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February 16, 1995

Re: Indian Point Unit No. 2
Docket No. 50-247
LER 95-01-00

Document Control Desk
US Nuclear Regulatory Commission
Mail Station P1-137
Washington, DC 20555

The attached Licensee Event Report LER 95-01-00 is hereby submitted
in accordance with the requirements of 10 CFR 50.73.

Very truly yours,



Attachment

cc: Mr. Thomas T. Martin
Regional Administrator - Region I
US Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Mr. Francis J. Williams, Jr., 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
PO Box 38
Buchanan, NY 10511

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LICENSEE EVENT REPORT (LER)

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 (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Indian Point Unit No. 2	DOCKET NUMBER (2) 0 5 0 0 0 2 4 7	PAGE (3) 1 OF 0 4
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TITLE (4)
Turbine Trip Due to Low Auto Stop Oil Pressure

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	1 7	9 5	9 5	0 0 1	0 0	0 2	1 6	9 5			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) 18 9	20.402(b)	20.405(c)	<input checked="" type="checkbox"/>	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 Michael A. Whitney, Sr. Engineer	TELEPHONE NUMBER 9 1 4 7 3 4 - 5 1 3 1
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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
B	J N S O L		A 6 1 0	N						

SUPPLEMENTAL REPORT EXPECTED (14)

<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On January 17, 1995, with the unit operating at 89% power, a turbine trip occurred due to low autostop oil pressure. The turbine trip in turn caused a reactor trip. All automatic actions occurred as expected and the plant responded to the transient as expected with the exception of a greater than expected cooldown of the Reactor Coolant System. Manual operator action was taken to restore pressures, levels and temperatures to expected values. The cause of the low autostop oil pressure was determined to be a solenoid valve which had a degraded pilot seat. Upon completion of a post trip review and a further review by the Station Nuclear Safety Committee, a reactor restart was initiated. On January 19, 1995, during startup with the unit operating at 16% power, a turbine trip occurred due to high steam generator level. This caused an automatic feedwater isolation which includes the automatic actuation of auxiliary feedwater pumps. The cause of the high steam generator level was attributable to operator execution of manual feedwater control.

**LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION**

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FACILITY NAME (1) Indian Point Unit No. 2	DOCKET NUMBER (2) 0 5 0 0 0 2 4 7	LER NUMBER (6)			PAGE (3)		
		YEAR 9 5	SEQUENTIAL NUMBER — 0 1	REVISION NUMBER — 0 0	0 2	OF	0 4

TEXT (If more space is required, use additional NRC Form 388A's) (17)

PLANT AND SYSTEM IDENTIFICATION:

Westinghouse 4-Loop Pressurized Water Reactor

IDENTIFICATION OF OCCURRENCE:

Turbine Trip due to Low Autostop Oil Pressure

EVENT DATE:

January 17, 1995

REPORT DUE DATE:

February 16, 1995

REFERENCES:

Significant Occurrence Reports (SOR's) 95-33, 95-45, A and B
Station Administrative Order (SAO) 132 Event Report No. 95-01

PAST SIMILAR EVENT:

None

DESCRIPTION OF OCCURRENCE:

One January 17, 1995 at 0039 hours, with the unit operating at 89% power, a turbine trip occurred due to low autostop oil pressure. Since the reactor power was above the P-8 turbine/reactor trip interlock setpoint of 20% power, the turbine trip caused a reactor trip. No plant conditions were in existence at the time that would have required a turbine autostop oil trip. During the trip, a half group quick open signal was generated as designed for six of the high pressure steam dump valves to the main condenser, resulting in rapid cooling of the reactor coolant system (RCS). While this cooldown was greater than expected, it was within design limits and technical specifications. Manual operator action was taken to start a second charging pump and secure main feedwater to the steam generators to restore RCS pressures, levels and temperatures. Otherwise, the plant's response to the transient including all automatic actuations occurred as expected.

On January 19, 1995 at 0812 hours, during startup with the unit operating at 16% power, a turbine trip occurred due to high steam generator level. This caused an automatic feedwater isolation which includes the automatic actuation of auxiliary feedwater pumps. The reactor did not trip because reactor power was below the P-8 turbine/reactor trip interlock setpoint of 20% power. Reactor power was stabilized at 6% power.

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		9 5	- 0 0 1	- 0 0	0 3	OF 0 4

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

ANALYSIS OF OCCURRENCE:

This report is being made because an actuation of the Reactor Protection System (RPS) occurred on January 17, 1995 and because an actuation of the Auxiliary Feedwater Pumps occurred on January 17 and 19, 1995. These actuations are reportable under 10 CFR 50.73(a)(2)(iv). There were no adverse safety implications for this event.

Following the turbine/reactor trip on January 17, 1995, the plant experienced a greater than expected cooldown of the reactor coolant system. This greater than expected cooldown is attributed to the high pressure steam dump valves being open longer than required. In response to this cooldown, manual operator action was taken to start a second charging pump and secure main feedwater to the steam generators to restore RCS pressures, levels and temperatures.

CAUSE OF OCCURRENCE:

The cause of the low autostop oil pressure on January 17 was determined to be a solenoid valve which had a degraded pilot seat. This valve is an ASCO pilot assisted solenoid valve which is installed as an autostop oil valve (ASB-20) and is normally de-energized closed. On a demand trip signal, this valve energizes open and dumps autostop oil, causing the autostop oil low pressure trip to effect a main turbine trip. The solenoid inadvertently opened when degradation of the cast urethane seat for the pilot orifice permitted sufficient oil leakage to inadvertently open the valve. The degradation of the urethane seat resembled a concavity, hemispherical in shape, about 1 millimeter in diameter just off center of the seat concavity for the pilot orifice.

As indicated above, the cause of the greater than expected plant cooldown appears to be the slower than expected closure of the high pressure steam dump valves.

The cause of the high steam generator level on January 19 was a cognitive personnel error in controlling feedwater. During the period prior to the trip, a licensed reactor operator was controlling steam generator level manually in accordance with procedure using the low flow bypass feedwater regulating valves getting ready to transfer to the main feedwater regulating valves. His attempt to decrease feedwater flow in response to increasing steam generator water levels was not accomplished in sufficient time to preclude reaching the trip setpoint.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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TEXT (If more space is required, use additional NRC Form 368A's) (17)

CORRECTIVE ACTION:

A post trip review was completed and a meeting of the Station Nuclear Safety Committee was held on January 17, 1995 to review the trip, its cause and the follow-up actions. It was concluded that the actions taken during and following the trip were adequate and appropriate.

The failed solenoid valve was sent to the manufacturer for analysis. The failure analysis report indicated that the degradation of the urethane seat was attributed to the hydrolysis of the cast urethane seat. Hydrolysis is the chemical decomposition of a substance when it interacts with moisture. However in this case, the degradation was evident in a relatively moisture free environment. Subsequent investigation has identified similar problems with this cast urethane seat at other utilities and industries and that the pilot seat material for this kind of valve is being changed.

By the end of the 1995 Refueling Outage the station will complete its evaluation of corrective actions for solenoid valves that utilize cast urethane pilot seats.

During the 1995 refueling outage, the high pressure steam dump control setting will be reviewed and adjusted as necessary to limit post trip cooling events.

The January 19, 1995, high steam generator level event will be reviewed with all operators during a future training cycle in 1995.