

PHILADELPHIA ELECTRIC COMPANY

PEACH BOTTOM ATOMIC POWER STATION

R. D. 1, Box 208

DELTA, PA 17314

(717) 456-7014



KEN POWERS  
PLANT MANAGER

April 29, 1993

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 a Technical Specification Violation which was the result of the Drywell Atmospheric Radiation Monitor being isolated from the drywell atmosphere.

Reference:	Docket No. 50-277
Report Number:	2-93-007
Revision Number:	0
Event Date:	04/03/93
Report Date:	04/29/93
Facility:	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)(i)(B).

Sincerely,

cc: R. A. Burricelli, Public Service Electric & Gas  
W. P. Dornsife, Commonwealth of Pennsylvania  
INPO Records Center  
J. J. Lyash, US NRC, Resident Inspector  
T. T. Martin, US NRC, Administrator, Region I  
R. I. McLean, State of Maryland  
C. D. Schaefer, DelMarVa Power  
H. C. Schwemm, VP - Atlantic Electric

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ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST. 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-6104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

DOCKET NUMBER (2)

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Peach Bottom Atomic Power Station  
Unit 2

YEAR

SEQUENTIAL  
NUMBERREVISION  
NUMBER

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Requirements for the Report

This report is being issued pursuant to 10 CFR 50.73(a)(2)(i)(B) due to a violation of Technical Specifications.

Unit Status at Time of Event

Unit 2 was in the RUN mode operating at approximately 100% power. There were no other systems, structures, or components that were inoperable that contributed to the event.

Description of the Event

On 4/3/93 at 1130 hours, with Unit 2 operating at approximately 100% power, it was discovered during an investigation by a Station Chemist of an iodine channel alarm that the Drywell Atmospheric Radiation Monitor (DARM)(EIIS:MON) was isolated from the drywell (EIIS:JM) atmosphere for an indeterminate period of time. This is a violation of Technical Specification (Tech Spec) 4.6.C.2., which requires that drywell atmospheric radioactivity levels be monitored and recorded at least daily. Although readings were taken and recorded daily, they were not representative of actual drywell conditions during the period of time that the DARM was isolated. In addition, with the DARM unknowingly inoperable, grab samples were not taken as required in Tech Spec 3.6.C.3.

The DARM contains two purge valves, one electrically operated (SV-4857) (EIIS:20) and one manually operated (HV-2-63G-40161) (EIIS:SHV). These valves allow either a sample input or a purge of the monitor to be selected. The electrically operated valve is used during normal operation of the DARM. The manual valve is a backup to the electric valve and is not normally manipulated. In this event, it was discovered that the manual valve, which is located inside the DARM cabinet, was in the purge position. A Chemist, who was investigating the iodine channel alarm trouble noticed that the manual valve was not in its usual position. The Chemist immediately returned the valve to the normal, sample, position and notified chemistry and shift supervision. Drywell atmospheric radiation levels were subsequently verified to be within expected normal operating limits.

Cause of the Event

The cause of the event has been determined to be a mispositioning of the DARM manual sample/purge valve. Having the manual sample/purge valve in the "PURGE" position closed the Drywell sample input to the DARM system and opened the purge line. This resulted in the monitoring of the Reactor Building atmosphere instead of the Drywell

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ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 60.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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atmosphere. An investigation was conducted to determine the cause of the mispositioning of the manual sample/purge valve. A review of past maintenance and troubleshooting activities on or associated with the DARM was performed. No cases were identified which would have required the manual valve to be manipulated.

The valve was last seen in its proper position by a chemistry technician performing a weekly filter change out in the cabinet on 03/09/93. Plant personnel who did routine work with the DARM system after 03/09/93 were interviewed and it was determined that human performance concerns were not involved with the event. The investigation did identify that the manual valve was properly labeled. The label required the notification of Shift Supervision prior to moving the valve out of the sample position. A human factors issue was identified with the use of this valve. This valve's position is very difficult to determine since it does not have external valve position indication. A Task Analysis was conducted at the cabinet which contains the manual purge/sample valve to determine if this human factors issue was the cause of the mispositioning. Information obtained from the Task Analysis and extensive interviews did not substantiate that these individuals caused the mispositioning.

Since the normal radiation levels indicated on the DARM are at or near the low end of the instrument's detection spectrum, readings with the DARM isolated from the drywell would appear to be normal. Therefore, the cause of the mispositioned valve as well as the period of time that the DARM was isolated could not be determined. It is unlikely that the valve was out of position for any substantial amount of time due to the fact that a chemistry technician did verify that the valve was properly positioned on 03/09/93 and the chemistry technicians who performed the weekly filter change outs in the panel had not noticed the mispositioning.

Analysis of the Event

No actual safety consequences occurred as a result of this event.

The DARM system provides supporting information to the Reactor Coolant Leakage Monitoring system. The DARM provides continuous monitoring of the drywell airborne radioactivity. As described in the Updated Final Safety Analysis Report section 4.10.3.2, any sudden increase in the monitor readings could indicate the presence of steam or reactor water leakage. The objective of the DARM, as indicated in Regulatory Guide 1.45 Position 5, is to be able to detect less than 1 gallon per minute (GPM) of unidentified Primary Coolant Pressure Boundary (PCPB) leakage in one hour. The reliability, sensitivity and response time of the DARM to detect 1 GPM in 1 hour of PCPB leakage depends on many complex factors such as the source of the leakage, drywell conditions,



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FACILITY NAME (1) Peach Bottom Atomic Power Station Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 2 7 7	LER NUMBER (6) YEAR SEQUENTIAL NUMBER REVISION NUMBER 9 3 — 0 0 7 — 0 0	PAGE (3) 0 4 OF 0 4
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and the physical properties and capabilities of the detectors. Therefore, there is no direct correlation or known relationship between the DARM count rate and leakage rate because the coolant activity levels, source of leakage, and background radiation levels (from leakage alone) are not known and cannot be effectively determined in existing reactors. Additionally, the monitoring of drywell sump pump (EIS:P) out rates and drywell temperature, as required by Tech Specs, also provide indication of PCPB leakage. Therefore, the loss of the ability of the DARM to monitor the drywell atmosphere was of minimal consequence.

Corrective Actions

The manual sample/purge valve was placed in the sample position on 4/3/93. Drywell atmospheric radiation levels were subsequently verified to be within expected normal operating limits.

This valve and the same valve on the other unit have been inspected and mechanically secured to prevent inadvertent mispositioning. As an interim corrective action, these valves will be removed under a Temporary Plant Alteration until the valves are permanently removed as part of a future DARM upgrade modification.

The pertinent information from this event will be provided to the appropriate Operations, Maintenance, Instrument & Controls, Health Physics, Chemistry, and Engineering personnel.

Previous Similar Events

One previous similar event (LER 3-91-006) was identified which involved mispositioning of valves on this system. The cause of the previous event could not be determined. The corrective actions taken as a result of this previous event involved the distribution of the event to the appropriate site groups. Because no physical changes were made to prevent inadvertent closing, the previous corrective actions did not prevent recurrence.