

November 4, 2009

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) 3-09-07

This LER reports a condition prohibited by Technical Specifications as a result of the discovery of one Main Steam Isolation Valve with a short stroke time in the closed direction. 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,



Garey L. Stathes  
Plant Manager  
Peach Bottom Atomic Power Station

GLS/djf/IR 964717

Attachment

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

CCN: 09-76

*IE22*  
*NRR*

### 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: 80 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.

<b>1. FACILITY NAME</b> Peach Bottom Atomic Power Station (PBAPS) Unit 3	<b>2. DOCKET NUMBER</b> 05000278	<b>3. PAGE</b> 1 OF 4
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**4. TITLE**  
Oil Leak from Main Steam Isolation Valve Dashpot Results in Short Valve Stroke Time

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
09	14	2009	09	- 07 - 00		11	04	2009		05000
									FACILITY NAME	DOCKET NUMBER
										05000

<b>9. OPERATING MODE</b>  3	<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §:</b> <i>(Check all that apply)</i>			
<b>10. POWER LEVEL</b>  0%	<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)
	<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 Armstrong, Regulatory Assurance Manager	TELEPHONE NUMBER <i>(Include Area Code)</i> 717-456-3351
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**13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT**

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
E	SB	FCV	A585	Y					

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

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

On 9/18/09, an Engineering evaluation determined that the ouboard Main Steam Isolation Valve (MSIV) AO-3-01A-086A did not meet its required Technical Specification (TS) minimum closure time of >= 3 seconds. This determination was based on MSIV stroke time testing performed on 9/14/09 when entering a refueling outage. This condition was considered as a condition prohibited by TS since there was evidence that the condition had existed during plant operations. The cause of the event was due to not requiring preventive maintenance for the MSIV oil dashpot needle control valve. Based on troubleshooting during the refueling outage, it was determined that when the oil dashpot stroked, a small amount of oil would leak from the o-ring seal around the stem of the 3/4" needle control valve. Over time, this resulted in insufficient oil in the dashpot causing inadequate dampening of the MSIV motion. The leaking MSIV oil dashpot needle control valve was replaced. The preventive maintenance program will be upgraded to ensure that the Units 2 and 3 MSIV needle control valves receive appropriate preventive maintenance in future outages.

There were no actual safety consequences associated with this event. There were no previous similar LERs identified.

**LICENSEE EVENT REPORT (LER)  
CONTINUATION SHEET**

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		2009	- 07	- 00		

**NARRATIVE**

**Unit Conditions Prior to the Event**

Unit 3 was in Mode 3 at 0% power when this event was discovered on 9/14/09. Unit 3 had just shutdown on 9/13/09 for its 17<sup>th</sup> Refueling Outage (P3R17). There were no other structures, systems or components out of service that contributed to this event.

**Description of the Event**

On 9/18/09, an Engineering evaluation determined that the ouboard Main Steam Isolation Valve (MSIV) AO-3-01A-086A did not meet its required Technical Specification (TS) minimum closure time of  $\geq 3$  seconds. This determination was based on MSIV (EIS: ISV) stroke time testing performed on 9/14/09 at approximately 1215 hours. As a result of this testing, it was identified that the AO-3-01A-086A had a closure stroke time of 2.22 seconds. This time measurement was based on the observed change in open and closed indicator lights. Although the measurement of the valve's closure time using the indicator lights is conservative with respect to the actual closure time of the valve, the Engineering evaluation determined that the valve's closure time did not meet the required  $\geq 3$  seconds. It is estimated that the actual valve closure time was 2.67 seconds.

This report is being submitted pursuant to:

10CFR 50.73(a)(2)(i)(B) – Condition Prohibited by TS – This occurrence is reportable under this criterion since there was evidence that the MSIV fast closure condition existed during plant operation. TS Limiting Condition for Operation (LCO) 3.6.1.3, Primary Containment Isolation Valves (PCIVs) requires that PCIVs be operable during operational modes 1, 2, and 3. Condition A of TS 3.6.1.3 requires that the associated penetration be isolated within 8 hours if an MSIV is inoperable. Because the AO-3-01A-086A MSIV was inoperable during its mode of applicability for a time period greater than 8 hours, it was determined that a condition prohibited by TS occurred.

Repairs were made to the AO-3-01A-086A during P3R17 and the valve was returned to an operable status prior to plant startup on 10/11/09 for cycle 18 operations.

**Analysis of the Event**

There were no actual safety consequences associated with this event.

The purpose of the MSIVs is to isolate the four main steam lines to mitigate postulated design events. Each of the four main steam lines contains an inboard valve (inside primary containment) and an outboard valve (outside primary containment).

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**NARRATIVE**

**Analysis of the Event, continued**

The safety objective of the MSIVs is to close automatically to:

- Prevent damage to the fuel barrier by limiting the loss of reactor coolant in case of a major leak from the steam piping outside the primary containment
- Limit release of radioactive materials by closing the nuclear system process barrier in case of gross release of radioactive materials from the reactor fuel to the reactor cooling water and steam
- Limit release of radioactive materials by closing the primary containment barrier in case of a major leak from the nuclear system inside the primary containment.

Each valve is a "Y"-shaped, 26-in globe valve. The main disc, or poppet, is attached to the lower end of the stem and moves in guides at a 45° angle from the inlet pipe. The valve stem travel is approximately 10 inches. An air cylinder with spring assist is part of the valve assembly and provides the motive capability for the valve. The speed of the valve closure is controlled by an oil dashpot which can be adjusted by a 3/4" needle valve located on the oil dashpot.

In accordance with TS 3.6.1.3, the isolation time of an MSIV is to be  $\geq 3$  seconds and  $\leq 5$  seconds. The closure speed of  $\leq 5$  seconds is the time established by design basis accident analysis to limit the release of reactor coolant or radioactive materials. The closure speed of  $\geq 3$  seconds is to ensure that the MSIV would close at a speed slow enough so that simultaneous closure of all steam lines will not induce a more severe over-pressure transient on the nuclear system than closure of the turbine stop valves while the turbine bypass valves remain closed.

An analysis was performed that evaluated the as-found closure speeds of the Unit 3 MSIVs to determine if there were any adverse affects on the overpressure safety analysis. It was concluded that this condition did not have a significant affect on the safety analysis and the plant never operated outside of the safety analysis.

The event was considered not to be risk significant.

**Cause of the Event**

The cause of the event was due to not requiring preventive maintenance for the MSIV oil dashpot (EIIIS: DPT) needle control valve (EIIIS: FCV). Based on troubleshooting during P3R17, it was determined that when the oil dashpot stroked, a small amount of oil would leak from the o-ring seal around the stem of the 3/4" needle control valve. Over time, this leakage had resulted in approximately 6 pints of oil leakage loss out of the 1.4 gallon capacity oil dashpot. The dashpot was verified to be full during the previous refueling outage (P3R16). However, it was determined that subsequent operations of the valve resulted in oil leakage past the needle valve stem o-ring such that the oil dashpot contained insufficient inventory of oil. Insufficient oil in the dashpot resulted in inadequate dampening of the MSIV motion.

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**NARRATIVE**

**Cause of the Event, continued**

The needle control valve had previously been determined to not require periodic preventive maintenance. The needle control valve had been in service for an extended period of time at PBAPS.

The needle control valve manufacturer is Auto-Ponent. The model number is NT-750S-C4.

**Corrective Actions**

The leaking MSIV oil dashpot needle control valve was replaced. Testing was performed to assure no other leaks from the oil dashpot. Other Unit 3 MSIVs were inspected for similar leakage and no similar concerns were found.

The preventive maintenance program will be upgraded to ensure that the Units 2 and 3 MSIV needle control valves receive appropriate preventive maintenance in future outages.

**Previous Similar Occurrences**

There were no previous LERs identified concerning conditions prohibited by TS involving short MSIV stroke times.