

TMI UNIT 1  
INSERVICE INSPECTION  
FOR  
EFFECTS OF REACTOR COOLANT LEAKAGE

A. Inspection Requirements

(1) During the period of reactor shutdown, refueling and startup for each scheduled, normal refueling outage, the accessible pressure-retaining components of the reactor coolant pressure boundary will be visually examined for evidence of reactor coolant leakage.

This examination (which will not require the removal of insulation) will be performed as follows:

(a) The exposed surface and joints of insulation which are accessible for direct visual examination will be visually inspected for evidence of reactor coolant leakage. This examination will be performed while the system is under a test pressure not less than the nominal operating pressure at rated power.

Most of the inaccessible surfaces are on the reactor vessel. The reactor vessel closure will be examined for evidence of leakage on the flange surfaces and for CRD and instrument nozzle leakage. The reactor vessel flange surfaces and the insulation under the reactor vessel lower head and incore instrument nozzles will likewise be examined. The remaining external surfaces of the reactor vessel are not accessible during refueling outage. These areas will be examined for evidence of leakage during scheduled inservice inspections of reactor vessel seam welds.

(b) The floor areas (or equipment) directly underneath these components which are accessible for direct visual examination will be visually inspected for evidence of reactor coolant leakage. This examination will be performed either while the system is under a test pressure not less than the nominal operating pressure at rated power or immediately after it has been at that pressure.

(2) Prior to reactor startup following each refueling outage, all connections on pressure-retaining components of the reactor coolant pressure boundary which have been opened during the outage will be visually examined for evidence of reactor coolant leakage. This examination will be performed while the system is under a test pressure not less than the nominal operating pressure at rated power.

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(3) During the conduct of the examination of (1) above, particular attention will be given to the insulated areas of components constructed of ferritic steels to detect evidence of boric acid residues resulting from reactor coolant leakage which might have accumulated during the service period preceding the refueling outage.

(4) The visual examinations of (1) and (2) above will be conducted in conformance with Article IS-211.1 of Section XI of the ASME Boiler and Pressure Vessel Code to the extent required for detection of leakage, and as accessibility permits.

#### B. Corrective Measures

(1) The source of any reactor coolant leakage detected by the examinations of A(1) above will be located by the removal of insulation where necessary and the following corrective measures applied:

(a) Normally expected leakage from component parts (e.g., valve stems) will be minimized by appropriate repairs and maintenance procedures. Where such leakage may reach the surface of ferritic components of the reactor coolant pressure boundary, the leakage will be suitably channeled for collection and disposal.

(b) Leakage from through-wall flaws in the pressure-retaining membrane of a component will be eliminated, either by corrective repairs or by component replacement. Such repairs will conform with the applicable code requirements.

(2) In the event boric acid residues are detected by the examinations of A(3) above, insulation from ferritic steel components will be removed to the extent necessary for examination of the component surfaces wetted by reactor coolant leakage to detect evidence of corrosion.

The following corrective measures will be applied:

(a) An evaluation of the effect of any corroded areas upon the structural integrity of the component will be performed in accordance with the applicable code requirements.

(b) Repairs of corroded areas, if necessary, will be performed in accordance with the applicable code requirements.

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