NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Peach Bottom Atomic Power Station - Unit 2	0 5 0 0 0 2 7 7	1 OF 0 5

TITLE (4)
Group II C Primary Containment Isolation System Isolation And A Reactor Scram That Resulted From An Instrument Isolation Valve Leaking Through During A Surveillance Test

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 NAMES	DOCKET NUMBER(S)
										0 5 0 0 0
0 2	0 7	8 9	8 9	0 0 3	0 1	0 4	2 6	8 9		0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
N		20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)	0 0 0	20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
T. E. Cribbe, Regulatory Engineer	7 1 7 4 5 6 - 7 0 1 4

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	
X	J F	I S V	0 2 3 2	N							

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On February 7, 1989, at approximately 12:45 PM, a group 2C Primary Containment Isolation System (PCIS) valve isolation occurred. This resulted in the motor operated feedwater flush valves ((MO) 2-02-38A and B) receiving signals to close. This isolation was not detected at this time. At 12:51 PM a reactor scram occurred. The scram was reset at 2:05 PM. At approximately 3:15 PM the oncoming shift discovered an intermediate position indication for MO-2-02-38A and then opened both MO-2-02-38A and B. The isolation and scram were the result of inadvertent reactor vessel pressure signals that occurred when instrument isolation valve (IIV) 2-2-55B leaked through during the calibration of reactor pressure transmitter (PT) 2-2-3-55B. The intermediate position on MO-2-02-38A was the result of an inadequate torque switch setpoint. There were no adverse consequences as a result of this event.

IIV 2-2-55B was replaced. The torque switch setting for MO-2-02-38A was increased to allow the valve to fully close under dynamic conditions. The Unit 2 motor operators which were identified as needing torque switch adjustments were readjusted to ensure proper operation. Additionally, the appropriate procedure has been revised to ensure future torque switch settings are adjusted to account for dynamic conditions.

The possibility of a modification to install a CR annunciator for the group 2C PCIS isolation is being reviewed. A critique was held with the involved shift crew to emphasize the importance of verifying isolations after an event.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

Requirements for the Report

This report is required per 10 CFR 50.73(a)(2)(iv) because of the unexpected actuation of an Engineered Safety Feature (ESF).

Unit Status at Time of Event

- Unit 2 was in the cold shutdown condition
- Feedwater System (EIIS:SJ) in long path recirculation (condensate demineralizers (EIIS:FDM) in service)
- Unit 2 2A and 3A reactor (EIIS:RCT) vessel instrumentation legs were blocked closed
- Control rods were fully inserted.

Description of Event

On February 7, 1989, at approximately 12:45 PM, with the reactor in the cold shutdown condition, a group 2C Primary Containment Isolation System (PCIS) (EIIS:JM) actuation occurred. This actuation resulted in the feedwater flush valves (Motor Operated Valves (MO) (EIIS:20) 2-02-38A and B) receiving signals to close. This isolation and an intermediate position indication on MO-2-02-38A were not identified by the utility licensed operators for approximately 2 1/2 hours. At approximately 12:51 PM a reactor scram occurred.

The scram was reset at approximately 2:05 PM. At approximately 3:15 PM the oncoming control room shift discovered an intermediate position indication for MO-2-02-38A and then opened both MO-2-02-38A and B.

Cause of the Event

Both events were the results of inadvertent reactor vessel pressure signals (600 psig and 1055 psig) that occurred during the calibration of reactor pressure transmitter (PT) (EIIS:PT) 2-2-3-55B.

At the time of the event, utility Instrumentation and Control (I & C) technicians were performing Surveillance Instruction (SI) 2P-2-55-B1CO "Calibration Check of Reactor Pressure Loop Instruments PT/PISH/PSL 2-2-3-55B". During the calibration of PT-2-2-3-55B, instrument isolation valve (IIV) (EIIS:ISV) 2-2-55B (manufactured by Dragon Valve Inc., Model P500F856) had excessive leakage through the seat causing the reference leg, which was isolated from the reactor due to root valve (EIIS:RTV) 2-2-36A being blocked closed, to pressurize (See Attachment 1). During this calibration, a Reactor Protection System (RPS) (EIIS:JC) "B" channel scram was received, as expected by procedure. When PT-2-2-3-55A sensed a reference leg pressure of 600 psig the group 2C PCIS isolation occurred. As the pressure in the reference leg was increased, PT-2-2-3-55A sensed high reactor pressure (1055 psig) and an unexpected "A" channel scram was received. This completed both logic circuits and resulted in the full reactor scram.

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TEXT *(If more space is required, use additional NRC Form 366A's)* (17)

On February 9, 1989, it was determined that the intermediate position on MO-2-02-38A was a result of a torque switch (EIIS:JS) setting which did not allow MO-2-02-38A to fully close under dynamic conditions. The torque switch was set for dynamic conditions during static diagnostic testing of the valve. Industry practice has been to assume that static testing results could be accurately extrapolated to dynamic conditions. Recent developments on site in conjunction with Idaho National Engineering Laboratory (INEL) testing and information from the diagnostic equipment supplier indicate an identifiable difference between these two conditions. Valve testing by the diagnostic equipment supplier indicates the stem thrust developed for a given torque switch setting is less under dynamic conditions.

There were two major causes for the 2 1/2 hour time delay in responding to the group 2C PCIS isolation. The first one is the fact that there is no control room annunciator for the 600 psig feedwater long path isolation. Secondly, the operating crew did not fully monitor the operation of Emergency Safety System (ESF) functions (Group 2C PCIS isolation) and verify their proper operation in response to Trip Procedure (T) 100, "Scram".

Analysis of Event

There were no safety consequences as a result of this event. The calibration check of this instrumentation is only performed during shutdown conditions, therefore this event could not have occurred at power. Additionally, when the reactor is critical the reference leg isolation valves are open. There was no control rod movement as a result of this event. The feedwater flush valves are closed during power operation. The failure of the MO-2-02-38A to close identified a potential problem involving static diagnostic testing to set motor operated valve torque switches for operation under dynamic conditions.

Corrective Actions

The instrument isolation valve which leaked through was replaced on February 27, 1989. SIs on similar instrumentation and the maintenance history of instrument valves were reviewed and it was determined that at this time it is not necessary to change any individual SIs or add the instrument valves to the preventive maintenance program.

On February 14, 1989, the torque switch setting for MO-2-02-38A was increased to ensure the valve would operate under dynamic conditions. Additionally, a detailed review of previous Motor Operated Valve (MOV) static test results was performed. This review identified valves that required a torque switch setting adjustment to provide sufficient margin to account for the differences in static and dynamic conditions. The Unit 2 operators which were identified as requiring torque switch adjustments were readjusted. The appropriate plant procedure has been revised to ensure future torque switch settings are adjusted to account for dynamic conditions.

A request to review the possibility of a modification to install a control room annunciator for the 600 psig feedwater longpath isolation has been initiated and will be performed for both units if deemed necessary.

*U.S. GPO: 1988-520-589:00070

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TEXT *(If more space is required, use additional NRC Form 366A's)* (17)

On February 10, 1989, the shift crew involved in the event held a critique to discuss the event and specifically the 2 1/2 hour time span between the group 2C PCIS isolation and the time the isolation was identified. During the critique, the importance of assuring the appropriate ESF functions (Group 2C PCIS isolation) are verified after a scram, as required per Trip Procedure (T) 100, "Scram", was discussed.

Previous Similar Events

There were three previous similar events, LER 2-85-15, 2-87-26, and 2-88-30 in which an isolation or scram resulted from a leaking instrument valve. The corrective actions for the previous events were to replace the leaking valves, thus they would not have been expected to have prevented this event.

*U.S. GPO: 1988-520-589-00070

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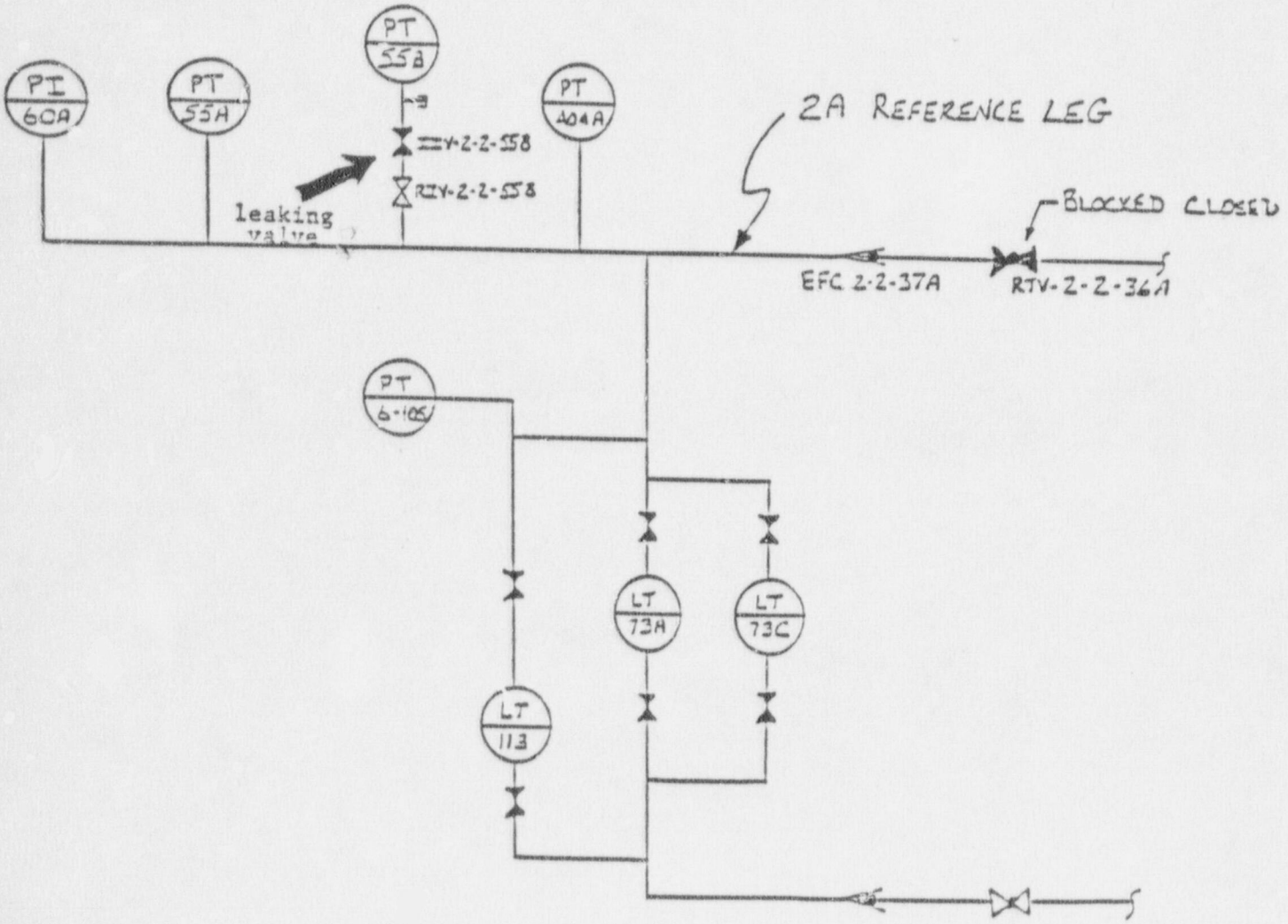
TEXT *(If more space is required, use additional NRC Form 366A's)* (17)

Attachment 1



CCN-89-14061

PEACH BOTTOM—THE POWER OF EXCELLENCE

PHILADELPHIA ELECTRIC COMPANY
PEACH BOTTOM ATOMIC POWER STATION
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D. M. Smith
Vice President

April 26, 1989
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 revised LER involves a Group 2C Primary Containment Isolation System isolation and a reactor scram which resulted from leakage through an instrument isolation valve during a surveillance test. This revision includes additional information concerning the failure of a valve to go fully closed during this event as well as updated information concerning the corrective actions.

Reference:	Docket No. 50-277
Report Number:	2-89-003
Revision Number:	01
Event Date:	02-07-89
Report Date:	04-26-89
Facility:	Peach Bottom Atomic Power Station RD 1, Box 208A, Delta, PA 17314

This LER is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(iv).

Sincerely,

cc: T. P. Johnson, USNRC Senior Resident Inspector
W. T. Russell, USNRC, Region I

IE22
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bcc: ANI Library
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