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NRC FORM 366 U.S. NUCLEAR REGI					REGULATO	RY COM	MISSION	APPROVED BY OMB NO. 3150-0104 EXPIRES 5/31/95										
LICENSEE EVENT REPORT (LER) ESTIMATED BURDEN PER RESPONSE THIS INFORMATION COLLECTION RE FORWARD COMMENTS REGARDING BUI THE INFORMATION AND RECORDS M (MMBB 7714), U.S. NUCLEAR REGUL WASHINGTON, DC 20555-0001, AND REDUCTION PROJECT (3150-010 MANAGEMENT AND BUDGET, WASHINGT									SE T REQUI BURDE MAN ULATO ID TO 104), GTON,	IO COM EST: 5 AGEMEN ORY COI THE I , OF , DC 2	IPLY WITH 50.0 HRS. IMATE TO IT BRANCH MMISSION, PAPERWORK FICE OF 0503							
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				CON	IPLE	E ONE LINE FO	R EACH	COM	IPONENT	FAILUR	E DESCR	IBED I	N T	HIS REPORT (1	3)			
CAUSE SYSTEM COMPONENT MANUFACTURER		REPORTABLE TO NPRDS		LE S		CAUSE	SYST	EM	COMPONENT	MANUFAÇ	TURE	R RE T	PORTABLE O NPRDS					
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On March 5, 1996, at 1606 hours, with Unit 3 in the run mode at 100% core thermal power, the High Pressure Coolant Injection (HPCI) System was declared inoperable due to a through-wall hole in the HPCI inlet drain pot line 3-2323-1"-LX. The line constitutes part of the HPCI system pressure boundary. The hole was located in a 45 degree elbow upstream of valve AOV 3-2301-29, the HPCI Turbine Steam Supply Drain Pot to Main Condenser Isolation Valve. This line serves to drain condensate from the HPCI turbine steam inlet supply line to the main condenser. The HPCI system was isolated and taken out of service to effect repairs. Technical Specification 3.5.C.2.a was entered and Unit 3 then entered a seven day unplanned TS Limiting Conditions for Operation. The elbow was replaced. Inspection of the elbow determined that the hole developed due to flow accelerated corrosion. Inspection of the piping upstream and downstream of the elbow revealed acceptable wall thickness. Corrective actions include replacement of the elbow and additional evaluation of the materiel condition of the drain line.

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NRC FORM 366A	U.S. NUCLEAR RE	APPROVED BY OMB NO. 3150-0104 EXPIRES 5/31/95					
	LICENSEE EVENT REPORT (LE TEXT CONTINUATION	ESTIMAT THIS I FORWARD THE IN (MNBB 7 WASHING REDUCTI MANAGEN	ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND PURCET WASHINGTON, DC 20503				
	FACILITY NAME (1)	DOCKET NUMBER (2)		LER NUMBER (6	)	PAGE (3)	
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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

EVENT IDENTIFICATION:

High Pressure Coolant Injection inoperable due to a through-wall hole in the inlet drain pot line to the condenser caused by flow accelerated corrosion.

A. PLANT CONDITIONS PRIOR TO EVENT:

Unit: 3	Event Date: 03-05-96	Event Time: 1606
Reactor Mode: Run	Mode Name: N	Power Level: 100%

Reactor Coolant System Pressure: 1005 psig

B. DESCRIPTION OF EVENT:

This report is being submitted in accordance with 10CFR50.73(a)(2)(i)(B), any operation or condition prohibited by the plant's Technical Specifications.

This report is also being submitted in accordance with 10CFR50.73(a)(2)(v), any event or condition that alone could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident.

On February 27, 1996, at 2152 (CST) a small through-wall hole developed on High Pressure Coolant Injection (HPCI) [BJ] inlet drain pot line 3-2323-1"-LX. The line constitutes part of the HPCI system pressure boundary. The hole was located in a 45 degree elbow upstream of valve AOV 3-2301-29, the HPCI Turbine Steam Supply Drain Pot to Main Condenser Isolation Valve. This line serves to drain condensate from the HPCI turbine steam inlet supply line to the main condenser. The through-wall hole was located inside of the Turbine Building. The hole developed in a location of the HPCI piping which could not be isolated for repairs without isolating the HPCI system. The hole provided a leakage path outside of the HPCI system pressure boundary into the Unit 3 Turbine Building. This constituted a condition prohibited by Technical Specification 3/4.6.F.1 because a through-wall hole developed in an ASME Class II piping system.

At 1606 (CST) on March 5, 1996, with Unit 3 in the run mode at 100% rated core thermal power, the HPCI System was isolated and taken out of service (OOS)to effect repairs to the inlet drain pot line to the condenser. Per Technical Specification (TS) 3.5.C.2.a the Unit then entered a seven day unplanned TS Limiting Conditions for Operation (LCO).

At 1820 on March 5, 1996, an ENS notification was made pursuant to 10CFR72(b)(2)(iii)(D) to inform the NRC of the event.

On March 6, 1996, the elbow on inlet drain pot line 3-2323-1"-LX was replaced through station work request number 960018945. Inspection of the elbow determined that the hole developed due to flow accelerated corrosion. Inspection of the piping upstream and downstream of the elbow revealed acceptable wall thickness.

At 1430 on March 6, 1996, the HPCI system was declared operable and the unit exited the seven day LCO.

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NRC FORM 366A (5-92)	U.S. NUCLEAR RE	APPROVED BY OMB NO. 3150-0104 EXPIRES 5/31/95					
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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

## C. CAUSE OF EVENT:

The failure of the piping was due to flow accelerated corrosion as determined by inspection of the elbow. A radiograph of this elbow coupling indicated metal thinning to less than 0.100 inches from the original 0.179 inches for a newly manufactured item. The thinning occurred on the outer radius of the inner pipe surface as a result of the HPCI saturated liquid steam line drains impingement on the elbow's material.

The cause of the event is classified as NRC Cause code B, "Design, Manufacturing, Construction/installation", due to the installed piping material failing to withstand the functional requirements of the system.

## D. SAFETY ANALYSIS:

The safety significance of the drain line hole on the performance of the HPCI system was negligible. Prior to the HPCI System being isolated to repair the elbow, it would have performed its safety function. Line 3-2323-1"-LX drains condensate that accumulates in the inlet drain pot to the condenser. The location of the leak in the affected elbow had no affect on the steam supply or exhaust function of the steam line. The condensate removal function was also not affected.

The through-wall hole was located inside of the Turbine Building. The Turbine Building is maintained at a negative pressure by the ventilation system and all discharges occur through the 2/3 chimney. The 2/3 chimney is continually monitored for radioactive releases. Capability therefore existed to monitor any release through the hole to the Turbine Building. No unmonitored radioactive release occurred that would have exceeded regulatory limits.

Based on the above and the fact that all other Emergency Core Cooling Systems required by Technical Specification 3.5.C.2.a were operable throughout this event, the safety significance is minimal.

NRC FORM 366A U.S. NUCLEAR (5-92)	U.S. NUCLEAR REGULATORY COMMISSION APPROVED BY OMB NO. 3150-0104 EXPIRES 5/31/95					
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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

## CORRECTIVE ACTIONS:

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High Pressure Coolant Injection (HPCI) inlet drain pot line 3-2323-1"-LX was repaired by station work request number 960018945. Repairs included cutting out the elbow and replacing it.

An inspection plan will be developed to evaluate the materiel condition of the drain line downstream from valve 2-2301-54 to valves AOV 2-2301-29 and AOV 2-2301-28 to determine if there are any additional instances of pipe wall thinning. Conditions which are determined to be unacceptable will be corrected with a material less susceptible to flow accelerated corrosion. (2491809600201)

An inspection plan will be developed to evaluate the materiel condition of the drain line downstream from valve 3-2301-55 to valves AOV 3-2301-29 and AOV 3-2301-28 to determine if there are any additional instances of pipe wall thinning. Conditions which are determined to be unacceptable will be corrected with a material less susceptible to flow accelerated corrosion. (2491809600202)

## F. PREVIOUS OCCURRENCES:

There have been no failure cases reported by LERs on Class 1, 2, or 3 piping due to flow accelerated corrosion. There have been previous failures on this line due to flow accelerated corrosion.

G. COMPONENT FAILURE DATA:

None