

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555

January 17, 1989

NRC INFORMATION NOTICE NO. 89-04: POTENTIAL PROBLEMS FROM THE USE OF
SPACE HEATERS

Addressees:

All holders of operating licenses or construction permits for nuclear power reactors and test and research reactors.

Purpose:

This information notice is being provided to alert addressees to potential problems from the use of space heaters. It is expected that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

On December 7, 1988, with the Fort Calhoun Station in cold shutdown and de-fueled, an onsite release of toxic chlorine gas occurred. The chlorine gas leaked from a chlorine gas cylinder when the fusible plug melted because of the proximity of a space heater.

The licensee stores the chlorine gas cylinders, used in the purification process of Missouri River water for plant cooling systems, in a ventilated, enclosed room approximately 4 by 6 feet. To keep the cylinders warm in preparation for use, a 13-kW heater was placed in the room. It appears, based on the licensee's initial investigation, that the fusible plug became overheated because of the close proximity of the heater to the cylinder and melted. The melting point of the plug is approximately 160°F. The melted fusible plug initiated the release of the chlorine gas.

The licensee detected the chlorine leak by the odor of chlorine gas in the area adjacent to the gas bottle storage room. The area was immediately evacuated.

A total of 22 individuals affected by inhalation of the gas were transported to a hospital by the rescue squad. The most severe effect on any individual was minor lung and nasal passage irritation. All individuals have been released from the hospital.

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Licensee personnel removed the leaking cylinder from the storage room to a parking lot that was downwind of the plant. The cylinder was kept in the parking lot until it completely depressurized. No other problems were reported after the cylinder was placed in the parking lot.

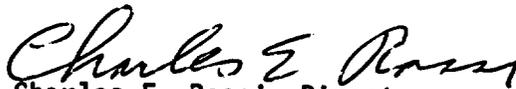
Discussion:

The use of space heaters at plants during the winter months is a common practice. However, the use of space heaters may not have been fully evaluated. It is important that licensees consider the following items before placing a space heater into service:

1. Fire hazards or combustibles in the area of the space heater.
2. Damage to or effect on the operability of equipment by the space heater.
3. Effect of accelerated aging on the environmental qualification of electrical equipment caused by the space heater.

Recipients may wish to review their use of space heaters to preclude problems that could result from inadequate controls.

~~No specific action or written response is required by this information notice. If you have any questions about this matter, please contact one of the technical contacts listed below or the Regional Administrator of the appropriate regional office.~~


Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Technical Contacts: P. C. Wagner, RIV
(817) 860-8127

John Jankovich, NRR
(301) 492-1167

Attachment: List of Recently Issued NRC Information Notices

LIST OF RECENTLY ISSUED
 NRC INFORMATION NOTICES

| Information Notice No. | Subject | Date of Issuance | Issued to |
|------------------------|--|------------------|--|
| 89-03 | Potential Electrical Equipment Problems | 1/11/89 | All fuel cycle and major nuclear materials licensees. |
| 89-02 | Criminal Prosecution of Licensee's Former President for Intentional Safety Violations | 1/9/89 | All holders of a U.S. NRC specific license. |
| 88-23, Supp. 1 | Potential for Gas Binding of High-Pressure Safety Injection Pumps During a Loss-of-Coolant Accident | 1/5/89 | All holders of OLs or CPs for PWRs. |
| 89-01 | Valve Body Erosion | 1/4/89 | All holders of OLs or CPs for nuclear power reactors. |
| 88-46, Supp. 2 | Licensee Report of Defective Refurbished Circuit Breakers | 12/30/88 | All holders of OLs or CPs for nuclear power reactors. |
| 88-101 | Shipment of Contaminated Equipment between Nuclear Power Stations | 12/28/88 | All holders of OLs or CPs for nuclear power reactors. |
| 88-100 | Memorandum of Understanding between NRC and OSHA Relating to NRC-licensed Facilities (53 FR 43950, October 31, 1988) | 12/23/88 | All major nuclear materials licensees and utilities holding CPs and OLs. |
| 88-99 | Detection and Monitoring of Sudden and/or Rapidly Increasing Primary-to-Secondary Leakage | 12/20/88 | All holders of OLs or CPs for PWRs. |
| 88-98 | Electrical Relay Degradation Caused by Oxidation of Contact Surfaces | 12/19/88 | All holders of OLs or CPs for nuclear power reactors. |

OL = Operating License
 CP = Construction Permit

Licensee personnel removed the leaking cylinder from the storage room to a parking lot that was downwind of the plant. The cylinder was kept in the parking lot until it completely depressurized. No other problems were reported after the cylinder was placed in the parking lot.

Discussion:

The use of space heaters at plants during the winter months is a common practice. However, the use of space heaters may not have been fully evaluated. It is important that licensees consider the following items before placing a space heater into service:

1. Fire hazards or combustibles in the area of the space heater.
2. Damage to or effect on the operability of equipment by the space heater.
3. Effect of accelerated aging on the environmental qualification of electrical equipment caused by the space heater.

Recipients may wish to review their use of space heaters to preclude problems that could result from inadequate controls.

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01/03/89

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TechEd
01/04/89

*C/OGCB:DOEA:NRR
CHBerlinger
01/09/89

D/DOEA:NRR
CERossi
01/10/89

Licensee personnel removed the leaking cylinder from the storage room to a parking lot that was downwind of the plant. The cylinder was kept in the parking lot until it completely depressurized. No other problems were reported after the cylinder was placed in the parking lot.

Discussion:

It is important that

The use of space heaters at plants during the winter months is a common practice. The NRC is concerned that the use of space heaters may not have been fully evaluated. Licensees ~~should~~ consider the following items before placing a space heater into service:

1. Fire hazards or combustibles in the area of the space heater.
2. Damage to or effect on the operability of equipment by the space heater.
3. Effect of accelerated aging on the environmental qualification of electrical equipment caused by the space heater.

It is recommended that recipients review their use of space heaters to preclude problems that could result from inadequate controls.

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Licensee personnel removed the leaking cylinder from the storage room to a parking lot which was downwind of the plant. The cylinder was maintained in the parking lot until completely depressurized. No other problems were reported after the cylinder was placed in the parking lot.

Discussion:

The use of space heaters at plants during the winter months is a common practice. The NRC is concerned that the use of space heaters may not have received the level of evaluation that is warranted. Licensees should consider the following items prior to placing a space heater into service:

1. Fire hazards or combustibles in the area of the space heater.
2. Damage or effect on the operability of equipment in the vicinity of the space heater.
3. Effect on the environmental qualification of electrical equipment that could occur due to the space heater causing accelerated aging.

It is recommended that recipients review their use of space heaters to preclude problems which could result from inadequate controls.

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