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10CFR 50.73

May 12, 2005

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Peach Bottom Atomic Power Station (PBAPS) Unit 3
Facility Operating License No. DPR-56
NRC Docket No. 50-278

Subject: Licensee Event Report (LER) 3-05-02

This LER reports a condition prohibited by Technical Specifications involving the inoperability of the automatic transfer function of the High Pressure Coolant Injection System (HPCI) suction valves. 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. If you have any questions or require additional information, please do not hesitate to contact us.

Sincerely,



Joseph P. Grimes
Plant Manager
Peach Bottom Atomic Power Station

JPG/djf/CR 315494

Attachment

cc: PSE&G, Financial Controls and Co-owner Affairs
R. R. Janati, Commonwealth of Pennsylvania
INPO Records Center
S. Collins, US NRC, Administrator, Region I
R. I. McLean, State of Maryland
US NRC, Senior Resident Inspector

CCN 05-14054

JEA 2

SUMMARY OF EXELON NUCLEAR COMMITMENTS

The following table identifies commitments made in this document by Exelon Nuclear. (Any other actions discussed in the submittal represent intended or planned actions by Exelon Nuclear. They are described to the NRC for the NRC's information and are not regulatory commitments.)

Commitment	Committed Date or "Outage"
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.	In accordance with the Corrective Action Program

LICENSEE EVENT REPORT (LER)

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

Estimated burden per response to comply with this mandatory 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 and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@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 an 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.

1. FACILITY NAME Peach Bottom Atomic Power Station	2. DOCKET NUMBER 05000 278	3. PAGE 1 OF 5
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4. TITLE
Technical Specification Non-Compliance due to a Unit 3 HPCI Suction Valve Logic Limit Switch Out of Adjustment

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
03	21	2005	05	- 02 -	0	05	12	2005		05000
									FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE 1	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: (Check all that apply)									
	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)						
10. POWER LEVEL 100	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)						
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)						
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)						
	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)						
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)						
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)						
<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> OTHER							
<input type="checkbox"/> 20.2203(a)(2)(vi)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A							

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME PBAPS Unit 3, James Mallon, Regulatory Assurance Manager	TELEPHONE NUMBER (Include Area Code) 717-456-3351
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13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
D	BJ	33	L200	Y					

14. SUPPLEMENTAL REPORT EXPECTED	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO			

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

On 3/21/05, at approximately 1640 hours, during preparations for the performance of a routine surveillance test for the Unit 3 High Pressure Coolant Injection (HPCI) system, Operations personnel discovered that the Condensate Storage Tank (CST) suction source Motor Operated (MO) Valve (MO-17) did not automatically close when the Suppression Pool Suction source valves (MO-57 & MO-58) were opened during the surveillance test. It was subsequently determined that a condition prohibited by Technical Specifications existed as a result of the Technical Specification 3.3.5.1 function of transferring the HPCI suction from the CST to Suppression Pool being inoperable for a time period longer than allowed in Technical Specification 3.3.5.1. Troubleshooting determined that the automatic closure of the MO-17 failed to occur due to a limit switch being out of adjustment. The limit switch is within the motor operator housing for the MO-58 valve and provides an auto-close input into the MO-17 valve logic. The HPCI CST – Suppression Pool transfer logic was returned to an operable condition on 3/22/05. There were no actual safety consequences associated with this event.

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Peach Bottom Atomic Power Station, Unit 3	05000278	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 5	
		05	- 02	- 00		

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 100% rated thermal power when the event occurred. There were no structures, systems or components out of service that contributed to this event. The Unit 3 High Pressure Coolant Injection system (EIIS:BJ) was considered inoperable due to preparations for routine surveillance testing on the instrumentation associated with the HPCI suction source transfer function. The HPCI system was not operating at the time of discovery.

Description of the Event

On 3/21/05, at approximately 1640 hours, during operational preparations for the performance of a routine surveillance test for the Unit 3 High Pressure Coolant Injection (HPCI) system, Operations personnel discovered that the Condensate Storage Tank (CST) (EIIS: TK) suction source Motor Operated (MO) Valve (MO-17) (EIIS: V) did not automatically close when the Suppression Pool Suction source valves (MO-57 & MO-58) were opened. The HPCI suction source was being transferred from the CST to the Suppression pool in preparation for routine surveillance testing on the instrumentation associated with the HPCI suction source transfer function. In accordance with the Bases for Technical Specification (TS) 3.3.5.1, if CST water level falls below a preselected level or if the Suppression Pool level raises above a preselected value, the MO-57 & MO-58 valves first open and then the MO-17 valve automatically closes. Contrary to this requirement, the MO-17 did not automatically close during the preparation activities. Operations personnel promptly detected the condition and declared the HPCI system inoperable in accordance with TS 3.3.5.1.

The MO-17 was closed by 1826 hours and the MO-57 & MO-58 valves were maintained open. HPCI was returned to its normal CST suction path line-up (i.e. MO-17 open, MO-57 & MO-58 closed) by 2310 hours.

Further troubleshooting by Maintenance personnel determined that the automatic closure of the MO-17 did not occur due to a limit switch (EIIS: 33) being out of adjustment. The limit switch is within the motor operator housing for the MO-58 valve and provides an auto-close input into the MO-17 valve logic. This limit switch being out of adjustment prevented the auto close function of the MO-17 when the MO-58 valve opened.

The MO-58 limit switch was adjusted by 1500 hours on 3/22/05 and the HPCI system was declared operable by 2045 hours on 3/22/05.

This condition was reported to the NRC on 3/21/05 at approximately 2234 hours pursuant to the requirements of 10CFR 50.72(b)(3)(v)(D) (Event Notification # 41510). It was subsequently determined that HPCI was capable of performing its safety function due to the availability of an adequate HPCI system suction supply. However, a condition prohibited by Technical Specifications is judged to have existed. This was due to the Technical Specification 3.3.5.1 function of transferring the HPCI suction from the CST to Suppression Pool being considered to be inoperable for a time period longer than allowed in Technical Specification 3.3.5.1. Technical Specification 3.3.5.1 requires that the CST Level – Low and Suppression Pool Water Level – High functions be capable of automatically operating the MO-57, MO-58 and MO-17 valves. If this function is not met, Technical Specifications actions include aligning the HPCI suction to the Suppression Pool (i.e. MO-57 & MO-58 open, MO-17 closed) within 24 hours. It is judged that the condition of the deficient limit switch existed for a time period greater than the Technical Specification Required Action time. Therefore, this event is being reported as a condition prohibited by Technical Specifications.

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Analysis of the Event

There were no actual safety consequences associated with this event.

The HPCI system is part of the Emergency Core Cooling System (ECCS) network that provides cooling water to the reactor vessel for certain design basis events. The HPCI system is designed to provide core cooling for a wide range of reactor pressures. Upon receipt of an initiation signal, the HPCI system valves align as necessary, the turbine accelerates, and the appropriate flow rate is achieved. The HPCI system is designed with two suction flow paths: the CST and the Suppression Pool flow paths. Normally, HPCI is aligned in the standby mode to the CST during plant operations. Transfer to the Suppression Pool suction source occurs if there is a low CST low water level or Suppression Pool high water level. In accordance with the Bases for Technical Specification (TS) 3.3.5.1, if CST water level falls below a preselected level or if the Suppression Pool raises above a preselected value, the MO-57 & MO-58 valves first open and then the MO-17 valve automatically closes. The MO-17 closure is initiated by the closure of two limit switches (one in each of the two motor operator housing for the Suppression Pool suction valves MO-57 & MO-58). Both limit switches need to close to provide the signal to close the MO-17 valve.

While normally aligned to the CST, the suction flow path from the Suppression Pool is isolated using the MO-57 and MO-58 valves. Therefore, for design basis events with HPCI aligned from the normal CST suction source, there would be no impact as a result of the mis-adjusted limit switch associated with the MO-17 valve logic relay. However, for other design events involving either a CST low water level condition or a high Suppression Pool high water level condition, HPCI suction would need to transfer from the normal CST source to the Suppression Pool water source. This prevents an excessively high Suppression Pool water level which could result in loads on the Suppression Pool exceeding their design values if there would be a blow down of the Reactor Vessel pressure through the safety / relief valves.

If a design basis event occurred while the limit switch deficiency existed, the Suppression Pool suction valves (MO-57 & MO-58) would have opened as designed. However, the CST suction source isolation valve (MO-17) would not have closed. However, engineering analyses exist that conclude that HPCI would have been capable of performing its design function while aligned to both suction sources. Therefore, the HPCI safety function was not affected by the limit switch deficiency.

The surveillance performed to check operability of the Suppression Pool high water level instruments is performed quarterly. The previous performance of the surveillance occurred on 12/15/04 and was successful. Also, the MO-57 and MO-58 valves were opened (and the MO-17 automatically closed) on 12/20/04 as part of the in-service testing program.

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Cause of the Event

Troubleshooting of the HPCI logic associated with the MO-17 valve determined that the limit switch (Limatorque Corporation, 2 Train Geared Limit Switch, Part 10106) housed in the motor operator for the MO-58 valve was slightly out of adjustment. The MO-17 closure is initiated by the closure of two limit switches (one in each of the two motor operator housings for the Suppression Pool suction valves MO-57 & MO-58). Both limit switches need to close to provide the signal to close the MO-17 valve. Troubleshooting performed just subsequent to the event determined that the MO-57 limit switch operated properly; however, the MO-58 limit switch (LS-2) did not fully make up.

Further investigation determined that the limit switch that stops the MO-58 valve in the open direction (LS-4) and the limit switch that provides input into the MO-17 valve logic circuit (LS-2) had slightly low finger preload adjustments. The LS-4 limit switch opens when the MO-58 valve is in the full open position. At the same time, LS-2 (located on the same limit switch rotor) closes providing an input to close the MO-17 valve. Had the preload been slightly higher, the LS-4 limit switch would have opened slightly later which would have ensured that the LS-2 contacts would have been made up. Also, had the LS-2 contact finger preload been slightly higher, the LS-2 contact would have closed slightly earlier ensuring proper logic input to close the MO-17 valve.

Preventive maintenance was performed on the motor operator for the MO-58 valve in May 2003. There were no adjustments made to the limit switches and the limit switches were ensured to be functional.

The underlying cause of the low limit switch finger preload settings was insufficient procedural control of limit switch adjustments. Although maintenance procedures provide significant detail concerning the repair and adjustment of components within valve motor operators, there was insufficient detail concerning the adjustment of limit switch settings when using multiple limit switch contacts for complex logic driven from the same limit switch rotor. It was determined that additional procedural direction was required concerning the verification of the proper adjustment of the limit switch rotors and contacts to ensure adequate limit switch contact engagement.

Corrective Actions

The limit switches (LS-2 and LS-4) in the MO-58 valve motor operator were adjusted to provide appropriate limit switch operation in the MO-17 and MO-58 valve logics. The MO-57 valve motor operator limit switches were inspected with no significant concerns noted. Post-maintenance testing of the HPCI suction valve logic was successfully performed by 1630 hours on 3/22/05.

An extent of condition review was performed to identify similar valves that have limit switches that provide interlocks to other plant equipment such as pumps, relays or other valves. Appropriate evaluations and inspections of these valve limit switches will be performed in accordance with the Corrective Action Program.

Programmatic documents involving valve motor operator limit switch adjustments will be revised to provide additional guidance on the adjustment of limit switches.

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Previous Similar Occurrences

An event occurred in October 2004 (LER 3-04-03) concerning a failure of the HPCI suction transfer logic to properly operate. In the October 2004 event, the MO-17 did not close when the MO-57 and MO-58 opened. Corrective actions performed as part of LER 3-04-03 included the repair of a loose wire connection on a logic relay located in the Cable Spreading Room associated with the suction transfer and therefore, would not have been expected to have prevented this event. Subsequent to the repair of the loose wire, post maintenance testing and subsequent routine surveillance testing was successfully performed. However, the possibility that the limit switch was the cause of the October 2004 event can not be ruled out.