NRC FORM 366 (12-81) 10 CFR 50

U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT

APPROVED BY OMB 3150-0011

CONTROL BLOCK: [| | | | | |] (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1	N Y I P S 2 (2)	0 0 - 0 0 0 0 0 - 0 0 (3)	4 1 1 1 1 (4)	(5)
	LICENSEE CODE	LICENSE NUMBER	LICENSE TYPE	CAT

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0 1	REPORT SOURCE: L (6)	0 5 0 0 0 2 4 7 (7)	1 1 2 9 8 3 (8)	1 2 1 3 8 3 (9)
		DOCKET NUMBER	EVENT DATE	REPORT DATE

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 During normal operation, while performing the containment spray pump test, two

0 3 MOVs 869A and B on the parallel spray pump discharge headers were found locked

0 4 closed instead of locked open rendering the system inoperable for automatic

0 5 operation during the injection phase of an accident. Tech. Spec 3.3B requires

0 6 two spray pumps and five FCUs be operable for operation with the reactor

0 7 critical. Health and safety of the public were not affected.

0 8

	SYSTEM CODE	CAUSE CODE	CAUSE SUBCODE	COMPONENT CODE	COMP. SUBCODE	VALVE SUBCODE
0 9	S B (11)	A (12)	B (13)	V A L V O P (14)	A (15)	Z (16)

(17) LER/RO REPORT NUMBER

EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE	REPORT TYPE		REVISION NO.
8 3	—	0 4 3	/	0 1	T	—	0

ACTION TAKEN	FUTURE ACTION	EFFECT ON PLANT	SHUTDOWN METHOD	HOURS (22)	ATTACHMENT SUBMITTED	NPRD-4 FORM SUB.	PRIME COMP. SUPPLIER	COMPONENT MANUFACTURER (26)
E (18)	H (19)	Z (20)	Z (21)	0 0 0 0	Y (23)	N (24)	Z (25)	Z 9 9 9

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 The cause of this event is attributed to operator error. The valves were

1 1 immediately placed in the required position (locked open, de-energized). Similar

1 2 de-energized valves were verified to be in the correct position. See attachment

1 3 for results of investigation and further corrective actions.

1 4

	FACILITY STATUS	% POWER	OTHER STATUS (30)	METHOD OF DISCOVERY	DISCOVERY DESCRIPTION (32)
1 5	E (28)	1 0 0 (29)	NA	B (31)	Surveillance Test

	ACTIVITY RELEASED	CONTENT OF RELEASE	AMOUNT OF ACTIVITY (35)	LOCATION OF RELEASE (36)
1 6	Z (33)	Z (34)	NA	NA

PERSONNEL EXPOSURES

	NUMBER	TYPE	DESCRIPTION (39)
1 7	0 0 0 (37)	Z (38)	NA

PERSONNEL INJURIES

	NUMBER	DESCRIPTION (41)
1 8	0 0 0 (40)	NA

LOSS OF OR DAMAGE TO FACILITY (43)

	TYPE	DESCRIPTION
1 9	Z (42)	NA

8312300217 831213
PDR ADOCK 05000247
S PDR

PUBLICITY

	ISSUED	DESCRIPTION (45)
2 0	N (44)	NA

NRC USE ONLY

NAME OF PREPARER G. Hinrichs PHONE (914) 526-5548

ATTACHMENT

DOCKET NO. 50-247
LER 83-043/01 T-O

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
INDIAN POINT STATION, UNIT 2

SEQUENCE OF EVENTS

On November 29, 1983, while performing a bimonthly (every two months) containment spray pump surveillance test, during normal operation, two motor operated spray header discharge valves (MOV 869A and MOV 869B) were found in the locked closed, de-energized position instead of the required locked open, de-energized position. This condition would have prevented automatic containment spray operation during the safety injection phase of an accident.

A review of conditions leading up to this event revealed that on October 12, 1983, during a cold shutdown MOVs 869A and 869B were closed and tagged out of service to work on the Reactor Coolant System. On October 18 1983 while still in the cold shutdown condition the tagout was cleared; however, these valves were specified to remain closed to block the containment spray paths while personnel continued work in the containment. Prior to plant startup, operators were assigned to perform Safety Injection System Check-off List (COL-12) which should have returned MOV 869A and MOV 869B to their proper positions prior to heating the reactor coolant system above 350 degrees. Although the facility Technical Specifications require containment spray system operability prior to taking the reactor critical, our procedures require a more restrictive limit of 350 degrees as documented in LER 82-010/01-T of 3/10/82.

On October 24, 1983 during the performance of Check-off List (COL)-12, Safety Injection System to ensure the proper line-up of the Containment Spray System, the personnel who conducted this check-off, did not verify the position of MOVs 869A and 869B.

Upon discovery by plant personnel, the incident was immediately reported by telephone to the NRC Operations Center and subsequently on November 30, 1983 a written report was sent to the Regional Administrator.

INVESTIGATION AND CAUSE

An investigation was initiated to establish the cause of the event and recommend corrective action. The investigation included interviews with cognizant operations and test personnel, a review of the COLs (Check-off Lists), OADs (Operation Administrative Directives), Training and Operator Qualification Program, the facility Technical Specifications, FSAR, Indian Point Probabilistic Safety Study, NRC's Safety Evaluation Report and other reference documentation.

The SWS on shift on October 18, 1983 during the cold shutdown explained why Valves 869A and 869B were left closed after the tagout, why he cleared the tagout and left the valves in the abnormal position. The SWS stated that the COL would have to be performed to place the valves in the proper lineup prior to heating the reactor above 350°F.

COL-12 was performed on October 23 and 24, 1983. It required one operator to ensure the correct valve position and a second operator to verify the position. COL-12 directs the operators to the motor control centers to perform two verifications for each valve: one, verify that the position of the valve is open and two, verify that the breaker is de-energized. In the de-energized condition, position indication for the valve is lost at the motor control centers. Verifying position at the motor control center, therefore, requires energizing the breaker. This was not done, and each operator assumed the valve was open. The first assumed that the valve was positioned by another operator. The second assumed the valve was open because the breaker was locked in the de-energized position.

Test personnel described how they found the valves and their subsequent actions. Test personnel realized the valve line-up was wrong when the "as left" position differed from the "as found" position during the spray pump test. The SRO was notified when the discrepancy was identified and the valves were positioned correctly.

As a result of the investigation it was determined that improvements could be made in the training/qualification program of the nuclear plant operator to place new emphasis on equipment status identification. The operator qualification standard will specify the knowledge required by the operator for the performance of COLs. In addition, we will further assure that appropriate guidance is provided to the operators in the conduct of COLs.

ANALYSIS AND CONSEQUENCES

The Unit No. 2 FSAR Sections 6.4 and 14.3 present the original analyses for the facility showing that the containment air recirculation cooling and filtration system will provide sufficient heat removal capability to maintain the post accident containment pressure below the design value, and has sufficient filtration capacity to reduce the concentration of fission products in the containment atmosphere following a loss of reactor coolant to levels ensuring that the two-hour and the thirty-day thyroid doses will not exceed the guideline limits of 10 CFR 100.

The design of the plant provides additional barriers to containment leakage in the form of a Weld Channel and Penetration Pressurization System and an Isolation Valve Seal Water System both of which are activated following a postulated accident. These systems would, under actual circumstances, limit the period of time during which the radioactivity contained within the Containment could be released to the atmosphere to a very short duration.

The Indian Point Probabilistic Safety Study specifically analyzed the case of operator error causing the discharge valves 869A and 869B to be left in a closed position following a test (Section 1.5.2.3.5.4.1). The result of this analysis shows a negligible effect on overall risk posed by operation of the plant under these conditions.

Indications available to the reactor operator in the control room that could be used to diagnose the lack of injection phase spray are:

1. A direct indication would be lack of flow indicated on FI-930, Spray Additive Tank Discharge.

2. A second indication would be the rate of decrease of the Refueling Water Storage Tank level during the five (5) minute intervals when the operator is required to check tank level in accordance with procedure E-1.

3. A third indication would be the failure of the Spray Additive Tank (SAT) level to fall and not receiving the expected SAT Low Level Alarm.

With several possible indications of a problem, the operator could notice the lack of spray flow from immediately after spray initiation up to thirty minutes after initiation. There are a number of options available to the Reactor Operators.

1. Valve realignment could take place quickly from MCC26AA and MCC26BB. The MCC area is designed to be accessible in high post-accident radiation fields.

2. Spray could be supplied from the RHR Pump discharge by opening MOV 889A or MOV 889B from the Central Control Room.

3. If not previously activated, containment spray would be initiated after switchover to the recirculation phase. Sodium hydroxide would be added to balance ECCS fluid pH as required by procedure.

IMMEDIATE CORRECTIVE ACTION

1. Motor Operated Valves 869A and 869B were placed in the correct position (locked, open, de-energized) following the Containment Spray Pump Surveillance Test on November 29, 1983.

2. Similarly de-energized, safeguards valves on COL-12 and COL-51 were verified to be in the correct position on November 29 and November 30.

3. The training and qualification status of the two operators who performed COL-12 on October 24 was reviewed by the Operations Superintendent and found in order. Additionally, the operators were interviewed and a determination was made that they had improperly performed the COL for MOV 869A and MOV 869B. They were re-instructed on the proper way to determine valve position.

PERMANENT AND LONG RANGE CORRECTIVE ACTION

1. COL-12, Safety Injection System Check-Off List, and COL-51, Locked Valve Check-Off List, will be validated by reviewing system prints, Technical Specifications, and the Final Safety Analysis Report to ensure that all valves are included that should be included. All COLs will be revised to provide appropriate guidance for verifying valve position to assure each of two verifications, where required, is completely independent and will contain a statement clearly defining that signing a COL signifies that the signer based upon his direct observation is acknowledging that the item identified in the COL has been completed.

2. Operations Section personnel will be retrained on the requirements for conducting a proper valve check-off and the requirements for maintaining equipment status control.

3. Section 8 of the Indian Point Station Training Manual will be revised to include a qualification standard which specifies what knowledge and practical abilities must be demonstrated to obtain each signature on the Operator Qualification Cards.

4. NPO Instructor participation in NPO on-the-job training will be increased by scheduling specific days that the NPO instructor will be in the plant giving check-outs to the NPOs working on qualification.

5. OAD-6, Equipment Status Identification, will be revised to clarify requirements.

6. Operations Administrative Directive No. OAD-19, Tag-Out Log will be revised to require that all tag-outs be prepared by one of the on-watch Reactor Operators with an independent verification of tag-out adequacy by the Senior Watch Supervisor.

7. To ensure that all necessary check-off lists are performed when coming out of an outage, in the future, the Senior Watch Supervisor will document on a status board to be installed in the Foreman's Office all check-off lists that need be performed when the need for the COL becomes apparent.

8. A review of valve position indication for all safety related valves will be made to determine if modifications are necessary to provide for positive indication of de-energized valves.

9. The operability of all currently installed safety related MOV position indicators will be verified and corrected if necessary.

10. Quality Assurance and Reliability will audit the permanent corrective action.

EQUIPMENT DESCRIPTION

Motor Operated Valves 869A and 869B are 8" gate valves Model 2116-EXT-SP manufactured by ALOYCO. The operators, which are mounted on the floor above the valve, are Limitorque Model SMB-000 with a position indicator dial and manual override capability. The valves are located on the discharge header of each containment spray loop prior to entering the containment. Whenever the RCS temperature is greater than 350°F these valves are required to be in the locked open position with the Motor Control Center Breakers de-energized.

John D. O'Toole
Vice President

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

December 13, 1983

Re: Indian Point Unit No. 2
Docket No. 50-247
LER-83-043/01T-0

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

Dear Dr. Murley:

The attached Licensee Event Report LER-83-043/01T-0 is hereby submitted in accordance with the requirements of Technical Specification 6.9.1.7. This event is of the type described in Technical Specification 6.9.1.7.1.f.

Very truly yours,

John D. O'Toole

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

Mr. Thomas Foley, Senior Resident Inspector
U. S. Nuclear Regulatory Commission
P. O. Box 38
Buchanan, New York 10511

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