

University of Pittsburgh Safety Manual	EH&S Guideline Number: 01-018	
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REFRIGERANT LEAK RESPONSE GUIDELINE

1. GENERAL

The purpose of this guideline is to establish a procedure for responding to significant releases of refrigerant throughout University facilities. When a refrigerant gas detector signals an alarm, the building engineer or other person noting the alarm should contact Pitt Police at 412-624-2121. The Police will contact the Department of Environmental Health and Safety.

Chiller plants pose the greatest risk of hazardous release of refrigerant. The two main chiller plants are located in Posvar Hall and the Petersen Events Center. Smaller building specific or localized centrifugal chillers are located in BST3, the Bioengineering Center and Victoria Hall. A stand-by chiller is located in Hillman Library.

2. RESPONSIBILITIES

Department of Environmental Health and Safety

- Review these guidelines at least every three years and revise as necessary.
- Conduct annual training for Building Engineers and the appropriate trades groups on refrigerant safety.
- Maintain training records.
- Act as response coordinator and safety officer during a release that does not involve City of Pittsburgh response.
- Monitor medical surveillance needs and maintain records in confidential manner.

University Police

- Notify EH&S, if a report of an alarm for a refrigerant leak is received.
- Respond to building of alarm and assist other team members.
- Act as Incident Commander during external emergency response by coordinating emergency communication, building evacuation if deemed necessary, crowd control and other emergency needs for the response team.

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Facilities Management

- Provide management support to foremen, chief engineer and supervisors in coordinating operations and maintenance of the chiller plants.
- Perform all required preventive maintenance on systems to maintain refrigerant detection alarms, sensors, ventilation, and chiller equipment.
- Prevent leaks as feasible by conducting proper preventive maintenance and refrigerant handling guidelines.
- Install signage at all entrances to areas with significant risk of refrigerant release (as assessed and determined by EH&S).
- Maintain accurate inventory records of refrigerant type and quantity stored in each area.

3. PROCEDURE

3.1. Areas with Potential for Significant Release of Refrigerants (e.g. chiller areas)

Areas with potential for significant release of refrigerants (e.g. chiller areas) must be constructed and maintained in accord with the International Building Codes. The following are clarifications:

- Alarms will be audible and visible both inside and outside these spaces.
- A leak detection system for refrigerants must be installed. Detectors should monitor the refrigerant concentration in ppm output that will be displayed locally.
- When the building is equipped with a building automation system (BAS), the leak detection system must be monitored by the BAS and send a refrigerant alarm to the engineers and/or Facilities Management. [e.g. Posvar chillers to remotely display at the Engineers' Office].
- Any door must have an exterior sign that reads:
 - “DANGER: Refrigerant Gas (Asphyxiation Hazard)”
 - “When alarm sounds, Do Not Enter Room. Vacate Area At Once”

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3.2. Response to Refrigerant Leaks

Upon notice of a refrigerant release or alarm

- 3.2.1. If the individual is within the area, he/she should immediately evacuate and call Pitt Police at 412-624-2121 notifying them of the leak, approximate rate and potential quantity if known.
- 3.2.2. University Police will notify City of Pittsburgh Emergency Response via 911. If Facilities Management receives a report of a refrigerant leak from a source other than the University Police, they should contact University Police and EH&S.
- 3.2.3. Emergency response personnel from the City of Pittsburgh must don appropriate personal protective equipment including self-contained breathing apparatus (SCBAs) for safe entry (and possible rescue) into the refrigerant leak area. The incident will be evaluated, and additional personnel called in as necessary to assure a safe and effective response.
- 3.2.4. University Police will send an officer to the building to act as Incident Commander.
- 3.2.5. No one shall enter the area of the refrigerant leak, unless they have the appropriate respiratory protection and have been properly trained in the SCBA.
- 3.2.6. If the source of the leak cannot be shut down remotely, it should be allowed to leak down utilizing ventilation, so responders may enter without personal protective equipment after verification by calibrated sampling equipment.
- 3.2.7. Once the leak is controlled and the response is complete, EH&S, Facilities Management and the University Police will conduct an after-action review. EH&S will document the incident and keep a record on file.