

Indian Point 3
Nuclear Power Plant
P.O. Box 215
Buchanan, New York 10511
914 736.8001



**New York Power
Authority**

L. M. Hill
Resident Manager

June 24., 1995
IPN-95-071

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

SUBJECT: Indian Point 3 Nuclear Power Plant
Docket No. 50-286
License No. DPR-64
Licensee Event Report # 95-011-00
"Overtemperature Delta T Reactor Trip Setpoint Exceeded Due To
Inadequate Test Procedure For Calibration Of Time Constants,
A Condition Prohibited By Technical Specifications "

Dear Sir:

The attached Licensee Event Report (LER) 95-011-00 is hereby submitted as required by 10CFR50.73. This event is the type defined in 10CFR50.73 (a)(2)(i)(B).

The Authority is making no commitments in this letter.

Very truly yours,

A handwritten signature in cursive script, appearing to read 'L. M. Hill', written over the typed name.

L. M. Hill
Resident Manager
Indian Point 3 Nuclear Power Plant

LMH/vjw

Attachment

cc: See next page

9507030067 950624
PDR ADDCK 05000286
S PDR

JEH

Docket No. 50-286
IPN-95-071
Page 2 of 2

cc: Mr. Thomas T. Martin
Regional Administrator
Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, Pennsylvania 19406-1415

INPO Record Center
700 Galleria Parkway
Atlanta, Georgia 30339-5957

U.S. Nuclear Regulatory Commission
Resident Inspectors' Office
Indian Point 3 Nuclear Power Plant

LICENSEE EVENT REPORT (LER)

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

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 (MNB 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.

FACILITY NAME (1) Indian Point Unit 3	DOCKET NUMBER (2) 05000286	PAGE (3) 1 OF 5
--	-------------------------------	--------------------

TITLE (4) Overtemperature Delta T Reactor Trip Setpoint Exceeded Due To Inadequate Test Procedure For Calibration Of Time Constants, 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
05	25	95	95	-- 011 --	00	06	24	95	FACILITY NAME	DOCKET NUMBER 05000
									FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9) N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)			
POWER LEVEL (10) 000	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)
	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> OTHER
	<input type="checkbox"/> 20.405(a)(1)(iii)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	(Specify in Abstract below and in Text, NRC Form 366A)
	<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

NAME Floyd Gumble, Senior Reactor Engineer	TELEPHONE NUMBER (Include Area Code) (914) 681-6724
---	--

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).	<input checked="" type="checkbox"/> NO				

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

On May 19, 1995, with the reactor in the hot shutdown condition, the results of surveillance test 3PT-V11, "Overtemperature Delta-T and Overpower Delta-T Calibration," indicated that the dynamic compensator units for the Overtemperature Delta-T function of the reactor protection system were out of calibration. A Deviation Event Report was initiated to assess the test results. On May 25, 1995, the review of surveillance test 3PT-V11 results indicated that the lead/lag time compensation constants may have caused the minimum number of channels of the Overtemperature Delta T Reactor Trip setpoint to be inoperable, a condition prohibited by Technical Specifications. Although the Overtemperature Delta T function is not applicable during plant shutdown, NYPA has no record of testing the constants after initial startup. Therefore, they could have caused the Overtemperature Delta T setpoint to have been outside Technical Specification requirements during previous plant operation.

NYPA determined the cause of the event to be a previous inadequate test procedure that failed to include the time constants. The corrective action for this event was to recalibrate the Tau-1 and Tau-2 time compensation constants to within acceptable tolerance. Calibration was performed May 19, 1995. The constants have already been added to the surveillance procedure.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)		PAGE (3)
Indian Point Unit 3	05000286	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER
		95	-- 011 --	00
2 OF 5				

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

DESCRIPTION OF EVENT

On May 19, 1995, at approximately 1448 hours, with the plant in the hot shutdown condition, reactor power at 15 cps, Reactor Coolant System (RCS) temperature at 547 degrees Fahrenheit and pressurizer pressure at 2235 psig, an Instrument and Control system engineer initiated Deviation Event Report (DER) 95-1217 to assess the test results of surveillance test 3PT-V11, "Overtemperature Delta-T (OTDT) and Overpower Delta-T Calibration (OPDT)" which indicated that the dynamic compensator units (COMP) for the OTDT function of the Reactor Protection System (JC) were out of calibration. On May 25, 1995, I&C Engineering concluded the results of surveillance test 3PT-V11 indicated that two constants associated with the Overtemperature Delta-T function were outside their acceptable range.

The OTDT function is described in Technical Specification 2.3.1.B.(4). The primary purpose of the OTDT function is to initiate reactor trip to maintain a Departure from Nucleate Boiling Ratio (DNBR) above 1.3. The Technical Specification OTDT limit consists of a specified full-power Delta-T for each channel, which is adjusted for variations in core power distribution, RCS temperature and RCS pressure. Four temperature channels are used, one for each coolant loop. The four channels are arranged in a two out of four (2/4) logic such that the tripping of two or more channels actuates an OTDT trip.

A previous assessment of the surveillance program identified a corrective action to revise the test for calibrating OTDT to incorporate the OTDT time compensation constants. Test 3PT-V11 was revised March 17, 1995 to incorporate the Tau-1 and Tau-2 time compensation constants for the OTDT setpoint. The revised surveillance test was performed on May 18 and 19, 1995, to measure the responses of the OTDT instrumentation to simulated signals. The OTDT constants are not measured directly but are determined by analysis of measured test parameters.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)		PAGE (3)	
Indian Point Unit 3	05000286	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	3 OF 5
		95	-- 011 --	00	

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

The OTDT constants found out of specification were:

Tau-1: This constant is an OTDT lead time constant used in processing the RCS T-average signal. The surveillance test requires the constant to be set between 25 and 27 seconds. Channel 32 was in specification (26.55 seconds). This constant was below 25 seconds in Channels 31 (22.5 seconds), 33 (19.79 seconds) and 34 (0.92 seconds).

Tau-2: This constant is an OTDT lag time constant used in processing the RCS T-average signal. The surveillance test requires the constant to be set between 2.0 and 3.0 seconds. Channel 31 was in specification (3.0 seconds). This constant was above three seconds in Channels 32 (5.59 seconds) and 33 (4.48 seconds), and less than two seconds in Channel 34 (0.0 seconds).

The OTDT time compensation constants are not specified in the equation presented in the Technical Specifications for the Delta T setpoint. However, they are a part of the circuit used to develop a trip signal and are used in analyzed accidents. Although the OTDT setpoint is not applicable at plant shutdown, the Delta T setpoint for OTDT could have been outside Technical Specification requirements during past plant operation since there is no record of tests that calibrated the constants since initial plant startup.

The Tau-1 and Tau-2 constants are used in accident analysis but are not identified in the Technical Specifications and were not previously required to be calibrated by procedure. These two constants were added to test procedure 3PT-V11 to complete a corrective action in resolution of a deficiency identified during an audit of the surveillance program. When the test was performed on May 18 and May 19, 1995, the time constants were found to be out of tolerance.

CAUSE OF THE EVENT

The Authority attributes the cause of this event to be an inadequate surveillance test procedure that failed to include the dynamic compensation unit's time compensation constants (Taus).

The cause of inadequate procedures were previously identified in NYPA's Restart and Continuous Improvement Plan. The causes of the surveillance process and program failures were ineffective management control, improper supervisory methods, personnel error, and inattention to detail. The restart package for the surveillance program has been reviewed and deemed ready for startup.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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 (MNB 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.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
Indian Point Unit 3	05000286	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	4 OF 5
		95	-- 011 --	00	

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

CORRECTIVE ACTIONS

The following corrective actions have been or will be performed to correct and prevent recurrence of this condition.

- During the current outage the surveillance test program was assessed to identify deficiencies and corrective actions for resolution of problems. Upgrades and improvements to the Technical Specification surveillance program were performed. A result of the assessment was the identification of the missing Tau values. A program corrective action was to incorporate the time compensation constants Tau-1 and Tau-2 into surveillance test procedure 3PT-V11, which was performed on March 17, 1995.
- Surveillance test procedure 3PT-V11 was changed by revision 17 dated March 17, 1995 to incorporate Tau-1 and Tau-2 time compensation constants.
- Testing of OTDT and OPDT was performed on May 18 and May 19, 1995 in accordance with surveillance test 3PT-V11 revision 19, and time compensation constants Tau-1 and Tau-2 were returned to within acceptable tolerance.

ANALYSIS OF THE EVENT

This event is reportable under 10CFR50.73(a)(2)(i)(B), which states, "The licensee shall report any operation or condition prohibited by the plant's Technical Specifications." The condition caused the minimum number of channels for the OTDT Reactor Trip setpoint to be outside the Technical Specification's acceptable tolerance as a result of lead-lag time compensation constants being out of calibration. Although the OTDT setpoint is not applicable at plant shutdown, it could have been outside Technical Specification requirements during past plant operation since the time constants have not been calibrated since initial startup.

Similar events have been reported in previous Licensee Event Reports (LER). Events whose cause was an inadequate test procedure that placed the plant in a condition prohibited by Technical Specifications were reported in previous Licensee Event Reports (LER); 95-010, 94-003, 94-004, 94-008, 94-010, 93-004, 93-009, 93-023, 93-34, 93-040 and 93-049.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
Indian Point Unit 3	05000286	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	5 OF 5
		95	-- 011 --	00	

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

SAFETY SIGNIFICANCE

Deviations observed in surveillance test 3PT-V11 for the Delta T setpoint time compensation constants would have resulted in a slightly higher Overtemperature Delta-T trip setpoint than would be allowed by the accident analysis for dynamic response.

Time compensation constants Tau-1 and Tau-2 are the lead and lag functions for RCS T-average measurement in the Overtemperature Delta-T function. Although the time constants are not described in the Technical Specifications, they are used in accident analysis. As a result of discovering the deviations, an investigation was initiated to determine their effects on the design basis accidents. Tau-1 and Tau-2 influence the time response for the RCS temperature penalty on the OTDT setpoint. An evaluation of the OTDT function shows that there is adequate conservatism elsewhere in the OTDT setpoint circuitry (e.g., value of K-1 constant) to compensate for variations in the RCS temperature penalty. Although the desired dynamic OTDT setpoint could have been exceeded during past plant operation, the design basis value for DNBR would not have been exceeded. Therefore, the Authority concludes that, because the evaluation indicates the plant would have met the design basis DNB limit, this condition did not affect the health and safety of the general public.