

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

May 22, 1989

NRC INFORMATION NOTICE NO. 89-48: DESIGN DEFICIENCY IN THE TURBINE-
DRIVEN AUXILIARY FEEDWATER PUMP
COOLING WATER SYSTEM

Addressees:

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

Purpose:

This information notice is being provided to alert addressees to a design deficiency in a turbine-driven auxiliary feedwater pump cooling water system. 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 April 13, 1989, the licensee for the Zion Station identified a design deficiency in the turbine-driven auxiliary feedwater (AFW) pump cooling water system. The deficiency was created when a modification was made to the turbine-driven AFW pump in order to satisfy the AC power independence criterion. This modification changed the pump's cooling water supply from the service water system to the auxiliary feedwater system. The cooling water now comes from the fifth stage leakoff of the AFW pump and is supplied to the pump's lube oil cooler, the AFW turbine governor, and the AFW turbine bearings at 75 psig by a pressure-regulating valve. The cooling water is then returned to the AFW pump suction line. The deficiency would have occurred when the AFW pump suction was aligned to its emergency supply (service water) rather than its normal supply (the condensate storage tank). In this emergency lineup, the suction pressure will increase to approximately 90 psig. Because the AFW pump cooling water pressure would be below the AFW pump suction pressure, AFW pump cooling water flow would be lost. This loss of cooling water flow could eventually lead to overheating of the AFW pump turbine bearings and failure of the AFW pump turbine.

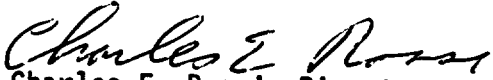
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Discussion:

The licensee made a temporary modification in the AFW pump cooling water return line configuration to correct this design deficiency. A permanent modification is under development for future installation.

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: Jared Wermiel, NRR
(301) 492-0870

Attachment: List of Recently Issued NRC Information Notices

LIST OF RECENTLY ISSUED
NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
89-47	Potential Problems With Worn or Distorted Hose Clamps on Self-Contained Breathing Apparatus	5/18/89	All holders of OLs or CPs for nuclear power reactors and fuel facilities.
89-46	Confidentiality of Exercise Scenarios	5/11/89	All holders of licenses for fuel cycle facilities and byproduct material licensees having an approved emergency response plan.
89-45	Metalclad, Low-Voltage Power Circuit Breakers Refurbished with Sub-standard Parts	5/8/89	All holders of OLs or CPs for nuclear power reactors.
89-44	Hydrogen Storage on the Roof of the Control Room	4/27/89	All holders of OLs or CPs for nuclear power reactors.
88-82, Supp. 1	Torus Shells with Corrosion and Degraded Coatings in BWR Containments	5/2/89	All holders of OLs or CPs for BWRs.
89-43	Permanent Deformation of Torque Switch Helical Springs in Limitorque SMA-Type Motor Operators	5/1/89	All holders of OLs or CPs for nuclear power reactors.
88-97, Supp. 1	Potentially Substandard Valve Replacement Parts	4/28/89	All holders of OLs or CPs for nuclear power reactors.
89-42	Failure of Rosemount Models 1153 and 1154 Transmitters	4/21/89	All holders of OLs or CPs for nuclear power reactors.
89-41	Operator Response to Pressurization of Low-Pressure Interfacing Systems	4/20/89	All holders of OLs or CPs for nuclear power reactors.

OL = Operating License
CP = Construction Permit

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*SAD/DEST:NRR
ATHadanf
05/09/89

D/DOEA:NRR
CERossi
05/16/89
*D/DEST:NRR
LCShao
05/10/89

*C/OGCB:DOEA:NRR
CHBerlinger
05/15/89
*RPB:ARM
TechEd
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jsw
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AT
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