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Vice President

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September 26, 1997

Re: Indian Point Unit No. 2
Docket No. 50-247
LER 97-02-01

Document Control Desk
US Nuclear Regulatory Commission
Mail Station PI-137
Washington, DC 20555

The attached Licensee Event Report 97-02-01 is hereby submitted in accordance with the requirements of 10 CFR 50.73.

Very truly yours,

Stephen E. Quinn

Attachment

C: Mr. Hubert J. Miller
Regional Administrator - Region I
US Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Mr. Jefferey Harold, Project Manager
Project Directorate I-1
Division of Reactor Projects I/II
US Nuclear Regulatory Commission
Mail Stop 14B-2
Washington, DC 20555

Senior Resident Inspector
US Nuclear Regulatory Commission
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NRC FORM 366 (6-89)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-104
EXPIRES: 4/30/92

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Indian Point No. 2	0 5 0 0 0 2 4 7	1 OF 0 4

TITLE (4) **Reactor trip due to Steam Generator low level**

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 1	2 6	9 7	9 7	- 0 0 2 -	0 1	0 9	2 6	9 7		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9): N

POWER LEVEL (10): 0 1 4

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: *(Check one or more of the following)* (11)

[ ] 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 336A)*
[ ] 20.405(a)(1)(iii)	[ ] 50.73(a)(2)(i)	[ ] 50.73(a)(2)(viii)(A)	
[ ] 20.405(a)(1)(iv)	[X] 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)
John P Beck, Senior Engineer	914 734-5692

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)

[ ] YES *(If yes, complete EXPECTED SUBMISSION DATE)* [X] NO

EXPECTED SUBMISSION DATE (15): MONTH DAY YEAR

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

On January 26, 1997, with reactor power at approximately 14 percent and a unit shutdown in progress, a manual turbine trip was initiated due to steam generator level variations. Feedwater regulating valves for 21, 22, 23, and 24 steam generators had been placed in manual prior to the trip due to inconsistent response experienced during the shutdown. Feedwater flow to the steam generators was being controlled primarily with 21 Main Boiler Feed Pump speed. 21 Main Boiler Feed Pump recirculation valve opened as designed on low flow, causing a reduction in feedwater to all steam generators. A manual turbine trip was initiated in accordance with management direction, which caused a further reduction in steam generator levels due to "shrink." The combined effect of reduced feedwater flow and "shrink" resulted in a low steam generator level reactor trip. All control rods fully inserted and the generator tripped 30 seconds following the turbine trip as designed. Following the reactor trip all safety-related equipment performed as required with the exception of the 21, 22, and 24 Main and 23 Low-flow Feedwater Regulating Valves which did not fully close, as required. A multi-discipline team was promptly assembled to investigate the cause of the Main and Low-flow Feedwater Regulator valve non-closures. The reactor was safely brought to hot shutdown conditions.

PLANT AND SYSTEM IDENTIFICATION:

Westinghouse 4-Loop Pressurized Water Reactor

IDENTIFICATION OF OCCURRENCE:

Reactor trip due to Steam Generator 23 low level

EVENT DATE:

January 26, 1997

REPORT DUE DATE:

February 25, 1997

REFERENCES:

Condition Identification and Tracking System (CITRS) No. 96-E00288, 96-E00290

PAST SIMILAR OCCURRENCE:

LER 85-006, 88-019, 92-002, 92-007, 95-016, and 96-016

DESCRIPTION OF OCCURRENCE:

On January 26, 1997, with a unit shutdown in progress and the reactor at approximately 14 percent power, the turbine was manually tripped at 12:08 hours at the direction of management when difficulty was encountered in positioning Main Feedwater Regulating Valves 21, 22, and 24. The 21 Main Boiler Feedwater Pump Recirculation Valve opened on low flow as designed, causing a decrease in all steam generator levels. The reactor subsequently tripped on 23 Steam Generator low level, and 30 seconds after the turbine trip, the generator tripped as designed. All control rods fully inserted into the core with the reactor trip as designed. All safety-related equipment performed as expected, except for 21, 22, and 24 Main and 23 Low-flow Feedwater Regulating Valves which remained in partially open positions after the reactor trip. The reactor was safely brought to hot shutdown conditions, and subsequently taken to cold shutdown condition.

ANALYSIS OF OCCURRENCE :

Reporting of the Reactor Trip (Reactor Protection System (RPS) actuation) on January 26, 1997 and Feedwater Regulating Valve closure is made pursuant to 10 CFR 50.73(a)(2)(ii)(B) and (iv). Following the reactor trip, all safety-related equipment functioned as designed, except for 21, 22, and 24 Main and 23 Low-flow Feedwater Regulating Valves which remained in partially open positions after the reactor trip. The reactor was safely brought to hot shutdown conditions and subsequently taken to a cold shutdown condition. There were no injuries to personnel or damage to equipment as a result of the reactor trip.

CAUSE OF OCCURRENCE :

The cause of the reactor trip was a low level in 23 Steam Generator. This low level is attributed to the post turbine trip steam generator level "shrink" coupled with the 21 Main Boiler Feedwater Pump Recirculation valve opening on low flow and the difficulty experienced in positioning the Main Feedwater Regulating valves.

The cause of the failure of the Main Feedwater Regulating valves supplying 21, 22, and 24 Steam Generators has been determined to be valve damage related to foreign material intrusion. This resulted from the failure of Foreign Material Exclusion (FME) boundaries during the 1995 refueling outage.

CORRECTIVE ACTION:

A controlled power reduction was ordered when 21 Main Feedwater Regulating valve exhibited unresponsive behavior. During the shutdown, two other Main Feedwater regulating valves exhibited similar behavior. When the reactor trip occurred, the control room operators took immediate actions in accordance with emergency operating and plant shutdown procedures. The reactor was safely brought to hot shutdown condition.

A detailed description of this event and the subsequent corrective actions undertaken has been provided to the staff in our response to NRC Confirmatory Action Letter 1-97-002, dated February 18, 1997. The corrective actions associated with the removal of the foreign material from those affected systems and/or components were completed prior to unit criticality on March 14, 1997.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

Longer-term measures to prevent recurrence of this event have been instituted. These measures include revision of Station Administrative Order (SAO) 150, "Foreign Material Exclusion and Control." Further, the root cause analysis process, as discussed in SAO-132, "Analysis of Station Events and Conditions," has been revised to adopt a standard method utilizing analytical techniques when performing root cause analysis. The requirement for additional peer reviews and management reviews for significant events is now proceduralized. Training on the root cause process, including the MORT technique, for greater than 60 investigators and managers has been completed. The root cause analysis procedure and training material will be evaluated and updated periodically to ensure that the investigation techniques provided are effectively utilized.