all fuel burning equipment which combust virgin liquid or gaseous fuel shall not be subject to the requirements of §5-261.

Hazardous Most Stringent Emission Rate Determinations		
Permit #	Pollutant / CAS #	Description/Emission limit
#AP-90-029a Re-established #AOP-01-037 Superseded by #AOP-15-005	Ammonia (NH ₃) / (7664-41-7)	40 ppmv (parts per million on a volume basis corrected to 12% CO ₂)(one-hour average) when wood is contributing more than thirty (30) % of the instantaneous heat input to the Main Boiler.
#AOP-15-005 Re-established #AOP-21-048 Re-established #AOP-24-001	Ammonia (NH ₃) / (7664-41-7)	20 parts per million on a volume dry basis (ppmdv) (corrected to 12% CO ₂) (one-hour average) when wood is contributing more than thirty (30) % of the instantaneous heat input to the Main Boiler.
#AOP-24-001	Acetaldehyde (75-07-0) Acrolein (107-02-8) Benzene (71-43-2) Formaldehyde (50-00-0)	• Maintaining a dryer inlet temperature of 150°F or less (1-hr average). • Adherence to annual dryer throughput limit of 92,632 ODT/yr. • Periodic monitoring and compliance testing in accordance with Condition (40) of this Permit.

As the Agency has determined that the Facility, following imposition of HMSER as noted above, may continue to have estimated emissions of ammonia, acetaldehyde, acrolein, benzene and formaldehyde in excess of their respective Action Levels, the Agency has considered whether or not an Air Quality Impact Evaluation should be required pursuant to §5-261(3) of the *Regulations*. The Agency has reviewed several factors relating to this Facility, including, but not limited to those listed in §5-261(3)(a)-(c) of the *Regulations* and the level of emissions and emission reduction measures typical for this category of emission source. Based on this review, the Agency is not requiring the Facility to conduct an air quality impact evaluation pursuant to §5-261(3) of the *Regulations* at this time.

(H) EQUIVALENCY DETERMINATIONS

Applicable Visible Emission Standards, Main Boiler		
Most Stringent	Regulatory Authority	Standard or Limit
	40 <i>CFR</i> Part 60 Subpart Db §60.43b(f)	Shall not exceed 20% opacity for any 6-minute average except for one 6-minute period per hour of not more than 27%. Does not apply to startup, shutdown and malfunction.
X	§5-211(2) and (3) of the <i>Regulations</i>	Shall not exceed 20% opacity for more than a period or periods aggregating to 6 minutes in any hour. The wood fuel burning exceptions of 5-211(3) were never approved by EPA and are not being incorporated into this Permit herein.

Applicable Filterable Particulate Matter Emission Standards, Main Boiler ¹		
Most Stringent	Regulatory Authority	Standard or Limit
	40 <i>CFR</i> Part 60 Subpart Db §60.43b(c)(1)	0.10 lb/MMBtu
X	MSER: Original Permit to Construct – Issued January 11, 1988	0.00070 gr/dscf corrected to 12% CO ₂ equivalent to 0.002 lb/MMBtu

¹ Note that these standards are for filterable particulate matter emission standards. The Facility is also subject to a total particulate emission standard of 0.10 gr/dscf under §5-231(3)(b)(iii) of the *Regulations* and as such, condensable particulate matter emissions will be required to be measured with a stack test as part of this Permit.

Applicable Fuel Sulfur Limitations, Main Boiler ¹		
Most Stringent	Regulatory Authority	Standard or Limit
	40 <i>CFR</i> , Part 72 §72.7(d)(3)	Sulfur content not to exceed 0.05 percent by weight.
X	#AP-90-029b – Issued August 15, 1991	Sulfur content not to exceed 10 grains per 100 cubic feet, equivalent to 0.00121 percent by weight.

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 and regulations or is subject to an acceptable schedule of compliance. Therefore, pursuant to 10 VSA §§556 and 556a, 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) and 556a(d)] [§5-501(1) of the *Regulations*]
- (2) Main Boiler Auxiliary Burner – Heat Input Limitation: The heat input to the Main Boiler's LPG-fired auxiliary burner shall not exceed fifty (50) MMBtu/hr. [10 V.S.A. §556(c)] [Application for AP-90-029b]
- (3) Main Boiler - Air Pollution Control Equipment:
 - (a) The Main Boiler shall be equipped with a particulate matter control system consisting of mechanical collectors in series with a five (5) field electrostatic precipitator (ESP), each of the make and specifications indicated by the Permittee in its application entitled "Air Pollution Control Operating Permit Application" and dated 15 September 2001.

At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate the mechanical collectors and ESP in a manner consistent with good air pollution control practice for minimizing emissions. The mechanical collectors and ESP shall be operated whenever the Main Boiler is running after initial start-up. [10 V.S.A. §556(c)] [Original Agency Approval to Construction: 1/11/1988] [40 *CFR* §60.11d]
 - (b) The Main Boiler shall be equipped with a non-catalytic nitrogen oxides reduction system consisting of either aqueous ammonia or urea injection into the boiler flue gas at appropriate points within the furnace. The Permittee shall maintain temperatures within the injection zones in a range between 1,600 degrees Fahrenheit (°F) and 1,900 °F. All elements of the non-catalytic reduction systems shall be maintained in good working order, in a manner consistent with good air pollution control practice for minimizing emissions, and shall be operating whenever the Main Boiler is running after initial start-up. [10 V.S.A. §556(c)] [Application for #AP-90-029a]

- (c) The Main Boiler shall be equipped with a selective catalytic nitrogen oxides reduction system (SCR) consisting of a catalyst and either aqueous ammonia or urea injection into the boiler flue gas upstream of the SCR. All elements of the SCR system shall be maintained in good working order, in a manner consistent with good air pollution control practice for minimizing emissions, and shall be operating whenever the Main Boiler is running after initial start-up. [10 V.S.A. §556(c)] [§5-1010(a) of the *Regulations*] [Application for #AOP-15-005]
- (4) **Pelletizing Equipment:** The Permittee shall control emissions from the hammermills, pellet mills, coolers, conveying and storage equipment by installing and operating cyclones and fabric filters as indicated in Finding of Fact (A) Pollution Control Equipment Specifications, or a similar device capable of achieving equivalent emission reductions if approved in writing by the Agency. The fabric filter dust collector(s) shall be equipped with a pressure differential gauge to continuously measure and display the pressure drop across the control device (e.g., manometer or magnehelic), or an equivalent as approved in writing by the Agency. The Permittee shall use the pressure drop measurement device to maintain the pressure drop across each fabric filter within acceptable ranges as specified by the manufacturer. All elements of this air pollution control system(s) shall be maintained in good working order at all times and operated in accordance with the manufacturer's operation and maintenance recommendations. The air pollution control system shall be in operation whenever the respective emission source is in operation. [10 V.S.A. §§556(c) and 556a(d)] [§5-1015(a)(1), (3) and (4) of the *Regulations*] [Application for #AOP-24-001]
- (5) **Stack Heights:** The exhaust gases from the following emission sources shall be vented vertically through a stack(s) of the configuration noted below. Where stack heights are noted in Findings of Fact A such stacks shall be configured accordingly. The stack(s) shall not be equipped with any device that may obstruct the upward discharge of the exhaust gases such as a fixed rain cap of a type that has not been approved by the Agency.

Stack Height and Configuration	
Emission source	Minimum stack height above stack grade (ft)
Main Boiler	212
Auxiliary Boiler	60
Emergency Generator	60
Wet Hammermill – EP1	49
Belt Dryer – EP2	26
Dry Product Truck Loading – EP3	26
PB1 – Dry Hammermill – EP4	26
PB1 – Cooler Pneumatic System – EP5	39
PB2 – Dry Hammermill – EP6	26
PB2 – Cooler Pneumatic System – EP7	39

Stack Height and Configuration	
Emission source	Minimum stack height above stack grade (ft)
Pellet Silo – EP8	49

For all other non-fugitive emission points at the Facility, the Agency recommends that they each be exhausted vertically through a stack(s) which extend a minimum of four (4) feet above the roof where the stack penetrates the roof and that they not be equipped with any device that may obstruct the upward discharge of the exhaust gases such as a fixed rain cap of a type that has not been approved by the Agency. [10 V.S.A. §§556(c) and 556a(d)] [§5-406 of the *Regulations*] [Original Agency Approval to Construction: 1/11/1988]

- Operational Limitations -

- (6) Main Boiler – Wood Fuel: The Permittee shall utilize as solid fuel for the Main Boiler only natural wood waste generated by wood processing operations that is uncontaminated by glues, preservatives, oils, or similar foreign substances. Furthermore, the Permittee shall notify the Agency of all proposed sources of wood fuel other than whole tree wood chips, and of the nature of said fuels, prior to the securing of any purchase/utilization agreements for said fuels. Whole tree wood chips means chips made from virgin wood and include stumps, branches, bark, and sawdust incidental to chipping operations. [10 V.S.A. §§556(c) and 556a(d)] [§§5-101, 5-231(2) and 5-1015(a)(1) of the *Regulations*]
- (7) Sulfur Content – Wood Fuel: The 12-month rolling average sulfur content of wood fuel used as fuel in the Main boiler shall not exceed 0.05 percent by weight. [10 V.S.A. §§556(c) and 556a(d)] [§§5-101, 5-231(2) and 5-1015(a)(1) of the *Regulations*] [40 CFR, §72.7(d)(3)]
- (8) Main Boiler – LPG Fuel:
- (a) The annual LPG fuel consumption by the Main Boiler shall not exceed, 556,000 gallons, based upon any rolling twelve (12) consecutive calendar month period.
 - (b) The sulfur content of LPG combusted by the Facility shall at no time exceed 0.0121 percent by weight, which is equivalent to 10 grains per 100 cubic foot.
- [10 V.S.A. §§556(c) and 556a(d)] [AP-90-029b issued 8/15/1991] [40 CFR, §72.7(d)(3)]
- (9) Auxiliary Boiler – Fuel Limit: The Auxiliary Boiler shall not operate more than 720 hours during any rolling twelve (12) consecutive calendar month period. [10 V.S.A. §§556(c) and 556a(d)] [Application for AP-90-029b]:
- (10) Belt Dryer - Production Limits: The production of dried wood material from the belt dryer shall not exceed the equivalent of 93,632 oven-dry tons (0% moisture content) per rolling twelve-month period. [10 V.S.A. §§556(c) and 556a(d)] [Application for #AOP-24-001]
- (11) Belt Dryer: The Permittee shall control the operation of the belt dryer such that:

- (a) The hot air at the dryer inlet, before coming in contact with the wood material to be dried, does not exceed 150 °F;
- (b) This temperature limit shall be based on a 3-hour rolling average.

[10 V.S.A. §§556(c) and 556a(d)] [§§ 5-261 and 5-1015(a)(3) and (4) of the *Regulations*] [Application for #AOP-24-001]

- (12) Miscellaneous Equipment – Allowable Fuel Types: Only LPG may be used as fuel in the LPG fired space heating equipment and the LPG vaporization equipment at the Facility unless the Permittee obtains prior written approval from the Agency to use another type of fuel. Only No.2 fuel oils, or lighter grade fuel oils, with a maximum sulfur content not to exceed 0.0015 percent by weight (15 ppm), may be used in the emergency diesel fire pump engine and fuel yard maintenance building heater unless the Permittee obtains prior written approval from the Agency to use another type of fuel. [10 V.S.A. §§556(c) and 556a(d)] [§§5-501 and 5-1015(a)(1) of the *Regulations*] [§5-221(1)(a) of the *Regulations*] [Application for #AOP-21-048]
- (13) Stationary and Non-Road Engines Fuel Specifications: Only LPG or fuel oils meeting the requirements of ultra-low sulfur diesel or distillate (ULSD) with a maximum sulfur content of 0.0015 percent by weight (15 ppm) may be used in reciprocating internal combustion engines, including, but not limited to, emergency electric generators and fire pump engines. [10 V.S.A. §§556(c) and 556a(d)] [§§5-221(1)(a), 5-501 and 5-1015(a)(1) of the *Regulations*] [Application for #AOP-21-048]
- (14) Stationary Diesel Engines: In accordance with 40 CFR Part 63 Subpart ZZZZ as may be applicable, for CI diesel engines which commenced construction (were installed) prior to June 12, 2006 the Permittee shall comply with the following. Engines that are limited to emergency operation only (emergency engines) are subject to different requirements than engines not restricted to emergency only operation (non-emergency engines).

For emergency engines of all sizes and non-emergency engines $\leq$ 300 HP:

- (a) Change oil and filter every 500 hours of operation or annually (1,000 hours if non-emergency), whichever comes first.
- (b) Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary.
- (c) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.
- (d) Install an elapsed hour meter (emergency engines only).
- (e) Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.
- (f) Maintain records of maintenance activities.

[10 V.S.A. §556a(d)] [§§5-407, 5-501 and 5-1015(a)(1) of the *Regulations*] [40 CFR, Part 63, Subpart ZZZZ, §§63.6603, 63.6640 and Table 2d] [Application for #AP-90-029b]]

- (15) Main Boiler - Chip management Plan: The Permittee shall operate the Facility in accordance with its Chip Management Plan, initially approved by the Agency on May 28, 1992. Future amendments to the plan do not require approval by the Agency, but a copy of the amended plan shall be sent to the Agency. Said plan shall detail the outdoor woodchip storage and handling methods to be utilized by the Permittee to prevent the

decomposition of the woodchips and the emissions of objectionable odors beyond the property line of the premises. [Original Agency Approval to Construction: 1/11/1988]

- (16) 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 coal, oil and wood fired boilers as well as all other applicable requirements of this regulation:
- (a) Five year tune-ups of the boiler(s) as required by 40 *CFR* §63.11223(c). For boilers installed prior to June 4, 2010 the first tune-up is required by March 21, 2014. Subsequent tune-ups must be completed no later than 61 months after the prior tune-up.
 - (b) A one-time energy assessment of the boilers as well as the rest of the Facility as required by 40 *CFR* §63.11201(b). This provision only applies to existing facilities with one or more boilers of 10 MMBtu/hr heat input or greater that were installed prior to June 4, 2010. The energy assessment must be completed by March 21, 2014.
 - (c) Notification, reporting and recordkeeping requirements as specified in §63.11225. This includes:
 - (i) §63.11225(a)(2): Initial Notification:
 - a. For boilers installed prior to June 4, 2010 the initial notification must be sent to the EPA no later than January 20, 2014. The Initial Notification was received by the Agency on August 19, 2011
 - (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 July 19, 2014 for boilers installed prior to June 4, 2010. The Notification of Initial Tune-up was submitted March 27, 2013
 - b. Notification of the completion of the energy assessment must be submitted no later than July 19, 2014.
 - (iii) §63.11225(b): By March 1 of each year, prepare and submit an annual compliance certification report. For boilers only subject to a requirement to conduct a 5-year tune-up and not subject to emission limits or operating limits, the Permittee may prepare only a 5-year compliance report.
 - (iv) All records, reports and notifications that are required by this regulation shall be submitted to the Agency as well as the U.S. Environmental Protection Agency.

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

- (17) Wood Used as Fuel: 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) and 556a(d)] [§§5-101, 5-231(2) and 5-1015(a)(1) of the *Regulations*]
- (18) Stationary 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 40 *CFR* Part 60 Subpart IIII and 40 *CFR* Part 63 Subpart ZZZZ, as may be applicable. All engines, 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 300 bhp, may still require approval from the Agency in the form of an amended permit prior to installation. [10 V.S.A. §§556(c) and 556a(d)] [§§5-271 and 5-501 of the *Regulations*]

- (19) Stationary Diesel Engines: The Permittee shall install, operate and maintain each reciprocating internal combustion engine, and any after-treatment control device (if any), in accordance with the manufacturer's written instructions and in a manner consistent with good air pollution control practices for minimizing emissions. [10 V.S.A. §§556(c) and 556a(d)] [§§5-407, 5-501 and 5-1015(a)(1) of the *Regulations*]
- (20) Stationary Emergency Engines: Stationary emergency engines, including those specified as such in Finding of Fact (A), shall be used only for emergency purposes and up to 100 hours per year for routine testing and maintenance, of which 50 hours may be for non-compensated non-emergency operation. Emergency purposes include periods of time when:
- (a) The usual source of power, heat or lighting is temporarily unavailable due to reasons beyond the reasonable control of the owner/operator;
 - (b) A fire or flood makes it necessary to pump water to minimize property damage.

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 without the approval of the Agency. The definition of emergency use for applicability to federal regulations NSPS Subpart IIII and NESHAP Subpart ZZZZ may be different and the Permittee should consult those regulations directly for applicability to those respective regulations. [10 V.S.A. §§556(c) and 556a(d)] [§§5-401(6)(c) and 5-501 of the *Regulations*]

- (21) 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. [10 V.S.A. §§556(c) and 556a(d)] [§5-202 of the *Regulations*]

- Emission Limitations -

- (22) Main Boiler - Filterable Particulate Matter:

- (a) In the event that emission testing demonstrates that particulate matter emissions exceed 0.00070 grains per dry standard cubic foot corrected to twelve percent carbon dioxide (gr/dscf corrected to 12% CO₂) or 0.50 pounds per hour (lbs/hour) when wood fuel is contributing more than thirty (30) percent ("%") of the instantaneous heat input to the Main Boiler, but are less than 0.00091 gr/dscf corrected to 12% CO₂ and 0.65 lbs/hour, the Permittee shall take all reasonable measures to reduce and maintain its emissions of particulate matter to the greatest extent practicable below 0.00091 gr/dscf corrected to 12% CO₂ and 0.65 lbs/hour. The Permittee shall report to the Secretary those measures implemented and the

degree of improvement derived from them. [10 V.S.A. §556(c) and §5-502(3)(a)(i) of the *Regulations*] [Original Agency Approval to Construction: 1/11/1988]

- (b) In the event that emission testing demonstrates that particulate matter emissions exceed 0.00091 gr/dscf corrected to 12% CO₂ or 0.65 lbs/hour, when wood fuel is contributing more than thirty (30) % of the instantaneous heat input to the Main Boiler, the Main Boiler shall cease operation. Operation shall be discontinued within thirty (30) days after the Permittee or the Agency receives the results of said testing. The Main Boiler will be permitted to restart only after the Permittee has demonstrated to the satisfaction of the Secretary that all necessary corrective actions have been taken to ensure that the Main Boiler will operate in compliance with this Permit. Within sixty (60) days after restarting operation under these circumstances, compliance with the above particulate matter emission limit shall be demonstrated by emission testing to the satisfaction of the Secretary. [10 V.S.A. §556(c)] [Original Agency Approval to Construction: 1/11/1988]
- (c) Any emission testing conducted to demonstrate compliance with the above particulate matter emission limit shall be performed in accordance with 40 *CFR* Part 60, Appendix A, Reference Method 5 or an equivalent method approved in writing by the Agency. The sampling time for each test run shall be at least 120 minutes and the minimum sampling volume shall be sixty (60) dry standard cubic feet. [10 V.S.A. §556(c) and 40 *CFR* Part 60 Subpart Db §60.46b] [Original Agency Approval to Construction: 1/11/1988]
- (23) Main Boiler - Total Particulate Matter: Emissions of total particulate matter from the Main Boiler shall not exceed 0.10 grains per dry standard cubic foot (gr/dscf) corrected to 12% carbon dioxide. This PM limit is to quantify the boiler's total PM emissions to establish compliance with 5-231(3)(b)(iii). Total PM includes both solid/filterable emissions as measured by EPA Reference Method 5, as well as PM emissions that are formed from condensable matter in the exhaust gases as measure by EPA Reference Method 202.
- Any emission testing conducted to demonstrate compliance with the above emission limit shall be performed in accordance with 40 *CFR* Part 60, Appendix A, Reference Method 5, and Part 51, Appendix M, Reference Method 202 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. [10 V.S.A. §§556(c) and 556a(d)] [§§5-231(3)(b)(iii) and 5-404 of the *Regulations*]
- (24) Belt Dryer – Particulate Matter: Emissions of particulate matter in the exhaust from the belt dryer shall not exceed the following limits:

Belt Dryer Pollutant Emission Limitations			
Pollutant	Emission Limits lb/ODT ¹	Emission Limits lb/hour ²	Reference Test Method
Total Particulate Matter	0.75	8.98	Method 5 & 202

Belt Dryer Pollutant Emission Limitations			
Pollutant	Emission Limits lb/ODT ¹	Emission Limits lb/hour ²	Reference Test Method
Condensable Particulate Matter	0.089	1.07	Method 202

¹ lb/ODT = pounds of pollutant per oven-dry ton (0% mc) of wood material product from the rotary dryer.

² lb/hr = pounds of pollutant per hour for NOx, CO, VOC based on a belt dryer production throughput of 12.0 ODT/hr,

Any emission testing conducted to demonstrate compliance with the above emission limits shall be performed in accordance with the Reference Method numbers listed above as found in 40 *CFR* Part 60, Appendix A, Reference Method 5, Part 51, Appendix M, Reference Method 202, or equivalent methods approved in writing by the Agency. [10 V.S.A. §§556(c) and 556a(d)] [§§5-231(3) and 5-404 of the *Regulations*][§5-502 of the *Regulations*] [Application for #AOP-24-001]

- (25) Wood Drying and Pelletizing Operations – Volatile Organic Compounds: Emissions of Volatile Organic Compounds in the exhaust from the belt dryer and pelletizing operations shall not exceed the following limits:

Wood Drying and Pelletizing Equipment – Volatile Organic Compound Emission Limitations		
Unit	Emission Limitations	
	lb/ODT ¹	Reference Test Method
Belt Dryer	0.84	Method 25a
EP1 - Wet Hammermill	0.95	
EP4 – PB1 – Dry Hammermill	0.95	
EP5 – PB1 – Pellet Cooler Pneumatic System	2.08	
EP6 – PB2 – Dry Hammermill	0.95	
EP7 – PB2 – Pellet Cooler Pneumatic System	2.08	
EP8 – Pellet Silo	0.25	

¹ lb/ODT = pounds of pollutant per oven-dry ton (0% mc) of wood material product.

Any emission testing conducted to demonstrate compliance with the above emission limits shall be performed in accordance with the Reference Method numbers listed above as found in 40 *CFR* Part 60, Appendix A, Reference Method 25a, or equivalent methods approved in writing by the Agency. [10 V.S.A. §§556(c) and 556a(d)] [§§5-231(3) and 5-404 of the *Regulations*][§5-502 of the *Regulations*] [Application for #AOP-24-001]

- (26) Pelletizing Operations - Particulate Matter: Emissions of Particulate Matter from the

pelletizing operations shall not exceed the following limits:

Pelletizing Equipment - Particulate Matter Emission Limitations		
Unit	Emission Limitations	
	gr/dscf ¹	lbs/hour ²
EP1 - Wet Hammermill	0.00226	0.18
EP3 – Truck/Dry Product Loading	0.00226	0.02
EP4 – PB1 – Dry Hammermill	0.00226	0.08
EP5 – PB1 – Pellet Cooler Pneumatic System	0.00226	0.10
EP6 – PB2 – Dry Hammermill	0.00226	0.08
EP7 – PB2 – Pellet Cooler Pneumatic System	0.00226	0.10
EP8 – Pellet Silo	0.00678	0.14

¹ gr/dscf equals grains of pollutant emitted per dry standard cubic foot of undiluted exhaust gas corrected to 12% carbon dioxide.

² lbs/hour equals pounds of pollutant emitted per hour.

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 Method 5, or equivalent methods approved in writing by the Agency. [10 V.S.A. §§556(c) and 556a(d)] [§§5-231(3) and 5-404 of the *Regulations*][§5-502 of the *Regulations*] [Application for #AOP-24-001]

- (27) 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.

Compliance with the above visible emission limits for the Main Boiler shall be determined by means of a continuous opacity monitoring system (COMS). At the Secretary's discretion, compliance shall, in the alternative, be determined by observations by a trained observer in accordance with 40 *CFR* Part 60, Appendix A, Method 9, or 40 *CFR* Part 51, Appendix M, Methods 203B and 203C. For all other installations and operations at the Facility, any emission testing conducted to demonstrate compliance with the above emission limits shall be performed in accordance with 40 *CFR* Part 60, Appendix A, Method 9, or 40 *CFR* Part 51, Appendix M, Methods 203B and 203C.

- (28) Main Boiler - Nitrogen Oxides: Nitrogen oxides ("NO_x") emissions from the Main Boiler shall not exceed 0.075 lb/MMBtu of heat input and 22.5 lbs/hour (based on a calendar quarterly average) when wood is contributing more than thirty (30) % of the instantaneous heat input to the Main Boiler. Nitrogen oxides ("NO_x") emissions from the Main Boiler shall also not exceed 0.15 pounds per million Btu ("lb/MMBtu") of heat input and 45 lbs/hour (eight-hour rolling average) when wood is contributing more than thirty (30) % of

the BTU input to the Main Boiler. Compliance with this NOx emission limit shall be determined by means of continuous emission monitoring system (CEMS) as required in this Permit.

Any emission testing conducted to demonstrate compliance with the above emission limits shall be performed in accordance with Title 40 *CFR* Part 60, Appendix A, Reference Method 10 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. [10 V.S.A. §556(c) and §§5-502(3)(a)(i) and 5-1010(a) of the *Regulations*] [Application for #AP-95-031] [Application for #AOP-15-005]

- (29) Main Boiler - Carbon Monoxide: Carbon Monoxide (CO) emissions from the Main Boiler shall not exceed 0.30 lb/MMBtu and 90 lbs/hour on an eight-hour rolling average when wood is contributing more than thirty (30) % of the instantaneous heat input to the Main Boiler.

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 Method 10 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. [10 V.S.A. §556(c) and §§5-502(3)(a)(i) and 5-261(3) of the *Regulations*] [Original Agency Approval to Construction: 1/11/1988]

- (30) Main Boiler - Volatile Organic Compounds: Volatile Organic Compounds (VOC) emissions from the Main Boiler shall not exceed 1.47 lbs/hour (3-hour average) when wood is contributing more than thirty (30) % of the instantaneous heat input to the Main Boiler.

Any emission testing conducted to demonstrate compliance with the above emission limit shall be performed in accordance with Method 25 or Method 25a of 40 *CFR* part 60, appendix A, combined with Method 18 of 40 *CFR* Part 60, appendix A, 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. [10 V.S.A. §556(c) and §§5-502(3)(a)(i) and 5-261(3) of the *Regulations*] [Original Agency Approval to Construction: 1/11/1988]

- (31) Main Boiler - Ammonia: Ammonia (NH₃) emissions from the Main Boiler shall not exceed 20 ppmvd (parts per million on a volume dry basis corrected to 12% CO₂ for a one-hour average) when wood is contributing more than thirty (30) % of the instantaneous heat input to the Main Boiler.

Any emission testing conducted to demonstrate compliance with the above emission limit shall be performed in accordance with EPA Conditional Test Method 027 (CTM-027), 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. [10 V.S.A. §556(c) and §§5-502(3)(a)(i) and 5-261(3) of the *Regulations*] [Application for #AP-90-029a]

- (32) Hazardous Air Pollutants: Emissions 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 year based on any rolling twelve (12) consecutive calendar month period.

The annual combined and individual HAP emissions from the Facility shall be calculated according to the following methodology:

a) Total HAP Emissions (<25 tons/year)

Annual Total HAP Emissions = The sum of the Monthly Total HAP Emissions during the previous 12-month period, where:

$$\text{Monthly Total HAP Emissions} = [(EF_{\text{wood}})(HHV_{\text{wood}})(\text{monthly wood fuel usage in wet, as-fired tons}) + (EF_{\text{distillate}})(HHV_{\text{distillate}})(\text{monthly distillate fuel usage in gallons}) + (EF_{\text{natural gas}})(HHV_{\text{natural gas}})(\text{monthly natural gas usage in standard cubic feet}) + (EF_{\text{LPG}})(HHV_{\text{LPG}})(\text{monthly LPG usage in gallons}) + (EF_{\text{Belt Dryer}})(\text{monthly chip production in the belt dryer in oven-dry tons}) + (EF_{\text{Wet Hammermill}})(\text{monthly wood throughput in the wet hammermill in oven-dry tons}) + (EF_{\text{Dry Hammermill}})(\text{monthly wood throughput in the dry hammermills in oven-dry tons}) + (EF_{\text{Pellet Cooler}})(\text{monthly wood throughput in the pellet coolers in oven-dry tons}) + (EF_{\text{Pellet Silo}})(\text{monthly wood throughput in the pellet silo in oven-dry tons})] / 2000 \text{ lb/ton}$$

Where:

$EF_{\text{wood}} = 7.54\text{E-}03 \text{ lb/MMBtu}$, or as determined and approved below.

$HHV_{\text{wood}} = 8.5 \text{ MMBtu/ton}$ or a site-specific value based on monthly wood fuel sampling performed in accordance with the Wood Fuel Sampling Plan required by this Permit.

$EF_{\text{distillate}} = 4.93\text{E-}04 \text{ lb/MMBtu}$

$HHV_{\text{distillate}} = 0.14 \text{ MMBtu/gallon}$

$EF_{\text{natural gas}} = 1.85\text{E-}03 \text{ lb/MMBtu}$

$HHV_{\text{natural gas}} = 0.00102 \text{ MMBtu/standard cubic foot}$

$EF_{\text{LPG}} = 1.85\text{E-}03 \text{ lb/MMBtu}$

$HHV_{\text{LPG}} = 0.0915 \text{ MMBtu/gallon}$

$EF_{\text{Belt Dryer}} = 3.76\text{E-}02 \text{ lb/ODT}$

$EF_{\text{Wet Hammermill}} = 2.67\text{E-}02 \text{ ton/ODT}$

$EF_{\text{Dry Hammermill}} = 2.67\text{E-}02 \text{ ton/ODT}$

$EF_{\text{Pellet Cooler}} = 6.20\text{E-}02 \text{ ton/ODT}$

$EF_{\text{Pellet Silo}} = 7.10\text{E-}03 \text{ ton/ODT}$

The total HAP emissions factor for wood (EF_{wood}) shall be based on the following table:

Detail of Total HAP Emission Factor for Wood (lb/MMBtu)		
HAP	CAS #	HAP Fraction Emission Factor
Formaldehyde	50-00-0	1.20E-03

Detail of Total HAP Emission Factor for Wood (lb/MMBtu)		
HAP	CAS #	HAP Fraction Emission Factor
Benzene	71-43-2	8.54E-04
Hydrogen Chloride	7647-01-0	8.34E-04
Methanol	67-56-1	3.04E-03
Chlorine	7782-50-5	7.90E-04
Styrene	100-42-5	6.40E-04
Dichloromethane (Methylene Chloride)	75-09-2	5.40E-04
All other HAPs	---	1.86E-03
Total EF _{wood}		7.54E-03

Where the site-specific testing results for an individual HAP, as determined by the Agency, is greater than its respective value in the above table, then the site-specific testing result shall be used in the calculations of the Total EF_{wood}. Where the site-specific testing results for an individual HAP, as determined by the Agency, are lower than its respective value in the above table, then the Permittee may at their discretion, use the site-specific testing result to calculate the Total EF_{wood}.

The total HAP emissions factor for wood (EF_{Belt Dryer}) shall be based on the following table:

Detail of Total HAP Emission Factor for Belt Dryer (lb/ODT)		
HAP	CAS #	HAP Fraction Emission Factor
Acetaldehyde	75-07-0	6.90E-03
Acrolein	107-02-8	4.51E-03
Benzene	71-43-2	4.20E-04
Cumene	98-82-8	3.45E-03
Formaldehyde	50-00-0	8.15E-03
Methanol	67-56-1	6.27E-03
Methyl isobutyl ketone	108-10-1	4.89E-04
m,p-Xylene	1330-20-7	6.27E-4
p-Cumene	99-87-6	5.04E-02
Phenol	108-95-2	9.41E-04
Propionaldehyde	123-38-6	6.90E-04
Toluene	108-88-3	6.90E-04
Total EF _{Belt Dryer}		3.76E-02

Where the site-specific testing results for an individual HAP, as determined by the Agency, is greater than its respective value in the above table, then the site-specific testing result shall be used in the calculations of the Total EF_{Belt Dryer}. Where the site-specific testing results for an individual HAP, as determined by the Agency, are lower than its respective value in the above table, then the Permittee may at their discretion, use the site-specific testing result to calculate the Total EF_{Belt Dryer}.

b) Individual HAP Emissions (each < 10 tons/year)

Annual Individual HAP Emissions = The sum of each Individual Monthly HAP Emission during the previous 12-month period, where:

$$\text{Monthly Individual HAP Emission} = [(IEF_{\text{wood}})(HHV_{\text{wood}})(\text{monthly wood fuel usage in wet, as-fired tons}) + (IEF_{\text{distillate}})(HHV_{\text{distillate}})(\text{monthly distillate fuel usage in gallons}) + (IEF_{\text{natural gas}})(HHV_{\text{natural gas}})(\text{monthly natural gas usage in standard cubic feet}) + (IEF_{\text{LPG}})(HHV_{\text{LPG}})(\text{monthly LPG usage in gallons}) + (IEF_{\text{Belt Dryer}})(\text{monthly chip production in the belt dryer in oven-dry tons}) + (IEF_{\text{Hammermill}})(\text{monthly wood throughput in the hammermills in oven-dry tons}) + (IEF_{\text{Pellet Cooler}})(\text{monthly wood throughput in the pellet coolers in oven-dry tons}) + (IEF_{\text{Pellet Silo}})(\text{monthly wood throughput in the pellet silo in oven-dry tons})] / 2,000 \text{ lb/ton}$$

Where emissions are evaluated each month for each individual HAP in the following table:

Individual HAP Emission Factors									
HAP	CAS #	IEF _{wood}	IEF _{distillate}	IEF _{natural gas}	IEF _{LPG}	IEF _{Belt Dryer}	IEF _{Hammermill}	IEF _{Pellet Cooler}	IEF _{Pellet Silo}
		lb/MMBtu				lb/ODT			
Formaldehyde	50-00-0	1.20E-3	3.43E-4	7.35E-5	7.35E-5	8.15E-3	6.30E-3	9.40E-3	2.30E-3
Benzene	71-43-2	8.54E-4	1.53E-6	2.06E-6	2.06E-6	4.51E-3	--	--	--
Hydrogen Chloride	7647-01-0	8.34E-4	-- ¹	-- ¹	-- ¹	--	--	--	--
Methanol	67-56-1	8.30E-4	-- ¹	-- ¹	-- ¹	6.27E-3	2.80E-3	3.80E-3	1.20E-3
Chlorine	7782-50-5	7.90E-4	-- ¹	-- ¹	-- ¹	--	--	--	--
Styrene	100-42-5	6.40E-4	-- ¹	-- ¹	-- ¹	--	--	--	--
Dichloromethane (methylene chloride)	75-09-2	5.40E-4	-- ¹	-- ¹	-- ¹	--	--	--	--
Acrolein	107-02-8	--	--	--	--	4.51E-3	1.04E-2	2.55E-2	--
Acetaldehyde	75-07-0	--	--	--	--	6.90E-3	5.20E-3	7.30E-3	1.20E-3
Phenol	108-95-2	--	--	--	--	9.41E-4	--	1.05E-2	1.20E-3
Propionaldehyde	123-38-6	--	--	--	--	6.90E-4	2.00E-3	5.50E-3	1.20E-3

¹ Emissions of certain HAPs and chlorinated compounds are typically negligible from the combustion of commercially available fossil fuels.

The HHV and fuel usage for each fuel used in the calculation of each Monthly Individual

HAP Emission shall be the same HHV and fuel usage as used in the calculation of the corresponding Monthly Total HAP Emissions.

Where the site-specific testing results for an individual HAP, as determined by the Agency, is greater than its respective value in the above table, then the site-specific testing result shall be used in the calculations of the Total EF_{wood} . Where the site-specific testing results for an individual HAP, as determined by the Agency, are lower than its respective value in the above table, then the Permittee may at their discretion, use the site-specific testing result to calculate the Total EF_{wood} . [10 V.S.A. §556(c) and §§5-404 and 5-405 of the *Regulations*] [40 CFR Part 63] [Application for #AOP-15-005] [Application for #AOP-24-001]

- (33) 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(2) of the *Regulations*. [10 V.S.A. §556(c) and 556a(d)] [§5-261 of the *Regulations*]
- (34) Volatile Organic Compound (VOC) Annual Emission Limits: Emissions of VOCs from the entire Facility shall not exceed 50 tons per year, based upon any rolling twelve (12) consecutive calendar month period. The combined annual VOC emissions shall be calculated according to the following methodology:

$$VOC_{total} (tpy) = [(total \text{ tons of wood, as fired including moisture, consumed in the main boiler per 12 months}) * HHV_{Wood} * EF_{Main \text{ Boiler}}] + [(total \text{ gallons of liquefied petroleum gas consumed in the auxiliary boiler and space heaters per 12 months}) * HHV_{LPG} * EF_{Auxiliary \text{ Boiler}}] + [(total \text{ gallons of liquefied petroleum gas consumed in the emergency generator per 12 months}) * HHV_{LPG} * EF_{Generators}] + [(total \text{ tons of wood processed in the belt dryer on an oven-dry basis per 12 months}) * EF_{Belt \text{ Dryer}}] + [(total \text{ tons of wood processed in the wet hammermill on an oven-dry basis per 12 months}) * EF_{Wet \text{ Hammermill}}] + [(total \text{ tons of wood processed in the dry hammermill(s) on an oven-dry basis per 12 months}) * EF_{Dry \text{ Hammermill}}] + [(total \text{ tons of wood processed in the pellet cooler(s) on an oven-dry basis per 12 months}) * EF_{Pellet \text{ Cooler}}] + [(total \text{ tons of wood processed in the pellet silo on an oven-dry basis per 12 months}) * EF_{Pellet \text{ Silo}}]$$

Where:

$$EF_{Main \text{ Boiler}} = 2.45E-6 \text{ ton/MMBtu}$$

HHV_{Wood} = 8.5 MMBtu/ton or a site-specific value based on monthly wood fuel sampling performed in accordance with the Wood Fuel Sampling Plan required by this Permit.

$$EF_{Auxiliary \text{ Boiler}} = 4.37E-6 \text{ ton/MMBtu}$$

$$HHV_{LPG} = 9.15E-2 \text{ MMBtu/gallon}$$

$$EF_{Generators} = 5.9E-5 \text{ ton/MMBtu}$$

$$EF_{Belt \text{ Dryer}} = 4.2E-4 \text{ ton/ODT}$$

$$EF_{Wet \text{ Hammermill}} = 4.75E-4 \text{ ton/ODT}$$

$$EF_{Dry \text{ Hammermill}} = 4.75E-4 \text{ ton/ODT}$$

$$EF_{Pellet \text{ Cooler}} = 1.04E-3 \text{ ton/ODT}$$

$$EF_{Pellet \text{ Silo}} = 1.25E-4 \text{ ton/ODT}$$

With Agency approval, the Permittee may use an alternative EF if the Permittee provides written justifications (e.g. stack tests) to the Agency that the Facility has a different EF than shown above. [10 V.S.A. §§556(c) and 556a(d)] [§5-501(1) of the *Regulations*] [Application for #AOP-24-001]

- (35) Fugitive Particulate Matter 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 the following measures or other equally effective measures for those operations or activities under the Permittee's control or supervision:
- (a) Techniques such as, but not limited to, enclosing or spraying with water or surfactants shall be employed by the Permittee to prevent particulate matter from becoming airborne from the handling and transportation of ash.
 - (b) The Permittee shall include in its contract(s) with those receiving ash from the Facility the following clause: *"The ash recipient shall take reasonable precautions at all times to prevent fugitive particulate matter from becoming airborne from the handling and disposing of ash."*
 - (c) All roads, traffic areas, and storage piles on the premises shall be maintained and treated as necessary to control fugitive dust, and all trucks and railroad cars which may be sources of fugitive dust shall be covered or treated as necessary.
 - (d) Reasonable measures shall be taken to control fugitive dust resulting from any wood chipping operations conducted at the Facility.
 - (e) Reasonable measures shall be taken to control fugitive dust resulting from any wood pellet conveyors at the Facility. Reasonable measure may include the use of enclosed conveyors.

[10 V.S.A. §556(c) and §5-231(4) of the *Regulations*] [Original Agency Approval to Construction: 1/11/1988] [Application for #AOP-24-001]

- (36) Nuisance and Odor: The Permittee shall not discharge, cause, suffer, allow, or permit from any source whatsoever such quantities of air contaminants, or odors beyond the property line of a premises, 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. [10 V.S.A. §§556(c) and 556a(d)] [§5-241(1) of the *Regulations*]

- Compliance Testing and Monitoring -

- (37) Operation and Maintenance Plan – Main Boiler: The Permittee shall maintain and implement an operation and maintenance plan (O&M Plan) for the Main Boiler and its associated air pollution control equipment. The O&M Plan shall include, but not be limited to the following:
- (a) Inspection and maintenance procedures to be followed to ensure proper operation of the Main Boiler and its associated pollution control equipment and continuing compliance with the emission standards specified in this Permit.

- (b) Details of 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) A description 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.
- (d) All operators of the Facility shall be trained in the operation and maintenance of both the Main Boiler and its associated air pollution control equipment by qualified personnel.

[10 V.S.A. §§556(c)][Original Agency Approval to Construction: 1/11/1988]

(38) Main Boiler - Compliance Testing and Monitoring:

- (a) Continuing compliance with the particulate matter emission standards specified in Condition (22) and (23) of this Permit and the VOC emission standard specified in Condition (30) of this Permit shall be determined by biennial emissions testing, to be conducted in 2025 and every other year thereafter. The Permittee shall conduct such testing and furnish the Agency with a written report of the results of such testing within ninety (90) days after June 1st for those years when re-testing is required. At least thirty (30) days prior to the re-testing, the Permittee shall submit a pre-test report prepared in accordance with the Agency's "Source Emission Testing Guidelines".
- (b) Continuing compliance with the visible air contaminant emission standards specified in Condition (27) of this Permit shall be determined by means of visual observations by a trained observer in accordance with 40 *CFR* Part 60, Appendix A, Method 9, or 40 *CFR* Part 51, Appendix M, Methods 203B and 203C, or equivalent methods approved in writing by the Agency. The Permittee shall perform visible emission testing, or the equivalent if approved by the Agency, of the belt dryer and shall furnish the Agency with a written report of the results each time testing is completed. At a minimum, such testing shall be completed once per calendar year and whenever there are visible emissions from the stack in excess of 10% opacity. Records of the results of all such testing and any corrective actions taken shall be maintained in a log book on site and made available to the Agency upon request.
- (c) Continuing compliance with the nitrogen oxides and carbon monoxide emission standards specified in Conditions (28) and (29) of this Permit shall be determined by means of continuous emission monitoring, as required in Condition (43) of this Permit
- (d) Continuing compliance with fuel sulfur content limitations specified in Condition (7) of this Permit shall be determined by fuel sulfur content sampling as required by Condition (39) of this Permit.
- (e) Continuing compliance with the ammonia emission standard specified in Condition (30) of this Permit shall be determined by continuous emission monitoring, as required in Condition (44) of this Permit.

[10 V.S.A. §§556(c) and 556a(d)] [§§5-402, 5-404(1) and 5-405(1) of the *Regulations*] [40 *CFR* 60.8]

(39) Wood Fuel - Sulfur Content and Heating Value Analysis: Wood fuel combusted in the

Main Boiler at the Facility shall be sampled and analyzed for sulfur as a percent of wet wood weight and gross calorific value (GCV) of the wet wood fuel in units of Btu/pound on a monthly basis.

The Permittee shall revise and update their existing Wood Fuel Sampling Plan within thirty (30) days following issuance of this Permit as necessary. The purpose of the Wood Fuel Sampling Plan shall be to provide procedures to evaluate continuous compliance with the respective wood fuel sulfur content limitations of this Permit.

The Wood Fuel Sampling Plan shall include, but not be limited to, a description of the procedures and methods for sample collection, handling, analysis, and reporting of results from the analytical laboratory. Said Wood Fuel Sampling Plan shall be present at the Facility at all times and shall be made available to representatives of the Agency upon request. The Permittee shall revise said Wood Fuel Sampling Plan at the Agency's request or on its own motion based on operating experience or to reflect equipment or operational changes. [10 V.S.A. §§556(c) and 556a(d)] [§5-405(1) of the *Regulations*] [40 *CFR* Part 72.7(b)(1)]

(40) Belt Dryer – Compliance Testing and Monitoring:

- (a) Continuing compliance with the particulate matter emission standards and the VOC emission standard specified in Condition (24) and Condition (25) of this Permit shall be determined by triennial emissions testing, to be conducted during the first year of operation of the belt dryer and every three (3) years thereafter. The Permittee shall conduct such testing and furnish the Agency with a written report of the results of such testing within ninety (90) days after June 1st for those years when re-testing is required. At least thirty (30) days prior to the re-testing, the Permittee shall submit a pre-test report prepared in accordance with the Agency's "Source Emission Testing Guidelines". If the pre-test report proposes representative testing of less than nine (9) of the total belt dryer stacks, the pre-test report shall be utilized only with prior written Agency approval.
- (b) Continuing compliance with the visible air contaminant emission standards specified in Condition (27) of this Permit shall be determined by means of visual observations by a trained observer in accordance with 40 *CFR* Part 60, Appendix A, Method 9, or 40 *CFR* Part 51, Appendix M, Methods 203B and 203C, or equivalent methods approved in writing by the Agency. The Permittee shall perform visible emission testing, or the equivalent if approved by the Agency, of the belt dryer and shall furnish the Agency with a written report of the results each time testing is completed. At a minimum, such testing shall be completed once per calendar year and whenever there are visible emissions from the stack in excess of 10% opacity. Records of the results of all such testing and any corrective actions taken shall be maintained in a log book on site and made available to the Agency upon request.
- (c) Continuing compliance with the hazardous air pollutant (HAP) emissions standard specified in the Table titled Condition (32) of this Permit shall be determined by emissions testing of the Belt Dryer for the following compounds:
 - Acetaldehyde 75-07-0
 - Acrolein 107-02-8

- Benzene 71-43-2
- Cumene 98-82-8
- Formaldehyde 50-00-0
- Methanol 67-56-1
- Methyl isobutyl ketone 108-10-1
- m,p-Xylene 1330-20-7
- p-Cumene 99-87-6
- Phenol 108-95-2
- Propionaldehyde 123-38-6
- Toluene 108-88-3

Emissions testing for these compounds shall be conducted during the first year of operation of the belt dryer and upon request by the Agency. The Permittee shall conduct such testing and furnish the Agency with a written report of the results of such testing within ninety (90) days after June 1st for those years when re-testing is required. At least thirty (30) days prior to the testing, the Permittee shall submit a pre-test report prepared in accordance with the Agency's "Source Emission Testing Guidelines". If the pre-test report proposes representative testing of less than nine (9) of the total belt dryer stacks, the pre-test report shall be utilized only with prior written Agency approval.

- (d) Continuing compliance with the process temperature limitation specified in Condition (11) of this Permit shall be determined by:
- (i) Installing and maintaining thermocouples or similar temperature sensors to measure the following process temperatures:
 - Belt dryer air inlet temperature; and
 - Belt dryer air outlet temperature.
 - (ii) Installing and operating a digital chart recorder. This chart recorder shall continuously monitor the belt dryer inlet and outlet temperatures. The chart recorder will calculate an hourly average temperature for each and store the averages electronically. The hourly average temperature data shall be retrieved at least monthly and compiled in a spreadsheet.
 - (iii) The process temperature monitoring system will activate an alarm if an hourly average temperature limit is exceeded.
 - (iv) A violation occurs when the hourly average temperature exceeds the respective limit for three consecutive hours. In the event of a violation of one of the temperature limits, the Permittee shall notify the Agency as required in Condition (51) of this Permit.

[10 V.S.A. §§556(c) and 556a(d)][§5-261(2) of the *Regulations*] [§§5-402, 5-404(1) and 5-405(1) of the *Regulations*] [40 CFR 60.8]

(41) Pelletizing Equipment – Compliance Testing and Monitoring:

- (a) Continuing compliance with the particulate matter and volatile organic compound emission standards specified in Condition (25) and Condition (26) of this Permit shall be determined by triennial emissions testing of six (6) pelletizing equipment emission points, EP 1, EP4, EP5, EP6, EP7, and EP8 to be conducted beginning in 2025 and every other year thereafter. The Permittee shall conduct such testing

and furnish the Agency with a written report of the results of such testing within ninety (90) days after June 1st for those years when testing is required. At least thirty (30) days prior to the testing, the Permittee shall submit a pre-test report prepared in accordance with the Agency's "Source Emission Testing Guidelines".

- (b) Continuing compliance with the visible air contaminant emission standards specified in Condition (27) of this Permit shall be determined by means of visual observations by a trained observer in accordance with 40 *CFR* Part 60, Appendix A, Method 9, or 40 *CFR* Part 51, Appendix M, Methods 203B and 203C, or equivalent methods approved in writing by the Agency. The Permittee shall perform visible emission testing, or the equivalent if approved by the Agency, of the belt dryer and shall furnish the Agency with a written report of the results each time testing is completed. At a minimum, such testing shall be completed once per calendar year and whenever there are visible emissions from the stack in excess of 10% opacity. Records of the results of all such testing and any corrective actions taken shall be maintained in a log book on site and made available to the Agency upon request.

[10 V.S.A. §§556(c) and 556a(d)] [§§5-402, 5-404(1) and 5-405(1) of the *Regulations*] [40 *CFR* 60.8]

- Compliance Assurance Monitoring -

(42) Main Boiler - Compliance Assurance Monitoring (CAM) – NO_x:

The Permittee shall use the continuous emission monitoring system for oxides of nitrogen, required in this permit, to fulfill their CAM obligation.

Compliance Assurance Monitoring (CAM) – NO _x	
Indicator	Measured NO _x
Approach	Use of NO _x CEM
Indicator Range	Alarm for NO _x concentration $\geq$ 39 ppm (approximately equivalent to 0.07 lb/MMBtu)
Measurement location	Exhaust stack after all control systems.
QA/QC	Described in Condition (38) of this Permit
Frequency	Continuous

The submittal by the Permittee of reporting information from the CEM as required by Condition (38)(e) of this Permit shall satisfy the reporting requirement of CAM for NO_x emissions.

[40 *CFR* Part 64]

(43) Main Boiler - Compliance Assurance Monitoring (CAM) – Particulate Matter:

Compliance Assurance Monitoring (CAM) – Particulate Matter			
Indicator	Secondary Voltage	Secondary Amperage	Inspection & Maintenance
Approach	The transformer-rectifier secondary voltage for each of the 5 fields is transmitted to the process control computer. The Unit Supervisor will monitor the computer which indicates and continuously monitors the secondary voltage.	The ESP field milliamps value for each of the 5 fields is transmitted to the process control computer. The Unit Supervisor will monitor the computer which indicates and continuously monitors the secondary amperage.	A. Inspection and Maintenance generated by work order and round sheets. B. Computer continuously records TR voltage and milliamp readings that are submitted in the QER. C. DCS alarm acknowledgement when a precipitator field fails. D. Inspections of screws, conveyors, and rotary seal valves daily. E. Inspect and test rappers, vibrators, and insulator blowers weekly. F. Test hopper high level alarms monthly. G. Internal inspection of precipitator annually.
Indicator Range	Field T-R kilovolt range: TR-1: 30-50 TR-2: 30-50 TR-3: 20-25 TR-4: 20-25 TR-5: 20-25 TR low kilovolt alarm for all fields is 10KVDC TR high kilovolt alarm for all fields is 60.5KVDC Excursions trigger an inspection, corrective action and a reporting requirement.	Field milliamp range: TR-1: 100-400 TR-2: 300-500 TR-3: 50-100 TR-4: 50-100 TR-5: 50-100 There are no low current alarms. TR high current alarm is on the primary side only and is set at 133AAC. Excursions trigger an inspection, corrective action and a reporting requirement.	Computer generated work orders to track and schedule inspection and maintenance.
Measurement location	Transformer-rectifier	Transformer-rectifier	Inspections are performed at the ESP, in the control room, and ancillary equipment locations.
Frequency	Record readings during every shift.	Record readings during every shift.	Depending on which function of A-G is occurring the frequency will be continuous to annual. When one of the functions unveils a problem, action is taken to resolve the problem.

The Permittee shall submit a summary report for each calendar quarter, within thirty (30) days after the close of the quarter, in a format acceptable to the Agency. The summary

shall contain information on the number, duration, value (% opacity) and cause (including unknown cause, if applicable) of excursions (as defined in (c) of this condition) and any corrective actions taken. In addition, the on/off field status and ESP voltage and current readings shall be provided for each reported excursion. If there are no excursions to report, then "none" or an equivalent statement shall be indicated. The report shall include a summary of the invalid 1-hour COMS averages with duration, cause and corrective action and the valid % data capture value.

[40 CFR Part 64]

- Continuous Emissions Monitoring -

- (44) Continuous Emission Monitoring (CEM): 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 CO in ppm, lb/MMBtu, lb/hr, emissions of NO_x in ppm, lb/MMBtu, lb/hr, NH₃ ppm emissions, CO₂ content, stack gas volumetric flow rate and visible emissions discharged to the atmosphere from the Main Boiler exhaust. The Permittee shall operate and maintain such system in good working order, within manufacturer's specifications and as specified below:
- (a) Except for NH₃, 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, Subparts A, and Appendix B, Performance Specification 1, 2, 3, 4 and 6, 40 CFR Part 60, Appendix F-Quality Assurance Procedures, and latest revision of the Agency's Continuous Emission Monitoring Requirements ("CEM Requirements").
 - (b) The NH₃ 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 CEM Requirements.
 - (c) The CEMS and COMS shall be operated, calibrated and maintained continuously, independent of the Main Boiler's operation. The Permittee must measure and record valid continuous emission data for the parameters listed in this condition during all periods of the Main 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) identified in the approved Quality Assurance Plan, routine maintenance, or uncontrolled malfunction. Nevertheless, the Permittee must obtain valid data for all CEMS parameters listed in this condition and COMS for a minimum of 90% of the Main Boiler's operating hours, based on the calendar quarter.
 - (d) The Permittee shall develop a Quality Assurance Plan (QA Plan) for the above CEMS and COMS that is acceptable to the Agency. Said QA Plan shall satisfactorily document instrumentation, monitoring procedures, calibration procedures, QA/QC procedures, data acquisition, validation 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. QA Plan modifications are subject to Agency review and shall not be implemented until approval has been received from the Agency.

- (e) The Permittee shall submit a summary report for each calendar quarter, within thirty (30) days after the close of the quarter, in a format acceptable to the Agency and in accordance with the Agency's CEM Requirements and the Permittee's approved QA Plan. The report shall include at a minimum, all valid CO lb/MMBtu, CO lb/hr, NO_x lb/MMBtu, NO_x lb/hr, NH₃ ppm (corrected to 12% CO₂) and visible emissions data in excess of the emissions standards specified in this Permit, as well as a frequency distribution summary of all valid CO lb/MMBtu, CO lb/hr, NO_x lb/MMBtu, NO_x lb/hr, NH₃ ppm (corrected to 12% CO₂) data collected, a summary of valid CEMS and COMS data capture, periods of CEMS and COMS downtime, CEMS and COMS invalid data, CEMS and COMS calibration and QA/QC results.
- (f) The CEMS CO and NO_x data shall be recorded and reported in units of pounds per MMBtu of heat input and lb/hour (NO_x as NO₂ and both CO and NO_x in terms of 8-hour rolling averages, calculated on an hourly basis). NH₃ data shall be recorded and reported in units of ppm (corrected to 12% CO₂) in terms of 1 hour averages, calculated on an hourly basis. Valid CEMS 8-hour rolling averages during source operation must be calculated from valid CEMS 1-hour sub-average data representing at least 75% of the particular averaging period.
- (g) The 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 averages. Valid COMS 1-minute averages during source operation must be calculated from at least five (5) valid 10-second measurements recorded during the clock minute. One (1)-minute averages shall be used for determining compliance with the twenty (20) % opacity aggregated six (6) minute standard and with the sixty (60) % opacity standard.
- (h) The Permittee shall maintain a file of all information reported in the quarterly summaries and all other supporting information and data collected by the monitoring system for at least five (5) years from the date of collection of such data or submission of such summaries.

[§§5-405, 5-1015(a)(3)-(5) of the *Regulations*][40 CFR Part 60 Subpart Db 60.49b(f)]

- Record Keeping and Reporting -

- (45) Record keeping: In addition to the record keeping and reporting requirements specified in Conditions (37), (38), (40), (41), (42) and (43) of this Permit, the Permittee shall maintain records of the following data:
 - (a) The quantity of wood fuel fired during each day and calendar month.
 - (b) The quantity of wood fuel other than whole tree chips, such as sawdust, mill chips and bark received during each calendar month.
 - (c) The sulfur content in percent of wet weight for wood fuel fired in the Main Boiler as analyzed on a monthly basis.
 - (d) Supplier certifications providing the sulfur content in percent by weight of LPG fuel fired in the main boiler, for each delivery of LPG to the Facility.

- (e) The quantity of LPG fired during each day and calendar month in each of the following:
 - (i) Main Boiler.
 - (ii) Auxiliary Boiler.
 - (iii) Auxiliary Generator.
- (f) The total hours of operation during each calendar month of the Auxiliary Generator.
- (g) The total hours of operation during each calendar month of the Main Boiler.
- (h) The total quantity of aqueous ammonia or urea injected into the Main Boiler and SNCR and the total quantity of aqueous ammonia or urea injected into the SCR during each calendar month.
- (i) Electricity supplied and used by each field of the electrostatic precipitator pursuant to the inspection and maintenance plan referenced by Condition (16) of this Permit.
- (j) Hourly average process temperature in the belt dryer inlet and exhaust as specified in Permit Condition (40)(d)(ii).
- (k) The total quantity of wood material processed in the Wet Hammermill (EP1), Dry Hammermills (EP4 and EP6), Pellet Coolers (EP5 and EP7) and Pellet Silo (EP8), in tons (weight of both dry wood and moisture in the pellets), each month. To facilitate conversion of the total weight of pellets produced (including water) to oven-dry-tons of wood material processed, the Permittee shall collect one sample of wood material entering each emission unit to be analyzed for moisture content, each calendar year for three years, and at the Agency's discretion thereafter. Moisture content analysis shall be performed in accordance with ASTM E871-82 (2019), or another method if approved in writing by the Agency.
- (l) Calculate the production of dried wood material processed through the belt dryer, in oven-dry tons, each month and each calendar year based on the following calculation:

$$M_{proc} = (M_{pellets} + M_{chips}) \times 1.1^*$$

Where:

M_{proc} = Mass of wood processed in rotary drier per month (ODT)

$M_{pellets}$ = Mass of pellets produced from wood dried in the rotary dryer each month, in tons (weight of both dry wood and moisture in the pellets)

M_{chips} = Mass of chips produced from wood dried in the rotary dryer each month, in tons (weight of both dry wood and moisture in the chips)

* Conversion factor accounts for conversion between oven dry (e.g., 0% moisture) and final moisture content of pellets (approx. 5%).

A report, signed by a responsible official of the Facility and containing summaries of such records shall be submitted to the Agency for each calendar quarter within thirty (30) days after the close of each quarter. [10 V.S.A. §556(c)] [40 CFR Part 60 Subpart Db §§ 60.49b(d)(1) and 60.49b(w)] [40 CFR Part 70 §70.6(a)(3)(iii)(A)] [40 CFR Part 72 §72.7(f)(3)]

- (46) 5-year Compliance Report: Within 120 days of completing the 5-year tune-up of the Main Boiler, required by Condition (16)(a) of this Permit, the Permittee shall submit a 5-year compliance report as required by 40 CFR Part 63 Subpart JJJJJJ §63.11225(b). [40 CFR Part 63 Subpart JJJJJJ]

- (47) Startup / Shutdown / Malfunction Occurrences and Periods Records: The Permittee shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the Main Boiler; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative. [40 CFR Part 60 Subpart A §60.7(b)] [Application for #AOP-15-005]
- (48) Records of Emergency Generator/Engine Usage: The Permittee shall maintain records in a log book, or electronic record system, of all hours of operation of each stationary emergency generator/engine 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 hours 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) and 556a(d)] [§5-405(1) of the *Regulations*]
- (49) Records of all required compliance testing shall include the following:
- (a) The date, place, and time of sampling or measurements.
 - (b) The analytical techniques or methods used.
 - (c) The results of all such analyses; and.
 - (d) The operating conditions existing at the time of sampling or measurement.
- [10 V.S.A. §§556(c) and 556a(d)] [§§5-402, 5-405(1) and 5-1015(5) of the *Regulations*] [40 CFR Part 70.6(a)(3)(ii)(A)]
- (50) Records: 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. [10 V.S.A. §§556(c) and 556a(d)] [§§5-402, 5-405(1) and 5-1015(a)(7) of the *Regulations*] [40 CFR Part 70.6(a)(3)(ii)(B)]
- (51) Notification: 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. [10 V.S.A. §§556(c) and 556a(d)] [§§5-402 and 5-1015(a)(6) of the *Regulations*]
- (52) Notification: 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 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) and 556a(d)] [§§5-402 and 5-501 of the *Regulations*]
- (53) Reporting: Semi-Annual Periodic Monitoring Reports: The Permittee shall submit semi-annual reports to the Agency 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. The semi-annual reports shall be signed by a responsible official of the Facility and contain the following information regarding the preceding six (6) month reporting period:

- (a) a summary of the fuel usage records required by this Permit;
- (b) a summary of the NO_x emission calculations as required by this Permit;
- (c) a statement of the sulfur content of any and all fuel delivered to the Facility during the reporting period;
- (d) If the stationary source was in violation of any provision of the terms of this Permit, the measures taken to bring the source into compliance.

[10 V.S.A. §§556(c) and 556a(d)] [§§5-402, 5-405(1) and 5-1015(a)(5) of the *Regulations*][40 CFR Part 70 §70.6(a)(3)(iii)(A)]

- (54) Reporting: Annual Compliance Certification: By February 1st of each year, the Permittee shall submit to the Agency and the U.S. EPA an annual certification of compliance for the previous calendar year which ascertains and identifies the compliance status of the Facility with respect to all terms and conditions of this Permit, including but not limited to the following:

- (a) Identification of each term or condition of the permit that is the basis of the certification;
- (b) The compliance status;
- (c) Whether compliance was continuous or intermittent; and
- (d) The methods used for determining the compliance status of the Facility over the reporting period.
- (e) If necessary, the Permittee also shall identify any other material information that must be included in the certification to comply with section 113(c)(2) of the Act, which prohibits knowingly making a false certification or omitting material information

[10 V.S.A. §§556(c) and 556a(d)] [§114(a)(3) of the CAA] [§§5-402 and 5-1015(a)(11) of the *Regulations*]

- (55) 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 or if the Facility performs one or more of the air contaminant emitting operations listed in 5-802(2) of the *Regulations*, 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. [10 V.S.A. §§556(c) and 556a(d)] [Subchapter VIII §§5-802, 5-803, 5-807, 5-808 of the *Regulations*]

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

Air Quality & Climate Division
Department of Environmental Conservation

Agency of Natural Resources
Davis 4
One National Life Drive
Montpelier, Vermont 05620-3802

[10 V.S.A. §§556(c) and 556a(d)] [§5-402 of the *Regulations*]

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

Attn: Air Compliance Clerk
Director, Enforcement and Compliance Division
U.S. EPA Region I
5 Post Office Square
Suite 100 (04-2)
Boston, MA 02109-3912

[10 V.S.A. §§556(c) and 556a(d)] [§5-402 of the *Regulations*]

- Stratospheric Ozone Protection -

- (58) Protection of Stratospheric Ozone - Recycling and Emissions Reduction. The Permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 *CFR* Part 82, Subpart F:

- (a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices specified in 40 *CFR* Part 82, Subpart F §82.156.
- (b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment as specified in 40 *CFR* Part 82, Subpart F §82.158.
- (c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program as specified in 40 *CFR* Part 82, Subpart F §82.161.
- (d) Commercial or industrial process refrigeration equipment must comply with the leak repair requirements specified in 40 *CFR* Part 82, Subpart F §82.156.
- (e) For each appliance normally containing fifty (50) or more pounds of refrigerant, the Permittee shall keep records of refrigerant purchased and added to such appliances as specified in 40 *CFR* Part 82, Subpart F §82.166.

[10 V.S.A. §§556(c) and 556a(d)] [40 *CFR* Part 82, Subpart F]

- Acid Rain Portion of Permit to Operate -

The Facility was previously not subject to the requirements of the Acid Rain Program as a New Independent Power Production Facility under 40 *CFR* Part 72.6(b)(6). With the expiration of the contracts previously held by the Facility, the Facility is now subject to the requirements of the Acid Rain Program. However, the Facility complies with the new unit exemption requirements of 40

CFR §72.7(b)(1), as it has not been previously allocated any allowances under Subpart B of 40 *CFR*, Part 73, has a nameplate capacity less than or equal to 25 MWe, and combusts wood and LPG fuel, with both fuels having a sulfur content of less than 0.05%.

To obtain this exemption, the Facility was required to submit a statement to the permitting authority by December 31 of the first year for which the unit is to be exempt under this section. This statement was to be signed by the designated or, if no designated representative has been authorized, a certifying official of each owner of the unit. The statement identified the unit, the nameplate capacity of each generator served by the unit and the fuels currently burned or expected to be burned by the unit and their sulfur content by weight, and stated that the owners and operators of the unit will comply with 40 *CFR* §72.7 (f). This statement was received by the Agency on December 17, 2012.

Accordingly, the Agency will incorporate the provisions and requirements of the exemption as described in 40 *CFR*, Part 72.7(a), (b)(1), (d), and (f) into this Permit.

(59) Applicability and Maintenance of Exemption: To maintain the new unit exemption requirements of 40 *CFR* §72.7(b)(1) the Permittee shall operate the Facility such that the Facility:]

- (a) Serves during the entire year one or more generators with total nameplate capacity of 25 MWe or less
- (b) Combusts fuel that does not include any coal or coal-derived fuel (except coal-derived gaseous fuel with a total sulfur content no greater than natural gas); and
- (c) Combusts gaseous and nongaseous fuel with an annual average sulfur content of 0.05 percent or less by weight as determined by Condition (38) and (60) of this Permit.

[40 *CFR*, Part 72.7(a)] [40 *CFR*, Part 72.7(f)(1)(i)]

(60) Applicable Portions of Part 72 for Exempt Facilities: The Facility, during the period that it maintains its exemption under 40 *CFR*, Part 72.7(a) shall be exempt from the Acid Rain Program, except for the provisions of 40 *CFR* §§ 72.2 through 72.6, and §§ 72.10 through 72.13. [40 *CFR*, Part 72.7(b)(1)] [40 *CFR*, Part 72.7(f)(2)]

(61) Fuel Sulfur Content – Compliance: Compliance with the requirement that fuel burned during the year has an annual average sulfur content of 0.05 percent by weight or less shall be determined as follows:

The annual average sulfur content, as a percentage by weight, shall be calculated using the equation shown below:

$$\%S_{\text{annual}} = \frac{\sum_{n=1}^{\text{last}} \%S_n V_n d_n}{\sum_{n=1}^{\text{last}} V_n d_n}$$

For gaseous fuel burned during the year the requirement is met if the annual average sulfur content is equal to or less than 0.05 percent by weight. The sulfur content of the gaseous fuel shall be determined by certifications provided from the fuel supplier certifying the sulfur content of the gaseous fuel that is delivered to the Facility.

For wood fuel, in lieu of the factor, volume times density ($V_n d_n$), in the equation, the factor, mass (M_n), may be used, where M_n is: mass of the nongaseous fuel in a delivery during the year to the unit of which the n th sample is taken, in lb;

Samples of wood fuel shall be collected and analyzed on a monthly basis, in accordance with the requirements Wood Fuel Sampling Plan required by this Permit. [10 V.S.A. §§556(c) and 556a(d)] [§§5-402, 5-404, 5-405(1) and 5-1015(5) of the *Regulations*] [40 *CFR*, Part 72.7(d)] [Application for #AOP-15-005]

- (62) Recordkeeping Requirements: For a period of 5 years from the date the records are created, Permittee shall retain at the Facility, records demonstrating that the requirements 40 *CFR*, Part 72.7(b)(1) are met. The 5-year period for keeping records may be extended for cause, at any time prior to the end of the period, upon written request by the EPA or Agency.

Such records shall include, for each monthly period of wood fuel delivery to the Facility, the unit or for fuel delivered to the unit continuously by pipeline, the type of fuel and the sulfur content of this fuel based on monthly sampling. [40 *CFR*, Part 72.7(f)(3)]

- (63) Loss of Exemption: On the earliest of the following dates, a unit exempt 40 *CFR* §72.7(b)(1) shall lose its exemption and for purposes of applying parts 70 and 71 of this chapter, shall be treated as an affected unit under the Acid Rain Program:
- (a) The date on which the unit first serves one or more generators with total nameplate capacity in excess of 25 MWe;
 - (b) The date on which the unit burns any coal or coal-derived fuel except for coal-derived gaseous fuel with a total sulfur content no greater than natural gas; or
 - (c) January 1 of the year following the year in which the annual average sulfur content for gaseous fuel burned at the unit exceeds 0.05 percent by weight (as determined under paragraph (d) of this section) or for nongaseous fuel burned at the unit exceeds 0.05 percent by weight (as determined under paragraph (d) of this section)

[40 *CFR*, Part 72.7(f)(4)]

- (64) Duty to Apply for Acid Rain Permit on Loss of Exemption: Notwithstanding § 72.30(b) and (c), the designated representative for a unit that loses its exemption under this section

shall submit a complete Acid Rain permit application 60 days after the first date on which the unit is no longer exempt.

For the purpose of applying monitoring requirements under part 75 of this chapter, a unit that loses its exemption under this section shall be treated as a new unit that commenced commercial operation on the first date on which the unit is no longer exempt. [40 CFR, Part 72.7(f)(4)]

- Standard Permit Conditions -

- (65) 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) and (g) and 556a(d)] [40 CFR Part 60.11(d) and 63.6(e)]
- (66) 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*]

- (67) 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 and §556a, as amended. [10 V.S.A. §§556(d) and 556a(g)] [§§5-1008(a) and 5-1008(e) of the *Regulations*]

- (68) Cause for reopening, modification, termination and revocation of this Permit includes, but is not limited to:
- (a) Inclusion of additional applicable requirements pursuant to state or federal law;
 - (b) A determination that the permit contains a material mistake or that inaccurate information was used to establish emissions standards or other terms or conditions of the operating permit;
 - (c) A determination that the operating permit must be modified or revoked to ensure compliance with applicable requirements;
 - (d) A determination that the subject source has failed to comply with a permit condition;
 - (e) For Title V subject sources, a determination by U.S. EPA that cause exists to terminate, modify, revoke or reissue an operating permit;
 - (f) Those causes which are stated as grounds for refusal to issue, renew or modify an operating permit under §5-1008(a) of the *Regulations*; or
 - (g) If more than three (3) years remain in the permit term and the source becomes subject to a new applicable requirement.
- [10 V.S.A. §§556(c) and 556a(d)] [§5-1008(e)(4) of the *Regulations*]
- (69) 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 of the *Regulations*] [40 CFR Part 70 §70.6(a)(6)(v)]
- (70) 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), 556a(d) and 557] [§§5-402, 5-404, and 5-1015(a)(10) of the *Regulations*]
- (71) 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) and 556a(d)] [§§5-409 and 5-1006(f) of the *Regulations*]
- (72) 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) and 556a(d)]
- (73) 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) and 556a(d)] [§§5-1008(a) and 5-1008(e) of the *Regulations*]

- (74) 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) and 556a(d)]
- (75) 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*. [10 V.S.A. §§556(c) and 556a(d)] [§5-403 of the *Regulations*]
- (76) 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) and 556a(d)]
- (77) 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) and 556a(d)]
- (78) 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 and 556a] [§§5-408, 5-501, 5-1004, and 5-1013(a) of the *Regulations*]
- (79) Renewable Energy Projects – Right to Appeal to Public Utilities Commission: 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 Utilities Commission 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 Utilities Commission 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 Utilities Commission, available on line at www.psb.vermont.gov. The address for the Public Utilities Commission is 112 State Street, Montpelier, Vermont, 05620-2701 (Tel. # 802-828-2358).

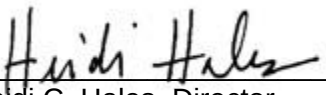
[10 V.S.A. §§556(c), 556a(d) and 8506]

- (80) 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). [10 V.S.A. §§556(c) and 556a(d)]
- (81) Conditions (1) – (5), (8), (9), (12) – (17), (22), (27) – (31) and (37) are derived from the new source review requirements of Subchapter V of the *Regulations*. With the exception of the cited new source review conditions, this Operating Permit shall expire as indicated on the cover page to this Permit. The Permittee shall submit to the Agency a complete application for renewal of the Operating Permit at least six (6) months before the expiration of the Operating Permit. If a timely and administratively complete application for an operating permit renewal is submitted to the Secretary, but the Secretary has failed to issue or deny such renewal before the end of the term of this Operating Permit, then the Permittee may continue to operate the subject source and all terms and conditions of this Operating Permit shall remain in effect until the Secretary has issued or denied the operating permit renewal. However, this Operating Permit shall automatically expire if, subsequent to the renewal application being determined or deemed administratively complete pursuant to §5-1006 of the *Regulations*, the Permittee fails to submit any additional information required by the Secretary as well as information pertaining to changes to the Facility within thirty (30) days or such other period as specified in writing by the Secretary. [10 V.S.A. §§556(c) and 556a(d)] [§§5-1011 and 5-1012(a) of the *Regulations*] [§§5-1005(c) and 5-1012 of the *Regulations*]
- (82) The conditions of this Permit as set forth above supersede all conditions contained in all prior Permits issued by the Agency to the Permittee for this Facility. [10 V.S.A. §§556(c) and 556a(d)]

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.

Permit issued and effective this 8th day of August, 2024.

Permit issuance authorized by:
Julie S. Moore, Secretary
Jason Batchelder, Commissioner
Vermont Agency of Natural Resources

By: 
Heidi C. Hales, Director
Air Quality & Climate Division

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Y:\AP_Admin\StationaryFacilities\Ryegate Holdings LLC and Capergy US LLC dba Ryegate Associates\AOP-24-001

Co-firing of fuels at Ryegate Associates.

Ryegate Associates Title V air permit allows cofiring of LPG and whole tree chips in the Riley boiler furnace. The Title V mandates that the Riley boiler be warmed up with LPG and wood chips be introduced when MWs are starting to be produced. The LPG is introduced to the furnace with a 50 Million BTUs per hour COEN gas burner.

LPG flow going to the COEN gas burner is measured at all times as is the run time of the burner. Megawatt generation is monitored at all times. The Distributive control system computers that monitor and control the generation facility calculates the megawatts produced when the LPG burner is on, and these MWs are subtracted from the total Net MWs produced.

A. Purpose:

Ryegate Associates, RA, is building and proposes to operate a 20 MW wood fired power plant in East Ryegate, Vermont. The facility will be fueled with whole tree wood chips as the primary fuel. The chips will be stored in both covered storage silos and an uncovered outside storage pile. Roundwood logs will also be stored at the facility for long term storage.

The purpose of this plan is to provide assurance to the State that the outside storage of wood chips will be done in such a way to minimize potential adverse environmental effects.

B. Background:

The proposed facility will be fired with wood fuel delivered in standard chip vans. The fuel will be mixed hardwood and softwood whole tree chips with a high heating value of 8.5 million Btu's per green ton, and an average moisture content of 50% (wet basis). Demolition waste, railroad ties, and other wastes will not be stored or burned at the facility.

Depending on the species, the chemical characteristics of the wood fuel will vary slightly. The design basis fuel analysis is as follows:

Hydrogen	3.0%
Carbon	25.0%
Oxygen	20.0%
Water	50.0%
Nitrogen	0.0% (0.15% maximum)
Sulfur"	0.0% (0.07% maximum)
Ash	2.0%

The fuel chips will be stored in both covered storage silos and an uncovered outside storage pile before being mechanically conveyed to the boiler. Primary storage will be the fuel silos. The outside chip piles and the roundwood piles provide for secondary storage. The storage silos provide 72 hours of covered storage at maximum plant operating capacity. The main purpose of the outside piles will be to allow continuous plant operation in spite of supply interruptions. Typical interruptions include such things as a labor strike or foul weather, which are expected to cause a reduction in wood fuel availability. Also, use of outside piles will allow the operators to take advantage of short term or seasonal excess availability of fuel wood supplies.

The pile will be built on sloped asphalt. Runoff from the pile will be discharged *in* accordance with an approved discharge permit to the Connecticut River through piping sized for a 10 year 24 hour storm. The pile will be rotated at a maximum interval of 120 days in order to prevent significant decomposition, acid formation, odors, or spontaneous combustion.

Roundwood logs will also be stored at the facility for periods up to 365 days. This fuel will be used to carry the plant through periods of long term shortages of fuel. The roundwood storage pile *will* not be subject to decomposition, odor generation, or spontaneous combustion. The current plan is for a contractor to provide services for roundwood chipping. However, RA may install and operate a permanent roundwood chipper on site if proven to be more economical and provide better operating flexibility.

The wood will be burned at a rate of approximately 30 tons/hr. This converts to approximately 10,000 tons for two weeks of fuel storage. The uncovered chip storage pile will occupy a ground area of approximately 2.0 acres.

The project has a base load power contract and therefore will operate continuously consuming steady quantities of wood. There will not be startups and shutdowns dictated by fuel costs and ISO New England requirements. This will allow procurement of fuel deliveries to be carefully planned in order to avoid large stockpiles of chips on site. This was a major cause of early problems at Burlington Electric Department's (BED) wood fired power plant. At BED plant operating hours were significantly reduced while wood fuel deliveries continued. This resulted in extremely large storage piles with heights of 60' to 80' and storage times greater than 12 months. That is when the spontaneous combustion and offensive odors caused by natural fermentation occurred. BED has since rectified the problems.

C. Potential Chip Storage Problems:

The potential problems that can result from outside chip storage include the following:

1. spontaneous combustion
2. offensive odors
3. fermentation
4. Contaminated leachate production
5. Increased wood fuel moisture content
6. Loss of heating value

This chip pile management plan is developed to decrease the potential for these problems to occur.

D. Chip pile Management Plan:

The following plan is proposed for Ryegate Power station:

1. The plant will be base loaded with a steady power contract. Fuel deliveries will be carefully planned in order to avoid large stockpiles of chips on site. A weekly inventory and age determination will be recorded utilizing weekly fuel delivery scale tickets and plant fuel consumption. The total pile inventory will not exceed 25,000 tons, which is the quantity of fuel that can be consumed in 30 days of operation when all deliveries are halted.
2. The outside chip pile serves as the secondary fuel source.
3. Whole tree logs will be stored onsite for long term storage. These logs will be chipped on site as necessary, but it is likely that the roundwood will turn over

every Year. Problems discussed above are not associated with the storage of roundwood logs.

4. A two-pile system will be used. Wood chips in the storage pile will be used based on the first-in first-out method. Wood chip piles will not exceed a height of 35' -40' tall.

5. Whole tree chips will not be stored on the site for more than 120 days at a time.

6. Chip piles greater than 120 days old will be monitored for excessive temperatures at several locations weekly for tracking purposes. In the event any temperature reaches 180 degrees (F) the pile will be monitored daily. Piles reaching a temperature of 200 degrees (F) or greater will be consumed immediately before internal heat causes spontaneous combustion.

Piles will be constructed with minimal horizontal surface area exposed. This will encourage shedding rainwater and help prevent moisture pick-up from rainfall.

8. Chips will be stored on a sloped paved surface with storm water runoff leading directly to the Connecticut River as approved by discharge permit. This will help prevent moisture build-up and a favorable environment for rapid fermentation in the chip pile. It will also prevent an environment for the generation of significant leachate from the chip pile. Annual storm water runoff from the chip pile is expected to be less than 823,000 gallons.

9. The storage area will be kept free from oil, chemical residues, litter, cigarette butts, tramp metal or any other miscellaneous refuse that can act as a external heat sink potentially leading to fires.

10. As research and experimentation on the mechanisms of chip storage are developed, the chip pile management plan can be modified to address the results that are encountered.

11. In the event the Ryegate facility is unable to consume *in* a timely manner a pile which is beginning to produce offensive odors, the Air Pollution Control Division and Ryegate town selectmen will be informed immediately. If necessary to consume the pile in a timely manner, the pile will be transported to another facility controlled by the operator of Ryegate Power Station for immediate consumption.

E. Summary:

The outside storage piles will be primarily used to ensure a continuous fuel supply for the base-loaded electric power plant.

The storage piles will be managed based on the first-in first-out basis and will be continuously rotated. Chips will remain in storage for no longer than 120 days. Piles will be limited to a height of 35 to 40 feet and good housekeeping will prevent external heat sources from causing fires.

The pile will be built on an asphalt sloped surface to allow storm water to drain from the storage area.

Factors that are conducive to spontaneous combustion, offensive odors, fermentation, and leachate production will not occur at the Ryegate facility. Short rotation periods, small piles, good housekeeping, and adequate drainage will assure that the environment will not be adversely affected by the outside chip storage pile. Also, the plan will be flexible to incorporate the findings of future research and experimentation.

There is an additional incentive for RA to properly manage the chip pile. During prolonged outside storage there is a loss in the wood chip's available energy, i.e. Btu heating value. Proper pile management by Ryegate Associates and minimal outside storage time will help optimize the fuel's heating value and thereby save overall annual fuel costs.

Monthly Wood Sampling Procedure

Wood samples are required by the Title V air permit. We need the heating value, sulfur content and Ash percentage of the fuel burned for our Emission Inventory. We also monitor CHNO and other prime pollutants like Lead.

Procedure

Get a 1-gallon ziploc from the back corner of the control room. In permanent marker, write on the bag the Identity of the sample, date, and company name. The Identities can be found on the example “Chain of Custody” form in this binder book. Identities are as follows: #1 Sample: Conveyor Belt.

Fill the bag with a minimum of 1+ pound of wood chips, as heating value results are reported in BTU’s per Pound, so the lab needs a pound to measure. The sample represents wood we are currently burning, gather chips appropriately to make a representative sample. IE- If wood is being mixed from both silos feeding the boiler, then take a sample from each.

Title V requires on a monthly basis that the Sulfur Content and Heating Value Analysis for the wood fuel combusted in the Main Boiler shall be sampled and analyzed for sulfur as a percent of wet wood weight. Also the gross calorific value (GCV) of the wet wood fuel in units of Btu/pound. In addition, Ryegate requires the following constituents: Ash, CHNO, Lead, Moisture.

Find a box on the mezzanine to ship the samples in. Fill out a “Chain of Custody Record” that is kept in the Wood Samples Binder. Use the example as a guideline. Seal up the box with samples and **Chain of Custody** sheet in it. Address labels are kept in this binder to ship the samples to the lab (Sterling Analytical). Use UPS ground shipping.

The operations supervisor will receive the results from the lab and update the three-ring binder in the fire proof filing cabinet. The operations supervisor will update the Sulfur content spreadsheet located on the network @

“S:\Environmental\WoodMoisture&LOI\MonthlySampleResults/ Sulfur Content Wood_Propane” and ensure the plant is operating in compliance with the 12-month rolling average limitation of the Title V permit.

He will also input BTU and Ash data into the Emissions Inventory spreadsheet located on the network @

“S:\Environmental\Air Permit Reporting\EmissionInventory”

In addition, the operations supervisor will check the monthly sample results for lead content above 3 ppm and take action to determine why it is above that if results are high.

The Wood Fuel Sampling Plan shall include, but not be limited to, a description of the procedures and methods for sample collection, handling, analysis, and reporting of results from the analytical laboratory. Said Wood Fuel Sampling Plan shall be present at the facility at all times and shall be made available to representatives of the Agency upon request. The Permittee shall revise said Wood Fuel Sampling Plan at the Agency's request or on its own motion based on operating experience or to reflect equipment or operational changes.

Make sure you use the address label with the below address and company name to ship samples to.

Sterling Analytical, Inc.
West Springfield, MA 01089

Wood Fuel Specifications
Pinetree Power-Bethlehem & Ryegate Associates

Target Chip Size:	2" X 2" X 1/4"
Chip Size Acceptable Range:	82% to be retained on 7/8" screen
Moisture Content Acceptable Range:	35%–55% (average of 45% on a green ton basis)
Maximum Chip Size Limit:	No more than 5% shall be 4 inches or larger in any dimension Unchipped twigs and intertwined sticks which disrupt fuel handling system is unacceptable
Maximum Fines or Pin Chips:	No more than 3% shall be 1/8" (minimal sawdust allowed)
Species:	Northern hardwoods preferred (birch, beech & maple) Mixture of softwood and hardwood allowed No Ash from May 1 thru Oct 1
Method:	Chips should be derived from live trees & loaded directly into trailer No "off the ground" chips accepted
Contaminants:	Chips shall be free of any contaminants: No paint, surface treatments, glues or other adhesives, plastic laminates, preservatives, petroleum products, chemicals, or hazardous materials
Sampling:	Random samples for testing shall be taken to assure compliance