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April 15, 1997

Re: Indian Point Unit No. 2
Docket No. 50-247
LER 97-05-00

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

The attached Licensee Event Report 97-05-00 is hereby submitted in accordance with the requirements of 10 CFR 50.73.

Very truly yours,



Attachment

cc: 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
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US Nuclear Regulatory Commission
Mail Stop 14B-2
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Senior Resident Inspector
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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 4

TITLE (4)
Unexpected Closure of Steam Generator Blowdown 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)
03	16	97	79	005	00	04	15	97		05000
										05000

OPERATING MODE (9) N

POWER LEVEL (10) 0 7.7

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

<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
<input type="checkbox"/> 20.406(a)(1)(i)	<input type="checkbox"/> 50.38(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)
<input type="checkbox"/> 20.406(a)(1)(ii)	<input type="checkbox"/> 50.38(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
<input type="checkbox"/> 20.406(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	
<input type="checkbox"/> 20.406(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	
<input type="checkbox"/> 20.406(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME: Phil Griffith, Engineer

TELEPHONE NUMBER: 914 734-5190

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR

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

On March 16, 1997, with a unit power escalation in progress, an automatic closure of the steam generator blowdown isolation valves occurred as a result of a high alarm on the Steam generator radiation monitor R-49. The actuation of these isolation valves occurred due to a conservatively low alarm setpoint for radiation monitor R-49. The blowdown was re-established upon successful completion of steam generator leak identification procedure steps, in Abnormal Operating Instruction A 1.2, Steam Generator Tube Leak. Although the steam generator blowdown isolation valves are Automatic Containment Isolation Valves, which are Engineered Safety Feature (ESF) components, their closure in this case was in response to low level radioactivity in the steam generator blowdown stream and not a Containment Isolation ESF signal. The health and safety of the public were not adversely affected by this event since the activity released was significantly below the 10 CFR Part 20 limits.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST 500 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

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
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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:

Unexpected closure of steam generator blowdown isolation valves which also function as ESF Automatic Containment Isolation valves.

EVENT DATE:

March 16, 1997

REPORT DUE DATE:

April 15, 1997

REFERENCES:

Condition Identification and Tracking System (CITRS) No. 97-E00934, Abnormal Operating Instruction A 1.2, Steam Generator Tube Leak and LER 95-20-00

PAST SIMILAR OCCURRENCE:

LER 95-20-00

DESCRIPTION OF OCCURRENCE:

On March 16, 1997 at approximately 7:00 AM, with a unit power escalation in progress, the steam generator blowdown radiation monitor R-49 alarmed and closed the eight blowdown isolation valves for the four steam generators. Following the determination as directed by Abnormal Operating Instruction A 1.2, Steam Generator Tube Leak the steam generator blowdown was returned to service.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST. 500 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.

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TEXT (If more space is required, use additional NRC Form 365A's) (17)

ANALYSIS OF OCCURRENCE:

The eight blowdown isolation valves also function as containment isolation valves, and the containment isolation system is an Engineered Safety Feature (ESF). This event is reportable under 10 CFR 50.73(a)(2)(iv) as it involves automatic actuations of ESF components. The actuation of ESF components was not in response to an ESF signal and was not required to mitigate any adverse radiological event. The health and safety of the public were not affected.

Sample lines for the blowdown streams from each of the four steam generators merge into one line that is monitored by radiation monitor R-49 for an increase in activity which may be indicative of a steam generator tube leak. The monitor has two setpoints, a "Warn" and an "Alarm." The warn setpoint actuates an alarm in the control room, while the higher alarm setpoint isolates blowdown and actuates an alarm in the control room. Blowdown is isolated by closure of two valves in each blowdown line.

On March 16, 1997, a power escalation was in progress due to the return of the unit to operation following a maintenance outage, when an isolation of the eight steam generator blowdown isolation valves occurred as a result of an indicated high activity on the R-49 blowdown radiation monitor. Subsequent to the isolation, the operations staff performed the leak identification procedure directed by A 1.2, Steam Generator Tube Leak and returned each steam generator blowdown to service individually while monitoring for tube leakage using the steam generator blowdown monitors, the N-16 steam line radiation monitors and chemistry samples. The grab samples obtained from 21, 22 and 24 steam generator blowdown streams indicated that there was no detectable activity in these streams. The grab sample from the 23 steam generator blowdown stream indicated that this generator had 1.0 E-6 $\mu\text{Ci/cc}$ cobalt-60 activity, this concentration is significantly below the concentration required for release per 10 CFR Part 20 Limits. The tube leakage measured as a result of the activity in the condenser off-gas was 1.5 gallons per day, well below Technical Specification limits. The off-gas calculation was supported by the N-16 radiation monitor results. Since 21, 22 and 24 steam generators appeared not to be the source of leakage, as indicated by the grab sample results, their blowdown lines were returned to service without a corresponding R-49 alarm. After an additional four hours of operation, the 23 steam generator blowdown was returned to service with no additional increase in activity.

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		9 7	0 0 5	0 0	0 4	OF 0 4

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

ANALYSIS OF OCCURRENCE: (Continued)

During the outage a Foreign Object Search and Retrieval (FOSAR) operation and sludge lancing had been performed as a result of the potential for foreign materials in the secondary side of the steam generators. The sludge lancing operation removed the majority of the sludge layer from the steam generator tube sheets, however, a small amount of loose sludge could not be removed from each of the steam generators. The remaining sludge in the steam generators is known to be contaminated with long lived radionuclides, primarily cobalt-60. The disturbance of the sludge pile caused the release of sludge from the steam generators to the blowdown stream. The conservatively low 'warn' and 'alarm' setpoint adjustment of the steam generator blowdown radiation monitor R-49 and the cobalt-60 contained in the sludge in the steam generator blowdown stream caused the R-49 monitor to trip the warning and alarms. In addition, the known characteristic of R-49 to over respond to activity in solid materials such as sludge in the sample stream in the monitor path also contributed to this event. The monitor's response to the solid sludge is not characteristic of the response to the Iodines, an indicator of primary to secondary tube leakage. The R-49 monitor over quantifies the cobalt-60 by a factor of over two (2). Additionally, as the short lived fission products built up in the reactor coolant and steam generators as a result of a primary to secondary leak one would have expected a concurrent increase in R-49 indicated activity, none was noticed. The conclusion was that the activity indicated occurred due to the presence of cobalt-60 in the blowdown stream and not primary to secondary leakage. The R-49 monitor performed as designed and provided the isolation of the blowdown lines for all four steam generators.

CAUSE OF OCCURRENCE:

The steam generator blowdown isolation resulted from a combination of small amount of activity in the blowdown stream (resulting from the sludge lancing residue) and a conservatively low setpoint of the steam generator blowdown radiation monitor R-49 alarm.

CORRECTIVE ACTION:

The steam generator blowdown was re-established using plant procedures. Revise the operating procedures to provide appropriate maximum alarm setpoints for R-49.