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September 2, 1997

Re: Indian Point Unit No. 2
Docket No. 50-247
LER 97-19-00

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

The attached Licensee Event Report 97-19-00 is hereby submitted in accordance with the requirements of 10 CFR 50.73.

Very truly yours,



Attachment

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

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

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)

Indian Point Unit No. 2

DOCKET NUMBER (2)

0 5 0 0 0 2 4 7 1 OF 0 5

PAGE (3)

TITLE (4) Closure of steam generator blowdown isolation valves that also function as ESF automatic containment isolation valves

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	7	3 1 9 7	9 7	0 1 9	0 0	0 9	0 2	9 7		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9) POWER LEVEL (10) N 0 9 2	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)	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 John P Beck, Senior Engineer

TELEPHONE NUMBER

AREA CODE

9 1 4 7 3 4 - 5 6 9 2

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

YES (If yes, complete EXPECTED SUBMISSION DATE)

X NO

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

On July 31, 1997, during a unit power escalation with power at approximately 92 percent, an automatic containment isolation valve closure occurred as a result of the high alarm setting being exceeded on the steam generator blowdown radiation monitor R-49. The blowdown was reestablished upon subsequent investigation based on successful completion of procedural guidance provided in System Operating Procedure (SOP) 12.3.2. This isolation occurred due to a conservatively low alarm setpoint for the steam generator blowdown radiation monitor R-49. Although these steam generator blowdown isolation valves are automatic containment isolation valves, which are Engineered Safety Feature (ESF) components, their closure was in response to low level radioactivity and not a containment isolation signal as a result of an ESF actuation.

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TEXT CONTINUATION**

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FACILITY NAME (1) Indian Point Unit No. 2	DOCKET NUMBER (2) 0500024797	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		97	019	00	02	OF	05

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

PLANT AND SYSTEM IDENTIFICATION:

Westinghouse 4-Loop Pressurized Water Reactor

IDENTIFICATION OF OCCURRENCE:

Closure of steam generator blowdown isolation valves that also function as ESF automatic containment isolation valves.

EVENT DATE:

July 31, 1997

REPORT DUE DATE:

September 2, 1997

REFERENCES:

Condition Identification and Tracking System (CITRS) No. 97-E02855,
LER 95-20-00, LER 97-05-00, and LER 97-11-00
Plant Operating Procedure (POP) 1.1, Plant Heat up
System Operating Procedure (SOP) 12.3.2, Digital Radiation Monitoring
System Operation (Local OR SRD)

PAST SIMILAR OCCURRENCE:

LER 95-20-00, LER 97-05-00, LER 97-11-00

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

DESCRIPTION OF OCCURRENCE:

On July 31, 1997 at approximately 00:52 hours, while increasing unit power level, and the unit at approximately 92 percent power, the steam generator blowdown radiation monitor R-49 alarmed and isolated the blowdown for all four steam generators. Following the subsequent review and resulting determination, steam generator blowdown was reestablished in accordance with SOP 12.3.2, Digital Radiation Monitoring System Operation.

ANALYSIS OF OCCURRENCE :

Sample lines for the blowdown streams from each of the four steam generators merge into one line monitored by radiation monitor R-49 for an increase in activity, which potentially may be indicative of a steam generator tube leak. The monitor has two setpoints, a "Warn" and an "Alarm." The warn setpoint also actuates an alarm in the control room, and the higher alarm setpoint isolates blowdown and actuates an alarm in the control room. Blowdown is isolated by the closure of two containment isolation valves in each blowdown line. During normal plant operation, there is a continuous low-level background or steady-state indication of radioactivity in the blowdown flow, which is well within any release limits. These limits are defined in Technical Specification 3.9.A.1.a.

During the unit power ascension, prior to ESF actuation, R-49 readings were approximately 1E-6 µCi/cc. A spike from approximately 1E-6 µCi/cc to 6.08E-6 µCi/cc resulted in the high alarm and subsequent isolation of the steam generator blowdown and sample valves as designed, preventing further monitoring of the activity in the steam generators. There were no other indications of a potential increase in primary to secondary leakage during this time such as an increase in Condenser Air Ejector Radiation Monitor, R-45, or N-16 Primary to Secondary Leak Rate Monitor readings.

Subsequent to the blowdown isolation the operators cleared the alarm by raising the alarm setting to a higher value in accordance with Operator Aid 96-01, which provides the operators with the allowable settings for the process radiation monitors. After R-49 was reset, and blowdowns reestablished at approximately 01:03 hours, a grab sample of the blowdown was taken and analyzed, which indicated the presence of 4E-7 µCi/cc of Co-60. No other

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radioisotopes were detected. The measured concentration of steam generator activity returned to readings ($3E-6 \mu\text{Ci/cc}$) similar to those before the spike. Analyses of manual grab samples of the steam generator blowdown and subsequent monitoring of R-49 confirmed that there was no evidence of increased primary to secondary leakage. In addition, there were no further spikes on R-49 resulting in alarm actuations after the monitor was reset. This observed behavior is consistent with the release of particulate material from the steam generator sludge pile, typically contaminated with Co-60, during changing blowdown and flow conditions during start-up and shutdowns.

The corrective actions provided in LER 97-11-00 discussed an increase of the high alarm setting from a conservatively low setting of five times the R-49 background reading to 75 percent (alternate high alarm set point) of the licensed release limit during periods of unit power escalations or decreases. During the July 30-31, 1997 power escalation, this recommendation had not been implemented. The recommendation to implement the alternate high alarm set point; proceduralized in POP 1.1 and SOP 12.3.2, was an action that "should" occur. When the operator reached the step in POP 1.1 to set the high alarm on R-49, he chose not to raise the setting from the more conservative low setting of $1 E-6 \mu\text{Ci/cc}$. The apparent discrepancy between the Operator Aid and the proceduralized guidance led operators to default to the more conservative alarm setting as specified in the Operator Aid. The monitor performed as designed and provided the isolation of the blowdown lines for all four steam generators.

The eight blowdown isolation valves also function as containment isolation valves, and the containment isolation system is an ESF. These events are reportable under 10 CFR 50.73(a)(2)(iv) because they involve automatic actuations of ESF components. The actuation of the ESF components was not in response to an ESF signal and was not required to mitigate any adverse radiological event.

CAUSE OF OCCURRENCE :

The steam generator blowdown isolation resulted from a combination of low level activity in the blowdown stream from particulate material released due to the changes in blowdown hydraulics, the unit power level increase and the conservatively low setting of the steam generator blowdown radiation monitor R-49 alarm setpoint. The steam generator blowdown radiation monitor R-49

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alarm setpoints can be adjusted as a function of background. During periods of high blowdown flow, such as startup and shutdown, the inclusion of background increases the probability for alarms and the initiation of blowdown isolations since the above known effects are not compensated for in the setpoint calculations.

CORRECTIVE ACTIONS:

The steam generator blowdown was reestablished using plant procedures.

The applicable operating procedures had been previously revised to provide guidance for increasing the high alarm set point for R-49 to compensate for the effects of increased activity from increased blowdown flow during planned transients or evolutions. During this event however, Operator Aid 96-01 in place at the Radiation Monitoring System Console, for operator use, was dated January 4, 1996. Operator Aid 96-01 did not yet reflect the recent provision of guidance on alternate high setpoint implementation as did SOP 12.3.2, and POP 1.1. During return to service of the unit, the recommended alternate high setpoint is specified to be in effect from time exceeding cold shutdown until full power is achieved and maintained for 24 hours. Operator Aid 97-21 now replaces Operator Aid 96-01, and provides guidance on the implementation of the alternate high setpoint. The corrective actions to revise procedures, as described in LER's 97-05-00 and 97-11-00 were fully implemented at the time of this event. Although SOP 12.3.2 and POP 1.1 were updated to issue guidance on raising R-49's alarm setpoint during power increases and decreases, the updated Operator Aid was not in place and created conflicting guidance. The Operator Aid has since been updated.

In a further attempt to preclude recurring ESF actuations associated with R-49 during power changes, the R-49 alarm setpoint will be permanently increased to 75 percent of the licensed release limit. This will include revision of the Operator Aid, SOP 12.3.2, and POP 1.1 and is scheduled to be completed by October 30, 1997.