

Commonwealth Edison Company
Dresden Generating Station
6500 North Dresden Road
Morris, IL 60450
Tel 815/642-2920



April 20, 1999

JMHLTR: #99-0052

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Dresden Nuclear Power Station, Unit 3
Facility Operating License No. DPR-25
NRC Docket No. 50-249

Subject: Licensee Event Report 1999-003-00, "Reactor Recirculation B Loop, High Pressure Flow Element Venturi Instrument Line Steam Leakage Results in Unit 3 Shutdown Due to Fatigue Failure Of Socket Welded Pipe Joint"

The enclosed Licensee Event Report, which is an interim report, describes the Reactor Recirculation B Loop, High Pressure Flow Element Venturi Instrument Line Steam Leakage Results in Unit 3 Shutdown Due to Fatigue Failure Of Socket Welded Pipe Joint. This condition is being reported pursuant to 10CFR50.73(a)(2)(i)(A), which requires reporting the completion of any nuclear plant shutdown required by the plant's Technical Specifications (TS).

The following actions were taken:

The tee with the failed weld, the two adjacent elbows (to the left and right sides of the run element of the tee), the pipe between the elbows, and approximately 5 inches of the pipe welded to the branch side of the tee were replaced with stainless steel TP 304 (original material is SS TP 316L, that has lower stress allowable).

The old welds were replaced by a stronger weld where the weld leg length along the pipe is twice the socket heights (the old welds leg length along the pipe was equal to the socket height) as recommended in EPRI report TR-107455 which states "Most significantly, increasing the axial weld leg dimension with respect to ASME Code minimums can substantially increase the fatigue strength of the joint and can even counteract the potentially damage effect of weld root defects."). The existing pipes that are welded to the new elbows were polished and non-destructive surface examined by penetrant testing before welding. (PT).

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Prior to the fitting replacement, the unit 3 Reactor Recirculation, A and B Loop, High & Low Pressure Flow Element Venturi Instrument Lines were visually inspected and no noticeable damage or deformation in the pipe or supports were observed.

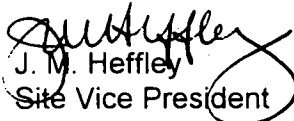
This Correspondence contains the following commitments:

The removed tee and elbow fittings (including approximately one inch of piping welded to all sides of the tee, and one side of each elbow) were sent to Argonne National Lab for further analysis to determine the root cause of failure. The analysis results are expected by May 1999. The corrective actions taken after 1997 weld failure were inadequate/inappropriate. An investigation will be performed to determine the root cause of the deficiency. The results of this investigation and the results of the analysis being performed by Argonne National Lab. will be submitted as a supplement to this LER. (NTS#: 2491809900301)

The Unit 3 Loop B Venturi flow element high-pressure instrument piping and supports analysis will be evaluated. Depending on the results of the root cause analysis of the failed weld and adjacent welds (by Argonne National Lab), the piping systems (for all units and loops) may be modified (if needed) to reduce vibration in the instrument line. (NTS#: 2491809900302).

If you have any questions, please contact Dale Ambler, Dresden Regulatory Assurance Manager at (815) 942-2920 extension, 3800.

Respectfully,


J. M. Heffley
Site Vice President
Dresden Nuclear Power Station

Enclosure

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Dresden Nuclear Power Station