



EVENT DESCRIPTION AND PROBABLE CONSEQUENCES

During normal operation, while performing routine maintenance, leakage was observed adjacent to a 2" flange on the Reactor Water Cleanup System suction piping. Investigation revealed a through wall leak near the piping weld between the 2" flange and the adjoining tee. Further investigation revealed a through wall leak in the spare nozzle of the Electro Chemical Potential Autoclave located upstream of the 2" flange. The Reactor Cleanup System was secured, the flange replaced, and the spare nozzle connection repair welded.

Conductivity monitoring of main coolant was shifted to the recirculation loop sample point during the repairs. The RWCU system was returned to service approximately 19 hours after the discovery. Reactor water chemistry was maintained within Tech. Spec. limits and there were no consequences to the health and safety of the public. A similar incident was reported as RO 77-22/1P.

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS

The cause of the cracks in the Reactor Water Cleanup weld neck flange is Intergranular Stress Corrosion. The cracks initiated on the inside surface parallel to the weld in the sensitized heat affected zone adjacent to the weld and were intergranular in nature. One crack completely penetrated the wall of the flange. No fatigue striations were found. The appearance of the cracking indicates typical boiling water reactor type stress - corrosion cracking with residual stresses from welding or possibly slow cyclic bending stresses as being the source of the tensile stress.

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