

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

January 23, 1985

IE INFORMATION NOTICE NO. 85-05: PIPE WHIP RESTRAINTS

Addressees:

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

Purpose:

This information notice is provided to alert recipients of a potentially significant problem pertaining to the energy absorbing material used in pipe whip restraints. It is expected that recipients will review the information for applicability to their facilities and consider actions, if appropriate, to preclude a similar problem occurring at their facilities. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

The Byron Nuclear Generating Station retested the energy absorbing material used in the pipe whip restraints and on October 31, 1984, reported that the dynamic crush strength of some samples was considerably lower than the values used in the design. The "6 KSI" material supplied by HEXCEL/MCI Division should have a strength between 5,400 and 7,000 psi. The manufacturer's test results were between 5,800 and 6,200 psi, but 40% of the material from Byron had a strength between 3,800 and 4,500 psi. In one instance, the dynamic crush strength was only 2,700 psi.

The function of the material is to slow the motion of major piping, such as the main steam line, in the event of a double-ended guillotine pipe break. The material is contained within the pipe whip restraint. This structure is not intended to serve as a restraint in normal operation or seismic loading.

The material consists of stainless steel sheets formed into a honeycomb shape and joined by a nickel brazing alloy. The product is in the form of rectangular plates up to 36 in. in length, width, or depth.

HEXCEL manufactured the material for the Byron Nuclear Generating Station in 1978 and 1979. A recent audit by the Office of Inspection and Enforcement found that an acceptable quality assurance program was not in effect during the period from 1978 to 1982. This material has been supplied by HEXCEL to other nuclear generating stations. It is not known if the material supplied by other vendors was made by HEXCEL.

The licensee is conducting a further investigation and assessing the impact on the unit. HEXCEL is continuing their internal investigation. It should be noted that separate from this specific problem the NRC is presently reviewing the pipe break criteria to determine if some whip restraints may be eliminated.

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 NRC regional office or this office.



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

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Attachment:  
List of Recently Issued IE Information Notices

Attachment  
IN 85-05  
January 23, 1985

LIST OF RECENTLY ISSUED  
IE INFORMATION NOTICES

Information Notice No.	Subject	Date of Issue	Issued to
85-04	Inadequate Management Of Security Response Drills	1/17/85	All power reactor facilities holding an OL or CP, & fuel fabrication & processing facilities
85-03	Separation Of Primary Reactor Coolant Pump Shaft And Impeller	1/15/85	All pressurized water power reactor facilities holding an OL or CP
85-02	Improper Installation And Testing Of Differential Pressure Transmitters	1/15/85	All power reactor facilities holding an OL or CP
85-01	Continuous Supervision Of Irradiators	1/10/85	All material licensees possessing irradiators that are not self-shielded and contain more than 10,000 curies of radioactive material
84-94	Reconcentration Of Radionuclides Involving Discharges Into Sanitary Sewage Systems Permitted Under 10 CFR 20.303	12/21/84	All NRC materials licensees other than licensees that use sealed sources only
84-93	Potential For Loss Of Water From The Refueling Cavity	12/17/84	All power reactor facilities holding an OL or CP
84-92	Cracking Of Flywheel On Cummins Fire Pump Diesel Engines	12/17/84	All power reactor facilities holding an OL or CP
84-91	Quality Control Problem Of Meteorological Measurements Problems	12/10/84	All power reactor facilities holding an OL or CP

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OL = Operating License  
CP = Construction Permit