Stephen B. Bram
Vice President

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

February 26, 1992

Re: Indian Point Unit No. 2
Docket No. 50-247
LER 92-02-00

Document Control Desk
US Nuclear Regulatory Commission
Mail Station P1-137
Washington, DC 20555

The attached Licensee Event Report LER 92-02-00 is hereby submitted in accordance with the requirements of 10 CFR 50.73.

Very truly yours,

Attachment

cc: Mr. Thomas T. Martin
Regional Administrator - Region I
US Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Mr. Francis J. Williams, Jr., Project Manager
Project Directorate I-1
Division of Reactor Projects I/II
US Nuclear Regulatory Commission
Mail Stop 14B-2
Washington, DC 20555

Senior Resident Inspector
US Nuclear Regulatory Commission
PO Box 38
Buchanan, NY 10511

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NRC FORM 366 (6-89)

U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92

FACILITY NAME (1): Indian Point Unit No. 2

DOCKET NUMBER (2): 0 5 0 0 0 2 4 7

PAGE (3): 1 OF 0 3

TITLE (4): Reactor Trip due to Main Feedwater Regulating Valve going closed.

EVENT DATE (5) MONTH	DAY	YEAR	LER NUMBER (6) YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	REPORT DATE (7) MONTH	DAY	YEAR
0 1	2 7	9 2	9 2	0 0 2	0 0	0 2	2 6	9 2

OTHER FACILITIES INVOLVED (8)

FACILITY NAMES	DOCKET NUMBER(S)
	0 5 0 0 0
	0 5 0 0 0

OPERATING MODE (9): N

POWER LEVEL (10): 1 0 0

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

☐	20.402(b)	☐	20.405(c)	X	50.73(a)(2)(iv)	☐	73.71(b)
☐	20.405(a)(1)(i)	☐	50.36(c)(1)	☐	50.73(a)(2)(v)	☐	73.71(c)
☐	20.405(a)(1)(ii)	☐	50.36(c)(2)	☐	50.73(a)(2)(vii)	☐	OTHER *(Specify in Abstract below and in Text, NRC Form 366A)*
☐	20.405(a)(1)(iii)	☐	50.73(a)(2)(i)	☐	50.73(a)(2)(viii)(A)		
☐	20.405(a)(1)(iv)	☐	50.73(a)(2)(ii)	☐	50.73(a)(2)(viii)(B)		
☐	20.405(a)(1)(v)	☐	50.73(a)(2)(iii)	☐	50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER AREA CODE	
John R. Ellwanger, Principal Engineer	9 1 4	5 2 6 - 5 1 8 2

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
B	S J	S S V	W 2 4 0	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

☐ YES *(If yes, complete EXPECTED SUBMISSION DATE)* X NO

EXPECTED SUBMISSION DATE (15): MONTH | DAY | YEAR

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

On January 27, 1992 the plant was operating at 100% power when a reactor trip occurred due to steam flow-feedwater flow mismatch. Subsequently, a high steam flow-low Reactor Coolant System (RCS) average temperature conditions resulted in a Safety Injection (SI) signal. The reactor trip was caused by a main feedwater regulating valve going to the closed position unexpectedly. The SI signal arose from a decrease in RCS temperature in response to the reactor trip coincident with high steam flow signals from two steam generators (although very high steam flow conditions indicating a steam line break did not exist).

Following the SI signal, containment isolation, phase A, could not be reset without use of installed keyed bypass switches. In the subsequent event evaluation it was determined that an open circuit in the SI interlock circuitry prevented reset. Given the initiating event (closure of the feedwater regulating valve) and the SI signal, all plant safety system reacted in accordance with design. The reactor tripped and the appropriate containment valves closed. There was no impact upon the health and safety of the public.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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Indian Point Unit No. 2	0 5 0 0 0 2 4 7	9 2	— 0 0 2	— 0 0	0 2 OF 0 3

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

PLANT AND SYSTEM IDENTIFICATION:

Westinghouse 4-Loop Pressurized Water Reactor

IDENTIFICATION OF OCCURRENCE:

Reactor Trip due to main feedwater regulating valve going closed.

EVENT DATE:

January 27, 1992

REPORT DUE DATE:

February 26, 1992

REFERENCES:

Significant Occurrence Report (SOR) 92-41

PAST SIMILAR OCCURRENCE:

Licensee Event Report (LER) 88-19

DESCRIPTION OF OCCURRENCE:

On January 27, 1992, the plant was operating at approximately 100% power when a main feedwater flow regulating valve for steam generator 24 unexpectedly went to the closed position. This resulted in a steam flow-feedwater flow mismatch which caused a reactor trip. Approximately 15 seconds later a Safety Injection (SI) signal was generated as a result of high steam flow from two steam generators (21 and 24) in conjunction with a low Reactor Coolant System (RCS) average temperature (Tavg) signal. The low RCS temperature was a natural consequence of the reactor trip and the steam dump valves opening upon the reactor trip. The high steam flow signals did not arise from actual high steam flows but were primarily due to steam flow through the steam dump valves and instrument loop uncertainties and other factors which acted together to cause the setpoint to be exceeded.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

DESCRIPTION OF OCCURRENCE: (continued)

Given the reactor trip and the SI signal, all plant systems performed as designed. One result of the SI signal was the closure of all non essential containment isolation valves. Recovering from the incident, the operators attempted to reset the containment isolation signal by procedure in the normal manner which requires satisfying several interlock requirements. These interlocks were established as a result of post-TMI requirements in order to prevent inadvertent reset by the operator. Reset could not be established in a normal manner. The operators were required to resort to keyed bypass switches permitted by procedure for reset. It was subsequently determined that the reset interlock did not function properly due to an open circuit.

ANALYSIS OF OCCURRENCE:

As noted previously, all safety systems responded to the event in accordance with design. The high steam flow signals were not the result of actual high steam flow; there was no break in the steam lines. At no time was the health and safety of the public impacted.

CAUSE OF OCCURRENCE:

The reactor trip was caused by closure of a main feedwater regulating valve. It has been determined that a solenoid valve controlling air pressure to the valve malfunctioned due to aging, relieving air pressure to the diaphragm of the regulating valve which caused it to go to the closed position. The reactor trip in conjunction with opening of the steam dumps caused a rapid decrease in RCS temperature. It is believed that the error uncertainties in the instrument loops acting in one direction played a predominate role in generating high steam flow signals. In addition, one flow transmitter was reading high. The impulse line was blown down and readings decreased.

CORRECTIVE ACTION:

The relays, transducer and solenoids controlling air pressure to the feedwater regulating valve were replaced. There is an existing preventive maintenance program to replace certain plant components at the end of their service life. As a result of this event, SOV replacement on a schedule based on an estimated design lifetime is being added to the program. In addition, the failed SOV is being subjected to further analysis at an independent laboratory to more precisely determine the cause of its failure.

The instrument lines to transmitter FT 419a were blown down. An evaluation of the adequacy of the current setpoint for SI initiation as a result of low RCS Tave/high steam flow is underway.