

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Indian Point Unit # 2	DOCKET NUMBER (2) 0 5 0 0 0 2 4 7	PAGE (3) 1 OF 4
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TITLE (4)  
Control Rod Drop - Reactor Scram/S.I. Actuation

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)
09	16	86	86	031		10	16	86			05000
											05000

OPERATING MODE (8)  N

POWER LEVEL (10) 100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)

<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.406(e)	<input checked="" type="checkbox"/> 80.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
<input type="checkbox"/> 20.406(a)(1)(i)	<input type="checkbox"/> 80.38(a)(1)	<input type="checkbox"/> 80.73(a)(2)(v)	<input type="checkbox"/> 73.71(e)
<input type="checkbox"/> 20.406(a)(1)(ii)	<input type="checkbox"/> 80.38(a)(2)	<input type="checkbox"/> 80.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
<input type="checkbox"/> 20.406(a)(1)(iii)	<input type="checkbox"/> 80.73(a)(2)(i)	<input type="checkbox"/> 80.73(a)(2)(vii)(A)	
<input type="checkbox"/> 20.406(a)(1)(iv)	<input type="checkbox"/> 80.73(a)(2)(ii)	<input type="checkbox"/> 80.73(a)(2)(vii)(B)	
<input type="checkbox"/> 20.406(a)(1)(v)	<input type="checkbox"/> 80.73(a)(2)(iii)	<input type="checkbox"/> 80.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME Joseph Bahr, Senior Engineer	TELEPHONE NUMBER AREA CODE: 9114 51261-55311
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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
A	A	A	CIBL	Y					

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)

On September 16, 1986 at 11:12:04 the reactor was manually tripped in accordance with procedure following the drop of 3 control rods at 100% power. This event occurred during preparation for the biweekly rod exercise test. The safety injection system was actuated following the trip due to a high steam flow signal combined with low average reactor coolant temperature; however, RCS pressure remained above the shutoff head for safety injection delivery. Following the reactor trip, safety injection and main steam isolation valve closure, the PORVs cycled during repressurization; however no steam was released since the PORV block valves are normally closed.

An electrical jumper which had been installed in preparation for rod testing was later determined to have been inadequate, resulting in the drop of the 3 rods. During shutdown, it was replaced with an appropriate substitute.

The health and safety of the public were not affected.

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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 0 2 4 7	LER NUMBER (6):			PAGE (3):	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	1	
		8 6	0 3 1	0 0	0 3	0 4

The steam supply regulator/stop valve for Auxiliary Boiler Feedwater Pump 22 was closed from the Control Room when a relief valve on the steam supply line was believed to have lifted.

The health and safety of the public were not affected.

Analysis of Occurrence:

Any event or condition that results in manual actuation of an engineered safety feature, including the reactor protection system is a reportable event. The reactor protection system functioned normally during the event. The safety injection actuation sequence initiated was unexpected; however, all actuating circuitry, valves and other equipment responded properly to the signal. Safety injection flow was not required, and no water was injected during this event. The coincident drop of three rods within the same control rod group/bank is bounded by the current safety analysis which encompasses a full control rod bank drop event. The health and safety of the public were not affected.

Cause of Occurrence:

Since the Refueling/Maintenance Outage, which ended 5/25/86, difficulty had been experienced with shutdown rod E-9. This resulted in a drop of E-9 on 8/31/86. A jumper was installed immediately prior to the 9/16/86 event with the intent of precluding the drop of E-9 during the biweekly rod exercise test required by Technical Specification. This jumper was to supply an increased holding current to the stationary gripper coil for E-9 thereby holding the rod in its fully withdrawn position while the other rods in the group were exercised. A second jumper was installed to prevent this additional current from being sensed by the auctioneering circuit for the entire group. The auctioneering circuit regulates the voltage to all rods in the group. This jumper would prevent the regulator from cutting back the voltage to the entire group (and causing rods to drop) when the additional current to rod E-9 was applied.

The second jumper had a higher resistance than expected. The existing circuit resistance was extremely low, necessitating an even lower jumper resistance. The jumper resistance had been calculated as being adequate, but proved to be higher than the calculated value when installed in the panel. When the hold current was applied to rod E-9 the logic circuitry sensed this higher current and reduced regulator current to the other three rods in the group (G-5, J-11 and L-7), causing them to drop. The manual reactor trip was mandated by the abnormal operating procedure for the inadvertant drop of more than one rod.

At no time during this sequence was the ability of rod E-9 to insert into the core upon opening of the reactor trip breakers affected.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO 3150-0104

EXPIRES 6/30/85

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		YEAR	SEQUENT A NUMBER	REV. SCH NUMBER			
		8 6	- 0   3   1	-- 0   0   0	2	OF	0   4

Plant and System Description:  
Westinghouse 4-loop pressurized water reactor

Identification of Occurrence:  
Reactor trip due to manual actuation

Event Date: September 16, 1986

Report Due Date: October 16, 1986

Reference: Significant Occurrence Report (SOR) 86-396

Past Similar Occurrence: None

Description:

On 9/16/86 during the biweekly rod exercise test PT-Q34, shutdown Bank A rods G-5, J-11 and L-7 dropped unexpectedly into the core. The control room operators were alerted by the rod bottom bistable indication, a large power tilt and decreasing Tav<sub>g</sub> indications. The operator manually tripped the reactor as required by procedure for the drop of more than one rod at 11:12:04. The reactor protection system functioned normally and an automatic turbine trip followed. Turbine first stage pressure decreased rapidly due to closure of the turbine stop valves on turbine trip. (Turbine first stage pressure infers power level in the high steam flow safety injection (SI) logic.) The decrease in measured steamflow lagged the turbine first stage pressure reduction to the point where the high steam flow (vs. inferred power level) portion of the high steam flow/low Tav<sub>g</sub> SI logic was made up. Since Tav<sub>g</sub> had already been reduced below the actuation setpoint for its portion of the SI logic a safety injection signal occurred. RCS pressure remained above the shutoff head for safety injection delivery and both trains of safety injection operated properly.

A main generator trip initiated by safety injection actuation occurred at 11:12:05 (Note: The time delay between turbine and generator trip would normally be approximately 30 seconds in the absence of a safety injection signal.) A redundant overspeed protection system (IEOPS) trip signal and a mechanical overspeed trip signal occurred due to the generator trip prior to turbine coastdown. The Main Steam Isolation Valves closed at approximately the same time terminating steamflow.

The termination of steamflow from the steam generators resulted in an RCS heatup and repressurization to the spray valve actuation setpoint of 2260 psig. Due to the interruption of instrument air caused by safety injection actuation, pressurizer spray valve operation was not effective in mitigating the pressure increase. Pressurizer pressure increased beyond the PORV lift setpoint and continued to approximately 2360 psig. The PORVs cycled but there was no discharge to the Pressure Relief Tank since the block valves were maintained closed (normal position). The plant was subsequently stabilized at hot shutdown using the atmospheric steam dump valves.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO 3150-0104  
EXPIRES 8/31/85

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 6	0 3 1	0 0	0 4	OF	0 4

(LET IF THIS SPACE IS REQUIRED USE ADDITIONAL NRC Form 302A (1/77))

Corrective Action:

While the plant was shutdown following the trip, the circuit from rod E-9 to the regulator was disconnected and grounded. This prevents the current to the holding coil of rod E-9 from affecting the other rods in the group during rod exercise tests.

Although the rod E-9 will denenergize upon opening of the reactor trip breakers and remains tripped, the rod will be maintained in the fully withdrawn position and is declared inoperable since it will not be subjected to biweekly exercise tests.

**Murray Selman**  
Vice President

Consolidated Edison Company of New York, Inc.  
Indian Point Station  
Broadway & Bleakley Avenue  
Buchanan, NY 10511  
Telephone (914) 737-8116

October 16, 1986

Re: Indian Point Unit No. 2  
Docket No. 50-247  
LER-86-31-00

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

Dear Sirs:

The attached Licensee Event Report LER-86-31-00 is hereby submitted in accordance with the requirements of 10 CFR Part 50.73.

Very truly yours,

*Murray Selman*

att

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

Senior Resident Inspector  
U.S. Nuclear Regulatory Commission  
P.O. Box 38  
Buchanan, NY 10511

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