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LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1) Peach Bottom Atomic Power Station Unit 2	DOCKET NUMBER (2) 0500 277	PAGE (3) 1 of 5
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TITLE (4)
This LER reports multiple unplanned Engineered Safety Feature (ESF) actuations during a planned electrical bus restoration following maintenance activities.

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	Sequential Number	Revision Number	MONTH	DAY	YEAR	Facility Name	Docket Number
05	21	99	99	004	00	06	20	99	PBAPS 3	0500 278
									Facility Name	Docket Number

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more) (11)								
POWER LEVEL (10)	100	20.2201(B)	20.2203(a)(2)(v)	50.73(a)(2)(i)	50.73(a)(2)(viii)					
		20.2203(a)(1)	20.2203(a)(3)(i)	50.73(a)(2)(ii)	50.73(a)(2)(x)					
		20.2203(a)(2)(i)	20.2203(a)(3)(ii)	50.73(a)(2)(iii)	73.71					
		20.2203(a)(2)(ii)	20.2203(a)(4)	X 50.73(a)(2)(iv)	OTHER					
		20.2203(a)(2)(iii)	50.36(c)(1)	50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 336A					
		20.2203(a)(2)(iv)	50.36(c)(2)	50.73(a)(2)(vii)						

LICENSEE CONTACT FOR THIS LER (12)

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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

Cause	System	Component	Manufacturer	Reportable to EPIX	Cause	System	Component	Manufacturer	Reportable to EPIX

SUPPLEMENTAL REPORT EXPECTED (14)

YES (if yes, complete EXPECTED SUBMISSION DATE)	X	NO	EXPECTED Submission Date (15)	Month	Day	Year
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On Friday, May 21, 1999 at approximately 2220 hours, during restoration of the normal power source to electrical bus 343 SU, the bus (343SU) was deenergized. This caused the 4KV emergency buses E13, E22, E33, and E42 to swap to their respective alternate power supplies (the 2SU-E transformer). During the swap to alternate power, 4 kV buses E13, E22, E33, and E42 experienced a momentary drop in voltage which resulted in multiple ESF actuations. The ESF actuations included a Unit 2 Outboard Primary Containment Isolation System (PCIS) Group II and Reactor Water Cleanup isolation and a Unit 3 Inboard PCIS Group II isolation. Additionally, a full Reactor Water Cleanup isolation (RWCU) occurred on Unit 3.

The cause of the deenergization was inadequate configuration control; specifically, a line disconnect from the normal power source was left in the open condition and the operating crew transferred the 343SU-E transformer to a dead power source.

The operating crew responded to the fast transfer per appropriate plant procedures and restored all PCIS systems to their normal configurations on both Unit 2 and Unit 3. This condition is reportable per 10 CFR 50.73(a)(2)(iv).

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	0500-278	99	004	00	

TEXT (If more space is required, use additional copies of NRC form 336A) (17)

Requirements of the Report

This LER is being submitted in accordance with 10 CFR 50.73.(a)(2)(iv) as a result of unplanned Engineered Safety Feature (ESF) actuations: Unit 2 Outboard Primary Containment Isolation System (PCIS) Group II and Reactor Water Cleanup partial isolation and Unit 3 Inboard Partial Group II isolation (EIIS:JM), and a full Reactor Water Cleanup isolation (EIIS:CE).

Unit Conditions at Time of Event

Both Unit 2 & 3 were operating at 100 percent reactor power (EIIS: RCT). Electrical bus 343 SU was receiving power from an alternate power supply (3 SU) in order to facilitate maintenance on a circuit switcher. Maintenance on the circuit switcher was completed and the operating crew was in the process of restoring electrical bus 343 SU to its normal power supply.

Description of the Event (See Attachment 1)

During the morning of 5/17/99, a clearance was applied to allow planned maintenance on the 343 SU bus and 3EA transformer. During the application, a bird's nest was observed in the 3437 circuit switcher on the 220-34 line. The condition was documented on an Action Request (AR) to have the nest removed.

Because of the existence of the bird's nest, shift operations personnel, decided that when the planned work was complete, the 3EA transformer would need to be energized via 3SU instead of the 220-34 line. In consideration of this, the preplanned restoration sequence of the clearance was changed to maintain the 3437 circuit switcher and the 3433 disconnect open rather than the normal closed positions. It was assumed that the switchyard clearance would tag and reclose the disconnect and the circuit switcher.

During the morning of 5/20/99, after the maintenance clearance was removed, an administrative clearance was hung to prevent use of the 220-34 line as the 3EA source. The administrative clearance consisted of two information tags on the control switches for the 3435 breaker and the 343 transformer load tap changer (LTC). The clearance did indicate that the 3437 circuit switcher was open, but the 3433 was **not** mentioned.

The switchyard crew performing the bird's nest removal decided to use a restriction instead of a clearance to perform the maintenance. Therefore, disconnect 3433 did **not** get tagged under the switchyard clearance program.

Due to weaknesses in the administrative controls (disconnect 3433 being excluded from the clearance), the crew did not recognize that disconnect 3433 was out of its normal position.

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At 2220, the PRO closed the 3435 breaker. When he released the control switch, the 343SU-1 breaker, which was supplying power to the 3EA transformer from 3SU, opened as expected. At this point the 3EA transformer became deenergized because disconnect 3433 was still open. This caused a momentary deenergization and fast transfer of the E-13, E-22, E-33, and E-42 4 KV electrical buses.

The momentary loss of power caused the following ESF actuations:

Unit 2 (PCIS Group II outboard, RWCUC outboard):

- Outboard Isolation D/W instrument N2 system
- Outboard Isolation Reactor Water Cleanup System
- Outboard Isolation of D/W Sump System

Unit 3 (PCIS Group II inboard, RWCUC full)

- Inboard Isolation of D/W instrument N2 system
- Inboard Isolation of D/W sump system
- Full Reactor Water Cleanup System Isolation
- Inboard Isolation Containment Atmosphere Sampling System
- Drywell Rad Gas Sampler flow path lost

Cause of the Event

The overall cause of this event was inadequate configuration control. Specifically, the position of disconnect 3433 was not adequately controlled when it was left in an other than normal condition.

Causes contributing to the loss of configuration control include the following:

1. Less than adequate written expectations for configuration control.
2. Inadequate documentation of equipment status changes.
3. Incomplete shift turnover.

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Analysis of the Event

The safety consequences of this event are considered minimal. 4KV buses E13, E23, E33, and E43 all transferred to their respective alternate power supply per system design. If an accident would have occurred, concurrent with the loss of the 3EA transformer, adequate AC power would have been available and both units could have been placed in a safe shutdown condition.

Unit 2 PCIS Outboard Group II and Outboard RWCU Isolations occurred due to the momentary voltage drop as the 4KV buses transferred to alternate, as per plant design. The unit continued operation at 100 percent power during the recovery from the event.

Unit 3 PCIS Inboard Group II and Full RWCU Isolations occurred due to the momentary voltage drop as the 4KV buses transferred to alternate, as per plant design. The unit continued operation at 100 percent power during the recovery from the event.

Corrective Actions

Completed corrective actions include the following:

- Power was restored to the 3EA transformer per plant procedures. Once completed, the 4KV buses were transferred to their respective normal power supply per appropriate plant procedures.
- All containment isolations were returned to normal and systems restored, as necessary, per appropriate plant procedures.
- Management expectations for shift turnover and communications were reinforced with all hands.

Future corrective actions included the following:

- Establish clear, written management expectations for equipment status control in the work process.

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Previous Events

LER 2-98-008, Unplanned Multiple Engineered Safety Feature Actuations During Planned Electrical Bus Isolation Clearance Activity, occurred on November 30, 1998. During a procedural transfer of 13KV buses a breaker trip caused six 4KV buses to swap to their alternate power supply. The result was similar to this event because both Unit 2 and 3 received partial Group II and RWCU isolations due to a momentary voltage drop as the buses transferred. The cause of the event was less than adequate procedural guidance.

LER 3-98-005, Inadvertent Unit 3 Electrical Bus E33 Trip (Engineered Safety Feature Actuation) During Performance of Unit 2 Electrical Bus E32 Surveillance Test, occurred on October 25, 1998. During a surveillance, the E33 bus was inadvertently deenergized when a technician and peer checker performed an action on a the incorrect bus. This event caused an ESF actuation due to the momentary interruption of power to E33. The cause of the event was inadequate self-checking and peer checking.

Attachment 1: Simplified System Drawing

SIMPLIFIED SYSTEM DRAWING

