

## REFRIGERANT LEAK DETECTORS FOR CHILLERS

### ISSUE:

Refrigerant leak detectors and monitors for new and existing chillers for personnel safety.

### BACKGROUND:

For new chillers, the Consultants generally specify refrigerant leak detectors and monitors, but fail to specify them for existing chillers even if they are located in the same mechanical equipment room.

### DISCUSSION:

American Society of Heating, Refrigerating & Air-conditioning Engineers (ASHRAE) Standard 15-94 states:

*"Care should be taken to avoid stagnant pockets of refrigerant vapors by proper location of ventilation inlet and exhaust openings (all commonly used refrigerants except ammonia [R-717] are heavier than air). All machinery rooms are now required to have detectors that will activate an alarm and mechanical ventilation at a value not greater than the corresponding TLV-TWA (or toxicity measure consistent therewith)".*

The safety hazard can be caused by any chiller, new or existing, due to refrigerant leak. Therefore, refrigerant leak detectors and monitors should be provided for both new and existing chillers. Refrigerant leak detectors and monitors are not part of a chiller and must be specified as separate items.

### RECOMMENDATIONS:

1. Follow ASHRAE Standard 15-94 recommendations for personnel safety.
2. Specify refrigerant leak detectors and monitors for new and existing chillers if they are located in the same room. If the existing chillers are in a separate room, then the leak detectors and monitors should be provided by the medical center as early as possible for these chillers.
3. The leak detectors must be suitable for each type of refrigerant used on chillers.
4. See previous Design Alerts No. 8 and 77 on 'Emergency Shut down of Refrigeration Equipment' and on 'Changes to ASHRAE 15, Safety Code for Mechanical Refrigeration'. Technical information Library (TIL) Web site address: [http://www.va.gov/facmgt/standard/d\\_alert.htm](http://www.va.gov/facmgt/standard/d_alert.htm)

### FOR ADDITIONAL INFORMATION:

Contact Satish Sehgal at 202-565-5032 in Facilities Quality Service (181A).

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DESIGN ALERT