



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Western Regional Office • 436 Dwight Street, Springfield MA 01103 • 413-784-1100

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Commissioner

November 10, 2011

Mr. Patrick F. Dunn
Vice President, Building Materials Group
Jain Americas – NuCedar Mills
1000 Sheridan Street
Chicopee, MA 01022

Re: PVAPCD – Chicopee
Application # 1-P-11-002
Transmittal # X236105
**PVC BOARD MILLING & COATING FACILITY
MODIFIED VOC/HAP EMISSION LIMITS**

Conditional Approval

Dear Mr. Loper:

The Massachusetts Department of Environmental Protection, Western Regional Office ("MassDEP") received on January 27, 2011 a Non-Major Comprehensive Plan Approval application from NuCedar Mills, Inc. for their PVC board milling and coating facility located at 1000 Sheridan Street in Chicopee, Massachusetts (hereinafter "NuCedar Mills").

During review of the application, MassDEP became aware that coatings were being used that had a higher volatile organic compound ("VOC") content than what was allowed in the September 14, 2006 Conditional Approval issued for the facility's initial operation. In a letter dated May 12, 2011, the facility documented that the coatings used contained up to 7.11 lb VOC per gallon solids applied, which is in excess of the 4.9 lb VOC per gallon solids applied limit specified in the Conditional Approval.

MassDEP issued a Notice of Noncompliance to NuCedar Mills dated June 22, 2011 requiring the facility to amend their plan approval application to reflect use of these higher VOC content coatings, and to include administrative mechanisms to ensure that such an exceedance does not occur in the future.

MassDEP received an updated application on November 9, 2011 that fulfilled the requirements of the Notice of Noncompliance, and served to complete the plan approval application.

The plans bear the seal and signature of Mark C. Bannon, Massachusetts Registered Professional Engineer No. 40552.

Review of the application by MassDEP reveals the following:

NuCedar Mills is operating a milling and coating facility for the manufacture of synthetic clapboards at 1000 Sheridan Street in Chicopee, Massachusetts. The clapboards are made from polyvinyl chloride ("PVC") resin core boards which are purchased and delivered to the NuCedar site where they are milled and coated.

Process steps consist of:

1. Receiving & storing purchased PVC core boards;
2. Individual core boards are placed on the automated production line;
3. Boards are pre-heated to soften the surfaces;
4. Boards are embossed using a hot-oil steel roller embosser, steel brushed, or left un-embossed depending on customer preference;
5. Boards are rip sawed into widths of between 7.5" to 12";
6. The ripped boards are molded via a router type molding machine to a clapboard profile;
7. Molded boards are then split and punched;
8. Clapboards are then de-ionized and vacuumed cleaned before painting;
9. Clapboard is painted via an HVLP cross-draft spray booth;
10. Painted board is then moved to a drying oven for flash-off, baking and cooling for a total of 75 minutes;
11. Product is inspected; and
12. Final product is packaged for shipping.

In addition to the main production line, the following activities take place on-site:

- Paint mixing
- Research and development lab
- Roof mounted natural gas heating and air condition units and area space heaters

NuCedar Mills is currently operating one enclosed automated spray system (used for production) and one open face industrial paint booth (used for touch-up). Both coating systems are equipped with high volume–low pressure (HVLP) spray guns and employ self-contained cleaning systems. The booths comply with the performance specifications listed in Regulation 310 CMR 7.03(16). The booths' and drying oven dimensions and specifications are as follows:

Equipment	Dimension (H-ft x D-ft x W-ft)	Face Velocity (fpm)	Flow Rate (acfm)	Stack Diameter (ft)	Stack Velocity (fps)
Production Cross Draft Spray Booth	8 x 12¼ x 12	100	9,600	2	50
Touch-up Open & Spray Booth	8 x 7 x 20	125	20,000	3	50
Paint Mix Booth	8 x 8 x 15	30	3,420	1	70
Drying Oven	8 x 70 x 20	NA	9,600	2	50

Each spray booth is equipped with 24" x 24" spun mesh filter pads two (2) inches thick to control over-spray particulate matter emissions, with a particulate control efficiency of $\geq 97\%$.

NuCedar is proposing to use coatings containing up to 7.11 lb VOC per gallon solids. The primary solvents in the coating include acetone, n-butyl acetate, and methyl n-amyl ketone. The only hazardous air pollutant ("HAP") expected to be used, hexamethylene diisocyanate (CAS # 822-06-0), is found in the coating catalyst at a concentration of approximately 0.2% by weight. An estimated 430-pounds of hexamethylene diisocyanate will be consumed each year, with some being retained in the finished product. HAP emissions are expected to be < 0.3 tons per year.

The expected use of coatings and cleanup solutions is as follows:

Type	VOC Content (lb/gallon; as applied)	Expected Use (gal/yr)	Proposed VOC Emissions (tpy)
As-applied coating	3.6	15,780	28.4
Thinners/reducers/clean-up	6.8	400	1.4
Total Coating/Clean-up		16,180	29.8
Acetone in coating	0.75	15,780	5.9
Acetone other	6.5	670	2.2
Total Acetone (tpy)			8.1

NuCedar Mills performed a top-down BACT analysis for controlling VOC emissions facility-wide and from the production spray booth alone from which most of the VOC emissions are released to the atmosphere. Based on the result of this analysis, a facility-wide emission restriction of 30.0 tons per year VOC is being proposed which would result in a cost of control via thermal or catalytic oxidation of over \$15,000 per ton.

It is the opinion of the MassDEP that the construction, installation, and operation of the facility as proposed by NuCedar Mills is consistent with modern air pollution control technology and Best Available Control Technology. The MassDEP hereby issues approval for the modifications described herein and in the submittal pursuant to Regulation 310 CMR 7.02(5) of the "Regulations for the Control of Air Pollution in the Pioneer Valley Air Pollution Control District", subject to the following provisions:

Emission Limits / Restrictions

1. NuCedar Mills shall ensure that the coating VOC content (lb VOC per gallon solids applied) and the calendar month and yearly (12-month rolling total) emissions of VOC and HAP indicated in Table 1 are not exceeded by their paint spraying operation:

Table 1
NuCedar Mills VOC Emission Limits

Emission Units	Coating VOC Content	Total VOC Emissions		Total HAP Emissions	
	lb VOC/GSA (as applied)	lb/month ⁽¹⁾	tons/year ⁽²⁾	lb/month ⁽¹⁾	tons/year ⁽²⁾
<ul style="list-style-type: none"> • Production paint spray booth, • Touch-up paint booth 	7.11	5000	30.0	150	0.9
<p>(1) Based on a calendar month total.</p> <p>(2) Based on a 12-month rolling total. Compliance with a 12 month rolling total is determined each month by adding the previous 12 months of VOC/HAP emissions comparing the total to the limits specified above.</p>					

Operational Requirements

2. NuCedar Mills shall keep clean-up solutions containing acetone or VOC/HAP in tightly covered containers during transport and storage; and cleaning rags used in conjunction with the cleanup solution shall be placed, when not in use, in closed containers and collected for proper disposal. NuCedar Mills shall store and dispose of all acetone and volatile organic compounds in a manner which will minimize evaporation to the atmosphere.

Testing Requirements

3. NuCedar Mills shall perform, at the request of the MassDEP or EPA, tests to characterize VOC/HAP and solids contents of the coatings used.
4. NuCedar Mills shall perform any other testing deemed necessary, at the request of MassDEP, to determine compliance with this Final Approval or any other Massachusetts "Regulation".

Recordkeeping Requirements

5. NuCedar Mills shall maintain the following records:
 - a) the pounds of acetone and VOC/HAP emitted facility-wide for each calendar month and for each rolling 12-month period.
 - b) the acetone and VOC/HAP content of all coatings (lb/gallon solids).
6. NuCedar Mills shall maintain all records on-site for a minimum of five years and shall make these records available to the MassDEP upon request.

Reporting Requirements

7. NuCedar Mills shall generate monthly reports in-house that document the compliance with provision 1 of this Final Approval. If any VOC/HAP emission limit is exceeded, NuCedar Mills shall notify the Department in writing no later than the 15th day of the following month.
8. NuCedar Mills shall submit to the MassDEP copies of the monthly reports required above by January 31 for the previous calendar year (January thru December).

General Requirements

9. Spray guns shall utilize one of the following methods of spray application and be maintained and operated in accordance with the recommendations of the manufacturer:
 - a. Electrostatic spray application; or
 - b. High Volume Low Pressure (HVLV) spray application; or
 - c. Any other coating application method that achieves a transfer efficiency equivalent to electrostatic or HVLV spray application and is approved by the MassDEP in writing.

10. Spray guns shall be cleaned in a device that:
 - a. minimizes solvent evaporation during the cleaning, rinsing, and draining operations;
 - b. recirculates solvent during the cleaning operation so that the solvent is reused; and,
 - c. collects spent solvent in a container with a tight-fitting cover so that it is available for proper disposal or recycling.

11. Each paint spray booth shall utilize two or more layers of dry fiber mat filter with a total thickness of at least two inches or an equivalent system as determined in writing by the MassDEP and that achieves particulate control efficiency of at least 97% by weight. Filter material shall be disposed in accordance with all applicable MassDEP regulations.

12. Face velocity of air at filter shall not exceed 200 feet per minute.

13. NuCedar Mills shall maintain purchase records of coatings and clean-up solutions on a monthly basis. The purchase records shall be summarized and include coating and clean-up solution identity, the quantity of each coating or clean-up solution used, and the "as-applied" VOC/HAP content (in terms of "pounds per gallon coating" and "pounds per gallon solids") of each coating and clean-up solution. Records shall be kept for five years, and be made available to representatives of the MassDEP upon request.

14. The paint spray booth shall have a stack conforming to the following criteria:
 - a. The stack shall discharge vertically upwards;
 - b. The stack shall not have rain protection of a type that restricts the vertical exhaust flow;
 - c. The stack gas exit velocity shall be greater than 40 feet per second; and
 - d. The minimum stack exit height shall be 35 feet above the ground or ten feet above roof level.

15. Emissions from stack shall have 0% opacity.

16. NuCedar Mills shall allow authorized MassDEP representatives immediate access to the facility in order to take samples, view the process operation or examine records to verify compliance.

This Final Approval pertains only to the air quality control aspect of the proposal and does not negate the responsibility of the owners or operators to comply with other applicable state, local, or federal laws and regulations.

The MassDEP has determined that the filing of an Environmental Notification Form (“ENF”) with the Secretary of Environmental Affairs, for air quality purposes, was not required prior to this action by the MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act and Regulation 301 CMR 11.00, section 11.03, provide certain “Fail-Safe Provisions” which allow the Secretary to require the filing of an ENF and/or Environmental Impact Report at a later time.

This Final Approval is an action of the MassDEP. There are limited rights of appeal. For a description of these rights, read the enclosure “Appeal Rights”.

If you have any questions or comments regarding this Conditional Approval, please contact John Kirzec at (413) 755-2225.

Sincerely,

This final document copy is being provided to you electronically by the Department of Environmental Protection. A signed copy of this document is on file at the DEP office listed on the letterhead.

Marc Simpson
Permit Chief
Western Regional Office

Cc: Mark Bannon, P. E.
Bannon Engineering
Post Office Box 171
Randolph, VT 05060

: Roberta Baker, DEP, WERO (electronic copy)
Peter Czapienski, DEP, WERO (electronic copy)
Chicopee Board of Health
Chicopee Fire Department
Yi Tian, DEP, Boston (electronic copy)

APPEAL OF APPROVAL

This Final Approval is an action of the MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date you received this document.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts which are the grounds for the request and the relief sought. Additionally, the request must state why the Final Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P. O. Box 4062
Boston, MA 02211

The request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below.

The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

The MassDEP may waive the adjudicatory hearing filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.