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PEACH BOTTOM ATOMIC POWER STATION
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PEACH BOTTOM—THE POWER OF EXCELLENCE

D. M. Smith
Vice President

November 6, 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 LER concerns a Local Power Range Monitor (LPRM) spiking upscale, causing a full reactor scram while in hot shutdown.

Reference:	Docket No. 50-277
Report Number:	2-89-024
Revision Number:	00
Event Date:	10/06/89
Report Date:	11/06/89
Facility:	Peach Bottom Atomic Power Station RD 1, Box 208A, Delta, PA 17314

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

Sincerely,

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

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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 3

TITLE (4) Local Power Range Monitor (LPRM) Spike Causes Reactor Scram Signal While In Hot Shutdown

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
1 0	0 6	8 9	8 9	—	0 2 4	— 0 0	1 1	0 6	8 9		0 5 0 0 0

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	0 0 0	20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
		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
T. E. Cribbe, Regulatory Engineer	AREA CODE 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	

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
X YES (If yes, complete EXPECTED SUBMISSION DATE)	NO		0 6	3 0	9 0

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

At 1307 hours on 10/6/89 with Unit 2 in Hot Shutdown, the Reactor Protection System (RPS) initiated a full Reactor Scram Signal. The full reactor scram was a result of a channel "B" RPS scram signal being received in conjunction with a channel "A" RPS scram signal already inserted. The "B" RPS scram signal was the result of a "D" Average Power Range Monitor (APRM) Hi-Hi Flux Signal caused by Local Power Range Monitor (LPRM) 40-33A spiking upscale. The "A" channel half scram was inserted as a result of the "E" Intermediate Range Monitor (IRM) being inoperable and blocked in standby. Immediate corrective action was to bypass LPRM 40-33A. The "A" half scram signal was reset when the previously inoperable "E" IRM was repaired and returned to service. The proximate cause of this event was the output signal for the LPRM 40-33A spiking high. No actual safety consequences occurred as a result of this event. It is planned to perform an investigation of the cause of the spiking output of LPRM 40-33A. The results of this investigation and the resulting corrective actions will be reported in a supplement to this LER. There was one previous similar event.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Peach Bottom Atomic Power Station Unit 2	0 5 0 0 0 2 7 7	8 9	— 0 2 4	— 0 0	0 2 OF 0 3

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

Requirements for the Report

This report is required pursuant to 10 CFR 50.73(a)(2)(iv) because an LPRM spiking upscale resulted in an Engineering Safeguard Feature Actuation (i.e., Reactor Protection System (EIIS:JC)).

Unit Status at Time of Event

Unit 2 was in Hot Shutdown with reactor pressure 450 psig and reactor level at +22". Unit 2 "A" RPS scram signal had previously been inserted as a result of less then the required number of Intermediate Range Monitor (IRM) Detectors (EIIS:DET) operable.

Description of the Event

At 1307 hours on 10/6/89 with Unit 2 in Hot Shutdown, the Reactor Protection System (RPS) initiated a full reactor (EIIS:RCT) scram signal. The full reactor scram was a result of a channel "B" RPS scram signal being received in conjunction with a channel "A" RPS scram signal already inserted. The "B" RPS scram signal was a result of a "D" Average Power Range Monitor (APRM) (EIIS:MON) Hi-Hi Flux Signal caused by LPRM 40-33A spiking upscale. The "A" channel half scram was previously inserted as required by Technical Specifications (less than the required number of IRMs operable). No control rod movement occurred because all rods had previously been inserted.

The "B" channel half scram was reset at 0350 hours when "D" APRM Hi-Hi Flux Trip Signal was reset by bypassing the 40-33A LPRM. The "A" channel half scram was reset when the previously inoperable "E" IRM was repaired and returned to service at 0445 hours on 10/6/89.

Cause of the Event

The proximate cause of this event was the output of the 40-33A LPRM spiking high. The root cause of the spiking of the LPRM signal is under investigation by Philadelphia Electric Company and General Electric Company (LPRM supplier).

Analysis of the Event

No safety consequences occurred as a result of this event.

The scram signal occurred with the unit in Hot Shutdown. No actual control rod motion occurred as a result of this scram. Had the LPRM spike occurred during a reactor startup (Mode Switch in "startup") a full scram would not have occurred. Per Technical Specification requirements, no more than one IRM detector would have been bypassed, thus the "A" channel half scram would not have been present. Had the LPRM spike occurred during power operation (Run Mode) a full scram would not have occurred. Power level would have been above that which requires the IRM instruments to be operable. Therefore, the "A" channel half scram would not have been present.

Corrective Actions

The following immediate corrective action was taken:

LPRM detector 40-33A was placed in the bypass position at 0350 hours and the "B" channel scram signal was reset.

The following corrective action is planned:

The cause of the spiking of LPRM de' tor 40-33A will be investigated. The results of this investigation and appropriate corrective actions will be provided in a supplement to this LER.

Previous Similar Events

There has been one previous similar event reported in LER 02-89-16. This event also involved the spiking of an LPRM in conjunction with an already present half scram inserted in the other RPS channel. The root cause of this event is under investigation and the appropriate corrective actions have not yet been identified. Therefore, the corrective actions in LER 02-89-16 could not have been expected to prevent this event.