

3.1.5

EMS Aspects: Maintenance and Operations, Emergency Power, Air

Aspect Ranking: 12

The University of Texas Health Science Center at Houston (UTHSC-H) is a research and educational institution with a need for emergency power if normal electrical power is interrupted. A regulated byproduct of the emergency power operation at UTHSC-H is the emission of volatile organic compounds and nitrogen oxides created during the combustion of fuel.

Emergency Power Air Emissions Compliance and Record Keeping:

Task/Activity Description:

All buildings at UTHSC-H, depending on the size, contain from one to four emergency generators which supply emergency electrical power in the event of normal grid interruption. The majority of the generators are natural gas fired with the remaining fueled by diesel. Nitrogen oxides (NO_x) and volatile organic compounds (VOCs) are released during the combustion process and are regulated by the Federal Clean Air Act and the Texas Clean Air Act. Natural gas burns cleaner and reduces the NO_x emissions.

The Houston Galveston area is designated as a severe non-attainment area for ozone. This designation limits the potential to emit (PTE) for minor sources of air pollution to 25 tons per year (TPY) of VOC's and 25 TPY of Nitrogen Oxides. The Environmental Protection Program (EPP) has completed an analysis of the annual emissions from all emergency power generators to demonstrate compliance with minor source limits.

The UTHSC-H emergency generators are authorized by Permit by Rule, 30 TAC §106.511 which applies to Portable and Emergency Engines and Turbines. Generator usage is limited to 10% of the normal annual operating schedule. In addition, 30 TAC Chapter 117 applies to combustion sources and specifies operation, record keeping, and run time meter requirements.

Key Control Points:

The permit by rule and Houston-Galveston area conditions are evaluated and NO_x PTE is calculated by the EPP utilizing a 12 month rolling average for generator run times. The evaluation of permit by rule conditions is completed annually or upon significant change in equipment.

In addition, an annual certification of synthetic minor source status is completed for NO_x sources by the EPP and signed by the VP of Facilities, Planning and Engineering.

Related Forms, Records, SOPs:

- EHSA
- [Certification of Air Emissions](#)

Personnel Responsible:

Maintenance and Operations Personnel

- Maintain generator usage records
- Operate generators for routine testing before 6 AM or after 12 PM

Safety Specialists, EPP

- Assists with the collection of usage records
- Perform semi-annual survey
- Perform annual air emissions analysis for synthetic minor source designation

Safety Manager, EPP

- Oversee and conduct PTE evaluations and retain documented results

Director, EHS

- Liaison with the VP of Facilities, Planning and Engineering
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Environmental Compliance (Air Releases) Program

Task/Activity Description:

Emergency Power Air Emission and Environmental Health & Safety Survey

Schedule: Semiannually

To assist Facilities personnel, who operate the emergency generators at UTHSC-H, in complying with the requirements for control of NO_x emissions and general safety, the Environmental Health & Safety Department's Environmental Protection Program (EPP) conducts semiannual surveys of the emergency generators and monthly record keeping of usage hours.

Inspections are performed by the EPP manager or safety specialist utilizing a checklist survey form. Deficiencies are noted on the form by checking the "yes, no, or not applicable" boxes or by adding items to an additional comments section on the survey

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form. Once the survey is complete, a memo listing any noted deficiencies and corrective actions is sent to the building maintenance manager and copied to the VP of Facilities, Planning and Engineering.

Deficiencies noted during the survey are tracked for resolution utilizing Environmental Health and Safety Assistant (EHSA) database. As part of the deficiency tracking process, at least thirty days are given to correct any deficiencies, before potentially escalating enforcement actions.

Key Control Points:

- Identify sources of NO_x and compare management practices to regulatory requirements
- Identify potential mismanagement, improper storage, and disposal of hazardous wastes
- Communicate environmental compliance requirements to personnel who operate emergency generators

Related Forms, Records, SOPs:

Emergency Generator Survey Form

Personnel Responsible:

Building Maintenance Manager

- Oversee emergency generator operations and ensure generators are not run for routine testing and maintenance between 6 AM and 12 PM

Manager/Safety Specialists, EPP

- Perform semiannual survey
- Enter deficiencies into database and generate memo report
- Track appropriate response through deficiency database
- Monitor inspection schedule through the EPP compliance calendar
- Advise appropriate actions on the compliance process
- Retain inspection and air emission documentation for 5 years

EH&S Director

- Liaison with the VP of Facilities, Planning, and Engineering
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Annual Training – Environmental Management Systems and Environmental Awareness

Task/Activity Description:

For the communication of environmental programs and environmental management systems, the EPP provides training on an annual basis for Maintenance and Operations staff. This training introduces and reinforces environmental management system principles, waste management practices specific to maintenance, and environmental concerns and compliance requirements for storm water, air emissions, hazardous materials management, and spill prevention and countermeasures. The training is lead by an instructor on an annual basis, and the training materials are available on the EHS web page.

Key Control Points:

- Communicate environmental compliance requirements and environmental management concepts to personnel who provide preventative maintenance for UTHSC-H buildings.

Related Forms, Records, SOPs:

- [Environmental Awareness and Environmental Management Systems for Facility Personnel](#)

Personnel Responsible:

Building Maintenance Manager

- Ensure AE maintenance staff attend training

Manager/Safety Specialists, EPP

- Develop training materials and submit updates to for web page
- Present training materials
- Document training by obtaining a sign in sheet with all participants listed, deliver sign in sheet to EH&S administrative assistant who will enter names of personnel trained into a training data base

Director, EHS

- Provide management review
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