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September 19, 2001

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Docket No. 50-278
SUBJECT: Licensee Event Report, Peach Bottom Atomic Power Station Unit 3

This LER reports a brief loss of the High Pressure Coolant Injection (HPCI) safety function. The LER is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(v). In accordance with NEI 99-04, the regulatory commitment contained in this correspondence is to restore compliance with the regulations. The specific methods that are planned to restore and maintain compliance are discussed in the LER.

Reference: Docket No. 50-278
Report Number: 3-01-001
Revision Number: 00
Event Date: 07/25/01
Report Date: 09/19/01

Facility: Peach Bottom Atomic Power Station Unit 3
1848 Lay Road, Delta, PA 17314-9032

Sincerely,

Gordon L. Johnston, Plant Manager

GLJ/djf

enclosure

cc: PSE&G, Financial Controls and Co-owner Affairs
R. R. Janati, Commonwealth of Pennsylvania
INPO Records Center
H. J. Miller, US NRC, Administrator, Region I
R. I. McLean, State of Maryland
A. C. McMurtray, US NRC, Senior Resident Inspector
A. F. Kirby III, DelMarVa Power

CCN 01-14094

IE22

NRC FORM 366 (1-2001)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 6-30-2001

Estimated burden per response to comply with this mandatory information collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Peach Bottom Atomic Power Station, Unit 3	05000 278	1 OF 4

TITLE (4)

High Pressure Coolant Injection System Inoperable due to Leaking Check Valve

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
07	25	01	01	0 0 1	00	09	19	01	FACILITY NAME	DOCKET NUMBER

		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply) (11)							
OPERATING MODE (9)	1		20.2201(b)		20.2203(a)(3)(ii)		50.73(a)(2)(ii)(B)		50.73(a)(2)(ix)(A)
POWER LEVEL (10)	90		20.2201(d)		20.2203(a)(4)		50.73(a)(2)(iii)		50.73(a)(2)(x)
			20.2203(a)(1)		50.36(c)(1)(i)(A)		50.73(a)(2)(iv)(A)		73.71(a)(4)
			20.2203(a)(2)(i)		50.36(c)(1)(ii)(A)		50.73(a)(2)(v)(A)		73.71(a)(5)
			20.2203(a)(2)(ii)		50.36(c)(2)		50.73(a)(2)(v)(B)		OTHER Specify in Abstract below or in NRC Form 366A
			20.2203(a)(2)(iii)		50.46(a)(3)(ii)		50.73(a)(2)(v)(C)		
			20.2203(a)(2)(iv)		50.73(a)(2)(i)(A)	X	50.73(a)(2)(v)(D)		
			20.2203(a)(2)(v)		50.73(a)(2)(i)(B)		50.73(a)(2)(vii)		
			20.2203(a)(2)(vi)		50.73(a)(2)(i)(C)		50.73(a)(2)(viii)(A)		
			20.2203(a)(3)(i)		50.73(a)(2)(ii)(A)		50.73(a)(2)(viii)(B)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
David J. Foss - Regulatory Assurance	(717) 456-4311

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

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
E	BJ	V	A 5 8 5	Y					

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

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On 07/25/01, at approximately 1530 hours, HPCI was removed from service and declared inoperable. Operations personnel conservatively decided to remove HPCI from service due to the potential of a water hammer condition if HPCI were to start. This potential condition was as a result of the HPCI discharge line not being completely full with water. Troubleshooting was performed and it was determined that there was leakage back through the HPCI suction check valve while on the alternate suction source. At approximately 1700 hours, the HPCI suction source was swapped back to its normal source (condensate storage tank). The HPCI discharge line was verified to be full and the system was returned to service. The HPCI system was declared operable on 07/28/01 at approximately 1300 following an engineering evaluation of the operability of the system with the leaking check valve. The cause of the HPCI system being inoperable was due to a leaking check valve in the alternate suction path. Additionally, it was determined that the safety function of the check valve needing to be closed was not appropriately identified in engineering documents that form the basis for determining appropriate leak testing. The check valve is planned to be repaired during the current refuel outage in progress on Unit 3. Actions were initiated to ensure that appropriate engineering documents are updated as necessary.

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NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

Unit Conditions Prior to the Event

Unit 3 was in Mode 1 and operating at approximately 90% rated thermal power in end-of-cycle coast down when the event occurred. The High Pressure Coolant Injection (HPCI)(EIIS:BJ) system had transferred to its alternate suction source (i.e. suppression chamber)(EIIS:NH) on 07/25/01 at approximately 1330 hours. The condensate storage tank level switches that control transfer of the HPCI suction source had been considered inoperable.

Description of the Event

On 07/25/01, at approximately 1530 hours, HPCI was removed from service and declared inoperable. Operations personnel conservatively decided to remove HPCI from service due to the potential of a water hammer condition if HPCI were to start. This potential condition was as a result of the HPCI discharge line not being completely filled with water. This was discovered by Operations personnel during preparations for swapping the HPCI suction to its normal suction source (i.e. condensate storage tank)(EIIS:KA).

Troubleshooting was performed and it was determined that there was slight leakage (approximately 370 cc/min) back through the HPCI suction check valve (EIIS:V). When aligned to the suppression chamber, this condition allowed for leakage back to the suppression chamber since the suppression chamber is at a lower elevation than the HPCI discharge line. When aligned to the normal condensate storage tank suction, the leaking check valve is not in the suction flow path, and the elevation of the condensate storage tank ensures the piping system is filled with water.

At approximately 1700 hours, the HPCI suction source was swapped back to its normal source (condensate storage tank). The HPCI discharge line was verified to be full and the system was returned to an available status. The HPCI system was subsequently declared operable on 07/28/01 at approximately 1300 following an engineering evaluation of the operability of the system with the leaking check valve.

This report is being submitted pursuant to 10CFR50.73(a)(2)(v) due to the loss of safety function of HPCI. Pursuant to 10CFR50.72(b)(3)(v), prompt notification of this event was made to the NRC on 7/25/01 at 1800 hours.

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NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

Analysis of the Event

There were no actual safety consequences as a result of this event. With HPCI inoperable, the Automatic Depressurization (ADS)(EIIS:RV) and Low Pressure Cooling systems were capable of providing core cooling if a design event were to occur. Additionally, the Reactor Core Isolation Cooling (RCIC)(EIIS:BN) system could provide high pressure cooling if necessary.

The HPCI system is normally lined up to take suction on the condensate storage tank, thereby assuring that the discharge line is full of water. The condensate storage tank is at a higher elevation than the discharge line. If the water supply in the condensate storage tank becomes low, an automatic transfer to the alternate source (suppression chamber) occurs. On 7/25/01, the transfer to the suppression chamber was due to a spurious signal of a condensate storage tank level switch and not an actual low water condition.

Prior to the HPCI system being on its alternate suppression chamber source, if a design event would have occurred, the HPCI system would have automatically started and injected water into the reactor. In the unlikely event that the design event would have continued during a high pressure condition where HPCI would need to restart after its first injection and the suction source swapped over to the suppression chamber, an engineering analysis verified that the HPCI system would have been operable with the leaking check valve. Based on the engineering evaluation of operability, HPCI was capable of performing its safety function once the system was filled and the system returned to service on 07/25/01 at approximately 1700 hours. The engineering evaluation demonstrated that it would take greater than one hour for the as-found leakage to impact operability of the HPCI system. Therefore, the maximum amount of time that the HPCI safety function was not available was about 2.5 hours (i.e. one hour after the time the HPCI suction transferred to the suppression chamber until the time the system was filled and returned to service).

Cause of the Event

The cause of the HPCI system being inoperable was due to a leaking check valve in the alternate suction path (i.e. suppression chamber). Leak testing performed on 7/25/01 confirmed that there was approximately 370 cc/min water leakage through the check valve seat.

Additionally, it was determined that the safety function of the check valve needing to be closed was not appropriately identified in engineering documents that form the basis for determining appropriate leak testing. The check valve opening function was considered as a safety function, but the tight closure of the check valve to prevent loss of water in the HPCI discharge line between starts was not captured as a safety function.

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NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

Corrective Action Completed

HPCI was returned to its normal condensate storage tank suction source. The Unit 2 HPCI system was evaluated and it was determined that a similar condition does not exist. As an interim action until the check valve is repaired, Operations procedures were revised to ensure appropriate actions are taken if the HPCI suction would swap to the suppression chamber.

Corrective Actions Planned

The check valve is planned to be repaired during the current refuel outage in progress on Unit 3.

Actions were initiated to ensure that appropriate engineering documents and test procedures for Units 2 and 3 are updated as necessary to ensure appropriate testing of the check valve in the future.

Previous Similar Occurrences

There were no previous events identified that involved HPCI loss of safety function due to a leaking check valve.