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November 18, 1998

Re: Indian Point Unit No.2
Docket No. 50-247

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

The attached Licensee Event Report 97-15-01 is hereby submitted in accordance with the requirements of 10 CFR 50.73.

Very truly yours,



Attachment

9812040058 970728
PDR ADDCK 05000247
S PDR

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
PO Box 38
Buchanan, NY 10511

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	PAGE (3) 1 OF 0 5
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TITLE (4)
Valve 1863 Position Creates the Potential for the Plant to be Outside Design Basis.

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	6	2 6 9 7	9 7	- 0 1 5	- 0 1	0 7	2 8	9 7		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9) N

POWER LEVEL (10) 0 0 0

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)	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 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)

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)

During the 1997 refueling outage, Con Edison personnel recognized that a check-off list specified the closed, rather than the open, position for manual valve 1863, which is in a high-head recirculation alternative flow path described in the UFSAR. Valve 1863 must be opened to provide a flow path for core decay heat removal in the event of multiple active failures of safety related equipment or a passive failure of the suction piping to the safety injection pumps. Certain accident scenarios have the potential for excessive post-accident radiation fields in the areas which provide access to the valve and at the location of the valve. This could render the flow path unavailable for use, if required, as the valve could not be accessed to be opened. The position of valve 1863 was changed to "open" prior to restart from the 1997 refueling outage. Further, a modification was completed on valve MOV-883 to address the concern of a single failure in an electrical system resulting in loss of capability to perform a safety function in accordance with Branch Technical Position EICSB 18. The Corrective Actions section identifies the completed, and ongoing activities. The currently ongoing corrective actions are scheduled for completion by March 1, 1999.

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TEXT CONTINUATION**

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TEST (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:

Manual valve 1863 was incorrectly positioned, albeit in accordance with the approved procedure, during plant operation such that the valve could not be opened when needed to provide a design basis accident high head alternative flow path.

EVENT DATE:

June 26, 1997

REPORT DUE DATE:

July 28, 1997

REFERENCE:

CITRS (Condition Identification and Tracking System) No. 97-E02552

PAST SIMILAR OCCURRENCES:

None

DESCRIPTION OF OCCURRENCE:

During the 1997 refueling outage, Con Edison personnel recognized that a check-off list specified the closed, rather than the open, position for manual valve 1863. This valve is in a high-head recirculation alternative flow path described in the UFSAR. Under certain loss of coolant accident recirculation scenarios, valve 1863 must be opened to provide a flow path for core decay heat removal.

ANALYSIS OF OCCURRENCE:

The safety injection system provides multiple flow paths for recirculation of the reactor coolant system to cool the core after a loss of coolant accident. These flow paths consist of:

- (1) Low head recirculation
 - (a) Preferred flow path- utilizes recirculation sump, recirculation pumps, and the residual heat removal (RHR) heat exchangers - completely internal to containment;

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(b) Alternative flow path- utilizes containment sump, RHR pumps, and the RHR heat exchangers - partially external to containment;

(2) High head recirculation

(a) Preferred flow path - utilizes recirculation sump, recirculation pumps, one RHR heat exchanger, and 21 & 23 SI pumps - partially external to containment;

(b) Alternative flow path - utilizes containment sump, RHR pumps, one RHR heat exchanger, and 21 & 23 SI pumps - partially external to containment;

These flow paths, which do not require valve 1863 to be open, ensure that no single active failure will prevent the mitigation of a design basis accident.

The UFSAR describes the availability of an additional high head recirculation alternative flow path through valve 1863 that provides a mechanism for core cooling in the event of a passive failure of the common suction piping to the SI pumps:

(c) Alternative flow path - utilizes containment sump, RHR pumps, and 22 SI pump - partially external to containment.

When manual valve 1863 is closed, it must be accessible during an accident so that it can be opened when required. Certain accident scenarios can potentially result in excessive post-accident radiation fields in the paths that provide access to the valve or/and at the location of the valve. Since such fields would likely render a high head recirculation alternative flow path as described in the UFSAR unavailable during an accident, this condition is reportable per 10 CFR 50.73(a)(2)(ii)(B), which requires that "The licensee shall report any event or condition that resulted in the nuclear power plant being in a condition that was outside the design basis of the plant."

Use of this high head recirculation alternative flow path through valve 1863 requires multiple active failures of safety related equipment or a passive failure of suction piping to the SI pumps. Therefore, the safety significance of this condition is minimal.

CAUSE OF OCCURRENCE:

The completed root cause evaluation identified two causes that were responsible for valve 1863 being specified as "closed" on the applicable check-off list.

1) Valve 1863 was closed in order to exclude upstream valve MOV-883 from application of Branch Technical Position EICSB 18.

Valve 1863 had been in the closed position during normal plant operation and RHR system operation since System Operating Procedure (SOP) 4.2.1 Rev. 0 was issued in 1976. The IP2 operating license, as outlined

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in the original FSAR (1970), required an alternative high head recirculation flow path through line 190 which contains Valve 1863. Accordingly, it was postulated that line 190 could be rendered inoperable in the event of a TMI (NUREG 0578) type accident. NRC Branch Technical Position EICSB 18, issued in 1975, addressed the concern of a single failure in an electrical system resulting in loss of capability to perform a safety function. This applied whether the loss of safety function was caused by a component failing to perform a requisite mechanical motion, or by a component performing an undesirable mechanical motion.

Motor Operated Valve (MOV) 883 is a manually controlled, electrically operated gate valve upstream of valve 1863 located on line 190 (RHR return line to the Refueling Water Storage Tank (RWST)). Following a postulated Loss of Coolant Accident (LOCA), should valve MOV-883 have spuriously opened during the injection phase, a significant amount of low head injection flow would have been recirculated rather than injected into the core. Such reduced flow would have violated the IP2 UFSAR. Closure of 1863 ensured that a single failure in MOV-883 would not result in flow through line 190.

2) Emergency Operating Procedures (EOP's), in effect since 1979, did not identify an alternate high head recirculation path through valve 1863. This resulted in valve 1863 not being evaluated in a NRC-mandated post-TMI radiation study which would have found it to be inaccessible. Subsequently, corrective actions to permit post-accident use of line 190, including valve 1863, were not developed.

CORRECTIVE ACTIONS:

1) SOP 4.2.1 was revised to facilitate the repositioning of valve 1863. This revision changed the position of valve 1863 to "open" prior to restart from the 1997 refueling outage.

2) A modification was completed to valve MOV-883 to address the concern of a single failure in an electrical system resulting in loss of capability to perform a safety function in accordance with Branch Technical Position EICSB 18.

3) Plant Engineering, Generation Support, and Nuclear Safety and Licensing (NS&L) staff received training on the post-TMI EDS Radiation Study and the modification to MOV-883.

The following corrective action items are currently ongoing.

1) The post-TMI Radiation Study will be expanded to incorporate line #155 back to RWST isolation valve 846, which was not part of the original study. Line #190 (RHR pump discharge flow path for alternate high head injection) intersects line #155. The postulated alternate high head injection flow through line #155 will be subject to recirculated radioactive fluid. This activity is scheduled to be completed by December 31, 1998.

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2) A review will be performed of EOPs to determine accessibility to vital equipment based on the Post-TMI Radiation Study. This review will encompass the procedures that directly establish internal and external recirculation. This activity is scheduled to be completed by March 1, 1999.