NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

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EXPIRES 5/31/95

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Indian Point Unit 3	05000286	1 OF 8

TITLE (4) FAILURE TO IMPLEMENT TECHNICAL SPECIFICATION REQUIRED SURVEILLANCE FOR AN INOPERABLE LEVEL CHANNEL ON THE 34 SAFETY INJECTION ACCUMULATOR; A CONDITION PROHIBITED BY TECHNICAL SPECIFICATIONS

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 NAME	DOCKET NUMBER
08	23	95	95	-- 017 --	01	12	01	95		05000
									FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	N
POWER LEVEL (10)	100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (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
	20.405(a)(1)(iii)	✓	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		(Specify in Abstract below and in Text, NRC Form 366A)
	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	TELEPHONE NUMBER (Include Area Code)
John Wheeler, Assistant Operations Manager	(914) 736-8202

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).	✓ NO.				

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On August 23, 1995, at approximately 0500 hours, the 34 safety injection accumulator level indication channel LI-934D alarmed and the Reactor Operator observed oscillations of approximately 10% to 15%. The Shift Manager declared the channel inoperable and entered a potential Limiting Condition for Operation (LCO) for Technical Specification Section 3.3.A.3.d. An investigation and troubleshooting was initiated for these problems. Approximately twelve hours later during turnover at the end of the next shift, the Watch Engineer discovered that the compensatory actions of Technical Specification Table 4.1-1, Item 17 had not been performed. A Performance Enhancement Review Committee meeting was conducted and concluded that the event was a human performance problem as a result of personnel cognitive error. Corrective actions included verifying the redundant channel operable and returning the inoperable channel to an operable status. Additional corrective actions include challenging the operators ability to use Technical Specification Section 4 to apply appropriate compensatory actions resulting from inoperable Technical Specification equipment during the two year continuing training cycle, perform a review and revise the process and documentation which support the accurate completion of instrument channel checks, issued a shift order to reenforce to operators the reasons for channel checks, how they are performed, and how they are documented.

DESCRIPTION OF EVENT

On August 23, 1995, at approximately 0500 hours with reactor power at 100%, the 34 safety injection accumulator (BQ) level indication channel LI-934D (LI) alarmed in the control room and the Reactor Operator observed oscillations of approximately 10% to 15%. Other accumulator parameters and the redundant channel were observed to be indicating normally. The Shift Manager declared the channel inoperable at 0500 hours and entered the condition in the Limiting Conditions for Operations (LCO) tracking log (No. 95-314) as a potential LCO under Technical Specification Section 3.3.A.3.d. A potential LCO is entered for inoperable equipment that is required to be operable, but the number of inoperable components required by the LCO action statement has not yet reached the threshold for implementing the action requirements.

Technical Specification Section 3.3.A.3.d requires one pressure and one level transmitter to be operating for each accumulator in the Safety Injection System. In addition, Technical Specification Table 4.1-1, Item 17 requires a check of the accumulator level and pressure channels every shift. However, there is a notation on the channel check frequency which states that if either an accumulator level or pressure instrument channel is declared inoperable, the remaining level or pressure channel must be verified operable by interconnecting and equalizing a minimum of two accumulators and crosschecking the instrumentation. The level transmitter LT-934D is manufactured by Rosemount Inc.(R369), Model number 1151DP4B22LMMB.

At approximately 1900 hours during operations review of the control room logs and verification of Technical Specification requirements, the Watch Engineer discovered that the compensatory surveillance requirement of Technical Specification Table 4.1-1 was missed. A Deviation Event Report (No. 95-1959) was initiated and corrective actions started. Operations assessed the condition and determined that the failure to perform the surveillance within the allowed interval and extension was a condition prohibited by Technical Specifications. Operations and Licensing determined that Technical Specification Section 4.1 allowed up to 24 hours to complete the missed surveillance.

The event was categorized as a human performance event and a Performance Enhancement Review Committee (PERC) meeting was convened on August 29, 1995. At that meeting operators stated they had observed, shortly after entering a potential LCO for the 34 accumulator level indicator (LI-934D), a battery charger trouble alarm (EI), a containment high humidity alarm (IJ), containment sump pump operation (IJ), and a 35 Fan Cooler Unit (FCU) (BK) high level weir alarm (IJ). Operators diagnosed a leak on service water (BI) lines for the 35 FCU and took actions to isolate the affected piping. At approximately 0552 hours on August 23, 1995, a 24 hour LCO was entered for the inoperable 35 FCU.

During troubleshooting for the leaking service water line, the containment was entered for damage assessment of the leakage on the surrounding equipment. Operators deduced that the accumulator level indicator LI-934D oscillated and performed erratically as an ancillary result of leaking service water from the 35 FCU. As a further consequence of the leaking service line, operators determined that the battery charger trouble alarm resulted from a DC power fault on the 34 accumulator tank fill/drain line valves SI-AOV-890D and SI-AOV-896D (ISV). To preclude adversely affecting the DC system, a Protective Tagging Order (PTO 95-1115) was applied at approximately 1420 hours on valves SI-AOV-890D and SI-AOV-896D, troubleshooting performed and the PTO removed at approximately 2140 hours.

In accordance with procedure SOP-SI-1, "Safety Injection System Operation," accumulator fill valve SI-AOV-890D would be used to interconnect to another accumulator to meet the requirements of Technical Specification Section 4.1, and Table 4.1-1. Technical Specification Table 4.1-1 requires the remaining 34 accumulator tank level instrument (LI-935D) (LI) to be verified operable by interconnecting it to another operable accumulator and crosschecking the instrumentation. When the missed surveillance was discovered, the valves still had a PTO applied. The accumulator tank fill/drain line valves SI-AOV-890D and SI-AOV-896D were returned to service after PTO 95-1115 was removed at approximately 2140 hours. At approximately 2225 hours on August 23, 1995, the 33 and 34 accumulators were crosstied in accordance with procedure SOP-SI-1 and the redundant level indicator (LI-935D) was verified operable at 2350 hours. The Work Request (95-04204-00) to resolve the problem with 34 accumulator level channel (LI-934D) was completed on August 24, 1995 at approximately 1630 hours and the potential LCO (95-314) exited at approximately 1900 hours on August 24, 1995.

The operating shift (2300 to 0700) that declared 34 accumulator level channel LI-934D inoperable at 0500 hours on August 23, 1995, was relieved at 0800 hours. The oncoming watch (0700- 1900 hours) was told to wait until ongoing activities were stabilized and a shift turnover could be satisfactorily performed. At the shift briefing, the oncoming shift was told that the 35 FCU had a service water leak, that 34 accumulator level channel LI-934D had been oscillating and was declared inoperable and that 34 accumulator fill/drain valves SI-AOV-890D and SI-AOV-896D had a ground fault on their DC power supply. At the shift briefing, details of the service water leak were provided. However, there was no mention of any compensatory actions for the inoperable 34 accumulator level channel LI-934D. The oncoming operators noticed during turnover that 34 accumulator level channel LI-934D had returned to the stable indicated values recorded prior to the event, but were told it was still considered suspect.

The LCO (95-314) tracking sheet for the 34 accumulator level channel (LI-934D) indicated there was no LCO on the accumulator level as long as the redundant channel was operable per Technical Specification 3.3.A.3.d. The required testing per Technical Specification Section 4.1, Table 4.1-1 for an inoperable channel was not referenced on the LCO tracking sheet. The relieving shift was also told not to manipulate any valves associated with the 34 accumulator because of suspected DC grounds on their respective control circuits. The oncoming Reactor Operator reviewed the control room log sheets, but did not make a connection with the note referencing Technical Specification Section 4.1, Table 4.1-1 and failed to apply the required compensatory action for an inoperable channel. The operator performed the required channel (LI-934D) check specified in Technical Specification Table 4.1-1 at 0800, 1200, and 1600 hours. The readings were consistent with the redundant channel (LI-935D) and with previous readings of level channel LI-934D. During shift turnover for the next shift (1900-0700 hours) the requirement of Technical Specification Section 4.1 was realized.

At the PERC meeting, the meeting participants concluded that the human performance problem was personnel cognitive error. The inappropriate actions were; 1) failure to list all the applicable sections of Technical Specifications on the LCO tracking sheet (Technical Specification Section 3.3 and Table 4.1-1 versus only Section 3.3), 2) taking credit for an inoperable channel to meet Technical Specification surveillance requirements (channel checks), and 3) inadequate implementation of the "operability" process for 34 accumulator level channel LI-934D.

CAUSE OF EVENT

The cause of the event was cognitive personnel error due to inattention to detail as a result of the distractions from the more visible problems with the service water leak. A lapse of memory resulted in not remembering that Technical Specification Section 3.3 is associated with Technical Specification Section 4.1 which has additional surveillance requirements. When approving the LCO tracking sheet, the Shift Manager failed to include the additional surveillance and compensatory action required by Technical Specification Section 4.1, Table 4.1-1 as required by administrative procedure AP-21.9, "Limiting Condition for Operation Tracking."

Inadequate written and verbal communications concerning the inoperability of the level channel resulted in misjudgment (i.e., omission of pertinent information from the LCO tracking sheet and during shift turnover). Self-checking was not applied to ensure that the subsequent channel checks of LI-934D and log recordings were correct for a channel identified as inoperable.

The process for performing and documenting instrument channel checks is weak because the requirements are dispersed among several documents. Specific weaknesses include; instruments requiring channel checks are designated on several operator log sheets verses one document, instructions for completing operator log sheets are listed in procedure OD-36, "Operator Rounds and Log Sheets," and instructions for performing instrument channel checks are listed in procedure AP-21, "Conduct of Operations". In addition, AP-21 does not provide guidance on how to address instruments that are functional but declared inoperable.

CORRECTIVE ACTION

The following corrective actions have been or will be performed to address the deficiencies identified for this event and to prevent recurrence:

- Operations crossconnected accumulators 33 and 34 at 2235 hours on August 23, 1995, and performed a check of the redundant 34 accumulator channel LI-935D to verify operability. Technical Specification Table 4.1-1 compensatory surveillance check was completed August 23, 1995, at approximately 2350 hours. Operations performed additional compensatory surveillance checks in accordance with Technical Specification Table 4.1-1 at 0430 hours and 0940 hours August 24, 1995.

- Instrument and Control (I&C) Engineering performed an operability determination based on the results of troubleshooting and concluded on August 24, 1995, that the 34 accumulator level channel was capable of performing its safety related function. Operations declared the channel operable on August 24, 1995, at approximately 1640 hours.

- The Training department will periodically, during the two year continuing training cycle for licensed operators, challenge the operators' ability to use Technical Specification Section 4, as required, to apply appropriate compensatory actions resulting from inoperable Technical Specification equipment. The Training department will track this commitment in the training commitment database for Biennial License Requalification training.

- Operations will review the process and documentation which support the accurate completion of instrument channel checks required by Instrument & Control technical and operational specifications by February 14, 1996.

- Operations will revise procedure(s), as required, to incorporate the changes identified by the review of the process and documentation which support the accurate completion of instrument channel checks by April 18, 1995.

- Operations issued a "Shift Order" to reenforce to the operators the reasons for channel checks, how they are performed, and how they are documented.

ANALYSIS OF EVENT

This event is reportable under 10 CFR 50.73 (a)(2)(i)(B). The licensee shall report any operation or condition prohibited by the plant's Technical Specification.

When the channel for 34 accumulator level (LI-934D) alarmed and was declared inoperable at 0500 hours on August 23, 1995, and a potential LCO entered, the action required by the note to Technical Specification Table 4.1-1 should have been performed to verify the operability of the redundant channel (LI-935D) within the time period of one shift. Verification of the operability of the redundant level channel (LI-935D) is required to meet Technical Specification 3.3.A.3.d. The plant was in a condition prohibited by the Technical Specifications in that operations failed to perform the required surveillance within the allowed surveillance interval.

Similar events were reported in Licensee Event Reports 95-001, 94-003, 93-021, 93-010, 93-001, 92-016.

SAFETY SIGNIFICANCE

This event did not affect the health and safety of the public. The basis for making this conclusion is that the required volume of water was available in the accumulators and the redundant level channel did not exhibit any problems and all other accumulator parameters and indications remained stable. Operations deduced that the cause of the level alarm and erratic oscillation was due to leakage from a service water line from a Fan Cooler Unit (FCU), and not loss of accumulator inventory. Records of control room indications and subsequent surveillance checks showed that the indicated level returned to previous values and remained stable. A trending graph recording produced by the Critical Functions Monitoring System (CFMS) (ID) during the event shows that the indications transmitted by LT-934D stabilized after approximately 45 minutes. The recording shows the stabilized value after the event is the same as the recorded value prior to the event.

The duration of the missed surveillance was minimal. The time from the last satisfactory channel check (approximately 0300 hours) until successful completion of the surveillance with compensatory action (2350 hours with accumulators 33 and 34 crosstied) was approximately twenty-one hours, which was also within four hours of the identification of the missed surveillance. While the inoperable channel (LI-934D) was not declared operable until 1640 hours on August 24, 1995, it is reasonable to conclude the channel was functioning properly after 0800 hours on August 23, 1995.