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THROUGH-WALL CRACKS IN CORE SPRAY PIPING AT DRESDEN-2

DESCRIPTION OF CIRCUMSTANCES:

The Commonwealth Edison Company notified the Region III Office of the Office of Inspection and Enforcement by telephone on January 28, 1975, of the finding of five through-wall cracks in the 10" diameter core spray piping system at the Dresden 2 facility.

The licensee reported that 3 cracks were identified in the "A" core spray loop and 2 cracks were identified in the "B" core spray loop. The cracks were revealed when moisture was observed seeping from them after the pipe insulation was removed in preparation for in-service inspection. The cracks range from 1/8" to 3/4" in length on the outside surface.

The three cracks in the "A" loop are in an approximately 9" long "dutchman" insert which is welded on one end to the reactor vessel nozzle safe-end and on the other end to the core spray inlet piping. The safe-end and dutchman insert are reportedly fabricated from Type 316 stainless steel while the core spray piping is Type 304 stainless steel. Two of these cracks are longitudinal and in the heat affected zone of the weld between the safe-end and dutchman insert. The other crack is circumferential and in the heat affected zone of the weld between the inlet piping and dutchman insert.

The two cracks in the "B" loop are circumferential and on the pipe side of the heat affected zone of the weld between the inlet piping and the dutchman insert.

Volumetric examination of all welds in the core spray lines is currently in progress by the licensee.

ACTION TO BE TAKEN BY LICENSEES:

For all boiling water reactors with operating license:

1. Complete, within 20 days of the date of this Bulletin, the inspection and test program described below. The inspection should be performed generally in accordance with the requirements of Appendix I of the 1974 Edition of Section XI of the ASME Code, except that volumetric

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examination should cover a distance of one pipe radius on each side of the welds. Where necessary for evaluation or confirmation of ultrasonic indications, supplementary examination techniques shall be used.

a. Examine all circumferential welds in each core spray loop up to and including the valve-to-pipe weld in the second isolation valve from the reactor pressure vessel.

   Conduct a system functional test or hydrostatic test on the core spray system piping beyond the second isolation valve.

b. Select for examination a representative sampling of the pressure retaining welds in austenitic piping that is a part of the reactor coolant pressure boundary. This sample should include a minimum of two selected circumferential welds in one loop of each of the piping systems (as applicable to your facility) listed below, and two selected circumferential welds in each representative branch piping run of greater than 2" nominal pipe size in those piping systems listed below.

   1) Main recirculation piping, including jet pump riser.

   2) Low pressure coolant injection system.

   3) Reactor head spray system.

   4) Control rod drive return system.

   5) Standby liquid poison system.

   6) Reactor cleanup system.

   7) Reactor feedwater system.

2. Notify this Office by telephone within 72 hours and in writing within 10 days of your schedule for conducting the examinations and tests described in 1 above.

3. Notify this Office within 24 hours (with written confirmation within 10 days) of their completion, of the results of the examinations and tests conducted in response to this Bulletin. A copy of the written notification of examination results (including all enclosures) should be sent to the Assistant Director for Construction and Operations, Office of Inspection and Enforcement, Nuclear Regulatory Commission, Washington, D. C. 20555.

We would also appreciate your comments regarding the significance and resolution of the problems involving the several cracks which have been revealed in boiling water reactor piping systems in recent months.