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UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

May 15, 1986

IE INFORMATION NOTICE NO. 86-35: FIRE IN COMPRESSIBLE MATERIAL AT
DRESDEN UNIT 3

Addressees:

All nuclear power reactor facilities holding an operating license (OL) or a construction permit (CP).

Purpose:

This notice is being issued to advise recipients of the circumstances surrounding a fire which occurred at Dresden Unit 3 on January 20, 1986. It is expected that recipients will review the information for applicability to their facilities and consider actions, if appropriate, to determine whether a similar fire hazard exists at their facilities. No specific action or response is required by this notice.

Description of Circumstances:

Dresden Unit 3 is a 773 MWe BWR with a typical "light bulb" Mark I drywell, which includes a free-standing steel containment vessel. A reinforced concrete shield wall surrounds the containment vessel. To allow for thermal and pressure expansion and contraction under design-basis conditions, an annular space of about 2 inches is provided between the vessel and the shield wall. After the vessel was erected and pressure tested, a composite urethane foam and fiberglass sheet was glued to the external surfaces of the vessel. This method of application provides a compressible fill in the space between the vessel and the concrete to ensure that adequate freedom for motion is maintained.

Dresden Unit 3 is replacing certain pipe that is part of the reactor coolant pressure boundary. In connection with this work, a pipe which penetrates the shield wall was being removed using an arc-air cutting technique. The sleeve in the shield wall through which the pipe passes slopes downward from the outside; hot slag from the pipe cutting inadvertently ran through the sleeve and contacted the urethane foam. The small fire which started was thought to have been promptly extinguished.

Some time later, personnel working inside the drywell noted that the inner surface of the vessel was heated by a continuing fire such that the paint was discolored in sizeable local areas. The station fire brigade reviewed plant records and identified the presence of the combustible foam in the annular space. Water was applied through the penetration where the fire apparently


started as well as through adjacent penetrations. The temperature of the inside surface of the steel drywell was monitored and was determined to have returned to normal about 12½ hours after the fire was first detected.

Discussion:

The licensee is committed to provide to the NRC an extensive evaluation of damage that may have been done by the fire and the repairs (if any) that may be required, the methods of accomplishment, the consequences of a recurrence of a fire in this or any similar space where a significant fraction of the local volume may be occupied by combustible foam, and methods of detection and suppression of any potential future fire. The NRC also has requested that the licensee consider and discuss the matter of conformance to Appendix R of 10 CFR 50. When the requested information is received the NRC will consider whether further action is required.

The reactor was shut down and defueled at the time of the fire, and resolution of NRC concerns will be required before restart. The event is discussed in greater detail in NRC Inspection Report No. 56-249/86006 (DRSS).*

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


Edward L. Jordan, Director
Division of Emergency Preparedness
and Engineering Response
Office of Inspection and Enforcement

Technical Contact: James Henderson, IE
(301) 492-9654

Attachment: List of Recently Issued IE Information Notices

*NRC Inspection Report 50-249/86006 (DRSS), available for review at the NRC Public Document Room, 1717 H St. NW, Washington, DC; the NRC Local Document Room, Morris Public Library, 604 Liberty St., Morris, IL 60450; and the NRC Region III Document Room, 799 Roosevelt Road, Glen Ellyn, IL 60137.

LIST OF RECENTLY ISSUED
IE INFORMATION NOTICES

Information Notice No.	Subject	Date of Issue	Issued to
86-34	Improper Assembly, Material Selection, And Test Of Valves And Their Actuators	5/13/86	All power reactor facilities holding an OL or CP
86-33	Information For Licensee Regarding The Chernobyl Nuclear Plant Accident	5/6/86	Fuel cycle licensees and Priority 1 material licensees
86-32	Request For Collection Of Licensee Radioactivity Measurements Attributed To The Chernobyl Nuclear Plant Accident	5/2/86	All power reactor facilities holding an OL or CP
86-31	Unauthorized Transfer and Loss of Control of Industrial Nuclear Gauges	5/6/86	All power reactor facilities holding an OL or a CP
86-30	Design Limitations of Gaseous Effluent Monitoring Systems	4/29/86	All power reactor facilities holding an OL or a CP
86-29	Effects of Changing Valve Motor-Operator Switch Settings	4/25/86	All power reactor facilities holding an OL or a CP
86-28		4/28/86	
86-27	Access Control at Nuclear Facilities	4/21/86	All power reactor facilities holding an OL or CP, research and nonpower reactor facilities, and fuel fabrication & processing facilities
86-26	Potential Problems In Generators Manufactured By Electrical Products Incorporated	4/17/86	All power reactor facilities holding an OL or CP

OL = Operating License
CP = Construction Permit