

**STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR RESOURCES**

AIR POLLUTION CONTROL REGULATION NO. 15

CONTROL OF ORGANIC SOLVENT EMISSIONS



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AUTHORITY: These regulations are authorized pursuant to R.I. Gen. Laws § 42-17.1-2(s) and 23-23, as amended, and have been promulgated pursuant to the procedures set forth in the R.I. Administrative Procedures Act, R.I. Gen. Laws Chapter 42-35.

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**RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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CONTROL OF ORGANIC SOLVENT EMISSIONS

15.1 Definitions

Unless otherwise expressly defined in this section, the terms used in this regulation shall be defined by reference to the Rhode Island Air Pollution Control General Definitions Regulation. As used in this regulation the following terms shall, where the context permits, be construed as follows:

15.1.1 "**Organic solvents**" means volatile organic compounds which are liquids at standard conditions and which are used as solvers, viscosity reducers, diluents, thinners, reagents or cleaning agents.

15.1.2 "**Actual emissions**" means the actual rate of emissions of a pollutant from a piece of equipment or a pollutant-emitting activity as determined in accordance with Subsections (a) through (c) below:

- (a) In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a two- year period which precedes the particular date and which is representative of normal stationary source operation. Actual emissions shall be calculated using the equipment's or activity's actual operating hours, production rates, and types of materials processed, sorted or combusted during the selected time period;
- (b) The Director may presume that stationary source-specific allowable emissions for the equipment or activity are equivalent to the actual emissions of the installation;
- (c) For any equipment or activity which has not begun normal operations on the particular date, actual emissions shall equal the potential to emit of the equipment or activity on that date.

15.1.3 "**The terms "baked, heat cured or heat polymerized"** mean coatings and other organic solvent containing materials which:

- (a) Have been heated in devices in which the air temperature exceeds 175°F (80°C), and
- (b) have become insoluble in solvents in which they were soluble before being subjected to heat.

15.1.4 A "**commercially available solvent**" means any organic solvent or mixture of organic solvents which may be obtained or formulated in the quantities required by a user as of the effective date of this regulation.

15.1.5 "**Emission Baseline**" means a level of emissions calculated by multiplying two factors:

- (a) the lowest of the source's actual or allowable emission rate in emissions per unit of production; and
- (b) the source's actual capacity utilization, or units of production, over some representative time period. Generally, the time period is the preceding two year average unless the source can demonstrate that those years were not representative of historical production.

15.1.6 "**Emission Reduction Credits**" and "**ERC**" means credits given for emission reductions beyond those required by the federally enforceable State Implementation Plan (SIP) or an enforceable document. Emission Reduction Credits must be enforceable, quantifiable, permanent, and surplus.

15.1.7 "**Installation**" means an identifiable piece of equipment which emits or has the potential to emit any regulated pollutant.

15.1.8 "**Process change**" means any modification of a machine, device or article undertaken to achieve compliance with this regulation.

15.2 Applicability and Exceptions

15.2.1 This regulation applies to all facilities which have or have had VOC emissions from all pollutant-emitting equipment or activities of at least:

- (a) 100 tons per year actual emissions of VOC since 1 January 1985, or
- (b) 100 tons per year potential emissions of VOC since 10 December 1989, or
- (c) 50 tons per year potential emissions of VOC since 1 January 1990.

15.2.2 Where ever the term "Volatile Organic Compound" or "VOC" is used in Sections 15.2 through 15.6, this term should be read as "Volatile Organic Compound and Halogenated Organic Compound" or "VOC and HOC".

15.2.3 The RACT requirements in Section 15.3 of this regulation do not apply to:

- (a) Equipment and pollutant-emitting activities that are regulated by Air Pollution Control Regulations 11, 18, 19, 21, 22.6, 25 and 26 or which has been determined to be BACT or LAER in a permit issued by the Division after 15 November 1990 pursuant to Air Pollution Control Regulation No.

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- (b) The spraying or other employment of insecticides, pesticides or herbicides; and
- (c) The blending of distillate or residual fuel oils.

15.2.4 A facility with potential yearly emissions of 100 tons or more of VOC, but with actual emissions not exceeding 100 tons/year VOC, may apply to the Director for exemption from Section 15.3. Exemption from Section 15.3 shall be in the form of an enforceable document issued by the Director which limits actual emissions to less than 100 tons per year of VOC. Such an enforceable document shall not exempt the facility from the requirements of Section 15.3 after May 31, 1995. The enforceable document shall include the following conditions:

- (a) Actual annual emissions shall not exceed 100 tons VOC per year, and
- (b) The facility will meet the emission cap over every consecutive 12-month period. Recordkeeping to demonstrate compliance shall follow the guidelines in Section 15.4.10 (b) through 15.4.10 (g), and shall be kept on a monthly basis. The cap must be consistent with the anticipated level of emissions in the approved SIP.

15.2.5 A facility with potential yearly emissions of 50 tons or more of VOC, but with actual emissions not exceeding 50 tons per year VOC any time after January 1, 1990, may apply to the Director for an exemption from Section 15.3 of this regulation. Application for an exemption must be submitted to the Director by July 28, 1993, and must include documentation of previous yearly VOC emission rates, in tons per year, since January 1, 1990. Exemption from Section 15.3 of this regulation will be in the form of an enforceable document issued by the Director which limits actual emissions to less than 50 tons per year VOC and shall include the following conditions:

- (a) Actual annual emissions shall not exceed 50 tons VOC per year, and
- (b) The facility shall meet the emission cap over every consecutive 12-month period. Record keeping to demonstrate compliance shall follow the guidelines in Section 15.4.10 (b) through 15.4.10 (g), and shall be kept on a monthly basis. The cap must be consistent with the anticipated level of emissions in the approved SIP.

15.3 Emission Limitations

15.3.1 Any facility which, prior to 1 January 1985, ever had actual emissions of VOC equal to 100 tons/year or more from equipment not specifically controlled by any other VOC regulation shall install and operate in compliance with RACT as specified in an enforceable document issued by the Director no later than the date in the enforceable document.

- 15.3.2 Any facility which, prior to 1 January 1989 but not before 1 January 1985, ever had actual emissions of VOC equal to 100 tons/year or more from equipment not specifically controlled by any other VOC regulation shall, no later than eighteen (18) months after becoming an actual 100 ton source, install and/or thereafter operate in compliance with RACT, as specified in an enforceable document issued by the Director.
- 15.3.3 Any facility which, prior to 30 November 1993, ever had potential emissions of VOC of 100 ton/year or more as defined in the Rhode Island Air Pollution Control General Definitions Regulation from equipment not specifically controlled by any other VOC regulation shall be in compliance with RACT, as specified in an enforceable document issued by the Director, no later than 10 June 1991 or 18 months from the date of notification by the Department to comply with RACT, whichever is later.
- 15.3.4 Any facility which has or ever has had potential emissions of VOC of 50 tons/year or more, since 1 January 1990, as defined in the Rhode Island Air Pollution Control General Definitions Regulation, from equipment not specifically controlled by any other VOC regulation, shall install and operate in compliance with RACT, as specified in an enforceable document issued by the Director, or comply with the requirements in Subsection 15.3.10 (a) or 15.3.10 (b) by May 31, 1995, or 18 months after the date that the facility first becomes a potential 50 ton/year VOC facility, whichever is later.
- 15.3.5 Facilities using add on controls to comply with RACT must show that the equipment meets specific capture and control performance standards which will be set in an enforceable document. Control efficiency of the equipment will be determined using EPA-approved test methods. Calculations will be done on a solids basis. Continuous compliance will be maintained at all times. Compliance averaging times will be met according to the control device chosen and EPA test methods (as codified in 40 CFR Part 60), as follows:

Compliance Method	EPA Reference Test Method	Test Averaging Time
Reformulation	24	instantaneous
Solvent destruction or solvent recovery except carbon adsorption	25	3 hours
Carbon adsorption	25 or other test method as appropriate	7 day rolling average

or other methods approved by the Director and EPA. Once the control efficiency has been determined for any add-on control device by Reference Method 25, or any alternative method approved by the Department and EPA, compliance shall be determined on an instantaneous basis (e.g. determined control efficiency shall be used to calculate whether samples from the process meet the applicable emissions limit.)

The owner or operator of a facility using carbon adsorption as a control measure shall obtain data on daily solvent usage and solvent recovery and determine the solvent recovery efficiency of the system every day. The recovery efficiency for each day shall be computed as the ratio of the total recovered solvent for that day and the prior six consecutive operating days to the total solvent usage for the same seven day period. This ratio shall be expressed as a percentage. Facilities may apply to the Director for an alternative averaging time if meeting the emission limitation as a 7 day rolling average is not technically or economically feasible. In no event shall the averaging period exceed a 30-day rolling period. All alternative averaging periods must be consistent with EPA guidance.

- 15.3.6 Every two years, a facility may be required to undergo RACT review at the discretion of the Department.
- 15.3.7 Any facility which is subject to the requirements of Subsection 15.3.4, but has not been required to install and operate in compliance with RACT prior to January 28, 1993, shall, by July 28, 1993 or six months after becoming a 50 ton per year potential VOC source, whichever is later, submit to the Director a RACT proposal for approval which includes all information specified in Subsection 15.3.8. Any subject facility which does not submit a RACT proposal by those dates will be subject to the requirements of Subsection 15.3.10.
- 15.3.8 All RACT proposals submitted to comply with Subsection 15.3.7 shall include the following information:
- (a) an inventory of all VOC-emitting equipment at the facility;
 - (b) an inventory of all VOC-emitting equipment at the facility not exempted from the RACT requirement of this section according to Subsection 15.2.3;
 - (c) identification of any additional VOC-emitting activities at the facility;
 - (d) the maximum capacity of each piece of VOC-emitting equipment not exempted under Subsection 15.2.3;
 - (e) the actual maximum amount of VOC emitted each in any day from each piece of VOC-emitting equipment at the facility not exempted under Subsection 15.2.3;
 - (f) an examination of the technical and economic feasibility of installing add-on VOC control equipment to control emissions from each piece of VOC equipment not exempted under Subsection 15.2.3;
 - (g) an examination of the technical and economic feasibility of reducing VOC use in each piece of equipment not exempted under Subsection 15.2.3 and in any additional VOC-emitting activities at the facility;

- (h) an examination of the technical and economic feasibility of using different process equipment or different processes to reduce VOC use or emissions not exempted under Subsection 15.2.3;
- (i) the control option or combination of control options selected, including emission limits and the test methods to demonstrate compliance;
- (j) the amount of reduction in VOC emissions that will be associated with implementing the selected control option;
- (k) a schedule for implementation, including a demonstration of compliance;
- (l) a means of assessing continuous compliance, including test methods, monitoring devices and reporting requirements;
- (m) a description of future research that will be conducted by the owner or operator to further reduce VOC emissions beyond the level of emissions proposed; and
- (n) any additional information requested by the Director that is deemed necessary to determine RACT.

15.3.9 After reviewing a RACT proposal, the Department, in consultation with the EPA, shall prepare a proposed enforceable document specifying RACT for the facility. The enforceable document shall be subject to a thirty day public comment period. A public hearing for interested persons to appear and to submit written or oral comments on the enforceable document shall be held upon request. The Director may also hold a hearing at his or her discretion, whenever he or she believes there is a significant degree of public interest in the proposed action. If held, a hearing shall take place no earlier than thirty (30) days nor later than sixty (60) days following initial public notice. Comments from the applicant and/or any interested persons shall be recorded at the public hearing. Written comments, to be considered part of the record, shall be submitted during the public comment period, which commences on the date of initial public notice and extends until close of business on the day of the public hearing. The final enforceable document shall be submitted to the EPA for approval as a source specific revision to the State Implementation Plan.

15.3.10 Any facility which is subject to the requirements of Section 15.3 and has not been required to comply with RACT previous to January 28, 1993 and which does not submit a RACT proposal to the Division by July 28, 1993 shall comply with one of the following requirements:

- (a) Install and operate an air pollution control system which controls emissions from each piece of VOC-emitting equipment and each VOC-emitting activity not exempt under the provisions of Subsection 15.2.3 by reducing inlet emissions by at least 95% and which is designed to capture

and control VOC emissions to obtain an overall reduction efficiency of 85% on a daily basis by 31 May 1995; and submit the following information to the Division by January 28, 1994:

- (1) an inventory of all VOC-emitting equipment at the facility;
 - (2) an inventory of all VOC-emitting equipment at the facility not exempt under Subsection 15.2.3;
 - (3) the maximum capacity of each piece of VOC-emitting equipment at the facility not exempt under Subsection 15.2.3;
 - (4) the actual amount of VOC emitted each day from each piece of VOC-emitting equipment at the facility not exempt under 15.2.3;
 - (5) a description of the proposed VOC emission capture and control system;
 - (6) testing procedures, monitoring procedures, and recordkeeping and reporting procedures which will be used to demonstrate, to the satisfaction of the Director and EPA, compliance with this section; and
 - (7) a schedule of implementation, including a demonstration of compliance; or
- (b) Implement a program to reduce daily VOC use and VOC emissions by 31 May 1995 such that actual VOC emissions from all VOC-emitting activities and equipment not exempted by the provisions of 15.2.3 do not exceed 20% of the daily VOC emissions from that equipment and those activities during each day of the calendar year 1990, calculated on either a mass of VOC per mass of solids applied basis if the affected VOC emitting equipment applies to surface coating, or a mass of VOC per unit of production basis. The following information shall be submitted to the Division by January 28, 1994:
- (1) an inventory of all VOC-emitting equipment at the facility;
 - (2) an inventory of all VOC-emitting equipment at the facility not exempt under Subsection 15.2.3;
 - (3) the maximum capacity of each piece of VOC-emitting equipment at the facility not exempt under Subsection 15.2.3;
 - (4) the actual amount of VOC emitted each day from each piece of VOC-emitting equipment at the facility not exempt under Subsection 15.2.3;

- (5) a calculation of the average daily VOC emissions in calendar year 1990, stated in terms of either mass of VOC emitted per mass of solids applied or mass of VOC emitted per unit of production;
- (6) a calculation of the average daily VOC emissions anticipated upon implementation of the VOC use and reduction plan, stated in terms of either mass of VOC emitted per mass of solids applied or mass of VOC emitted per unit of production;
- (7) testing procedures, monitoring procedures, and recordkeeping and reporting procedures to demonstrate, to the satisfaction of the Director and EPA, compliance with this section; and
- (8) a schedule of implementation, including a demonstration of compliance.

15.4 Emission Bubbling

In an emissions bubble, the owner or operator of a facility with more than one VOC emitting installation may apply to the Director to meet the total emission control requirements mandated by applicable regulations through a mix of control techniques over no greater than a 24 hour period. The option to meet requirements of Regulation 15 by bubbling is not available if the Federal Environmental Protection Agency has designated Rhode Island as a Nonattainment Area Lacking Approved Demonstration of Attainment (NALAD) for Ozone. Bubbles approved when the state is under other designations shall remain in force when the state is designated as NALAD for Ozone. Further, no bubbles may be issued to sources subject to RACT under Section 15.3 until EPA approves the emission limits as RACT for the facility.

15.4.1 It is the responsibility of the owner or operator of the facility to develop its specific emission bubble. Application for approval of an emission bubble shall be made to the Department and must include:

- (a) Identification of all VOC emission installations to be bubbled;
- (b) Demonstration of how compliance will be met on a daily basis; and
- (c) Certification that all VOC installations are under the control of, or operated by, the same person.
- (d) In order to comply with a bubble, the combined actual emissions over a 24 hour period from all operations in the bubble at the facility must be less than or equal to the allowable emission total (E) determined by the following equation:

$E = A_1 \times B_1 + A_2 \times B_2 + \dots + A_n \times B_n$: where E = the allowable emissions from the facility in pounds per day; A₁, A₂, ..., A_n = the applicable emission limitation for each unit of production (i.e., for a

coating operation, pounds of VOC/gallon of solids applied; B1, B2, ..., Bn = the number of production units processed each day (i.e., for a coating operation, gallon of solids applied per day.)

The Department shall not approve any emissions bubble without first giving public notice at least 30 days prior to approval, and affording all interested persons opportunity to comment. The public may request a hearing. Upon a demonstration of significant public interest, the Director, in his discretion, may hold a hearing. EPA shall be provided with the public notice, proposed approval order, and technical support by the first day of the public comment period. Public (and EPA) comments will be considered prior to final approval of the bubble application. Upon issuance of final approval of the bubble, EPA will be mailed a copy of the approval, new technical support, and response to public comments.

15.4.3 The emissions bubble shall not allow increases in emissions above the following standards, where applicable:

- (a) Best Available Control Technology Determinations;
- (b) Lowest Achievable Emission Rate Determinations;
- (c) Federal New Source Performance Standards (40 CFR Part 60);
- (d) National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61);
- (e) Any other condition or standard that is specifically required by the Clean Air Act.
- (f) For emissions controlled by a bubble issued under this Section, the emission baseline as defined in subsections 15.1.5 and 15.4.11.

15.4.4 An approved emissions bubble shall be in effect for a period of no more than three years from the date of issuance. At the end of such three-year period, the facility must reapply for permission to bubble. The Department shall review the bubble for compliance and may either terminate or extend its approval based on consideration of air quality, control technology innovation, and any other determinations as the Department deems appropriate.

15.4.5 The provisions and emission limitations of any approved bubble shall be incorporated by approval. Compliance with this approval will be determined, when necessary, with DEM and EPA approved test methods. The approval must include source specific emission limits, recordkeeping requirements, and test methods used to demonstrate compliance. A facility which is subject to an enforcement action needs EPA approval to bubble.

- 15.4.6 The ERC's used in an emissions bubble must be calculated on a solids applied basis.
- 15.4.7 The emission limitation in an emissions bubble approval may be specific for each installation or may be expressed as a facility-wide daily average.
- 15.4.8 All regulated or unregulated VOC installations may be incorporated into an emissions bubble. Nonreactive VOC may not generate credit in a trade against reactive VOC in a bubble.
- 15.4.9 If a facility plans to reduce emissions at an unregulated installation in order to increase emissions at a regulated installation, then the facility must define RACT for the unregulated installation and obtain approval from the Director under Section 15.3 and be approved by EPA as a single source SIP revision. Emission reduction credits will be allowed only for reductions achieved beyond the RACT emission limit.
- 15.4.10 In order for a facility to demonstrate compliance with the emission limitations that were approved pursuant to Subsection 15.4.5, it is required that records shall be maintained. The records shall be:
- (a) kept on a daily basis for each installation being bubbled; and
 - (b) specific enough to demonstrate compliance for the facility as a whole; and
 - (c) maintained for a five-year period and be accessible for review by the Director or the designated personnel of the Director and EPA.

The record keeping requirements may include, but are not limited to:

- (d) process information; and
- (e) coating formulation data including the name of the coating, the color of the coating if the color is used as part of its name, the identification number for the coating that can be used to relate consumption data for that coating to its formulation data, the density of the coating (lbs coating/gallon of coating), the total VOC content of the coating by weight percent, the water content of the coating by weight percent, the solids content of the coating as a volume percent, the percentage by weight of the coating that consists of exempt solvents as identified in the definition of VOC in the Rhode Island Air Pollution General Definitions Regulation and the formulation of the diluents used (lbVOC/gallon of diluent); and
- (f) coating and diluent consumption data for each installation, VOCs emitted, daily data for wash up and clean up solvents; and
- (g) any other data necessary to show compliance.

15.4.11 Facilities applying to bubble will be assigned an emission baseline, as defined in subsection 15.1.5. Capacity utilization will be based on the average production during the two-year period prior to application to bubble. The facility's annual emissions may not exceed the limit set by the emission baseline. Emissions must be reported monthly and compliance with the emission baseline must be met every consecutive 12 month period or another shorter period determined by the Director.

15.4.12 An approvable bubble must meet the following requirements:

- (a) Emissions must be surplus. The reductions must not have been included in those anticipated in the State Implementation Plan for the affected source. ERC's cannot be taken for reductions made prior to the base year of the State's approved SIP. Emissions reductions shown must not have been required by current state regulations, and must not be used by the facility to meet any other regulatory requirement.
- (b) Emission reductions must be permanent. The amount and duration of the reductions must be shown.
- (c) Emission reductions must be quantifiable. A reliable basis for calculating the amount and rate of reductions must be used. Emission rates before and after the reductions must be documented.
- (d) Emission reductions must be enforceable. An enforceable document containing emissions rates will be issued.
- (e) All of the requirements of EPA's final Emission Trading Policy (51 FR 43814) must be met.

15.5 General Provisions

15.5.1 Purpose

The purpose of this regulation is to limit emissions of volatile organic compounds from stationary sources of air contaminants.

15.5.2 Authority

These regulations are authorized pursuant to R.I. Gen. Laws § 42-17.1-2(s) and 23-23, as amended, and have been promulgated pursuant to the procedures set forth in the R.I. Administrative Procedures Act, R.I. Gen. Laws Chapter 42-35

15.5.3 Application

The terms and provisions of this regulation shall be liberally construed to permit the Department to effectuate the purposes of state law, goals and policies.

15.5.4 Severability

If any provision of this regulation or the application thereof to any person or circumstance, is held invalid by a court of competent jurisdiction, the validity of the remainder of the regulation shall not be affected thereby.

15.5.5 Effective Date

The foregoing regulation, "Control of Organic Solvent Emissions", as amended, is hereby adopted and filed with the Secretary of State this 12th day of February, 2015, in accordance with the provisions of Chapters 23-23, 42-35, 42-17.1, 42-17.6, of the General Laws of Rhode Island of 1956, as amended.

Janet Coit, Director
Department of Environmental Management

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