

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

October 14, 1988

NRC INFORMATION NOTICE NO. 88-82: TORUS SHELLS WITH CORROSION AND
DEGRADED COATINGS IN BWR CONTAINMENTS

Addressees:

All holders of operating licenses or construction permits for boiling water reactors (BWRs).

Purpose:

This information notice is being provided to alert addressees to the discovery of suppression pool steel shells with corrosion and degraded coatings in BWR containments. 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:

During recent NRC inservice inspections (50-220/88-09 and 50-410/88-09) at the Nine Mile Point Nuclear Station (NMPNS), inspectors found that the inside surface of the torus shell at Unit 1, which was designed and constructed as uncoated, had corroded. Furthermore, the NRC inspectors' independent thickness measurements of the torus shell revealed several areas in which the thickness was at or below the minimum specified wall thickness. Based on additional analysis, it was determined that the shell thickness is acceptable until June 1989 at which time the licensee will perform an ultrasonic reexamination of the torus shell. Based on the findings, the licensee is committed to take corrective actions.

A recent survey of BWRs located in NRC Region I also revealed that some Mark I tori had experienced degradation of the coating and that cleaning and recoating were required. The cause of these degradations is not yet fully understood.

Discussion:

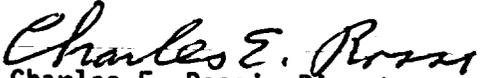
Although the torus shell thinning due to corrosion observed at NMPNS Unit 1 and the coating degradation in tori of other Region I plants have no immediate effect on plant operation, the NRC staff considers these deficiencies to be significant because the measured corrosion rates of torus shells are greater than the corrosion rates assumed as part of the original design. The torus shell degradation, if it continues, may jeopardize containment integrity.

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Many licensees of BWR plants are currently required to perform periodic visual inspections of the suppression pool steel shells or liners in accordance with their technical specifications, but the methods used by licensees vary. Some licensees examine only those portions of the torus above the water line, and others employ divers or use cameras to inspect submerged surfaces. Such inspections can only detect general degradation. Localized degradation such as pitting can be detected most effectively by draining the torus and inspecting it under dry conditions. In view of the importance of the containment to the health and safety of the general public, licensees may wish to review and evaluate the adequacy of their containment surveillance programs to determine if any problems similar to those described above exist at their plants.

This information notice also applies to suppression pools for other types of BWR containments (Mark II and Mark III), whether built of steel or of concrete with a steel liner, because the steel shell or liner may degrade through disintegration of the paint system and /or corrosion of the base metal.

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: Chen P. Tan, NRR
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Attachment: List of Recently Issued NRC Information Notices

LIST OF RECENTLY ISSUED
 NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
88-81	Failure of Amp Window Indent Kynar Splices and Thomas and Betts Nylon Wire Caps During Environmental Qualification Testing	10/7/88	All holders of OLs or CPs for nuclear power, test, and research reactors.
88-80	Unexpected Piping Movement Attributed to Thermal Stratification	10/7/88	All holders of OLs or CPs for PWRs.
88-79	Misuse of Flashing Lights for High Radiation Area Controls	10/7/88	All holders of OLs or CPs for nuclear power reactors.
88-69, Supp 1	Movable Contact Finger Binding in HFA Relays Manufactured by General Electric (GE)	9/29/88	All holders of OLs or CPs for nuclear power reactors.
88-78	Implementation of Revised NRC-Administered Requalification Examinations	9/22/88	All holders of OLs or CPs for nuclear power reactors.
88-77	Inadvertent Reactor Vessel Overfill	9/22/88	All holders of OLs or CPs for BWRs.
88-76	Recent Discovery of a Phenomenon not Previously Considered in the Design of Secondary Containment Pressure Control	9/19/88	All holders of OLs or CPs for nuclear power reactors.
88-75	Disabling of Diesel Generator Output Circuit Breakers by Anti-Pump Circuitry	9/16/88	All holders of OLs or CPs for nuclear power reactors.
88-74	Potentially Inadequate Performance of ECCS in PWRs During Recirculation Operation Following a LOCA	9/14/88	All holders of OLs or CPs for W and B&W-designed nuclear power reactors.

OL = Operating License
 CP = Construction Permit