

# LICENSEE EVENT REPORT (LER)

U.S. NUCLEAR REGULATORY COMMISSION  
APPROVED FORM NO. NRC-310  
EXPIRES 03/1986

FACILITY NAME (1)	EVENT NUMBER (2)	PAGE (3)
Indian Point Unit 2	0 6 0 0 0 2   4 7	1 of 0 3

TITLE (4)  
**Inoperability of Backup Nitrogen Supply to PORVS**

EVENT DATE (5)			LEA NUMBER (6)		REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	EVENT NUMBER
1	1	8 8 7	0 1 5	0 0	1	2	1 8 8 7		0 6 0 0 0
									0 6 0 0 0

OPERATING MODE (9)  N

NUCLEON LEVEL (10) 0 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 50. (Check one or more of the following) (11)

<input type="checkbox"/> 20.001(a)	<input type="checkbox"/> 20.001(b)	<input type="checkbox"/> 20.001(c)	<input type="checkbox"/> 20.001(d)
<input type="checkbox"/> 20.001(1)(i)	<input type="checkbox"/> 20.001(1)(ii)	<input type="checkbox"/> 20.001(1)(iii)	<input type="checkbox"/> 20.001(1)(iv)
<input type="checkbox"/> 20.001(1)(v)	<input checked="" type="checkbox"/> 20.001(1)(vi)	<input type="checkbox"/> 20.001(1)(vii)	<input type="checkbox"/> 20.001(1)(viii)
<input type="checkbox"/> 20.001(1)(ix)	<input type="checkbox"/> 20.001(1)(x)	<input type="checkbox"/> 20.001(1)(xi)	<input type="checkbox"/> 20.001(1)(xii)

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Jude Del Percio	AREA CODE: 9 1 4   5 2 6   - 5 1   2 7

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
B	L K	B F P		N	B	L K	P S F		N
B	L K	V		N					

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)  NO

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR

Indian Point 2 was at cold shutdown for a refueling outage. The backup nitrogen supply system to the pressurizer power operated relief valves (PORVs), which are used for low temperature overpressure protection of the reactor coolant system, was found to be inoperable during a test conducted on 11/18/87. Check valves failed to prevent backflow to the non-safety nitrogen system and the nitrogen consumption per valve stroke was greater than expected.

The check valves will be replaced. The apparent high nitrogen consumption per valve stroke is being investigated.

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  
 (EXP. 10/81)

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (3)			PAGE (3)		
		YEAR	SIGNIFICANT NUMBER	REVISION NUMBER	1	OF	3
		Indian Point Unit 2	05000247	87-015-00	02		

Plant and System Identification:

Westinghouse 4-loop pressurized water reactor - 900 MWe

Identification of Occurrence:

The system was found to be inoperable during a test conducted in accordance with procedure P-MT-72 (Rev. 0), "RCS OPS Nitrogen System Check" on 11/18/87.

Event Date: November 18, 1987

Report Due Date: December 18, 1987

Reference:

1. P-MT-72, Revision 0, "RCS OPS Nitrogen System Check."
2. Significant Occurrence Report No. 87-578

Past Similar Events: None

Description of Occurrence:

The pressurizer PORVs are utilized for low temperature overpressure protection of the reactor coolant system. Each PORV is provided with a separate safety related backup nitrogen supply system. Check valves 4107 and 4108 are provided to prevent backflow from the backup nitrogen system to the normal nitrogen system in the event that the normal system loses pressure. The basis for size of each backup nitrogen system accumulator is 200 cycles of valve operation which is the number of cycles required to mitigate the worst case overpressure transient with no operator action for ten minutes.

The system was tested on 11/18/87 using procedure P-MT-72 Revision 0 when the plant was in cold shutdown for a refueling outage. This test was to verify operability of the PORVs and their backup nitrogen systems. The system failed the test acceptance criteria and was thus declared inoperable due to the following:

1. Check valves relied upon to isolate the backup nitrogen system did not prevent backflow to the normal nitrogen system.
2. Nitrogen consumption per stroke was excessive.

# LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0164  
(EXPIRES 6/30/85)

FACILITY NAME (1):  Indian Point Unit 2	DOCKET NUMBER (2):  0   5   0   0   0   2   4   7	LER NUMBER (6): YEAR: 87 SEQUENCE NUMBER: 015 REVISED NUMBER: 00	PAGE (3): 03 of 03
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**Cause of Occurrence:**

Normal equipment wear was the cause of the check valve failures and system leaks. Cause of the apparent excess nitrogen consumption per valve stroke is currently being investigated. The check valve failure and excess nitrogen consumption per valve stroke were not previously identified because of a lack of a periodic test of the system.

**Analysis of Occurrence:**

The low temperature overpressure protection system (OPS) was never incapable of operating because the normal nitrogen system was available at all times and the system has not been called upon to operate at any time. As a result, the health and safety of the public were not affected. However, the OPS must be considered technically inoperable because its safety related backup nitrogen system was incapable of performing its design function. The backup nitrogen system was inoperable because:

1. The check valves would have permitted backflow to the non-safety nitrogen system in the event that system lost pressure.
2. Even with the check valves functioning properly the accumulators would not have had sufficient nitrogen to permit 200 cycles of valve operation because the nitrogen consumption per valve stroke apparently was greater than that used to size the accumulators.

The operability requirements for this system are given in Technical Specification 3.1.A.4. Since the system was found to be inoperable per that Technical Specification, this event is reportable under 10CFR50.73(a)(2)(i)(B).

**Corrective Action:**

Check valves 4107 and 4108 will be replaced. The system leaks were repaired. A procedure will be developed for a periodic test to verify integrity of the backup nitrogen system and Technical Specification 4.18 will be revised to mandate that this test be performed. The apparent excess nitrogen consumption per valve stroke will be investigated and resolved prior to entering any operating condition that requires the system to be operable.



Consolidated Edison Company of New York, Inc.  
Indian Point Station  
Broadway & Bleakley Avenue  
Buchanan, New York 10511-1099

December 18, 1987

Re: Indian Point Unit No. 2  
Docket No. 50-247  
LER 87-015-00

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

The attached Licensee Event Report LER-87-015-00 is hereby submitted in accordance with the requirements of 10 CFR 50.73.

Very truly yours,

A handwritten signature in cursive script that reads "Stephen Bram".

Stephen Bram  
Vice President  
Nuclear Power

Attachment

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