

LICENSEE EVENT REPORT (LER)

(See reverse for required number of
digits/characters for each block)ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS
MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS.
REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE
LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD
COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION
AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR
REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO
THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF
MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

Hope Creek Generating Station

DOCKET NUMBER (2)

05000354

PAGE (3)

1 OF 5

TITLE (4)

Unplanned HPCI Inoperability due to Minimum Flow Bypass Valve Failure Caused by
Personnel Error

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 NAME	DOCKET NUMBER
05	28	97	97	-- 009	-- 00	06	26	97	FACILITY NAME	DOCKET NUMBER
										05000
OPERATING MODE (9)		1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)							
POWER LEVEL (10)		100	20.2201(b)			20.2203(a)(2)(v)		X	50.73(a)(2)(i)(B)	50.73(a)(2)(viii)
			20.2203(a)(1)			20.2203(a)(3)(i)			50.73(a)(2)(ii)	50.73(a)(2)(x)
			20.2203(a)(2)(i)			20.2203(a)(3)(ii)			50.73(a)(2)(iii)	73.71
			20.2203(a)(2)(ii)			20.2203(a)(4)			50.73(a)(2)(iv)	OTHER
			20.2203(a)(2)(iii)			50.36(c)(1)		X	50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A
			20.2203(a)(2)(iv)			50.36(c)(2)			50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME

Paul Duke, Station Licensing Engineer

TELEPHONE NUMBER (Include Area Code)

(609) 339-1466

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

During a High Pressure Coolant Injection (HPCI) pump surveillance test at approximately 1151 on May 28, 1997, the minimum flow bypass valve (1BJHV-F012) failed to close as expected when flow exceeded the minimum flow setpoint. The HPCI pump was secured and the minimum flow bypass valve was observed to close automatically. The HPCI system was declared inoperable at 1251 and a 14 day Limiting Condition for Operation (LCO) was entered pursuant to TS 3.5.1. A four hour notification was made at 1435 pursuant to 10 CFR 50.72(b)(2)(iii) for the inoperability of the single train safety system. Troubleshooting found the minimum flow transmitter isolated and the equalizing valve open. The transmitter was restored to service and the HPCI system was tested to demonstrate proper operation of the minimum flow bypass valve. This LER is being submitted pursuant to 10 CFR 50.73(a)(2)(v) and 10 CFR 50.73(a)(2)(i)(B). The cause of this event was personnel error. The isolated flow transmitter was returned to service. There were no actual safety consequences associated with this condition. There was no impact on public health and safety.

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PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor (BWR/4)
High Pressure Coolant Injection System - EIIS Identifier {BJ}

IDENTIFICATION OF OCCURRENCE

Discovery date: 05/28/97
Problem Report: 970528252

CONDITIONS PRIOR TO OCCURRENCE

The plant was in OPERATIONAL CONDITION 1 (POWER OPERATION) at 100% of rated thermal power. There were no other structures, systems, or components that were inoperable at the beginning of the event that contributed to the event.

DESCRIPTION OF OCCURRENCE

During a High Pressure Coolant Injection (HPCI) pump surveillance test at approximately 1151 on May 28, 1997, the minimum flow bypass valve (1BJHV-F012) failed to close as expected when flow exceeded the minimum flow setpoint. The HPCI pump was secured and the minimum flow valve was observed to close automatically. The HPCI system was declared inoperable at 1251 and a 14 day Limiting Condition for Operation (LCO) was entered pursuant to TS 3.5.1. A four hour notification was made at 1435 pursuant to 10 CFR 50.72(b)(2)(iii) for the inoperability of the single train safety system. Troubleshooting found the minimum flow transmitter isolated and the equalizing valve open. The transmitter was then restored to service and the HPCI system was tested satisfactorily to demonstrate proper operation of the minimum flow bypass valve.

An investigation found the transmitter had inadvertently been left isolated after a sensor calibration performed on May 17, 1997. This resulted in the plant being operated for 11 days with less than the required minimum number of operable HPCI Pump Discharge Flow - Low (Bypass) channels per Technical Specification 3.3.3.

Technical Specification (TS) 3.3.3, Emergency Core Cooling System Actuation Instrumentation, requires the HPCI minimum flow bypass valve to be opened within one hour if the number of operable HPCI Pump Discharge Flow - Low (Bypass) channels is less than the required minimum. In addition, TS 3.3.3 requires the inoperable channel to be restored to OPERABLE status within 7 days or the HPCI system to be declared inoperable.

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DESCRIPTION OF OCCURRENCE (continued)

Contrary to the requirements of TS 3.3.3, the number of operable HPCI Pump Discharge Flow - Low (Bypass) channels was less than the required minimum for a period of 11 days during which the HPCI system was not declared inoperable.

This event is being reported pursuant to 10 CFR 50.73(a)(2)(v) as an event or condition that alone could have prevented the fulfillment of a safety function and pursuant to 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by plant Technical Specifications.

APPARENT CAUSE OF OCCURRENCE

The apparent cause of this event was personnel error in the form of procedural non-compliance during the minimum flow transmitter calibration performed on May 17, 1997. Failure to perform an adequate second verification was a contributing factor.

The technician performing the calibration performed the component restoration steps out of order. This failed to meet management expectations regarding verbatim compliance in procedurally controlled activities. As a result of performing steps out of order, the technician did not adequately track steps as they were performed.

The second verifier for the transmitter calibration did not perform a hands-on verification of the transmitter isolation valves and the equalizing valve as required by procedure.

ASSESSMENT OF SAFETY CONSEQUENCES

The primary purpose of HPCI is to maintain reactor vessel inventory after small breaks that do not depressurize the reactor vessel. The HPCI system is also used to maintain reactor vessel inventory following a reactor isolation and coincident failure of the non-ECCS Reactor Core Isolation Cooling (RCIC) System. A minimum flow bypass is provided for pump protection. The bypass valve automatically opens on a low flow signal, and automatically closes on a high flow signal. When the bypass is open, a portion of the pump discharge flow is directed to the suppression chamber.

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ASSESSMENT OF SAFETY CONSEQUENCES (continued)

The HPCI system initially injects water from the condensate storage tank (CST). During an actual system actuation, water from the CST would have continued to be diverted through the open minimum flow valve to the suppression pool until the pump suction was automatically transferred from the CST to the suppression pool on suppression pool high level. HPCI logic is such that a suction swap from the CST to the suppression pool would not affect the ability of HPCI to perform its design function. A preliminary assessment of this event shows that the capacity of the HPCI system is sufficient to provide adequate flow and pressure under the above conditions. An engineering evaluation is being performed to confirm the preliminary assessment.

In addition, during the period associated with this event, the Core Spray, Low Pressure Coolant Injection, Automatic Depressurization, and Reactor Core Isolation Cooling systems remained operable except for a brief period during which surveillance testing was conducted. Throughout the period associated with this event, a sufficient number of ECCS systems were available to mitigate the consequences of an accident. Variations in plant operating mode would not have affected the significance of this event.

The HPCI system is considered a single train safety system; therefore any unplanned inoperability constitutes a condition that alone could have prevented the fulfillment of a safety function. However, the safety consequences of this event were negligible since the HPCI system was capable of performing its safety function and a sufficient number of ECCS systems were available and able to mitigate the consequences of an accident. There was no impact on public health and safety.

PREVIOUS OCCURRENCES

A review of previous LERs at Hope Creek identified several events due to Maintenance personnel errors. LERs 95-005-00, 97-004-00 and 97-006-00 reported events caused by Controls technician personnel errors in the use of test equipment. Procedure non-compliance was not identified as a cause of these events and the corrective actions taken would not have prevented a recurrence.

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CORRECTIVE ACTIONS

1. The isolated transmitter was restored to service on May 28, 1997.
2. A stand down was conducted by station management for Maintenance and support groups to emphasize the importance of procedure adherence.
3. Surveillances performed since April 1997 by the technician involved were reviewed. Switch lineups and valve positions were verified.
4. PSE&G has evaluated performance deficiencies for personnel involved and initiated disciplinary actions as appropriate.
5. An engineering evaluation of this event is being performed to confirm the preliminary assessment of safety consequences. This activity will be completed by July 27, 1997.