CCN 91-14201

ADWER STATION

PEACH BOTTOM-THE POWER OF EXCELLENCE

PHILADELPHIA ELECTRIC COMPANY

PEACH BOTTOM ATOMIC POWER STATION R D. 1. Box 208 Delta, Pennsylvania 17314 (717) 456-7014

November 29, 1991

Docket No. 50-277

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

> SUBJECT: Licensee Event Report Peach Bottom Atomic Power Station - Unit 2

This LER concerns an Engineered Safety Feature actuation that occurred due to degraded diodes in the '2B' Reactor Protection System Motor Generator.

Reference:Docket MReport Number:2-91-037Revision Number:00Event Date:11/04/9Report Date:11/29/9Facility:Peach BPo 1P

Docket No. 50-277 2-91-037 00 11/04/91 11/29/91 Peach Bottom Atomic Power Station RD 1, Box 208, Delta, PA 17314

This LER is being submitted pursuant to the requirements of 10 CFR 50.73(a)(2)(iv).

Sincerely, Power

(1022 1)

cc: J. J. Lyash, USNRC Senior Resident Inspector T. T. Martin, USNRC, Region I

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Requirements for the Report

This report is submitted to satisfy the requirements of 10 CFR 50.73(a)(2)(iv) due to unplanned Engineered Safety Feature Actuations.

Unit Conditions at Time of Event

Unit 2 was in the RUN mode at 99% of rated thermal reactor (EIIS:EA) power. There were no systems, structures, or components that were inoperable that contributed to the event.

Description of the Event

On 11/4/91 at 1535 hours, a Unit 2 'B' channel Reactor Protection System (RPS) (EIIS:JC) half scram occurred when the '2B' RPS Motor Generator (M/G) output breaker (EIIS:BKR) tripped as a result of an undervoltage condition on the output of the '2B' RPS M/G set. The tripped breaker caused a Primary Containment Isolation System (PCIS)(EIIS:JM) half Group III isolation which started Standby Gas Treatment (EIIS:BH) and tripped the ventilation systems. The '2B' RPS bus was then aligned to its alternate feed which allowed the half scram and isolations to be reset. Subsequently, the affected systems were restored to normal. The NRC was notified of the event via ENS at 1650 hours.

Cause of the Event

The cause of the event has been determined to be an undervoltage condition on the "B" RPS bus.

An investigation identified that two M/G set diodes were degraded. Additionally, excessive dirt was found in the area of the generator field and exciter.

The existing PM program did not address diode checks and generator area cleanliness.

Analysis of the Event

No actual safety consequences occurred as a result of these events. Isolations and actuations functioned as designed. The undervoltage trip protects the RPS components from damage. If a half scram signal had been present on the "A" channel RPS during this event, a full scram would have occurred.

Corrective Actions

Following the event, the '2B' RPS bus was aligned to its alternate feed which allowed the half scram and isolations to be reset. Subsequently, the affected

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104 EXPIRES 4/30/92

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systems were restored to normal. Six diodes were replaced and the M/G set exciter and generator field were vacuumed clean on 11/8/91.

A recorder was installed under a Temporary Plant Alteration to provide a method to monitor the '2B' M/G set while in-service. The RPS bus was returned to its normal power supply on 11/9/91.

The '2B' M/G set will be monitored in an effort to identify any other operating difficulties that may be encountered.

The existing preventative maintenance tasks on the RPS M/G sets will be revised to include generator area cleaning and diode checks.

Additionally, a review of the Nuclear Plant Reliability Data System and work orders was performed concerning failed diodes and no significant problems were identified.

The other RPS M/G sets on both units will be taken out of service to support an inspection of these diodes and to perform generator area cleaning.

Previous Similar Events

No previous similar LERs have been identified involving RPS output breaker trips due to degraded diodes. However, there were two previous LERs (2-91-029 and 2-91-031) involving 2B M/G set output breaker trips. The first event involved a failed rheostat while the second event involved a failed voltage regulator. Since the corrective actions taken as a result of these events involved rheostat and voltage regulator replacement, they would not have been expected to prevent this event.