

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) James A. FitzPatrick Nuclear Power Plant DOCKET NUMBER (2) 050003331 PAGE (3) 1 OF 04

TITLE (4) High Pressure Coolant Injection made inoperable due to motor operated valve failure as a result of procedure deficiency.

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)		
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES		DOCKET NUMBER(S)
03	10	88	88	001	00	04	06	88			05000
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)											

OPERATING MODE (9) 1	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10) 100	20.405(a)(1)(i)	50.36(e)(1)	X 50.73(a)(2)(v)	73.71(e)
	20.405(a)(1)(ii)	50.36(e)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 356A.)
	20.405(a)(1)(iii)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(A)	
	20.405(a)(1)(iv)	50.73(a)(2)(iii)	50.73(a)(2)(viii)(B)	
	20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12)
NAME: W. Verne Childs, Senior Licensing Engineer
TELEPHONE NUMBER: 315 349-6305
AREA CODE: 315

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)										
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS	
D	BJ	MOV-14	P296	Y						

SUPPLEMENTAL REPORT EXPECTED (14) YES (If yes, complete EXPECTED SUBMISSION DATE) X NO
EXPECTED SUBMISSION DATE (15) MONTH DAY YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

EIS codes are in []

During normal operation at 100% rated power on 3/10/88 when required to be operable by Technical Specification 3.5.C, High Pressure Coolant Injection (HPCI) [BJ] was made inoperable when steam supply valve 23-MOV-14 failed to open during surveillance testing.

Automatic Depressurization System [AD], Low Pressure Coolant Injection [BO], Low Pressure Core Spray [BM], and Reactor Core Isolation Cooling [BN] systems were demonstrated operable. These systems are redundant to or back up HPCI, resulting in operation of the plant within the range of accident analyses in the Final Safety Analysis Report.

The motor on 23-MOV-14 was destroyed by excessive current as a result of a procedure deficiency which did not require inspection and lubrication of valve stem and stem nut threads when valves are repacked.

Immediate corrective action was to replace the failed motor and return HPCI to service on 3/11/88 within approximately 23 hours. Long-term corrective action is to revise the valve repacking procedure to require inspection, cleaning, and lubrication of valve stem and stem nut threads. LER-85-025, 86-014, 86-011, and 86-003 are related events in which safety-related valve motors failed due to procedure deficiencies.

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TEXT (If more space is required, use additional NRC Form 365A's) (17)

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Event Description

During normal full power (100% rated) operation at 1230 hours on 3/10/88, High Pressure Coolant Injection (HPCI) [BJ] turbine steam supply valve 23-MOV-14 failed to open in response to an open signal. The HPCI [BJ] system automatic initiation logic was being tested by performance of Surveillance Test ST-4E, titled "HPCI Subsystem Logic Functional Test".

Failure of valve 23-MOV-14 to open resulted in HPCI [BJ] being declared inoperable when the system was required to be operable by Technical Specification 3.5.C. Surveillance to demonstrate the operability of Automatic Depressurization System (ADS) [AD], Low Pressure Coolant Injection (LPCI) [BO], Low Pressure Core Spray (LPCS) [BM], and Reactor Core Isolation Cooling (RCIC) [BN] as required by Technical Specification 4.5.C.1.a was initiated.

At 1415 hours on 3/10/88 during the surveillance testing required by Technical Specification 4.5.C.1.a, RCIC [BN] was also made inoperable for approximately one minute due to a personnel error which resulted in isolation of the RCIC [BN] steam supply (refer to LER-88-002 for details of this event). Personnel performing the surveillance recognized the RCIC [BN] isolation as a personnel error, immediately corrected the error, and restored RCIC [BN] to service.

Following repair of valve 23-MOV-14 and testing to demonstrate operability of HPCI [BJ], the system was returned to service at 1131 hours on 3/11/88, approximately 23 hours after failure.

Cause of Event

Valve 23-MOV-14 failed to open when an open signal was provided by the logic system due to motor failure. Examination of the DC motor revealed destruction of the commutator due to excessive current.

As part of post-work testing following replacement of the motor on valve 23-MOV-14, it was found that peak motor current for unseating the valve in the open direction with a differential pressure of approximately 1,000 psi was unacceptably high.

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TEXT (If more space is required, use additional NRC Form 368A's) (17)

Investigation of the high current revealed that the valve stem and stem nut threads did not have adequate lubrication. Following lubrication, the valve motor current tests were repeated during opening of the valve with a differential pressure of 1,000 psi. A comparison of pre-lubrication and post-lubrication data revealed a peak valve motor unseating current reduction of approximately 50%.

Examination of maintenance records and maintenance procedures reveals that the valve stem of 23-MOV-14 had been repacked to correct a packing leak on 2/24/88. The valve was tested on 2/25/88 with satisfactory results. Review of Maintenance Procedure MP-59.9, titled "Valve Repacking", revealed that the procedure did not include instructions to determine if the valve stem and stem nut threads were adequately lubricated. Packing leaks can wash the lubricants off of the valve stem and stem nut surfaces.

In consideration of the above, the cause of the event was determined to be a result of a procedural inadequacy which did not include evaluation of relubrication of the valve stem and stem nut.

Analysis of Event

HPCI [BJ] is designed to provide makeup water to the reactor in the event of a small Loss of Coolant Accident (LOCA) at a rate of 4,250 gpm with reactor pressure between 150 and 1,120 psig. In the event of failure of the system (or the system being made unavailable for maintenance), the Automatic Depressurization System (ADS) [AD] provides protection for a small break LOCA. ADS is designed to depressurize the reactor so that Low Pressure Coolant Injection (LPCI) [BO] and/or Low Pressure Core Spray (LPCS) [BM] can provide flow to the core for adequate core cooling.

LPCI [BO], LPCS [BM], and ADS [AD] were demonstrated to be fully operable as required by Technical Specification 4.5.C.1.a. RCIC [BN] was also demonstrated to be fully operable except for the short time period noted in the event description above and in LER-88-002. Accordingly, operation of the plant was within the limits of the Technical Specifications and Final Safety Analysis Report.

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Corrective Action

Immediate corrective action was to replace the failed motor and lubricate the valve stem and stem nut threads.

Long-term corrective action is to revise Maintenance Procedure MP-59.9 to require inspection, cleaning, and lubrication of the valve stem and stem nut threads during repacking of manual and power operated valves.

Additional Information

Failed component identification:

- Valve Motor Manufacturer: Peerless-Porter
- Motor Model Number: DS224B
- Manufacturer NPRD Code: P269

LER-85-025, 86-014, 86-011, and 86-003 are related events in which safety-related valve motors failed due to procedure deficiencies.

James A. FitzPatrick
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Radford J. Converse
Resident Manager

April 6, 1988
JAFP-88-0333

United States Nuclear Regulatory Commission
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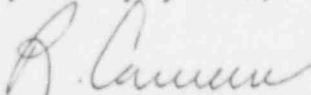
REFERENCE: DOCKET NO. 50-333
LICENSEE EVENT REPORT: 88-001-00

Dear Sir:

Enclosed please find referenced Licensee Event Report in accordance with 10 CFR 50.73.

If there are any questions concerning this report, please contact Mr. W. Verne Childs at (315) 349-6305.

Very truly yours,


RADFORD J. CONVERSE

RJC:WVC:lar

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