UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
Washington, D.C. 20555-0001

April 11, 2001

NRC INFORMATION NOTICE 2001-04: NEGLECTED FIRE EXTINGUISHER MAINTENANCE CAUSES FATALITY

Addressees

All holders of licenses for nuclear power, research, and test reactors and fuel cycle facilities.

Purpose

The U.S. Nuclear Regulatory Commission (NRC) is issuing this information notice to alert addressees to the danger of corrosion to fire extinguishers. It is expected that recipients will review the information for applicability and consider actions, as appropriate, to ensure safety at their facilities. However, suggestions contained in this information notice are not NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances

On August 25, 2000, at the Port of Rotterdam, Netherlands, an employee who was trying to extinguish a small fire activated a fire extinguisher, which in-turn exploded, killing the employee. The cause of the explosion was corrosion under a rubber or plastic base protecting the bottom of the extinguisher. This base had trapped moisture next to the shell of the extinguisher accelerating corrosion. The corrosion was hidden by the flange and went unnoticed during inspections. The extinguisher was manufactured in 1987 by Ansul, Belgium, which is not affiliated with Ansul Incorporated, USA.

Following the incident, a number of other extinguishers were checked and other cases of serious corrosion were found. The vendor had conducted maintenance for the first few years after purchase of the extinguishers, but another contractor had been doing the periodic maintenance for the last nine years. The vendor has distributed a warning to owners of these extinguishers saying the annual inspection must include a visual inspection of the extinguishers with the base removed.

A warning was issued on this incident by the Government Industry Data Exchange Program, Agency Action Notice ANN-U-01-02 on October 5, 2000. This notice includes pictures of a corroded cylinder and is posted at the following Web site:
http://www.msha.gov/ALERTS/equipment/ansuldrychem.pdf

Discussion

The NRC endorses the use of the National Fire Protection Associations' (NFPA) Standard for Portable Fire Extinguishers, NFPA 10. The standard provides guidance for the selection, installation, design, inspection, and maintenance of portable fire extinguishers. A general requirement is that extinguishers installed in an environment where they may be subjected to

physical damage or degradation should be adequately protected. This includes wet areas which are conducive to corrosion (cooling towers, intake pumping stations, utility vehicles, etc.). During monthly inspections, visual examination of extinguishers should check for obvious physical damage, such as corrosion, leakage, and denting. If damage is detected, the extinguisher should be removed from service and given applicable maintenance. NFPA 10 requires fire extinguisher maintenance to be conducted at least annually and some extinguishers get an internal as well as an external examination. In addition to annual maintenance, hydrostatic testing is required every 5 to 12 years, depending on the type of extinguisher. Extinguishers that fail to pass visual examination or hydrostatic tests are marked "CONDEMNED" and should never be reused. It should also be noted that fire extinguishers are pressure vessels and some facilities elect to use a fire equipment servicing contractor to maintain and recharge their fire extinguishers.

Conclusion

Fire extinguishers are often the first line of defense in fire suppression, and should be readily available to suppress a fire in its incipient stages. Fire extinguishers should not constitute a hazard to the personnel and property they are designed to protect. Proper installation, inspection, and maintenance by qualified personnel should ensure fire extinguishers have a long service life.

This information notice requires no specific action or written response. If you have any questions about the information in this notice, please contact one of the technical contacts listed below or your facility's project manager.

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Attachments:
1. List of Recently Issued NRC Information Notices
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LIST OF RECENTLY ISSUED
NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
2001-03	Incident Reporting Requirements for Radiography Licensees	04/06/01	All industrial radiography licensees
2001-02	Summary of Fitness-for-Duty Program Performance Reports for Calendar Years 1998 and 1999	03/28/01	All holders of operating licenses for nuclear power reactors, and licensees authorized to possess or use formula quantities of strategic special nuclear material (SSNM) or to transport formula quantities of SSNM
2001-01	The Importance of Accurate Inventory Controls to Prevent the Unauthorized Possession of Radioactive Material	03/26/01	All material licensees
2000-17, Supp. 2	Crack in Weld Area of Reactor Coolant System Hot Leg Piping at V.C. Summer	02/28/01	All holders of operating licenses for nuclear power reactors except those who has ceased operations and have certified that fuel has permanently removed from reactor vessel
2000-22	Medical Misadministrations Caused by Human Errors Involving Gamma Stereotactic Radiosurgery (GAMMA KNIFE)	12/18/00	All medical use licensees authorized to conduct gamma stereotactic radiosurgery treatments
2000-21	Detached Check Valve Disc not Detected by Use of Acoustic and Magnetic Nonintrusive Test Techniques	12/15/00	All holders of OLs for nuclear power reactors except those who have ceased operations and have certified that fuel has been permanently removed from the reactor
2000-20	Potential Loss of Redundant Safety Related Equipment Due to Lack of a High-Energy Line Break Barrier	12/11/2000	All holders of operating licenses or construction permits for nuclear power reactors

OL = Operating License
CP = Construction Permit

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2001-01	The Importance of Accurate Inventory Controls to Prevent the Unauthorized Possession of Radioactive Material	03/26/01	All material licensees.
2000-22	Medical Misadministrations Caused by Human Errors Involving Gamma Stereotactic Radiosurgery (GAMMA KNIFE)	12/18/00	All medical use licensees authorized to conduct gamma stereotactic radiosurgery treatments.
2000-19	Implementation of Human Use Research Protocols Involving U.S. Nuclear Regulatory Commission Regulated Materials	12/05/2000	All medical use licensees.
2000-18	Substandard Material Supplied by Chicago Bullet Proof Systems	11/29/2000	All 10 CFR Part 50 licensees and applicants. All category 1 fuel facilities. All 10 CFR Part 72 licensees and applicants.
2000-16	Potential Hazards Due to Volatilization of Radionuclides	10/5/2000	All licensees that process unsealed byproduct material.
2000-15	Recent Events Resulting in Whole Body Exposures Exceeding Regulatory Limits	9/29/2000	All radiography licensees.
2000-12	Potential Degradation of Firefighter Primary Protective Garments	9/21/2000	All holders of licenses for nuclear power, research, and test reactors and fuel cycle facilities.
2000-11	Licensee Responsibility for Quality Assurance Oversight of Contractor Activities Regarding Fabrication and Use of Spent Fuel Storage Cask Systems	8/7/2000	All U.S. NRC 10 CFR Part 50 and Part 72 licensees, and Part 72 Certificate of Compliance holders.