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OFFICE OF INSPECTION AND ENFORCEMENT
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ISOLATION CONDENSER TUBE FAILURE

DESCRIPTION OF CIRCUMSTANCES:

On February 12, 1976, an electrical fault in the main transformer at the Millstone Unit 1 facility caused an automatic shutdown of the reactor plant from full power. Shortly after the shutdown, a small amount of radioactive steam and water was discharged from the isolation condenser vent as a result of tube failure in the isolation condenser. This discharge of radioactive water and steam caused low levels of contamination on the ground immediately outside of the reactor building. This contamination was removed and no resulting contamination was found outside the plant area.

Subsequent visual inspection of the isolation condenser tube revealed that one tube had a one inch hole in the tube wall at the "U" bend. Metallographic examination showed cracking of the tube in both the bend and in the straight section adjacent to the bend. Eddy current testing of the remaining tubes indicated that approximately 30 percent of the tubes have extensive cracking to a depth greater than that allowed for minimum wall thickness. In addition, other indications of possible tube defects have been found in the region of the tube sheet. These possible tube defects are currently under evaluation.

ACTIONS REQUIRED BY LICENSEES:

All licensees of BWR power reactor facilities with isolation condensers or an equivalent installation are to take the following actions:

ACTIONS REQUIRED BY LICENSEES:

1. Provide a description of the steps taken or planned to:
 - a. Assure that the integrity of the isolation condenser tubes is being maintained during operations. This assurance may be obtained by the implementation of tube leak detection procedures such as procedural controls for the temperature, volume and isotopic content of the shell side water.
 - b. Assure that the margin of isolation condenser tube integrity is maintained. This assurance may be obtained by periodic nondestructive examinations of the tubes. In the event nondestructive examinations of the tubes cannot be performed, hydrostatic testing, in accordance with the 1974 ASME Section XI requirements, is an acceptable alternate. The next nondestructive or hydrostatic testing should be performed at the first practicable opportunity, but no later than the next refueling outage.
 - c. Assure prompt detection and operator response to an isolation condenser tube break.
2. A report of the above descriptions and plans should be submitted within 20 days after receipt of this bulletin.
3. A report of the performance, the results, and the evaluation of the next nondestructive examination of the tubes should be submitted within 30 days following completion of the examination.

Reports should be submitted to the Director of the NRC Regional Office, and a copy should be forwarded to the NRC Office of Inspection and Enforcement, Division of Reactor Inspection Programs, Washington, D. C. 20555.

Approval of NRC requirements for reports concerning possible generic problems has been obtained under 44 U.S.C. 3512 from the U. S. General Accounting Office.
(GOA Approval B-180255(R0072), expires 7/31/77.)