

Exelon Nuclear  
Peach Bottom Atomic Power Station  
1848 Lay Road  
Delta, PA 17314-9032

Telephone 717.456.7014  
www.exeloncorp.com

Nuclear

December 6, 2001

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

Docket No. 50-277  
SUBJECT: Licensee Event Report, Peach Bottom Atomic Power Station Unit 2

This LER reports an automatic reactor scram and resultant containment isolations and standby gas start on Unit 2 due to a generator neutral fault. The LER is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(iv). 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.	50-277
Report Number:	2-01-004	
Revision Number:	00	
Event Date:	10/23/01	
Report Date:	12/6/01	

Facility: Peach Bottom Atomic Power Station Unit 2  
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. McMurtry, US NRC, Senior Resident Inspector  
A. F. Kirby III, DelMarVa Power

CCN 01-14106

IE22

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)

<b>FACILITY NAME (1)</b> Peach Bottom Atomic Power Station, Unit 2	<b>DOCKET NUMBER (2)</b> 05000 277	<b>PAGE (3)</b> 1 OF 4
---	---------------------------------------	---------------------------

**TITLE (4)**

Automatic Reactor Scram due to Electrical Fault on Generator Conductor

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
10	23	01	01	004	00	12	6	01		
<b>OPERATING MODE (9)</b>		1	<b>THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply) (11)</b>							
<b>POWER LEVEL (10)</b>		90	20.2201(b)			20.2203(a)(3)(ii)			50.73(a)(2)(ii)(B)	50.73(a)(2)(ix)(A)
			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)		X	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
			20.2203(a)(2)(iii)			50.46(a)(3)(ii)			50.73(a)(2)(v)(C)	Specify in Abstract below or in
			20.2203(a)(2)(iv)			50.73(a)(2)(i)(A)			50.73(a)(2)(v)(D)	NRC Form 366A
			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)**

<b>NAME</b> David J. Foss - Regulatory Assurance	<b>TELEPHONE NUMBER (Include Area Code)</b> (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	EL	DMP	P 2 9 5	Y					
<b>SUPPLEMENTAL REPORT EXPECTED (14)</b>					<b>EXPECTED SUBMISSION DATE (15)</b>		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 10/23/01, at approximately 1102 hours, an automatic reactor scram occurred as a result of a main turbine trip caused by a generator lockout. As expected when the turbine tripped, reactor pressure increased resulting in five safety relief valves lifting initially to control reactor pressure. Reactor water level decreased resulting in expected containment isolations and a standby gas treatment start. There were no actual safety consequences as a result of this event. Plant equipment responded as designed to the event. It was discovered that the Main Generator A phase isophase bus ventilation damper became detached from the bus compartment and fell onto the Main Generator A phase conductor resulting in a ground fault. The investigation into the cause of this event determined that tapped holes in the ductwork were stripped during previous maintenance. The isophase bus ductwork damper was repaired. Other similar dampers on Unit 2 were inspected and no similar concerns were noted. Similar dampers on Unit 3 will be inspected during an outage of sufficient duration to permit inspections. Maintenance procedures will be upgraded. There were no previous similar events identified.

**LICENSEE EVENT REPORT (LER)**

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Peach Bottom Atomic Power Station, Unit 2	05000277	01	- 004	- 00	2 OF 4

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

Unit Conditions Prior to the Event

Unit 2 was in Mode 1 and operating at 100% rated thermal power when the event occurred. There were no structures, systems or components out of service that contributed to this event.

Description of the Event

On 10/23/01, at approximately 1102 hours, an automatic reactor scram occurred as a result of a main turbine trip caused by a generator lockout. The main turbine trip resulted in the main turbine control and stop valves going closed.

As expected when the turbine tripped, reactor pressure increased resulting in five safety relief valves lifting initially to control reactor pressure. Reactor pressure was subsequently controlled by the main turbine bypass valves. Additionally, both Reactor Recirculation pumps received a trip signal when reactor pressure exceeded 1106 psig. An alternate rod injection signal was also generated due to the high pressure signal.

As expected for this type of event, reactor water level decreased resulting in PCIS (EIIS: JM) group II and III isolations and a standby gas treatment (EIIS: BH) start. All isolations performed as designed.

No Emergency Core Cooling actuations occurred due to this event. All other systems responded as expected for the given plant conditions. The operating crew stabilized the plant per applicable procedures.

The scram and primary containment isolation was reset on 10/23/01 at approximately 1120 hours.

This report is being submitted pursuant to 10CFR50.73(a)(2)(iv) due to the actuation of the Reactor Protection System (RPS) and Primary Containment / Standby Gas Treatment Systems. Pursuant to 10CFR50.72(b), prompt notification of this event was made to the NRC on 10/23/01 at approximately 1500 hours.

**LICENSEE EVENT REPORT (LER)**

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
Peach Bottom Atomic Power Station, Unit 2	05000277	01	- 004 -	00	3 OF 4	

**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. Plant equipment responded as designed to the event.

Five main steam relief valves lifted momentarily due to the reactor high pressure condition which is expected for a turbine trip / generator lockout initiating event. Engineering reviewed the relief valve (EIIS: RV) response to the high pressure condition and there were no significant concerns identified. Initially, it appeared that relief valve 'A' may have lifted at a slightly lower pressure than what the relief valve is set for. However, more detailed investigation into post event pressure data as well as other hydrodynamic affects determined that the relief valve operated as designed.

Because of the main steam high pressure signal, Alternate Rod Injection (ARI) actuated. This is a redundant feature to other Reactor Protection System (RPS) circuitry to ensure that control rods are inserted for a scram condition. There were no concerns noted with the operation of this equipment.

The generator lockout functioned as designed. Both the generator neutral overcurrent and overvoltage protective devices for the A phase were tripped resulting in the generator lockout. These protective devices responded as designed.

The isophase ductwork dampers provide control of cooling to the main generator conductors to remove heat. The dampers are manually operated devices that are positioned to provide optimum cooling to the main generator conductors. The dampers are not safety related equipment. Had the damper failed and not come in contact with the live conductor (i.e. no generator lockout / scram event), the unit would have continued to operate. Because the damper would not significantly have impeded the ventilation flow, there would not have been any significant impact on the cooling of the conductors.

Cause of the Event

Megging of the generator (EIIS: TB) resulted in the identification of a ground fault on 10/27/01. It was discovered that the A phase isophase bus ventilation damper (EIIS: DMP) became detached in the bus ductwork and fell onto the A phase conductor (EIIS: CBL). One side of the damper remained attached to the bus ductwork, resulting in a ground fault on the neutral phase. Further examination identified that the damper mounting flange had broke and was no longer attached to the mounting angle on the bus ductwork.

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Peach Bottom Atomic Power Station, Unit 2	05000277	01	- 004	- 00	4 OF 4

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

Cause of the Event, cont.

Further investigation determined that the tapped holes in the bus ductwork were stripped where the mounting angle is secured to the ductwork. This was attributable to previous maintenance performed during a refueling outage. It appears that three screws were over tightened during reinstallation of the damper which caused the tapped holes to become stripped. This allowed the screws to eventually fall out which led to the damper failure.

It was also identified that the preventive maintenance task for the isophase cooling system did not specifically review the integrity of the dampers on a routine basis.

Corrective Action Completed

The isophase bus ductwork damper was repaired, thereby eliminating the neutral ground. Other similar dampers on Unit 2 were inspected and no similar concerns were noted.

Corrective Actions Planned

Similar dampers on Unit 3 will be inspected during an outage of sufficient duration to permit inspections.

Appropriate procedures that control isophase damper work will be improved.

An upgraded design of the bolting to resist over tightening will be pursued.

Appropriate procedures will be updated to regularly inspect these dampers in the future.

Previous Similar Occurrences

There were no previous events identified that involved a scram due to a generator conductor ground.