



Owner EH&S	DOC. NO. ENV-AQMP	REV. 02	DATE 11/03/2018
DOC. TITLE Air Quality Management Plan			

Air Quality Management Plan

Clean Air Act

Plan Review Required – Annual November 3, 2018

Regulatory Authority(s)

- Environmental Protection Agency (EPA)
- Massachusetts Department of Environmental Protection (MADEP)

Regulations Applicable

- 42 U.S.C. 7401
 - CAA, sec 112(r)
- 40 CFR 81.322 (EPA to Massachusetts)
- 310 CMR 7.00 (Air Pollution Control)

Noncompliance Enforcement

- EPA penalties for violations of the CAA begin at \$93,750.00 a day per violation
- Penalties for non-compliance with the Massachusetts Department of Environmental Protection are based on the Administrative Penalty regulation, 310 CMR 5.00

Responsibility(s)

- The overall responsibility for environmental compliance at Amherst College rests with the Board of Trustees and the President of the College.
- For this plan, the following other departments and positions within the College shall assume responsibilities applicable to them.
 - Chief of Campus Operations
 - Director of Facilities
 - Facilities Supervisors responsible for the Central Energy Plant and Mechanical Departments
 - Design and Construction for both new construction and renovation projects
 - Department of Environmental Health and Safety

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1. Definitions

Electric Steam Generating Unit – any fossil fuel fired electric utility steam generating unit of > 25 megawatts that serves a generator that produces electricity for sale.

Mobile Source – any non-stationary source, such as motor vehicles, which includes, but is not limited to buses, cars, and trucks, as well as boats, construction equipment, lawn mowers and tractors.

Stationary Source – any stationary source or group of stationary sources located at a specific site and under the control of a single entity that emits or has the potential to emit hazardous air pollutants (HAP's) that include, but are not limited to; carbon monoxide, lead, mercury, oxides of nitrogen, sulfur dioxide and particulates.



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- **Area Source** – any stationary source that is not considered to be a “major source” of hazardous air pollutants.
- **Major Source** - any stationary source that emits, or has the potential to emit \geq 10 tons of a specific hazardous air pollutant annually, or 25 tons of a combination of hazardous air pollutants over the course of a year.

2. Applicability

Amherst College owns and operates both a stationary source Central Energy Plant (CEP) that utilizes fossil fuels, as well as mobile sources which has the potential to generate hazardous air pollutants, regulated by both the Federal EPA and the Massachusetts DEP. The goal of the CAA is to regulate emissions of HAP's to better protect the health and well-being of the public as well as the environment.

3. Requirements

For Amherst College, the EPA and MADEP encourages the use of alternative fuels for both mobile and stationary sources of emissions. Alternative fuels may include biodiesel, electricity, natural gas and propane, which are cleaner than both regular diesel and gasoline from an emissions standpoint. The general requirements to prevent air pollution in Massachusetts includes the following provisions;

- 3.1 No person owning, leasing or controlling the operation of any mobile or stationary source shall willfully, negligently, or through failure to provide necessary equipment or to take necessary precautions, permit any emission from said air contamination source or sources of such quantities of air contaminants which will cause, by themselves or in conjunction with other air contaminants, a condition of air pollution.
- 3.2 In accordance with the requirements of 310 CMR 7.02, the Commonwealth of Massachusetts has set procedures and standards of issuance of facility approvals which establish emission limitations and/or restrictions for a facility or emission unit.
- 3.2.1 A plan approval is required prior to the construction, substantial reconstruction, alteration or subsequent operation of any facility that may emit contaminants to the air.
- 3.2.1.1 The need for the plan is determined by comparing the maximum design capacity of the proposed equipment for fuel utilization facilities or the potential to emit to the plan approval thresholds.
- For plan approval or denial, the MADEP must limit its actions to matters that may cause or contribute to a condition of air pollution.

3.2.2 Exemptions

- 3.2.2.1 The requirement to obtain a plan approval if the facility qualifies for one or more of the following;
- a) **Air Pollution Control Equipment** which do not include oxidizers or afterburners, that are added to a facility currently in compliance with the provisions of 310 CMR 7.02, provided that the air pollution reduction equipment is not otherwise required and that it does not increase the potential emissions of a single criteria pollutant or any single non-criteria pollutant by $>$ 1 ton or more, calculated over a 12 consecutive month time period, and that the air pollution control equipment does not replace an existing air pollution control device required by the plan
- Persons installing the air pollution control equipment as allowed by the exception shall notify the MADEP, Air Quality Section, within 60 days of installation.



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- b) **Air Pollution Control Equipment for Particulate(s)** means the replacement of an existing air pollution control device for particulates, such as a baghouse, even if it was required by a previous plan. The replacement device shall be similar in design to the existing control device, and the same size or larger than the original control device. The replacement device must be designed to achieve the same or better collection efficiency as the device being replaced.
- Persons replacing this device must notify the MADEP (Air Quality Section) in writing, at least 30 days before the device is replaced
- c) **Battery Charging Facilities** used to charge lead acid batteries
- d) **Burner Tip Replacement**
- e) **Cooling Towers** with a maximum recirculation rate of $\leq 20,000$ gpm, a drift eliminator, a non-chromium inhibitor, and has total dissolved solids concentration in the blowdown $< 1,800$ mg/liter.
- f) ***De minimis* Increase in Emissions** – Construction or alteration that results in an increase in potential emissions of < 1 ton of any air contaminant, calculated over any consecutive 12-month time period.
- g) **Emergency and Stand-By Engines, Generators or Turbines** which must comply with the requirements of 310 CMR 7.03 on all units installed after June 01, 1990
- Also see the Amherst College Environmental Results Program which includes the mandates for Emergency Generators, Turbines and Fire Pumps.
- h) **Emergency Release Containment**, which is an area specifically constructed or designed to contain an unplanned release
- i) **Fire Suppression Systems**
- j) **Fuel and Chemical Storage Tanks** with a capacity of $\leq 40,000$ gallons and used exclusively to store a product with a vapor pressure of < 1.5 psi at the average annual ambient temperature
- k) **Fuel Atomization Equipment**, with the exception of replacing a steam or air atomization with a mechanical atomization.
- l) **Fuel Loading Racks**
- m) **Fuel Switching** – Conversion of a fuel utilization facility rated at a maximum heat input capacity of $< 100,000,000$ Btu per hour energy input where the unit is converted from oil or solid fuel to oil/natural gas dual fuel capability or natural gas as the only fuel source.
- For this exception the fuel utilization facility is defined as any single boiler, hot oil generator, melt furnace, process heater, oven or similar fuel burning unit as determined by the MADEP
- n) **Fuel Utilization Facilities** which is any fuel utilization facility, excluding internal combustion engines such as combination turbines or reciprocating engines, where the individual fuel utilization emission unit being constructed or altered has a maximum energy input capacity of less than:
- 10,000,000 Btu/hour utilizing natural gas or propane
 - 10,000,000 Btu/hour utilizing distillate fuel oil
 - 10,000,000 Btu/hour utilizing residual fuel oil with a sulfur content of < 0.28 lbs/million Btu heat release potential, which is $\sim 0.5\%$ sulfur by weight.



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- 3,000,000 Btu/hour utilizing solid fuel with automatic fuel feed
- 3,000,000 Btu/hour utilizing digester gas
- 1,000,000 Btu/hour utilizing hand fired solid fuel
- o) **Insignificant Activities** as referenced in 310 CMR 7.00 (appendix C (5)(i), as well as office equipment, static electricity reduction devices, electric arcs and motors that generate ozone
- p) **Maintenance or Repair** of a facility
- q) **Blending and Mixing Equipment** to make water based solutions of < 5% VOC's by weight
- r) **Molding** – Compression or plastic injection, except for blow and extrusion molding
- s) **Motor Vehicle Maintenance**, except for refinishing facilities
- t) **Operating Hours** which would be an increase in the hours of operation of a production facility not otherwise restricted
- u) **Operating Rate/Product Changes** an increase in the rate of production at a facility not otherwise restricted
- v) **Ownership** which is a change in facility ownership, provided the MADEP is notified (in writing) with 60 days of the effective date of the change
- w) **Plan Approval by Rule** - which is an emission unit listed in 310 CMR 7.03, provided that the design, maintenance, operation and recordkeeping requirements conforms to the requirements of 310 CMR 7.03
- x) **Plumbing** as it pertains to soil stacks and vents
- y) **Pressure Release Devices**
- z) **Relocation of Approved Equipment**, previously approved, as long as the equipment does not contribute to a condition of air pollution.
- aa) **Thermal and Catalytic Oxidizers** which would be the process emission oxidizer or afterburner with a rated capacity of <40,000,000 Btu/hour using natural gas and installed on a previously approved facility or on a new facility which otherwise meets the plan approval exemptions provided in 310 CMR 7.02(2)
 - Persons installing thermal or catalytic oxidizers (if permitted by this exception) must notify the MADEP (Air Quality Section) within 60 days of installation.
- bb) **Turbines and Reciprocating Engines**
 - March 22, 2006 or before – an individual internal combustion engine including a combustion turbine or reciprocating engine having an energy input capacity of < 3,000,000 Btu/hour or an internal combustion engine regulated by EPA as an off-road engine
 - March 23, 2006 or after – an individual internal combustion engine including a combustion turbine or reciprocating engine installed and operated in compliance with 310 CMR 7.26 (40) – 310 CMR 7.26 (44), or an internal combustion engine regulated by EPA as a non-road engine
- cc) **Wastewater Treatment** and/or pumping facilities with average daily input flows of 50,000 gpm and which treat sanitary sewage exclusively
- dd) **Water Treatment** - treatment systems that process cooling water or boiler feed water



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ee) **RACT, Organic Material Storage and Distribution, ERP, or NOx Allowance Program**

ff) **Violation of an Issued Plan Approval**

gg) **Biotechnology Laboratory** – A laboratory used solely for research, development or support for medical device, drug, or biologic products derived in whole or in part from biotechnology, and that such products are either undergoing pre-clinical research in preparation for, or are the subject of, one of the following U.S. Food and Drug Administration (FDA) regulatory applications or notices:

- New Drug (Investigational) Application
- New Device (Investigational) Excerption Notice
- New Drug Application, premarket approval application, premarket notification pursuant to section 510(k) of the FDA

3.2.2.2 **Recordkeeping Requirements** – the owner or operator of the facility or emission unit that is exempt from plan approval shall keep the following records on-site and up-to-date so that the year to date information is readily available for inspection by the EPA and MADEP

- a) Date of construction or alteration documentation
- b) Emission calculations under the specific conditions that qualifies the activity for exemption documentation
- c) Air pollution control and other equipment performance specifications
- d) Verification of the overall efficiency of any air pollution control device, showing capture and/or destruction/removal efficiency.

3.2.2.3 **Reporting**

3.2.2.3.1 The owner or operator of a facility subject to “**Source Registration**” reporting requirements of 310 CMR 7.12 shall report the construction or alteration activities that qualify for the exemption in the next required source registration.

- Quantification of emissions is not required unless specifically requested.

3.2.2.3.2 The owner or operator of a facility required to report under 310 CMR 7.02(2)(b)33 for violating the provisions of the plan approval shall submit the report within 30 days of the action.

3.2.2.4 **Enforcement**

3.2.2.4.1 If construction or alteration or operation of an emission unit for which an exemption from plan approval is claimed, violates any provisions of 310 CMR 7.00, the owner, operator and controlling facility will be subject to enforcement under M.G.L 111, sec 142A and B and chapter 21A sec 16 and/or any other relief or remedy provided in the law including, but not limited to, injunctive relief.