

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

August 18, 1988

NRC INFORMATION NOTICE NO. 88-64: REPORTING FIRES IN NUCLEAR PROCESS  
SYSTEMS AT NUCLEAR POWER PLANTS

Addressees:

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

Purpose:

This information notice is being provided to alert addressees to the importance of prompt reporting to the NRC of fires in nuclear process systems at nuclear power plants. These incidents involve ignition, detonation, burns, combustion, explosion, and the like, of solid, liquid, or gaseous material in safety and nonsafety related nuclear process systems. 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 February 27, 1988, a fire lasting more than ten minutes occurred in the off-gas system charcoal beds at Grand Gulf while the plant was at 100 percent power. A hydrogen detonation caused the fire. The charcoal beds were isolated and power was reduced to 55 percent to reduce off-gas radiation release levels, although no radioactive materials were released as a result of this fire. A nitrogen purge was used to extinguish the fire.

On June 20, 1986, a test of the temperature reducing capability of the non-safety related off-gas vault refrigeration system was performed at the Perry plant. External radiant space heaters were used to raise the temperatures of the charcoal bed vessel and equipment. Dry instrument air was blown through the charcoal beds to simulate system gas flow. The test was stopped when the charcoal beds caught fire. A nitrogen purge of the charcoal beds was used to extinguish the fire. The test resumed on July 6, 1986. The charcoal beds again caught fire, and the test was stopped. A nitrogen purge was again used to extinguish the fire. No radioactive releases resulted from either fire.

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Discussion:

For each of the fires at the Perry plant, the licensee declared an Unusual Event and notified the NRC Operations Center. However, the fire at Grand Gulf was not reported to the NRC Operations Center, because Grand Gulf defines an unusual event as a fire lasting more than ten minutes in a safety related area.

Various NRC documents refer to fires that should be reported to the NRC Operations Center. NUREG-0654, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," lists a fire within the plant lasting more than 10 minutes as an example of a condition that would require notifying the NRC of an Unusual Event. Accordingly, fire in a process system lasting more than 10 minutes would be an adequate criterion for declaring an Unusual Event in accordance with the Emergency Plans of most licensees.

NUREG-1022, "Licensee Event Report System," and Supplement No. 1 thereto provide information and guidance on notifying the NRC Operations Center per 10 CFR 50.72 and on preparing licensee event reports per 10 CFR 50.73. These documents contain examples of potentially reportable events, several of which deal with various aspects of fires.

It is important that recipients notify the NRC Operations Center of events involving fires in nuclear process systems at nuclear power plants in a timely manner. Timely reporting of events ensures that the NRC can properly respond, including alerting or informing other governmental agencies of the potential or resultant consequences, as appropriate.

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact the technical contact 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 Contact: Richard J. Jolliffe, AEOD  
(301) 492-7159

Attachment: List of Recently Issued NRC Information Notices

LIST OF RECENTLY ISSUED  
NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
88-63	High Radiation Hazards from Irradiated Incore Detectors and Cables	8/15/88	All holders of OLS or CPs for nuclear power reactors, research reactors and test reactors.
88-62	Recent Findings Concerning Implementation of Quality Assurance Programs by Suppliers of Transport Packages	8/12/88	All holders of NRC quality assurance program approval for radioactive material packages.
88-61	Control Room Habitability - Recent Reviews of Operating Experience	8/11/88	All holders of OLS or CPs for nuclear power reactors.
88-60	Inadequate Design and Installation of Watertight Penetration Seals	8/11/88	All holders of OLS or CPs for nuclear power reactors.
88-04, Supplement 1	Inadequate Qualification and Documentation of Fire Barrier Penetration Seals	8/9/88	All holders of OLS or CPs for nuclear power reactors.
88-59	Main Steam Isolation Valve Guide Rail Failure at Waterford Unit 3	8/9/88	All holders of OLS or CPs for nuclear power reactors.
88-58	Potential Problems with ASEA Brown Boveri ITE-51L Time-Overcurrent Relays	8/8/88	All holders of OLS or CPs for nuclear power reactors.
88-57	Potential Loss of Safe Shutdown Equipment Due to Premature Silicon Controlled Rectifier Failure	8/8/88	All holders of OLS or CPs for nuclear power reactors.
88-56	Potential Problems with Silicone Foam Fire Barrier Penetration Seals	8/4/88	All holders of OLS or CPs for nuclear power reactors.

OL = Operating License  
CP = Construction Permit