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10CFR 50.73

January 12, 2007


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 No. DPR-44  
NRC Docket Nos. 50-277 and 50-278

Subject: Licensee Event Report (LER) 2-06-04

This LER reports a condition involving an Unanalyzed Condition as a result of a 1985 plant modification that inadvertently created an Emergency Diesel Generator building Carbon Dioxide Suppression room flooding vulnerability. 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,

 FOR J.P. GRIMES

Joseph P. Grimes  
Plant Manager  
Peach Bottom Atomic Power Station

JPG/csb/IR 554800

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 06-14101

JE22

# 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.

<b>1. FACILITY NAME</b> Peach Bottom Atomic Power Station (PBAPS) Unit 2	<b>2. DOCKET NUMBER</b> <b>05000 277</b>	<b>3. PAGE</b> 1 OF 4
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**4. TITLE**  
Plant Modification Created Diesel Generator Building Carbon Dioxide Suppression Room Flooding Vulnerability

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
11	17	2006	06	- 04 -	0	01	12	2007	PBAPS Unit 3	<b>05000278</b>
									FACILITY NAME	DOCKET NUMBER
										<b>05000</b>

<b>9. OPERATING MODE</b>  1	<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: (Check all that apply)</b>									
<b>10. POWER LEVEL</b>  100%	<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 checked="" 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 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 Units 2 and 3, James 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	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

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

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

On 11/17/2006, Engineering personnel determined that a potential flood vulnerability had existed in the Emergency Diesel Generator (EDG) building Carbon Dioxide Suppression room. A plant modification performed in 1985 had installed a catch basin at the EDG building fuel oil filling station, which is located outside the EDG building. The catch basin discharge was tied in to the EDG building's oily waste separator tank, upstream of the flood protection isolation valve. In the event of a design basis flood, a potential pathway existed for floodwater to enter the building through the floor drains. It was determined that the maximum credible flow rate would have exceeded the capability of the floor sump, thereby potentially challenging the Emergency Service Water system booster pumps and return valves, as well as High Pressure Service Water system return valves. A temporary change to the applicable special event procedure for floods was previously implemented on 11/10/06 to mitigate this condition. The procedures will be permanently revised. There were no actual safety consequences associated with this event.

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
Peach Bottom Atomic Power Station, Unit 2	05000277	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 4
		06	- 04	- 00	

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

Unit Conditions at the Time of Discovery

PBAPS Unit 2 and Unit 3 were in Mode 1 at 100% reactor thermal power when the event was discovered. There were no other structures, systems or components out of service that contributed to this event.

Description of the Event

On 11/17/2006, Engineering personnel concluded that a potential flood vulnerability had existed in the Emergency Diesel Generator (EDG) building (EIS: ME) Carbon Dioxide Suppression room. A plant modification performed in 1985 had installed a catch basin at the EDG building fuel oil filling station, which is located outside the EDG building. The catch basin discharge was tied in to the EDG building's oily waste separator tank, upstream of the flood protection isolation valve. In the event of a design basis flood, a potential pathway existed for floodwater to enter the building through the floor drains. It was determined that the maximum credible flow rate would likely have exceeded the capability of the floor sump, thereby potentially challenging the Emergency Service Water system booster pumps and return valves, as well as High Pressure Service Water system return valves.

During a walk down by Engineering and Operations personnel on 11/07/06, it was observed that the EDG building fuel oil filling station catch basin discharges to the EDG building oily waste separator tank upstream of its flood protection isolation valve. This isolation valve would be manually closed in the event of an external flood as directed by special event flood procedures. The catch basin discharge pipe inadvertently defeated this isolation valve by providing a flow path from outside the EDG building and into the Carbon Dioxide Suppression room sump through the floor drains. This created a path for external floodwater to back up into the EDG building Carbon Dioxide Suppression (EIS: KP) room during a postulated external flood event. Analysis performed by Engineering determined that the Carbon Dioxide Suppression room sump pumps (EIS: P) would not be able to keep up with the worst-case backflow through the drain line. It was confirmed that the four EDG diesel (EIS: EK) bays were adequately protected from this flooding potential by check valves (EIS: V), which had recently been verified to be operational. The equipment in the EDG building Carbon Dioxide Suppression room potentially impacted by this condition are the Emergency Service Water (ESW) system (EIS: BI) booster pumps and return Motor-Operated Valves (MOVs), and the High Pressure Service Water (HPSW) system return MOVs.

Based on concerns identified in a review of yard area drawings and as a result of a field walk down by Engineering and Operations personnel regarding this concern, a temporary change was made to the station Special Event procedure SE-4 for external flooding on 11/10/06. This temporary change directs the plugging of the drain line in the outside sump in sufficient time to preclude any buildup of floodwater in the room.

In summary, the walkdown performed on 11/07/06 identified the catch basin interconnection, followed by a temporary change to the external flooding procedure on 11/10/06. Upon conclusion by Engineering that the sump capability was exceeded, this condition was determined to be reportable on 11/17/06.

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This report is being submitted pursuant to 10CFR 50.73(a)(2)(ii)(B) to report an unanalyzed condition that degraded plant safety. Because the PBAPS licensing basis assumes a flood elevation at the EDG building of 137.5 feet and assumes that the EDG building has flood protection up to 138 feet, this resulted in an unanalyzed condition. The flood valve isolation would not have prevented the flow from the outside catch basin into the EDG building Carbon Dioxide Suppression room sump and floor drains.

Cause of the Event

It was determined that a plant modification performed in 1985 installed the catch basin outside of the EDG building at the fuel oil fill station.

The cause of the as-found condition was the failure of the design and review organizations at the time of the modification to recognize the impact of the EDG Building oil fill station catch basin installation on the Carbon Dioxide Suppression Room flood protection requirements. The rigor applied to the engineering evaluation and review in the development of the plant modification was inadequate. The plant modification package and the associated design were reviewed to determine the evaluation / justification for the installed configuration. This included a review of the project scope documents, work instructions, PORC meeting minutes, installation drawings and training materials. The Safety Evaluation concluded that the installation of the catch basin would have had no adverse effect on the EDG building wall and seismic separation was not required. The oil spill containment system was not considered nuclear safety-related, and therefore there were no special requirements for its installation. The modification did not involve safety-related systems, equipment or materials.

Analysis of the Event

There were no actual safety consequences associated with this event.

The floods estimated to recur once every 250 years reach an elevation of 113 feet (Conowingo Datum). General grade at the site has been established at a nominal 115' foot level. The worst-case probable maximum flood (PMF) combined with a postulated failure of the upstream dam (Holtwood Dam) would require the EDG building to withstand a design basis external flood with standing water at the 132' elevation. The catch basin design would have potentially allowed floodwater to enter the drains at the 128' elevation.

Any postulated floods that may have occurred below the 128' elevation would not have resulted in water entry into the EDG building Carbon Dioxide Suppression room. In the unlikely event of an onset of a design basis PMF flood, it is expected that significant scrutiny of the flood protection features of the station structures would have been performed. These reviews would have likely identified this vulnerability prior to a PMF occurring. Past station experience with severe weather such as hurricanes confirms that sufficient notice is provided (on the order of days) to allow for detailed reviews of existing station flood prevention features, and provide adequate time to supplement them, as necessary, to preclude equipment damage. It was confirmed that the four Emergency Diesel Generator bays were protected at all times by separate back flow check valves.

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The equipment located in the EDG building Carbon Dioxide Suppression room includes the ESW booster pumps, and the ESW/HPSW system return MOVs. These systems support containment heat removal via the RHR heat exchangers, as well as EDG and ECCS room cooler functions.

Assessments indicate that this event would not be risk significant.

Corrective Actions

A temporary change was made to the station Special Event procedure SE-4 for external flooding. This temporary change directs the plugging of the drain line in the outside sump in sufficient time to preclude any buildup of floodwater in the room. This change will be incorporated as a permanent change.

A review of the current PBAPS configuration control procedures concluded that the current design process would prevent recurrence of this type of event. Current configuration control would result in this type of modification to be performed as a nuclear safety-related design change. As such, the configuration control procedures would have required the designer to consider the impact to external and internal flooding analyses. Thus, further corrective actions related to the current design change process are not required.

An extent of condition review was performed to focus on modifications performed on other PBAPS external flood protected structures identified in the PBAPS UFSAR that could create new flood entry paths, or by-pass originally designed external flood protection features. The reviews included the Reactor building, Main Control Room complex, Emergency Diesel Generator building, Pump structure (portion containing critical service water pumps), and Emergency heat sink facility, including cooling tower. No other reportable conditions were identified.

Previous Similar Occurrences

There were no previous similar events identified.