



Air Emission Source Compliance Requirements

Prior to purchasing equipment, an evaluation of the equipment's air emission potential must be completed. The following steps should be taken to make this evaluation. A conversation with EH&S staff from Environmental Affairs is recommended.

1. The following equipment is being considered for purchase. Prior to purchasing this equipment, the air emissions impact must be considered and a determination of whether a permit or registration of the source is required.
 - Emergency generators having an output capacity equal to or greater than 37 Kw.
 - Individual boilers having a heat input capacity greater than 10 MMBtu/hr or a group of boilers within close proximity or using a single stack that have an aggregate heat input capacity greater than 10 MMBtu/hr.
 - Cooling towers that have the potential to emit greater than one ton of particulates or 20,000 gpm of blowdown based on the level of dissolved solids and the water circulation rate.
 - Sources of Volatile Organic Compound (VOC) (e.g., solvents, paints, degreasers, etc) that have the potential to emit greater than one ton of VOCs.
 - Other sources of emissions that may exceed one ton of emissions for a specific pollutant, including particulate matter, Carbon Monoxide, Nitrogen Oxides, Sulfur Oxides, etc.
2. DEP approval is required as described in 310 CMR 7.00. The University has retained the services of an air compliance consultant who is managing the DEP approval process, which can take from several months up to one year to complete. The Contractor must coordinate and cooperate with the Owner and the air compliance consultant to ensure that the permitting process is complete in support of the installation schedule. The Contractor must provide a complete copy of manufacturer's specifications, schematics, plans, etc., to the Owner, the air compliance consultant, and Harvard EHSEM for review as requested and must complete all permitting documentation as necessary to support the schedule.
3. The Contractor is responsible for performing the work in accordance with this specification, and with all applicable Federal, state, and local regulations governing work involving permitting, installation and commissioning of an air emission source. Wherever there is a conflict or overlap of requirements, the most stringent provisions shall apply.
4. For work that will be sub-contracted, the Contractor is responsible to ensure that the Sub-contractor has reviewed and will strictly adhere to this specification, all reference documents, and with all local, state, and Federal regulations.



5. All Contractors and Sub-contractors must have current, applicable licenses for all work performed.
6. The latest revision of the standards listed below should be reviewed by the Contractor in order to fulfill their obligations related to permitting, installation, and commissioning of air emission sources.
 - National Electrical Manufacturer's Association (NEMA)
 - Underwriters Laboratories (UL)
 - National Fire Protection Association (NFPA)
 - American Society of Testing Materials (ASTM)
 - Institute of Electrical and Electronic Engineers (IEEE)
 - American National Standards Institute (ANSI)
 - 310 CMR 7.00: Massachusetts Air Pollution Control & Federal 40 CFR 60
 - Local air and noise pollution control ordinances

Specific Source Requirements

Emergency Generators

- An exhaust stack shall be “installed so as not to cause or contribute to a condition of air pollution” (e.g., stack height is 10 feet above rooftop, discharge is vertical, discharge is not near fresh air intakes or windows, etc.).
- The unit shall be installed with weather-protective enclosure with removable or hinged side panels so as to allow inspection and maintenance if the unit is to be placed outside of a building.
- At minimum, the unit shall be installed with a critical degree silencer to minimize noise pollution. Check with local noise ordinances and ensure compliance.
- At minimum, the installation shall include a fuel meter and an elapsed-time indicator.
- The stack cannot have a rain cap or “shanty cap” which inhibits the flow of exhaust gases.



HARVARD

Campus Services

ENVIRONMENTAL HEALTH & SAFETY

- The unit will have a “non-turn-back” hour meter to track the operating hours of the unit
- Oil-fired units must only burn Ultra Low Sulfur Diesel (15 ppm)
- The units must be in compliance with the NOx emission limits for non-road diesel engines based on the size of the unit and the date of manufacture.

Boilers

- The unit shall comply with the latest design guidelines of the American Boiler Manufacturer’s Association and the American Society of Heating, Refrigerating and Air-Conditioning Engineers.
- Before boiler installation, examine roughing-in for concrete equipment bases, anchor-bolt sizes and locations, and piping and electrical connections to verify actual locations, sizes, and other conditions affecting boiler performance, maintenance and operation.
- All fuel gas piping systems, fuel gas utilization equipment and related accessories servicing the boiler shall be installed in accordance with NFPA 54.
- All fuel oil piping systems, fuel oil utilization equipment, and related accessories servicing the boiler shall be installed in accordance with NFPA 31 and permit requirements.

Cooling Towers

- Cooling tower thermal performance shall be certified in accordance with Cooling Technology Institute’s STD-201.
- The fill material and water distribution systems servicing the cooling tower shall be made of materials resistant to corrosion and heat.
- The unit shall be provided with drift eliminator that is made of material that is resistant to corrosion, decay and biological attack.
- The unit shall be equipped with a blowdown discharge flow meter.