

Exelon Nuclear  
Peach Bottom Atomic Power Station  
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10CFR 50.73

November 15, 2010

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

Peach Bottom Atomic Power Station (PBAPS) Units 2 and 3  
Facility Operating License Nos. DPR-44 and DPR-56  
NRC Docket Nos. 50-277 and 50-278

Subject: Licensee Event Report 2-10-02

Enclosed is a Licensee Event Report concerning a condition prohibited by Technical Specifications involving a deficiency in a rod hanger associated with the 'A' Emergency Service Water system discharge pipe. 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,



Gary L. Stathes  
Plant Manager  
Peach Bottom Atomic Power Station

GLS/djf/IR 1118711 / 1114812

Attachment

cc: US NRC, Administrator, Region I  
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: 10-93

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 FOIA/Privacy Section (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects.resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NE08-10202, (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)	<b>2. DOCKET NUMBER</b> 05000277	<b>3. PAGE</b> 1 OF 4
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**4. TITLE**  
Improperly Fastened Rod Hanger Results in Inoperable Subsystem of Emergency Service Water

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	18	2010	10	- 002 -	0	11	15	2010	PBAPS Unit 3	05000278
									FACILITY NAME	DOCKET NUMBER
										05000

<b>9. OPERATING MODE</b>  5	<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §:</b> (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)						
<b>10. POWER LEVEL</b>  0%	<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 2, James M. Armstrong, 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

<b>14. SUPPLEMENTAL REPORT EXPECTED</b>	<b>15. EXPECTED SUBMISSION DATE</b>	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 9/22/10, Engineering personnel determined that a rod hanger (33HB-S143) supporting the discharge pipe of the 'A' Emergency Service (ESW) Pump had not been carrying adequate pipe load prior to recent upgrades of the ESW discharge pipe support system during the week of 9/13/10. It was determined that the rod hanger condition (prior to 9/13/10) would have been unacceptable due to its degraded seismic capability. The degraded condition of rod hanger 33HB-S143 only affected the 'A' ESW subsystem during postulated seismic conditions. Since this condition was caused by inadequate original construction installation, this event is considered to be a condition prohibited by Technical Specifications (TS) due to one subsystem of ESW being inoperable for a time period longer than allowed by TS.

The original installation of the rod hanger was deemed to be inadequate since jam nuts were not installed to prevent loosening of the top nut that fastens the threaded rod hanger to a nearby structural steel member. The underlying cause was determined to be due to an inadequate design drawing.

The affected rod hanger was repaired. The drawing associated with this rod hanger will be upgraded to clearly require staking requirements. A sample of similar rigid restraint drawings were reviewed for staking requirements and no other concerns were identified.

There were no actual safety consequences associated with this event.

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**NARRATIVE**

Unit Conditions at Time of Discovery

At the time of discovery of the condition, PBAPS Unit 2 was shut down for its 18<sup>th</sup> refueling outage (Mode 5 at 0% rated thermal power.) Unit 3 was operating in Mode 1 at 100% rated thermal power.

There were no other structures, systems or components out of service that contributed to the event.

Description of the Event

On 9/22/10, Engineering personnel determined that a rod hanger (33HB-S143) supporting the discharge pipe of the 'A' Emergency Service (ESW) Pump had not been carrying adequate pipe load prior to recent upgrades of the ESW discharge pipe support system performed during the week of 9/13/10. The degraded condition of the rod hanger was initially identified on 9/18/10 during the performance of planned Inservice Inspection (ISI) activities. On 9/18/10, the ISI inspector identified concerns with the rod hanger 33HB-S143 clamp fasteners. When investigated further by Engineering, it was determined that the rod hanger was not carrying the pipe load contrary to the requirements of the associated design drawings.

The as-found condition on 9/18/10 did not cause the 'A' ESW subsystem to be inoperable due to recent unrelated upgrades on the 'A' ESW subsystem supports installed during the week of 9/13/10. However, Engineering determined that prior to the upgrades performed during the week of 9/13/10, the 'A' ESW subsystem rod hanger condition would have been unacceptable due to its degraded seismic capability. Furthermore, Engineering determined that the degraded condition of the rod hanger was due to a loose nut at the top of the rod hanger where it is fastened to a nearby structural steel member. It was identified that a jam nut (or other staking method) was not installed during initial plant construction. A jam nut would have assured no movement of the load bearing nut on the threaded rod hanger.

This report is being submitted pursuant to:

10CFR 50.73(a)(2)(i)(B) – Condition Prohibited by TS – This event is reportable under this criterion since an 'A' ESW pump discharge piping rod hanger was unacceptable for loading conditions during a seismic condition. Technical Specification (TS) LCO 3.7.2, Emergency Service Water (ESW) System and Normal Heat Sink requires that two ESW subsystems be OPERABLE. If one ESW subsystem is inoperable, then the subsystem must be returned to an OPERABLE status within 7 days. Since the condition was due to inadequate installation during original plant construction, it is assumed that the fastener deficiency has existed for greater than the 7-day completion time for the TS 3.7.2 Required Action associated with one ESW subsystem being inoperable.

The top attachment nut for rod hanger 33HB-S143 was tightened and staked on 9/28/10.

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Analysis of the Event

The ESW system (EIS: CC) is a standby system which is shared between Units 2 and 3. It is designed to provide cooling water for the removal of heat from equipment, such as Emergency Diesel Generators (EDGs) and room coolers for Emergency Core Cooling System equipment, required for a safe reactor shutdown following a Design Basis Accident or transient. Upon receipt of a loss of offsite power signal, or whenever any EDG is in operation, the ESW system will provide cooling water to its required loads. The ESW system consists of two redundant subsystems.

The affected rod hanger (33HB-S143) supports the discharge pipe (EIS: P) of the 'A' ESW pump downstream of the discharge check valve. The rod hanger consists of a threaded rod fastened at its top to a nearby structural steel member and at the bottom to the circular pipe clamp. Rod hanger 33HB-S143, as well as adjacent restraints, carry piping system deadweight to limit pipe stress to within code allowables including nozzle and anchor loads at the 'A' ESW pump.

There were no actual safety consequences associated with this event. The degraded condition of rod hanger 33HB-S143 (EIS: H) would have only affected the 'A' ESW subsystem during postulated seismic conditions. This condition was determined to not affect the 'B' ESW subsystem. There have been no actual adverse affects as a result of seismic events at PBAPS. If a design basis seismic event had occurred, the rod hanger deficiency could have resulted in overstressing of the 'A' ESW pump (EIS: P) anchor bolts. Therefore, if a design basis seismic event were to occur, continued operability of the 'A' ESW subsystem could not be assured during the design basis seismic event. For other design events (non-seismic related), the adverse condition of the rod hanger would not have significantly affected the ability of the 'A' ESW subsystem to perform its safety function.

Cause of the Event

The original (construction) installation of the rod hanger was deemed to be inadequate since jam nuts were not installed to prevent the loosening of the top fastener which connects the rod hanger to a nearby structural steel member. It is believed that over time the top fastener on the rod hanger loosened since no jam nut was installed. This resulted in the rod hanger no longer carrying the required pipe load.

The underlying cause was determined to be due to an inadequate design drawing. The original construction design drawing did not properly specify that the load bearing members under tension were to be staked, pinned or double-nutted.

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**NARRATIVE**

Corrective Actions

The top attachment nut for rod hanger 33HB-S143 was tightened and staked on 9/28/10. The drawing associated with this hanger will be upgraded to clearly require staking / jam nut requirements.

A sample of similar hanger drawings were reviewed for staking requirements. Systems reviewed included Residual Heat Removal, High Pressure Coolant Injection, Main Steam, ESW, and High Pressure Service Water. These drawings were found to require jam nuts, tack welds or staking of pipe clamps, lugs and load bearing threaded rod connections such as turnbuckles, weldless eye nuts, clevises, etc. The hanger 33HB-S143 drawing was the only drawing identified that did not include specific requirements for staking the load bearing threaded rod connections.

Other actions are being pursued in accordance with the site Corrective Action Program.

Previous Similar Occurrences

Previous concerns with the similar hanger on the 'B' ESW subsystem was identified in 2007 and 2009. For these occurrences, it was determined that the hanger was carrying load and no stress analysis was required or performed. At those times, there were no additional walkdowns performed to identify similar existing conditions.