Jaeger USA, Inc.	]	**Final RACT Order Issued**
104 Pickering Road	]	**December 9, 1996**
Rochester, NH 03839	]	**ARD-96-001**
	]	**Amended August 10, 2007**
	]	**Amended November 16, 2012**
		Amended July 30, 2015
		Amended June 3, 2016

A. Introduction

This proposed revised RACT Order is issued by the New Hampshire Department of Environmental Services, Air Resources Division, to Jaeger USA, Inc., pursuant to RSA 125-C.

B. Parties

1. The New Hampshire Department of Environmental Services, Air Resources Division ("DES"), is a duly constituted administrative agency of the State of New Hampshire having its principal offices at 29 Hazen Drive, Concord, NH, telephone number (603) 271-1370.
2. Textile Tapes Corporation ("Textile Tapes") was a New Hampshire-based corporation doing business in New Hampshire, with a business address of 104 Pickering Road, Rochester, New Hampshire 03867, telephone number (603) 332-5816 (the "Facility"). On April 1, 2016 ownership of the Facility was transferred to Jaeger USA, Inc. Jaeger USA, Inc., is a New Hampshire corporation, having a business address of 104 Pickering Road, Rochester, NH 03867-4604, telephone number (603) 332-5816 ("Jaeger USA"). All references to Textile Tapes in this RACT Order apply to Jaeger USA.

C. Statements of Fact and Law

1. Jaeger USA owns and operates the following processes located at its Rochester Plant at 104 Pickering Road in Rochester, New Hampshire:
   a. Line 1A, Fabric Coating Line (removed in 1999);
   b. Line 1B, Fabric Coating Line;
   c. Line 1C, Hot Melt Coating Line (installed in 1993).
2. Textile Tapes reported to DES that 1990 total VOC emissions were 90 tons and noted that the facility was operated by a company other than Textile Tapes in 1990.
3. Textile Tapes filed a "Reasonably Available Control Technology (RACT) Statement" on March 15, 1993 for the facility.
4. DES issued a Letter of Insufficiency dated May 19, 1993.
5. Textile Tapes filed a VOC RACT compliance schedule, in response to DES's Letter of Insufficiency, on June 10, 1993 as amendment to the March 15, 1993 submittal.

6. Textile Tapes initially, in letters dated March 15, 1993 and June 10, 1993, proposed the following measures as RACT:
    a. For Line 1A, Line 1B, and Line 1C (with the exception stated in part C.6.b below) comply with the provisions of Env-A 1207.3(a), *Applicability Criteria and Compliance Standards for Coating of Paper, Fabric, Film and Foil Substrates,* which limits the emission rate of VOC at all times to 2.9 lb/gallon of coating; as applied, excluding water and exempt compounds; and
    b. For the coating described as "5000 series adhesive" utilized on Line 1A and 1B:
        i. Reformulate the "5000 series adhesive" to comply with the emissions limitation in part C.6.a., above; or
        ii. Install a thermal oxidizer to control VOC emissions equivalent to the emissions limitation in part C.6.a.; or
        iii. Subcontract all coatings activities, which would result in emission rates exceeding the emission limitation in part C.6.a.
7. DES issued a letter on February 8, 1995 requesting an updated VOC RACT plan.
8. Textile Tapes filed further revisions to update its VOC RACT plan as requested by DES on February 24, 1995.
9. Effective August 19, 1995, DES re-adopted Rule Env-A 1204 *Stationary Sources of Volatile Organic Compounds* (VOCs) with amendments.
10. Textile Tapes filed an evaluation of RACT control options and an application for a RACT order pursuant to Env-A 1204.05 on December 7, 1995.
11. Textile Tapes ultimately proposed the following measures as RACT in its December 7, 1995 application for RACT order:
    a. For Line 1A, Line 1B, and Line 1C (with the exception stated in part C.6.b) comply with the provisions of Env-A 1207.03(a), *Applicability Criteria and Compliance Standards for Coating of Paper, Fabric, Film and Foil Substrates,* which limits the emissions rate of VOC at all times to 2.9lb VOC/gallon of coating; as applied, excluding water and exempt compounds;
    b. For the coating described as "5000 series adhesive," utilized on Line 1A and 1B:
        i. Increase solids content of "5000 series adhesive" from 33% by weight to 40% by weight; and
        ii. Limit the emission rate of VOC resulting from the application of the "5000 series adhesive" at all times to 4.7 lb VOC/gallon of coating, as applied, less water and exempt compounds;
    c. Limit facility-wide VOC emissions to 70 tons, on a 12-month rolling basis; and
    d. File annual reports detailing efforts to meet emission limitation in C.11.a. for all coatings.
12. On June 28, 1996, DES received Textile Tapes' application for a Title V Permit as required by Env-A 609. The application included a request to include the limits specified by the VOC RACT Order in the Title V permit once issued.

13. DES issued a RACT Order ARD-96-001 ("The Order") on December 9, 1996.

14. On March 5, 1998, DES received Textile Tapes' request for a modification to the Order issued December 9, 1996 to include a provision for the use of a generic release coating on line 1C, which was not addressed in the original Order.

15. On March 10, 1998, The United States Environmental Protection Agency ("EPA") approved the Order into the New Hampshire State Implementation Plan ("SIP").

16. DES issued an amended Order on September 8, 1998.

17. On October 1, 1998, DES submitted the amended Order to EPA as a SIP revision.

18. On September 24, 1999, Textile Tapes submitted an application for installation of the recuperative thermal oxidizer ("RTO") and dryer replacement on coating line 1B. Coating line 1A was eliminated.

19. On January 18, 2000, Temporary Permit TP-BP-651 was issued to Textile Tapes for the RTO on coating line 1B.

20. On February 19, 2002, Textile Tapes requested the second modification of the Order to include the RTO.

21. On March 27, 2002, DES received comments from the EPA on the proposed February 19, 2002 modification to the Order. EPA asked DES to withdraw the previous Textile Tapes SIP submittal dated October 1, 1998 and state in the new SIP submittal that the revised Order supersedes the previous orders.

22. On April 23, 2002, DES submitted the revised Order as a revision to the SIP; EPA deemed the submittal complete on May 28, 2002.

23. Effective December 31, 2002, DES re-adopted Rule Env-A1204, *Stationary Sources of Volatile Organic Compounds* (VOCs) with amendments.

24. On or about September 25, 2006, Textile Tapes notified DES via phone and email of a potential business opportunity to coat product with a new coating known as Chemlok TS3320-19 Primer ("Chemlok"). The new coating exceeds the 2.9 lb/gal VOC standard required by Env-A 1207.03(a) and the Order.

25. Textile Tapes indicated to DES that the new coating can not be applied on the RTO-controlled Line 1B due to physical properties of the non-compliant Chemlok coating. DES directed Textile Tapes to:

    a. Purchase Discrete Emissions Reduction ("DER") credits as described in Env-A 3100 for the excess emissions generated by applying the non-compliant Chemlok coating;
    b. Modify the Order to allow the application of non-compliant Chemlok coating on Line 1C; and
    c. Modify Title V Permit TV-OP-009 ("the Permit") to include the application of non-compliant Chemlok coating on Line 1C.

26. On October 24, 2006, in accordance with Env-A 3104.08, MacMillan & Donnelly, Inc. ("M&D") submitted a "Notice of Intent to Use Discrete Emission Reduction Credits" for the

period of October 25, 2006 to December 31, 2007, on behalf of Textile Tapes, for the predicted generation of excess emissions when using the non-compliant Chemlok coating on Line 1C.

27. M&D estimated the excess emissions from the non-complaint Chemlok coating to be approximately 3.6 tons per year.

28. Textile Tapes provided the purchase contract from Public Service of New Hampshire ("PSNH"), dated October 3, 2006, documenting the purchase of a total of 4 DER credits (2 ozone season credits and 2 non-ozone season), the serial numbers, and associated cost of the credits.

29. Textile Tapes began applying the non-compliant Chemlok coating on Line 1C on October 25, 2006.

30. On December 28, 2006, DES received applications from Textile Tapes to amend the Order and the Permit to allow Textile Tapes to use DERs to comply with VOC RACT and to generate DERs in the future through the operation of the RTO.

31. On January 17, 2007, Textile Tapes entered into Administrative Order by Consent No. AO ARD 07-003 with DES, allowing Textile Tapes to use DERs until such time as the Order and Permit are modified.

32. On August 10, 2007, DES issued an amended RACT Order which allowed for the use of DERs.

33. On May 6, 2011, Textile Tapes submitted an application to replace the existing RTO with a new RTO. Temporary Permit, TP-0086, was issued on July 8, 2011 for the installation of a 3.0 MMBtu/hr natural gas fired TANN Lanbein Engelbracht America Regenerative Thermal Oxidizer.

34. On October 5, 2011, Textile Tapes conducted stack testing on the RTO. The RTO demonstrated compliance with the 95% destruction efficiency at 1568 ^{o}F which is higher than the temperature listed in RACT Order ARD-96-001 last issued on August 10, 2007 of 1250 ^{o}F.

35. On August 3, 2012, Textile Tapes submitted an application, requesting an amendment to link the minimum temperature requirement to stack test conditions for the Textile Tapes RTO in RACT Order ARD-96-001. Textiles Tapes proposed to maintain the destruction efficiency requirement of 95% which would be demonstrated through periodic stack testing.

36. On November 16, 2012, ARD-96-001 was revised to replace the minimum temperature requirement of 1250 ^{o}F with the requirements that the RTO temperature will not drop below the average temperature at which the facility has demonstrated compliance through the most recent DES approved stack testing.

37. Effective June 1, 2011, DES readopted Env-A 1200 (formerly Env-A 1204), with amendments. The RACT Order has been updated to reflect the readopted Env-A 1200.

38. On November 5, 2014, Textile Tapes submitted a temporary permit application to limit facility wide VOC emissions to 24.9 tons per year. The purpose of the request was to limit VOCs emission to be below major source thresholds and to avoid the applicability of Env-A 1207.03(b) and (c) under VOC RACT.

D. Order

1. Based on the above findings and determinations, DES hereby orders Jaeger USA to implement the following as RACT:

   a. For Line 1B and Line 1C, when applying compliant coatings, (as defined in Env-A 1202.38) the Facility shall comply with the provisions of Env-A 1207.03(a), *Emission Rate Limits for Coating of Paper, Fabric, Film and Foil Substrates*, which limits the emission rate of VOC, at all times, to 2.9 lb VOC/gallon of coating; as applied, excluding water and exempt compounds;

   b. For line 1B, when applying non-compliant coatings, (as defined in Env-A 1203.52) the Facility shall demonstrate compliance with the provisions of Env-A 1207.03(a) as specified in D.1.a. above by:

      i. Venting all emissions from non-compliant coatings to the thermal oxidizer; or

      ii. Using the daily weighted average procedure described as follows:

         1. "VOC_w" means the daily-weighted average VOC content of coatings, as applied, used on a given coating line, in units of pounds of VOC per gallon of coating, minus water and exempt compounds;

         2. "n" means the number of different coatings, as applied, used each day on a coating line;

         3. "V_i" means the volume of the i^{th} coating, as applied, used each day on a coating line, in units of gallons, minus water and exempt compounds;

         4. "C_i" means the VOC content of the i^{th} coating, as applied, used each day on a coating line in units of pounds of VOC per gallon of coating, minus water and exempt compound;

         5. "V_T" means the total volume of all coating, as applied, used each day on a coating line in units of gallons, minus water and exempt compounds; and

         6. The "VOC_w" shall be equal to the sum, over the n coatings used on a given coating line, of the products of each V_i and C_i, divided by V_T, as in the following equation:

$$VOCw = \frac{\sum_{I=1}^{n} (ViCi)}{V_T}$$

   c. For Line 1C, when applying non-compliant coatings other than generic release coatings, the Facility shall comply with the provisions of Env-A 1207.03(a) as specified in D.1.a. above either by:

      i. Using the daily weighted average procedure as described in D.1.b.ii. above; or

      ii. Using generated or purchased DERs to offset excess emissions in accordance with Condition D.6;

d. For any generic release coating utilized on Line 1C, the Facility shall:

   i. Limit the emission rate of VOC resulting from the application of the generic release coating, at all times, to 5.9 lb VOC/gallon of coating applied, less water and exempt compounds; and

   ii. Limit the facility-wide use of the generic release coating to less than 5 tons during any consecutive 12-month period;

e. Limit facility-wide VOC emissions to 24.9 tons, on a 12-month rolling basis; and

f. As part of the Annual Emissions Report submitted annually by April 15th of the following year, include information detailing efforts to meet the emission limitation in D.1.a. for a generic release coating including:

   i. A technical evaluation of each alternative coating considered and basis for acceptance or rejection; or

   ii. A statement indicating that no coatings were evaluated during the time period covered by the report.

2. Prior to the use of any new coating, Jaeger USA shall demonstrate compliance by one of the following options:

   a. Chemical manufacturers Material Safety Data Sheet (MSDS) information (density and weight percent VOC content) along with the Facility coating formulation recipe information (gallons of each ingredient, *i.e*. coatings, diluent solvent, and exempt diluent solvent; density of each ingredient; and weight percent VOC content of each ingredient). The Facility shall calculate the pounds VOC per gallon coating as applied, minus water and exempt compounds using the following formula:

$$\frac{P * X}{(1 - Yw - Ye)}$$

Where:

"P" means the density of the mixed coating as applied (pounds coating/gallon coating);

"X" means the weight fraction of VOC in the mixed coating;

"Y_w" means the volume fraction of water in the mixed coating; and

"Y_e" means the volume fraction of exempt compounds in the mixed coating.

When using this option, the Facility shall maintain the calculation sheets and records for each coating formulation; or

   b. The referee liquid VOC test method specified as follows:

      i. Method 24, 40 CFR part 60, Appendix A for all coatings as applicable using the 60-minute bake time procedure; or

      ii. Method 24A, 40 CFR Part 60, Appendix A as applicable.

   c. DES reserves the right to have the facility perform Method 24 testing on any coatings for formal demonstration of compliance.

d. All Method 24 analyses and/or calculation sheets for new coatings shall be submitted in the annual VOC report.

3. Jaeger USA is subject to Env-A 1207.03, *Emission Rate Limits for Coating of Paper, Fabric, Film and Foil Substrates* and has chosen to comply with this section for its non-compliant coatings on Line 1B by implementing an add-on control system as specified in D.1.b.i. Jaeger USA is required to comply with the more stringent of:

   a. A VOC emission reduction efficiency of 95%, as specified in D.4.a;

   b. An overall VOC emission reduction efficiency determined as follows:

      i. The VOC emission rate limit, when operating with the thermal oxidizer, shall be determined, on a solid basis, by the following equation in accordance with Env-A 1205.01(d):

$$S = \frac{E_c}{\left(1 - \frac{E_c}{d_A}\right)}$$

      Where:

      "S" means the VOC emission rate limit in terms of lbs VOC/gal of coating solids;

      "d_A" means the actual density of VOC for converting the emission limitation to a solids basis in lbs/gal. The Permittee has an option to use the density value of 7.36 lb/gal if running more than one coating;

      "E_c " means the emission rate limit prescribed for the applicable coating category. For those processes applying a coating to any woven or non-woven, fibrous or non- fibrous substrate, including paper, fabric, glass matting, plastic film, ribbon, and magnetic tapes, E_c shall be equal to 2.9 lbs VOC/gal of coating, as applied to the substrate; and

      ii. The required overall emission reduction efficiency, E, shall be determined by the following equation:

$$E = \left(\frac{VOCa - S}{VOCa}\right)100\%$$

      Where:

      S = The VOC emission rate limit in terms of lbs VOC/gal of coating solids;

      VOC_a = The maximum VOC content of the coatings used in lb VOC/gal solids or the daily weighted average VOC content of the coatings used in lb VOC/gal solids; or

4. Jaeger USA shall perform the following monitoring and testing of the RTO:

   a. Minimum destruction efficiency for the RTO shall be at least 95% and the RTO combustion temperature shall not drop below the average temperature at which Jaeger USA has demonstrated compliance through the most recent DES approved stack testing with the 95% efficiency.

   b. Jaeger USA shall conduct compliance stack testing once every 5 years within 90 days of the anniversary of the previous stack test. For stack testing purposes only, Jaeger USA shall be

allowed to operate at a lower temperature than identified in item 4.a above in an effort to demonstrate compliance with the RACT Order RTO 95% efficiency requirement. In the event that Jaeger USA does not meet the provisions of the RACT order during the stack test, then Jaeger USA shall be allowed to use DERs as described in item 5 below for RACT compliance during the stack testing period.

c. The Facility shall maintain copies of compliance stack test records on site. These records shall be made available to DES/USEPA upon request.

d. The combustion temperature of the RTO shall be monitored and recorded continuously.

e. The Facility shall operate low-temperature lockout, a low temperature alarm, or a temperature chart which shall be examined at least once every 24 hours to ensure compliance with the minimum combustion temperature identified in item 4.a above. Records of all temperature monitoring shall be maintained at the facility for inspection for at least 5 years.

f. Compliance with the monitoring requirement to reduce VOC emissions from the dryer exhaust by a minimum of 95% shall be demonstrated using the applicable procedure(s) described in Env-A 804, *Volatile Organic Compound Testing,* and in accordance with the Permit.

g. Jaeger USA shall be allowed to generate DERs for emission reductions that are achieved in excess of the reductions required in Part D.3 or the lowest applicable allowable emissions rate limit, as specified in Env-A 3103.02.

5. Jaeger USA shall be allowed to use DERs for RACT compliance during times that it is unable to meet the maximum emission rate stated in Part D.1.a. The following calculations will be used to determine the amount of credits generated on a given day:

   a. <u>Calculation of Allowable VOC Emissions per Day</u>

   "E_{al}" means the allowable VOC emission rate;

   "E_{pre}" means the actual emission rate from line 1B before entering the thermal oxidizer;

   "E" means the required overall reduction efficiency (expressed as a decimal) as determined in Part D.3; and

   "E_{al}" shall be calculated as in the following equation:

   $$E_{al} = E_{pre} * (1-E)$$

   b. <u>Actual VOC Emissions per Day</u>

   "E_{ac}" means the actual VOC emission rate

   c. <u>Emission Credit Generation Calculation</u>

   Jaeger USA shall subtract the actual VOC emission rate (E_{ac}) from the allowable VOC emission rate (E_{al});

   $$E_{al} - E_{ac}$$

   to determine if emission credits will be generated on a given day using the following criteria:

i. If the result of the subtraction is a positive number, then the emissions are below the requirements of RACT and the amount equal to the difference between E_{al} and E_{ac} will count towards emission credits;

ii. Actual emission credits shall be calculated by taking the amount of credited emissions in part D.5.c.i and multiplying them by a safety factor of 0.9; and

iii. In no instance should generated DERs plus Jaeger USA' actual emissions in any 12-month period exceed the annual VOC emissions limit stated in the Permit.

6. Jaeger USA shall be allowed to use generated or purchased DERs to comply with VOC RACT according to the following:

   a. Non-compliant coatings shall only be applied on Coating Line 1C when there is a physical limitation preventing Jaeger USA from applying the coatings on Coating Line 1B;

   b. DERs shall only be used to achieve compliance when the RTO is out of service due to a malfunction or routine maintenance, or when a non-compliant coating must be applied on Coating Line 1C;

   c. The amount of DERs required to achieve compliance shall be calculated according to the following:

      i. The emission rate limit shall be determined on a solids basis, according to the equation in D.3.b.i.

      ii. The Allowable VOC Emissions per Coating shall be calculated for each coating as follows:

         1. "E_{al}" means the allowable VOC emission rate of a given coating in units of lb/month or kg/month;

         2. "S" means the VOC emission standard in terms of lb VOC/gal or kg VOC/l of coating solids, as calculated in item 6.c.i, above;

         3. "W" means the weight of coating or dilution solvent used in the coating line in units of pounds or kg;

         4. "D" means the density of the coating or dilution solvent in units of lb/gal coating, or kg/l coating as determined from Method 24 or 24A analysis;

         5. "V_S" means the volume fraction of the solids content of the coating, in units of gal solids/gal coating or l solids/l coating as determined by calculation using the formulation; and

         6. "E_{al}" shall be equal to the product of S, VS and W divided by D for each coating or dilution solvent used, as in the following equation:

$$E_{al} = S^* V_S *(W/D)$$

      iii. The Actual VOC Emissions per Coating shall be calculated for each coating as follows:

         1. "E_{ac}" means the actual VOC emission rate of a given coating in units of pounds;

2. "W" means the weight of coating or dilution solvent used in the coating line in units of pounds;
3. "W_V" means the weight fraction of VOC content of the coating, in units of lb VOC/lb coating as determined by calculation using the formulation; and
4. "E_{ac}" shall be equal to the product of W and W_V, as in the following equation:

$$E_{ac} = W^* W_V$$

iv. The Excess Emissions per Coating shall be equal to the difference between the actual VOC emissions (E_{ac}) and the allowable VOC emissions (E_{al}).

$$\text{Excess Emissions} = E_{ac} - E_{al}$$

v. At the time of use, Jaeger USA shall permanently retire ten percent of all DERs dedicated to that particular use, such that the amount of DERs required to demonstrate compliance shall equal the excess emissions calculated in item iv above divided by an environmental benefit factor of 0.9.

7. Jaeger USA shall comply with recordkeeping requirements of Env-A 904.03, and Env-A 904.07 for an add-on pollution control device, specifically the RTO.
8. Annually by November 30, Jaeger USA shall submit a report to DES on the projected use of credits for the upcoming year. This report shall meet the requirements of Env-A 3104.08, *Notice of Intent to Use DERs*, including the following information:
   a. The name and location of the user;
   b. A copy of the Notice and Certification of Generation submitted by the generator source to the State (for paperwork reduction purposes, a certified statement that the notice is on file with DES will suffice);
   c. The protocol used to document the amount of DERs needed to demonstrate compliance; and
   d. Information documenting that Jaeger USA is in compliance with Env-A 1400, *Regulated Toxic Air Pollutants.*
9. Annually by April 15, Jaeger USA shall submit a report to DES on the balance of credits for the previous calendar year. This report shall meet the requirements of Env-A 3103.08, *Notice and Certification of Generation* and Env-A 3104.09, *Notice and Certification of Use*, including the following information:
   a. The name and location of the owner or operator of the source;
   b. A brief description of the generation activity;
   c. A list of the source's applicable allowable emission rates;
   d. The amount of DERs generated each month;
   e. A calculation of the amount of DERs generated;
   f. The amount of DERs used each month;
   g. A calculation of the amount of DERs required to demonstrate compliance with the emission limits stated above;

h. A statement that the reductions were calculated in accordance with Env-A 3103.07;

i. A statement that the DERs were not generated in whole or in part from actions prohibited pursuant to Env-A 3103.07;

j. A statement that due diligence was made to verify that the DERs were not previously used, and not generated as a result of actions prohibited under the regulations or other provisions of law;

k. A statement that the DERs were not used in a manner prohibited under the regulations or other provisions of law; and

l. A certification by a responsible official of truth, accuracy, and completeness that states:

   i. Based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete; and

   ii. The user source in compliance with all National Ambient Air Quality Standards, except ground level ozone, and all Ambient Air Limits for Regulated Toxic Air Pollutants.

10. Jaeger USA shall comply with all terms and conditions contained in permits to be issued by DES.

Please address any correspondence and communication in reference to this Order to:

Air Permit Programs Manager
Permitting & Environmental Health Bureau
NHDES, Air Resources Division
29 Hazen Drive., P.O. Box 95
Concord, NH 03302-0095
(603) 271-1370

Please address any correspondence and communication in reference to the DERs to:

Joseph T. Fontaine
Technical Services Bureau
NHDES, Air Resources Division
29 Hazen Drive., P.O. Box 95
Concord, NH 03302-0095
(603) 271-6794

Craig A. Wright, Director
Air Resources Division

cc: Timothy Drew, PIP Office
City of Rochester
Amy Austin, POWER Engineers, Inc.