

Indian Point 3
Nuclear Power Plant
P.O. Box 215
Buchanan, New York 10511
914 739.8200



October 31, 1989
IP3-89-079

Docket No. 50-286
License No. DPR-64

Document Control Desk
Mail Station PI-137
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

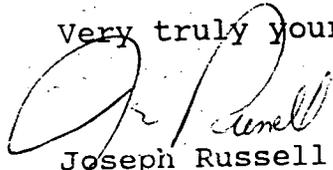
Dear Sir:

The attached Licensee Event Report LER 89-012-01 is hereby submitted in accordance with the requirements of 10CFR50.73.

This supplement addresses commitments to the NRC that were contained in LER 89-012. Actions taken by the plant include, but were not limited to, procedural revisions, changes to testing methodology and more clearly outlining responsibility guidelines. A committee has been assigned to address these issues and will continue to review the modification and installation process and make recommendations as necessary.

This event is of the type defined in the requirements per 10CFR50.73(a)(2)(i).

Very truly yours,


Joseph Russell
Resident Manager
Indian Point Three Nuclear Power Plant

WD/rj
Attachment

cc: Mr. William Russell
Regional Administrator
Region 1
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, Pennsylvania 19406

INPO Records Center
Suite 1500
1100 Circle 75 Parkway
Atlanta, Georgia 30339

8911070009 891031
PDR ADDOCK 05000286
S FDC

IF22
||

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Indian Point, Unit 3	DOCKET NUMBER (2) 0 5 0 0 0 2 8 6	PAGE (3) 1 OF 0 5
---	--	------------------------

TITLE (4)
CROSSWIRING OF A HOT LEG AND COLD LEG CHANNEL TEST SWITCH DURING A MODIFICATION

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	4	8	9	8	9	0	1	2	0	1	1	0	3	1	8	9			0	5	0	0	0

OPERATING MODE (8)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)									
POWER LEVEL (10) 0 2 5	<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"/> 50.38(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"/> 50.38(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)						
	<input type="checkbox"/> 20.405(a)(1)(iii)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)							
	<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)		TELEPHONE NUMBER	
NAME William Booth		AREA CODE	7 3 1 4 7 3 6 8 0 4 6

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
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO				

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

On June 24, 1989 at 1400 hours while commencing load escalation from twenty-five percent reactor power, control room operators observed 34 loop delta temperature indication reading low and 34 loop average reactor coolant temperature reading approximately three (3) degrees higher than normal. The Instrument and Control Department inspected the loop 34 instrumentation panel and found one hot leg temperature channel test switch and the cold leg temperature channel test switch cross-wired. The wires were reconnected to the correct switches and the instruments were returned to normal operation. The root causes for this event are identified as several personnel errors. These errors include inadequate installation workmanship, inadequately performed post installation testing and inadequate quality control. To identify and correct the underlying causes of this event, a study has been conducted comparing the errors identified as contributing to this event, to errors found in similar events. This study and its results were presented to the Modification Control Manual Committee for incorporation into the MCM procedures. In addition, a dedicated committee has been assembled to define the work processes that led to these events and recommend solutions to prevent recurrence.

FACILITY NAME (1) Indian Point, Unit 3	DOCKET NUMBER (2) 0 5 0 0 0 2 8 6 8 9	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
			- 0 1 2	- 0 1	0 2	OF	0 5

TEXT (If more space is required, use additional NRC Form 388A's) (17)

DESCRIPTION OF THE EVENT

On June 24, 1989 at 1400 hours, while commencing load escalation from twenty-five percent reactor power, control room operators observed a low delta T (average hot leg temperature minus cold leg temperature) and a slightly higher than normal average reactor coolant temperature (approximately three degrees) for loop 34.

Instrumentation and Controls (I&C) personnel conducted troubleshooting of loop 34 hot and cold leg temperature instrumentation and found that one of three hot leg test switches (TS-441A3) and the cold leg test switch (TS-441B) for loop 34 were cross-wired. I&C personnel reconnected the wires correctly and restored loop 34 temperature indication to normal.

INVESTIGATION OF THE EVENT

Indian Point 3 (IP3) had just completed a modification which involved removing the resistance temperature detector bypass manifold system and installing a new thermal well RTD system for Reactor Coolant System (RCS) temperature (T) monitoring and protection. This modification included all mechanical and electrical rewiring necessary to install the new system. The portions of the maintenance work request that detailed the electrical work, specifically the terminating of the T-hot and T-cold terminal blocks (TB) and test switches, were initialed and verified by the maintenance contractor foreman and contractor Quality Control technician as having been properly terminated on April 19, 1989. The maintenance work request required a point-to-point continuity check of every termination after each panel was completed, including the connections described in this event. Had these point-to-point continuity checks been correctly performed, this event would not have occurred. The reactor was in cold shutdown at this time while the plant was conducting the cycle 6/7 refueling and steam generator replacement outage. Criticality was achieved on June 22, 1989.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) Indian Point, Unit 3	DOCKET NUMBER (2) 0 5 0 0 0 2 8 6	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 9	- 0 1 2	- 0 1	0 3	OF	0 5

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

Since this problem was not identified until June 24, the plant operated for two days outside the confines of Technical Specifications with less than the specified minimum degree of redundancy for the Over Power delta T and Over Temperature delta T protective functions .

CAUSE OF THE EVENT

The root cause of this event is identified as an inadequately performed modification installation in that:

1. The continuity checks of the connections described were less than adequate, and
2. The Quality Control of both the termination work and the post installation continuity checks were less than adequate, and
3. Workmanship with respect to installation of the wires was less than adequate.

CORRECTIVE ACTIONS

Since this was one of several events found following the Cycle 6/7 Steam Generator Replacement Outage that involved similar wiring discrepancies, a sample set of events was evaluated in a study to statistically identify underlying common errors.

A committee was subsequently assembled, consisting of supervisory personnel from each department involved in the maintenance and modification control process to address the results of this study. The committee meetings are currently conducted following the guidelines established by the NYPA Employee Involvement program; a neutral facilitator conducts the meetings and participants analyze the information and recommend solutions based on their collective knowledge and experience. Resultant solutions will be presented to plant management for review and implementation as appropriate. As of October 31, 1989, this process is still continuing.

1

FACILITY NAME (1) Indian Point, Unit 3	DOCKET NUMBER (2) 0 5 0 0 0 2 8 6 8 9	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		—	0 1 2	— 0 1	0 4	OF 0 5

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

Areas under evaluation include but are not limited to:

- * The modification process.
- * The Quality Assurance inspection process.
- * The retest program following modification and maintenance.

The study and its results were also presented to the MCM Committee for incorporation into the MCMs. The following list includes some of the revisions to MCM-10 (Preparation of Engineering Requirements for the Installation of Modifications) and MCM-11 (Preparation of Modification Test Requirements).

MCM-10

- * Reemphasize the requirement that all installation procedures (vendor and plant) be prepared in accordance with site procedures.
- * Define the Engineering Installation Requirements document and the type of technical input that it provides.
- * Reemphasize the requirement that revisions to Modification Packages be reviewed and approved at the same levels as the original document and include Engineering Change Notices (ECN) to ensure that all changes are incorporated.

MCM-11

- * More clearly state who is responsible for testing component level functions (i.e., continuity, megger, pump rotation, etc.).
- * Require that plant personnel are always involved in equipment testing or calibration performed by contract personnel.
- * Improve communications between engineers developing tests and the groups conducting those tests to ensure that testing is adequate and practical.

FACILITY NAME (1) Indian Point, Unit 3	DOCKET NUMBER (2) 0 5 0 0 0 2 8 6				LER NUMBER (6)						PAGE (3)			
					YEAR	SEQUENTIAL NUMBER		REVISION NUMBER		OF	0	5	0	5
					8 9	-	0	1	2					

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

This study will also be presented to site management at all levels during the Technical Staff Training Annual Review to familiarize personnel with the type of errors that caused the events studied. | 1

ANALYSIS OF THE EVENT

This event is reportable under 10CFR50.73.(a)(2)(i)(B), any operation or condition prohibited by the plant's Technical Specifications. The plant operated for two days with less than the minimum degree of redundancy listed in table 3.5-2 as required by Technical Specification 3.5.3. Two delta T signals are required to initiate Over Power or Over Temperature protective functions. Even though loop 34 delta T was inoperable, the remaining three loop delta signals were available throughout the time period of concern. If a condition requiring a trip would have occurred, sufficient operable channels were available to initiate an automatic trip, and so the plant was not operating in an unanalyzed condition.

SECURING FROM THE EVENT

Following identification of the cross-wiring problem, the loop 34 temperature instruments were returned to normal on June 24 and plant operations continued.