

**STATE RHODE ISLAND AND PROVIDENCE PLANTATIONS  
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

**OFFICE OF AIR RESOURCES**

**AIR POLLUTION CONTROL GENERAL DEFINITIONS REGULATION**

**Applicability**

Unless otherwise expressly defined by an individual Air Pollution Control Regulation, the terms, definitions and unit of measure abbreviations contained herein shall be generally applicable to all Rhode Island Air Pollution Control Regulations adopted or amended at the same time as or after the adoption of these definitions.

**Definitions**

**“Act” or “Clean Air Act” or “CAA”** means the Federal Clean Air Act, as amended 42 U.S.C. 7401, et seq.

**“Actual heat input”** means the gross heat release potential based upon the actual BTU content of the fossil fuel being burned and the rate at which it is burned.

**“Administrator”** means the Administrator of the United States Environmental Protection Agency or the Administrator's duly authorized representative.

**“Aerodynamic downwash”** means the rapid descent of a plume to ground level with little dilution and dispersion due to alteration of background air flow characteristics caused by the presence of buildings or other obstacles in the vicinity of the emission point.

**“Air contaminant”** means soot, cinders, ashes, any dust, fumes, gas, mist, smoke, vapor, odor, toxic or radioactive material, particulate matter, or any combination of these.

**“Air pollution”** means the presence in the outdoor atmosphere of one or more air contaminants in sufficient quantities which, either alone or in connection with other emissions, by reason of their concentration and duration, may be injurious to human, plant or animal life, or cause damage to property or which unreasonably interferes with the enjoyment of life and property.

**“Air pollution control system”** means a system, device or equipment designed and installed primarily for the purpose of reducing or eliminating the emission of air contaminants to the atmosphere.

**“Best available control technology” or “BACT”** means an emissions limitation (including a visible emissions standard) based on the maximum degree of reduction for each air pollutant which would be emitted from any proposed stationary source or modification which the Director, on a case-by-case basis, taking into account energy, environmental and economic impacts and other costs, determines is achievable for such stationary source or modification through application of production processes or available methods, systems and techniques, including fuel cleaning, clean fuels, or treatment or innovative fuel combustion techniques for control of such pollutant. In no event shall application of best available control technology result in emissions of any pollutant which would exceed the emissions allowed by any applicable state or federal air pollution control rule or regulation. If the Director determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of air emissions standards infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead to satisfy the requirement of best available control technology. Such standard shall to the degree possible set forth the emission reduction achievable by implementation of such design, equipment, work practice or operation and shall provide for compliance by means which achieve equivalent results.

**“Biodiesel”** means a fuel for diesel engines derived from natural oils, such as soybean oils, and which meets the American Society for Testing and Materials specifications of ASTM D 6751 and is registered with the US EPA as a fuel and a fuel additive under Section 211(b) of the Clean Air Act .

**“CFR”** means the Code of Federal Regulations.

**“Cold Cleaning”** means an organic solvent cleaning process which cleans and removes contaminants or water from surfaces by spraying, brushing, flushing, immersing, or drying parts. Cleaning machines that use heated, nonboiling solvent to clean the parts are classified as cold cleaning machines. Wipe cleaning is not included in this definition.

**“Department”** means the Rhode Island Department of Environmental Management.

**“Director”** means the Director of the Rhode Island Department of Environmental Management or any subordinate or subordinates to whom he or she has delegated the powers and duties vested in him or her by Title 23, Chapter 23, Section 5 of the General Laws of Rhode Island.

**“Distillate Oil”** means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396-78, “Standard Specification for Fuel Oils”.

**“Division”** means the Rhode Island Department of Environmental Management’s Office of Air Resources or its predecessor agencies, the Division of Air Resources and the Division of Air and Hazardous Materials.

**“Emissions unit”** means any part of a stationary source which emits or would have the potential to emit any air pollutant (including fugitive emissions). This term is not meant to alter or affect the definition of the term “unit” for purposes of Title IV of the Act.

**“Enforceable document”** means a major or minor source permit issued pursuant to the requirements of Air Pollution Control Regulation No. 9, an operating permit or emissions cap issued pursuant to the requirements of Air Pollution Control Regulation No. 29, an air toxics operating permit issued pursuant to the requirements of Air Pollution Control Regulation No. 22, a consent agreement or an approval issued pursuant to the requirements of Air Pollution Control Regulation Nos. 15, 19, 21, 26, 27, 30 or 35.

**“EPA”** means the United States Environmental Protection Agency.

**“Facility” or “stationary source”** means all air pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control). Pollutant-emitting activities shall be considered as part of the same industrial grouping if they belong to the same “major group” (i.e. which have the same two-digit code) as described in the Standard Industrial Classification Manual, 1987. A facility or stationary source may consist of one or more emissions units. A facility or stationary source does not include emissions resulting directly from an internal combustion engine for transportation purposes, emissions from a nonroad engine or the activities of any vessel.

**“Federally Enforceable”** means all limitations and conditions which are enforceable by the Administrator of the U.S. Environmental Protection Agency including, but not limited to, those requirements developed pursuant to 40 CFR Part 60 (New Source Performance Standards), 40 CFR Part 61 (National Emission Standards for Hazardous Air Pollutants), 40 CFR Part 63 (National Emission Standards for Hazardous Air Pollutants for Source Categories), requirements within the State Implementation Plan, those requirements in operating permits issued pursuant to Air Pollution Control Regulation No. 29 or 40 CFR Part 71 (except those listed as “Not Federally Enforceable”), those requirements in major or minor source permits issued pursuant to Air Pollution Control Regulation No. 9, to the extent the regulation is a part of the State Implementation Plan and those requirements in emissions caps issued pursuant to Air Pollution Control Regulation No. 29.

**“Fossil fuel”** means natural gas, petroleum, coal and any form of solid, liquid or gaseous fuel derived from such materials for the purpose of creating useful heat.

**“Fossil fuel fired steam or hot water generating unit”** means a furnace or boiler used in the process of burning fossil fuel for the purpose of producing steam or hot water by heat transfer.

**“Fuel oil”** means any virgin distillate oil, virgin residual oil, biodiesel or a blend of these.

**“Fugitive emissions”** means those emissions which could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening.

**“Good engineering practice” or “GEP”** means, with respect to stack heights, the height necessary to insure that emissions from the stack do not result in excessive concentrations of any air pollutant in the immediate vicinity of the source as a result of aerodynamic downwash, eddies and wakes which may be created by the source itself, nearby structures or nearby terrain obstacles as calculated according to the Rhode Island Guideline on Air Quality Modeling.

**“Halogenated Organic Compound” and “HOC”** means the following compounds:

- (a) CFC-11 (trichlorofluoromethane)
- (b) CFC-12 (dichlorodifluoromethane)
- (c) CFC-113 (1,1,1-trichloro 2,2,2-trifluoroethane)
- (d) CFC-114 (1,2-dichloro 1,1,2,2-tetrafluoroethane)
- (e) CFC-115 (chloropentafluoroethane)
- (f) HCFC-22 (chlorodifluoromethane)
- (g) HCFC-31 (chlorofluoromethane)
- (h) HCFC-123 (1,1,1-trifluoro 2,2-dichloroethane)
- (i) HCFC 123a (1,2-dichloro-1,1,2-trifluoroethane)
- (j) HCFC-124 (2-chloro 1,1,1,2-tetrafluoroethane)
- (k) HCFC-141b (1,1-dichloro 1-fluoroethane)
- (l) HCFC-142b (1-chloro 1,1-difluoroethane)
- (m) HCFC-151a (1-chloro-1-fluoroethane)
- (n) HCFC-225ca (3,3-dichloro-1,1,1,2,2-pentafluoropropane)
- (o) HCFC-225cb (1,3-dichloro-1,1,2,2,3-pentafluoropropane)
- (p) methyl chloroform (1,1,1-trichloroethane)
- (q) methylene chloride (dichloromethane)
- (r) perchloroethylene

**“Hazardous Air Pollutant” and “HAP”** means an air pollutant which has been listed pursuant to Section 112(b) of the Clean Air Act Amendments of 1990.

**“Heat input capacity”** means the manufacturer’s or designer’s guaranteed maximum rate of heat input, whichever is greater.

**“Lowest achievable emission rate” or “LAER”** means, for any stationary source, the more stringent rate of emissions based on the following:

- (1) The most stringent emission limitation which is contained in the implementation plan of any state for such class or category of stationary source, unless the owner or operator of the proposed stationary source demonstrates that such limitations are not achievable; or

- (2) The most stringent emission limitation which is achieved in practice by such class or category of stationary source. This limitation, when applied to a modification, means the lowest achievable emission rate for the new or modified installation within the stationary source.

In no event shall the application of this term permit a proposed new or modified stationary source to emit any pollutant in excess of the amount allowable under applicable new source performance standards.

**Natural gas**” means a naturally occurring mixture of hydrocarbon and non hydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane.

**“Nitrogen oxides”** means nitric oxide (NO), nitrogen dioxide (NO<sub>2</sub>) and any other species of nitrogen oxides, expressed as the molecular weight of NO<sub>2</sub>.

**“Nonroad engine”** means:

- (a) Except as discussed in paragraph (b) of this definition, a nonroad engine is any internal combustion engine:
  - (1) In or on a piece of equipment that is self-propelled or serves a dual purpose by both propelling itself and performing another function (such as garden tractors, off-highway mobile cranes and bulldozers); or
  - (2) In or on a piece of equipment that is intended to be propelled while performing its function (such as lawnmowers and string trimmers); or
  - (3) That, by itself or in or on a piece of equipment, is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform.
- (b) An internal combustion engine is not a nonroad engine if:
  - (1) the engine is used to propel a motor vehicle or a vehicle used solely for competition, or is subject to standards promulgated under section 202 of the Act; or

- (2) the engine is regulated by a federal New Source Performance Standard promulgated under section 111 of the Act; or
- (3) the engine otherwise included in paragraph (a) (3) of this definition remains or will remain at a location for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. Any engine (or engines) that replace an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive time period. An engine located at a seasonal source is an engine that remains at a seasonal source during the full annual operating period of the seasonal source. A seasonal source is a stationary source that remains in a single location on a permanent basis (i.e., at least two years) and that operates at that single location approximately three months (or more) each year. This paragraph does not apply to an engine after the engine is removed from the location.

**“Opacity”** means the degree to which air contaminants reduce the transmission of light and obscure a contrasting background.

**“Organic compound”** means any carbon-containing compound with the exception of carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, metallic carbonates and ammonium carbonate.

**“Organic Solvent Cleaning”** means the process of cleaning contaminants or water from surfaces by cold cleaning or vapor cleaning using Volatile Organic Compounds (VOC) or volatile Hazardous Air Pollutants.

**“Owner or operator”** means any person who owns, leases, operates, controls or supervises any building, structure, facility, installation or emissions unit which directly or indirectly results or may result in emission of any air contaminant.

**“Particulate matter”** means any material, other than uncombined water, that is or has been airborne and exists as a liquid or solid at ambient conditions.

**“Permanent total enclosure”** means a permanently installed enclosure that completely surrounds a source of emissions such that all VOC emissions are captured and contained for

discharge to a control device and which meets the specifications given in Method 204 or 40 CFR Part 51, Appendix M.

**“Person”** means an individual, trust, firm, joint stock company, corporation (including a quasi-governmental corporation), partnership, limited liability company (LLC), association, syndicate, municipality, municipal or state agency, fire district, club, non-profit agency or any subdivision, commission, department, bureau, or agency of state or federal government (including a quasi-governmental corporation) or of any interstate body.

**“Potential to emit” or “potential emissions”** means:

- (a) The maximum capacity of a stationary source to emit a pollutant under its physical or operational design. Any physical or operational limitation on the capacity of a source to emit a pollutant, including air pollution control equipment and restrictions on the hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design only if the limitation or the effect it would have on emissions is federally enforceable. Secondary emissions do not count in determining the potential to emit of a stationary source. This term does not alter or affect the use of this term for any other purposes under the Act, or the term “capacity factor” as used in Title IV of the Act or the regulations promulgated thereunder.
- (b) “Potential emissions” from organic solvent cleaning operations at a stationary source are calculated as follows:
  - (1) Determine the potential to emit for each individual solvent cleaning using the following equation.

$$PTE_i = H_i \times W_i \times SAI_i$$

Where:

$PTE_i$  = the potential to emit for solvent cleaning machine i (kilograms of solvent per year).

$H_i$  = hours of operation for solvent cleaning machine i (hours per year). = 8760 hours per year, unless otherwise restricted by a Federally

enforceable requirement.

$W_i$  = the working mode uncontrolled emission rate (kilograms per square meter per hour). = 1.95 kilograms per square meter per hour for batch vapor and cold cleaning machines. = 1.12 kilograms per square meter per hour for in-line cleaning machines.

$SAI_i$  = solvent/air interface area of solvent cleaning machine  $i$  (square meters). Cleaning machines that do not have a solvent/air interface shall calculate a solvent/air interface area using the procedure in paragraph (2) of this section.

- (2) Cleaning machines that do not have a solvent/air interface shall calculate a solvent/air interface area using the following equation.

$$SAI=2.20 * (Vol)^{0.6}$$

Where:

$SAI$ =the solvent/air interface area (square meters).

$Vol$  = the cleaning capacity of the solvent cleaning machine (cubic meters).

- (3) Sum the  $PTE_i$  for all solvent cleaning operations to obtain the total potential to emit for solvent cleaning operations at the facility.

**“Reasonably Available Control Technology”** and **“RACT”** means the lowest emission limitation that a particular piece of equipment or pollutant emitting activity is capable of meeting by using measures that are reasonably available in terms of technological and economic feasibility.

**“Residual oil”** means No. 4, No. 5, or No. 6 fuel oil.

**“Stack”** means a flue, conduit or opening to provide for the emission of the products of combustion and/or other air contaminants into the atmosphere.

**“Secondary emissions”** means emissions which occur as a result of the construction or operation of a major stationary source or major modification, but do not come from the major stationary source or major modification itself. Secondary emissions must be specific, well defined, quantifiable and impact the same general areas as the stationary source or modification. Secondary emissions include emissions from any off-site support facility which would not be constructed or increase its emissions except as a result of the construction or operation of the major stationary source or major modification. Secondary emissions do not include emissions from any mobile source regulated under Title II of the Clean Air Act.

**“Vapor Cleaning”** means an organic solvent cleaning process in which contaminants or water are cleaned and removed from surfaces by condensing hot solvent vapor on the colder pieces. This definition includes vapor degreasing and drying.

**“Volatile organic compound” and “VOC”** means any organic compound which participates in atmospheric photochemical reactions. This includes any organic compound other than the following compounds:

- (a) acetone
- (b) CFC-11 (trichlorofluoromethane)
- (c) CFC-12 (dichlorodifluoromethane)
- (d) CFC-113 (1,1,2-trichloro 1,2,2-trifluoroethane)
- (e) CFC-114 (1,2-dichloro 1,1,2,2-tetrafluoroethane)
- (f) CFC-115 (chloropentafluoroethane)
- (g) 2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-heptafluoropropane ((CF<sub>3</sub>)<sub>2</sub>CF<sub>2</sub>OCH<sub>3</sub>)
- (h) dimethyl carbonate
- (i) ethane
- (j) 2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane ((CF<sub>3</sub>)<sub>2</sub>CF<sub>2</sub>OC<sub>2</sub>H<sub>5</sub>)
- (k) HCFC-22 (chlorodifluoromethane)
- (l) HCFC-31 (chlorofluoromethane)
- (m) HCFC-123 (1,1,1-trifluoro 2,2-dichloroethane)
- (n) HCFC 123a (1,2-dichloro-1,1,2-trifluoroethane)
- (o) HCFC-124 (2-chloro 1,1,1,2-tetrafluoroethane)

- (p) HCFC-141b (1,1-dichloro 1-fluoroethane)
- (q) HCFC-142b (1-chloro 1,1-difluoroethane)
- (r) HCFC-151a (1-chloro-1-fluoroethane)
- (s) HCFC-225ca (3,3-dichloro-1,1,1,2,2-pentafluoropropane)
- (t) HCFC-225cb (1,3-dichloro-1,1,2,2,3-pentafluoropropane)
- (u) HFC-23 (trifluoromethane)
- (v) HFC-32 (difluoromethane)
- (w) HFC-43-10mee (1,1,1,2,3,4,4,5,5,5-decafluoropentane)
- (x) HFC-125 (pentafluoroethane)
- (y) HFC-134 (1,1,2,2-tetrafluoroethane)
- (z) HFC-134a (1,1,1,2-tetrafluoroethane)
- (aa) HFC-143a (1,1,1-trifluoroethane)
- (bb) HFC-152a (1,1-difluoroethane)
- (cc) HFC-161 (ethylfluoride)
- (dd) HFC-227ea (1,1,1,2,3,3,3-heptafluoropropane)
- (ee) HFC-236ea (1,1,1,2,3,3-hexafluoropropane)
- (ff) HFC-236fa (1,1,1,3,3,3-hexafluoropropane)
- (gg) HFC-245ca (1,1,2,2,3-pentafluoropropane)
- (hh) HFC-245ea (1,1,2,3,3-pentafluoropropane)
- (ii) HFC-245eb (1,1,1,2,3-pentafluoropropane)
- (jj) HFC-245fa (1,1,1,3,3-pentafluoropropane)
- (kk) HFC-365mfc (1,1,1,3,3-pentafluorobutane)
- (ll) HFE-7000 (1,1,1,2,2,3,3-heptafluoro-3-methoxypropane or  $n\text{-C}_3\text{F}_7\text{OCH}_3$ )
- (mm) HFE-7100 (1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxybutane or  $\text{C}_4\text{F}_9\text{OCH}_3$ )
- (nn) HFE-7200 (1-ethoxy-1,1,2,2,3,3,4,4-nonafluorobutane or  $\text{C}_4\text{F}_9\text{OC}_2\text{H}_5$ )
- (oo) HFE-7300 (1,1,1,2,2,3,4,5,5,5-decafluoro-3-methoxy-4-trifluoromethylpentane or  
L-14787 or  $\text{C}_2\text{F}_5\text{CF}(\text{OCH}_3)\text{CF}(\text{CF}_3)_2$ )
- (pp) HFE-7500 (3-ethoxy-1,1,1,2,3,4,4,5,5,6,6-dodecafluoro-2-(trifluoromethyl) hexane)
- (qq) methane
- (rr) methyl acetate
- (ss) methyl chloroform (1,1,1-trichloroethane)

- (tt) methyl formate ( $\text{HCOOCH}_3$ )
- (uu) methylene chloride (dichloromethane)
- (vv) parachlorobenzotrifluoride (PCBTF)
- (ww) perchloroethylene (tetrachloroethylene)
- (xx) propylene carbonate
- (yy) cyclic, branched, or linear completely methylated siloxanes
- (zz) The perfluorocarbon compounds which fall into these classes:
  - (1) Cyclic, branched, or linear, completely fluorinated alkanes;
  - (2) Cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;
  - (3) Cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and
  - (4) Sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.

These compounds have been determined to have negligible photochemical reactivity. For purposes of determining compliance with emission limits, VOC will be measured by the approved test methods. Where such a method also inadvertently measures compounds with negligible photochemical reactivity, as defined above, an owner or operator may exclude these negligible photochemical reactive compounds when determining compliance with an emissions standard. Exempt solvents will be treated as water in “pounds of VOC per gallon of coating minus water” calculations. Classification of methylene chloride and perchloroethylene as exempt compounds does not relieve the facility of the requirements in Air Pollution Control Regulation No. 22.

The compound t-butyl acetate is considered a VOC for purposes of all recordkeeping, emissions reporting, photochemical dispersion modeling and inventory requirements which apply to VOC and shall be uniquely identified in emission reports, but is not a VOC for purposes of VOC emissions limitations or VOC content requirements.

## Abbreviations and Symbols - Units of Measure

Abbreviations and Symbols	Definition
Btu	British thermal unit
° C	Degree Celsius (centigrade)
cm	Centimeter
dscf	Dry cubic feet at standard conditions
dscm	Dry cubic meter at standard conditions
° F	Degree Fahrenheit
ft	Feet
g	Gram
gal	Gallon
gr	Grain
hr	Hour
kg	Kilogram
lb	Pound
lbs	Pounds
m	Meter
m <sup>3</sup>	Cubic meter
mg	Milligram (10 <sup>-3</sup> gram)
mm	Millimeter (10 <sup>-3</sup> meter)
ppm	Parts per million
psi	Pounds per square inch
tpy	Tons per year
µg	Microgram (10 <sup>-6</sup> gram)
vol	Volume
wt	Weight
%	Percent

## General Provisions

### Purpose

The purpose of this regulation is to provide a consistent set of definitions and abbreviations for terms used in more than one of the Rhode Island Air Pollution Control Regulations.

### Authority

These regulations are authorized pursuant to Rhode Island General Laws § 42-17.1-2(s) and 23-23, as amended, and have been promulgated pursuant to the procedures set forth in the Rhode Island Administrative Procedures Act, Rhode Island General Laws

Chapter 42-35.

**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.

**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.

**Effective Date**

The foregoing regulation, “Rhode Island Air Pollution Control General Definitions Regulation”, as amended, after due notice, is hereby adopted and filed with the Secretary of State this 9<sup>th</sup> day of September, 2010 to become effective twenty (20) days thereafter, 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.

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W. Michael Sullivan, PhD., Director  
Department of Environmental Management

**Notice Given on:** July 21, 2010  
**Public Comment Period Ended:** August 23, 2010  
**Filing Date:** September 9, 2010  
**Effective Date:** September 29, 2010