

LICENSEE EVENT REPORT (LER)

APPROVED OMB NO. 3160-0104
EXPIRES - 9/31/85

FACILITY NAME (1)										DOCKET NUMBER (2)										PAGE (3)																	
INDIAN POINT, UNIT 2										0150101214171										OF 31																	
TITLE (4)																																					
INOPERABLE ROD POSITION INDICATING SYSTEM																																					
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)																			
									None									01501010111																			
0	2	0	5	8	4	8	4		0	0	3	0	0	0	3	2	2	8	4	None									01501010111								
OPERATING MODE (9)				THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)																																	
POWER LEVEL (10)				20.402(w)				20.406(w)				60.72(w)(2)(w)				73.71(w)																					
				20.408(w)(1)(i)				60.72(w)(2)(w)				73.71(w)																									
				20.408(w)(1)(ii)				60.72(w)(2)(w)				OTHER (Specify in Abstract below and in Text, NRC Form 305A)																									
				20.408(w)(1)(iii)				60.72(w)(2)(w)																													
				20.408(w)(1)(iv)				60.72(w)(2)(w)																													
				20.408(w)(1)(v)				60.72(w)(2)(w)				60.72(w)(2)(w)(B)																									
				20.408(w)(1)(vi)				60.72(w)(2)(w)				60.72(w)(2)(w)																									
				20.408(w)(1)(vii)				60.72(w)(2)(w)				60.72(w)(2)(w)																									
				20.408(w)(1)(viii)				60.72(w)(2)(w)				60.72(w)(2)(w)																									
				20.408(w)(1)(ix)				60.72(w)(2)(w)				60.72(w)(2)(w)																									
				20.408(w)(1)(x)				60.72(w)(2)(w)				60.72(w)(2)(w)																									
LICENSEE CONTACT FOR THIS LER (12)																																					
NAME															TELEPHONE NUMBER																						
															AREA CODE																						
															9145265127																						
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																																					
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC																												
D		01010	01010	Y																																	
B		Z1E1	01120	Y																																	
SUPPLEMENTAL REPORT EXPECTED (14)															EXPECTED SUBMISSION DATE (15)																						
YES (If yes, complete EXPECTED SUBMISSION DATE)															NO																						

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space ty. written lines) (15)

On February 9, 1984 the plant was brought to the hot shutdown condition due to RPI Channel Drift. A recalibration of the RPI system was performed and the unit was returned to full power at 0700 hours on February 11, 1984.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES 8/31/85

FACILITY NAME (1) INDIAN POINT, UNIT 2	DOCKET NUMBER (2) 0 5 0 0 0 2 4 7 8 4	LER NUMBER (8)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		0 0 3	0 0 3	0 0 2	OF	0 3	

TEXT (If more space is required, use additional NRC Form 366A (1-7))

On February 9, 1984, while monitoring rod position using the digital position voltmeter, two rod indicators in shutdown Bank A, Group 1 (location D4 and D12) were out of specification and determined inoperable. A plant shutdown to the Hot Shutdown condition was completed in accordance with T.S. 3.10.6.2. The analog-signal provided by coil stacks was found to be out of calibration. The individual rod position indicators and plant computer rod position monitor were recalibrated and rod position calibration graphs revised accordingly. The plant was returned to full power by 0700 hours on February 11, 1984.

Separate analog and digital signals sense and display control rod position and provide backup for each other:

- a) Analog Signal - An analog signal, proportional to rod position, is produced for each individual rod by measuring the output voltage of secondary coils which are stacked alternately with energized primary coils on the control rod mechanism drive shaft housings. This analog signal is provided directly to the operator by means of individual rod position indicators and a digital position voltmeter. The individual rod position indicators consist of analog indicators directly reading rod position for each control rod. The digital position voltmeter consists of one digital voltmeter directly reading the analog signal for the rod selected by the rod selector switches. This voltmeter reading is compared to the Rod Position Calibration graphs for each rod to provide rod position.
- b) Digital Signal - The digital signal consists of pulses generated from the rod drive control system. This information is provided directly to the operator by means of step counters for each control rod group. The pulses are also converted to an analog signal and provided to the computer for comparison to the analog signal generated by the secondary coils.

The plant computer monitors the inputs provided by the analog and digital signals and generates an alarm if an individual rod position deviates from its group's position by a preselected amount. Operating procedures require the reactor operator to compare the digital and analog readings upon recognition of any apparent malfunction. Therefore, a single failure in rod position indication does not itself mislead the operator.

Previous Condition

On January 26, 1984 while operating at 100% power the plant's Westinghouse Proteus 2500 computer rod position deviation monitor indicated several control rod positions were outside of the deviation limit allowed by the Technical Specification. All rod indications receiving the analog signal input showed approximately a five step withdrawal beyond full withdrawal. This was not logical since all the rods except bank D were at their fully withdrawn position

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		YEAR	SEQUENCIAL NUMBER	REVISION NUMBER			
		8 4	- 0 0 3	- 0 0	0 3	OF	0 3

TEXT (if more space is required, use additional NRC Form 366a (17))

prior to the event. The reliability of the Proteus rod position information was suspected and manual logging of rod position using the digital position voltmeter was commenced. This did not resolve the apparent erroneous position indications, and on January 27 unit shutdown was started.

A detailed review of the rod position calibration data was undertaken. Following normal recalibration and plotting of calibration data, only four rod position indications were found out of specification with none in the same bank. Technical Specifications were thus satisfied and the load reduction was terminated on January 27, 1984 at 140 MWe. The excore nuclear instrumentation system and the incore movable detector system verified normal power distribution and did not identify any misaligned rods.

After discussions with Westinghouse the rod position indicating system supplier, the most probable cause of the five step increase in indication was determined to be movement in a voltage adjustment potentiometer on the RPI Power Supply Sola Transformer. The condition (approximate 5 step change in indication) was able to be reproduced by physical disturbance of the cabinet containing the Sola Transformer. A small adjustment was made to produce a negative five step average indication move.

Power ascent was commenced at 0115 hours and 100% power was achieved at 1000 hours on January 28, 1984.

At no time were any rods misaligned. Therefore the health and safety of the public were unaffected.

John D. O'Toole
Vice President

Consolidated Edison Company of New York, Inc.
4 Irving Place, New York, NY 10003
Telephone (212) 460-2533

March 22, 1984

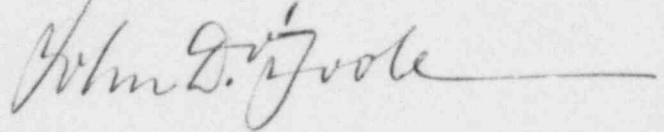
Re: Indian Point Unit No. 2
Docket No. 50-247
LER-84-003-00

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

Dear Sirs:

The attached Licensee Event Report LER-84-003-00 is hereby submitted in accordance with the requirements of 10 CFR Part 50.73.

Very truly yours,



attach.

cc: Dr. Thomas E. Murley,
Regional Administrator-Region I
U. S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, Pa. 19406

Mr. Thomas Foley, Senior Resident Inspector
U. S. Nuclear Regulatory Commission
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Buchanan, New York 10511

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