

Paul H. Kinkel
Vice President

Consolidated Edison Company of New York, Inc.
Indian Point Station
Broadway & Bleakley Avenue
Buchanan, NY 10511
Telephone (914) 734-5340
Fax: (914) 734-5923

November 28, 1997

Re: Indian Point Unit No. 2
Docket No. 50-247

Document Control Desk
US Nuclear Regulatory Commission
Mail Station P1-137
Washington, D.C. 20555

SUBJECT: Reply to Notice of Violation
(Inspection Report 50-247/97-11)

The attachment to this letter constitutes Con Edison's reply to the Notice of Violations (NOV) included with your October 29, 1997 letter concerning the inspection conducted from August 19, 1997 through September 29, 1997 at the Indian Point 2 facility.

Con Edison acknowledges the observations cited within the report concerning the lack of adherence to station procedures by line workers and by supervisory and management personnel. The occurrence of these types of issues in the past is of concern to Con Edison. In order to address this issue, Con Edison senior management conducted meetings with all Nuclear Power departments regarding the responsibilities and expectations of management personnel. During these meetings, all individuals were reminded of their management responsibilities to direct the work force and to ensure that standards and expectations for performance are met. Recent examples of inadequate procedural adherence were discussed. This communication to employees was provided on November 7, 1997. In addition, all management personnel were provided with a copy of Inspection Report 97-11. We believe that the management attention being applied will lead to performance improvements at the plant. Other activities to address procedural adherence matters comprehensively are under review by senior management. We will advise you as our plans are finalized.

Should you have any questions regarding this matter, please contact Mr. Charles W. Jackson, Manager, Nuclear Safety and Licensing.

Very truly yours,

Paul H. Kinkel

IEDO11

9712170502 971128
PDR ADOCK 05000247
PDR
G



Attachment

cc: Mr. Hubert J. Miller
Regional Administrator - Region I
US Nuclear Regulatory Commission
495 Allendale Road
King of Prussia, PA 19406

Mr. Jefferey F. Harold, Project Manager
Project Directorate I-1
Division of Reactor Projects I/II
US Nuclear Regulatory Commission
Mail Stop 14B-2
Washington, D.C. 20555

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

ATTACHMENT
REPLY TO NOTICE OF VIOLATION

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
INDIAN POINT UNIT NO. 2
DOCKET NO. 50-247
November 1997

NOTICES OF VIOLATION

The Notices of Violation in Inspection Report 50-247/97-11 are stated as follows:

- A. 10 CFR 50 Appendix B, Criterion XVI, in part, requires that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment are promptly identified and corrected.

Contrary to the above, on August 17, 1997, measures were not established to assure a condition adverse to quality was promptly corrected. Specifically, the feedwater regulating and low flow bypass isolation valves' response was identified as a deficiency, as the valves repositioned closed upon taking their control switches from open to automatic, rather than staying open as expected. Operations personnel overrode this function by caution tagging the associated control switches in the open position and continued with power ascension without determining the extent of condition that was causing the anomalous response. Consequently, on August 21, 1997, during troubleshooting activities for the anomalous response of the isolation valves, it was discovered that a portion of the safety-related feedwater isolation safety function was not functioning and had been inoperable since August 17, 1997. This inoperability was the result of the same anomalous condition that caused the isolation valves to incorrectly close when placed in automatic.

This is a Severity Level IV violation (Supplement D).

Reply to Violation A

We acknowledge the concern addressed by this violation and agree that a condition identified by Operations personnel on August 17, 1997 during power ascension from a forced outage was a deficiency and was not corrected prior to the continuation of plant power ascension activities. At the time, the determination to accept the deficient condition and continue with power ascension activities was based upon an incomplete understanding of the nature of the deficiency.

On August 17, 1997, during power ascension from a forced outage operators observed motor-operated stop valves (BFD-5 and BFD-90 series) beginning to close when their controls were placed into the "Auto" position. These motor-operated stop valves were expected to have remained open. Consequently, control room operators kept the valve control switches in the "Open" position, which restored the valves to their desired positions, and then consulted with management. An investigation of the design and operation of the control logic of the feedwater regulating and low flow bypass isolation valves (BFD-5 and BFD-90 series) was initiated with plant engineering and licensing personnel. Based upon a review of the accident analysis by licensing personnel, it was determined that the analysis did not take credit for the effect of closure of the feedwater regulating and low flow bypass isolation valves. Therefore, it was concluded that the continuation of plant power ascension activities with the control switches for the BFD-5 and BFD-90 series valves in the "Open" position was acceptable. However, this decision was not based upon a comprehensive analysis of the deficiency. Operations personnel continued with power ascension, deferring troubleshooting activities until the reactor was at full power. Subsequently, on August 21, 1997, during follow-up troubleshooting activities, technicians discovered that two energized relays (3RSBFP1 and 3RSBFP2) were blocking the generation of a trip signal to both 21 and 22 main boiler feed pumps. Because this trip contributes to the analyzed feedwater isolation sequence on a safety injection or high steam generator level signal, control room operators entered Technical Specification 3.0.1 and initiated a plant shutdown. An investigation was initiated to determine why relays 3RSBFP1 and 3RSBFP2 were energized. As a result, overly restrictive settings on the limit switches for motor-operated main boiler feedwater pump discharge valves (BFD-2-21 and BFD-2-22) were discovered to be the reason that the energized relays were blocking the generation of a trip signal to both 21 and 22 main boiler feed pumps.

Because of the nature of the circumstances that led to this event, the need to conduct a root cause analysis was recognized and an analysis of this event was initiated.

The root causes identified were: 1) Management failed to recognize initially that the main boiler feedwater pump discharge valves (BFD-2-21 and BFD-2-22) could not meet their functional requirements when overly restrictive Rotor No. 3 time settings associated with the main boiler feed pump trip logic were implemented. These time settings resulted in an abnormal limit switch position which generated an undesirable automatic closure signal to the BFD-5 and BFD-90 series valves and did not arm the main boiler feedwater pump trip signals from the BFD-2-21 and BFD-2-22 valves. 2) The determination of valve stroke timing performance requirements and their control using established station processes was ineffective. Previous BFD-2-21 and BFD-2-22 valve timing test results were approved verbally without formal documentation. 3) Limit switch settings were not considered setpoint changes, thus they did not receive the same level of review as other kinds of setpoint changes. 4) With the lack of any primary indication of the main boiler feedwater pump trip logic (on BFD-2 closure) not being armed, management was not able to adequately diagnose the significance of the automatic closures of the BFD-5 and BFD-90 series valves. 5) During the period from August 17-21, 1997, specific managers and knowledgeable individuals were unavailable for consultation. This reduced the quality of decisions made prior to the decision to enter Technical Specification 3.0.1. and delayed the diagnostic efforts which eventually led to the resolution of the problem.

When it was determined that a contributing cause for this event was overly restrictive Rotor No. 3 time settings, Con Edison immediately performed the following corrective actions. New Rotor No. 3 time settings for the BFD-2-21 and BFD-2-22 valves were specified, evaluated, and determined to be acceptable. A review of all safety-related motor-operated valves was performed to determine if any other "pass through signals" exist such as for BFD-2-21 and BFD-2-22. No other similar configurations were found. To prevent a repetition of this type of event, Con Edison will perform the following corrective actions.

- Evaluate a design modification for the addition of primary indication of main boiler feed pump trip status generated from the BFD-2-21 and BFD-2-22 valves. This corrective action will be completed prior to the 1999 refueling outage.
- Determine the appropriate administrative controls for safety-related motor-operated valve rotor setpoints. This corrective action will be completed prior to the 1999 refueling outage.
- For unexpected plant responses, ensure all pertinent organizations are involved in determining causes which involve operability issues. This corrective action will be completed by December 31, 1997.
- Develop and implement a plan/matrix ensuring that acceptable levels of key plant personnel are consistently maintained. This corrective action will be completed by December 31, 1997.

B. Code of Federal Regulations, 10 CFR 50.55a, requires that inservice testing (IST) of certain American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) Class 1, 2, and 3 pumps and valves be performed in accordance with Section XI of the ASME Code and applicable addenda, except w[h]ere relief has been requested and granted or proposed alternatives have been authorized by the Commission.

On April 15, 1996, the NRC granted ASME Section XI relief request 33, to include check valve sample disassembly/inspection for valve 881 (inlet line to residual heat removal

pump from the refueling water storage tank), instead of quarterly testing to verify the full open position or closed position on cessation of flow. The inspection frequency requested, and approved by the NRC, was at each refueling in accordance with NRC Generic Letter 89-04, Guidance on Developing Acceptable IST Programs, position 2.

Contrary to the above, following questioning by the NRC, Con Edison identified on September 26, 1997, that valve 881 was not disassembled and inspected during the last refueling outage, conducted May through July of 1997.

This is a Severity Level IV violation (Supplement I).

Reply to Violation B

We acknowledge the concern addressed by this violation and agree that contrary to ASME Section XI Relief Request 33, valve 881 had not been disassembled and inspected as required during the 1997 refueling outage. Valve 881 is an inlet line check valve to the RHR pumps from the Refueling Water Storage Tank. This valve is normally closed and is required to open following a design basis accident in order to provide RHR flow during the LPSI mode. The valve is also required to close during external containment recirculation to prevent reverse flow to the Refueling Water Storage Tank. Relief Request 33 was submitted for approval in a letter dated November 30, 1995 to be applicable for the Indian Point Unit 2 Third Ten-Year Interval Inservice Testing Program which began on July 1, 1994. Prior to the Third Ten-Year Inservice Testing Program, valve 881 was only required to be exercised open at refueling intervals using the RHR pumps to refill the primary system. Valve 881 was not inservice tested to verify closure, since its safety function was to open and allow flow from the Refueling Water Storage Tank to the RHR pumps. Thus, prior to July 1, 1994, valve 881 was not required to be disassembled and inspected under inservice testing requirements.

Implementation of check valve disassembly and inspection activities, in accordance with approved IST relief requests is conducted via work orders through the preventive maintenance program. Prior to the 1997 refueling outage Con Edison outage planning personnel conducted a review of all preventive maintenance tasks. During this review a previously approved preventive maintenance task sheet was found which removed valve 881 from the program. Based upon this task sheet, valve 881 was removed from the preventive maintenance program by canceling its associated work order. The work order had been incorrectly canceled solely on the basis of the pre-approved preventive maintenance task sheet. Since valve 881 had been previously approved for removal from the preventive maintenance program, the decision to cancel it did not receive further review. Thus, there was no information available to the outage planning individual to indicate that the preventive maintenance task was associated with the inservice testing program.

Upon discovery of this failure to implement the requirements of the IST program for valve 881, an operability determination was performed. A determination of acceptable operability was made based upon observations made during the last quarterly surveillance test of the RHR pumps. To ensure that no similar events have occurred, all work orders written for check valves required to be disassembled and inspected as part of the IST program for the 1997 refueling outage were verified to have been completed. To prevent recurrence of this type of event, work orders written through the preventive maintenance program for IST requirements will contain identification that they are part of the IST program to prevent inadvertent cancellation. This corrective action will be implemented prior to the 1999 refueling outage.

- C. Technical Specification (TS) Section 6.8.1 requires that written procedures be implemented covering activities referenced in Regulatory (Safety) Guide 1.33, November 1972. Appendix A of Regulatory Guide 1.33 recommends written procedures that govern procedure adherence. Station Administrative Order (SAO) - 133, "Procedure, Technical Specification and License Adherence and Use Policy," Section 5.1.1, states that

procedures shall be followed. SAO-105, Work Permits, Section 2.10.2, states that the SWS/SFS shall review all proposed work and ensure that the work authorized by the permit is in compliance with the TSs and Nuclear Power procedures and that the protection provided is adequate.

Contrary to the above, troubleshooting on fan unit K-3 was performed on August 27, 1997, without issuance of a work permit, without the knowledge of the central control room operators, and without ensuring that TS LCO 3.3.H.2 was entered for the time that the access plate to the fan unit was removed.

This is a Severity Level IV violation (Supplement I).

Reply to Violation C

We acknowledge the concern addressed by this violation and agree that a lack of adherence to station procedures by supervisory and management personnel occurred during a portion of a troubleshooting activity on August 27, 1997. The reason for this was a less than adequate work plan for the troubleshooting activity associated with the smoke and smell from the K-3 fan. In addition, communications and teamwork during this evolution were inadequate, resulting in actions affecting control room ventilation operability being performed in the field by operations management, without the knowledge of the central control room operators. The control room "envelope" was breached by the removal of the access cover from fan unit K-3. The knowledge of what constitutes the control room "envelope" and configuration control, and in this case how changes in configuration affected operability, were less than adequate. This resulted in a breach of the control room "envelope" without the declaration of the associated technical specification LCO. Upon discovery of this condition, both individuals recognized the significance of the procedural violation and initiated the appropriate notifications.

To prevent an repetition of this type of event, all central control room ventilation plenum doors and access plates have been labeled to indicate that CCR envelope, that a LCO is required, and that the Shift Watch Supervisor is to be notified prior to entry. Troubleshooting activities which require manipulation of equipment will be performed using a work permit. This direction will be reflected in applicable station procedures by December 31, 1997. In addition, appropriate supervisory and management personnel were briefed of this event and its significance.

- D. Technical Specification (TS) Section 6.8.1 requires that written procedures be implemented covering activities referenced in Regulatory (Safety) Guide 1.33, November 1972. Appendix A of Regulatory Guide 1.33 recommends written procedures that govern procedure adherence. Station Administrative Order (SAO)-133, "Procedure, Technical Specification and License Adherence and Use Policy," Section 5.1.1, states that procedures shall be followed. SAO-703, Fire Protection Impairment Criteria and Surveillance, Section 4.9, states that when fire protection equipment is to be removed from service, the Senior Watch Supervisor shall be informed. Section 4.13.1 also requires the establishment of interim fire watches or fire watch tours during the period of impairment.

Contrary to the above, on September 23, 1997, the NRC observed that fire protection equipment was removed from service without obtaining the Senior Watch Supervisor's approval. Specifically, the roll-up fire protection door to the 21 charging pump room was removed from service in that a hose and electrical cord were passed across the doorway such that the door would have been prevented from fully closing. Also, no compensatory fire watch or tour had been established.

This is a Severity Level IV violation (Supplement I).

Reply to Violation D

We acknowledge the concern addressed by this violation and agree that the individuals who ran a hose and electrical cord across a doorway designated as a fire protection barrier exhibited poor judgment and a non-questioning attitude. It is also recognized that previous incidents of procedural non-adherence have occurred with this roll-up fire protection door.

Upon notification of this incident, the responsible individuals were questioned regarding their knowledge of what constituted a fire protection equipment impairment and its associated compensatory actions. The individuals stated that they were aware of the door's fire protection function, but felt that the hose and cord would not prevent the door from closing, although not completely to the floor. Thus, these individuals incorrectly believed that the hose and cord did not impair the fire door. This is an example of lack of knowledge and non-compliance with station fire protection requirements. In response to previous incidents involving this particular fire door, additional enhancements to the identification of roll-up fire doors, and instructions to personnel about the procedures required if one is to be impaired, were provided. The frames around the doorways of all roll-up fire doors have been painted with red and white diagonal striping. Larger signs identifying these roll-up doors as fire doors were also previously installed. It is our belief that the identification of roll-up fire doors are adequate and that the root cause for this violation is the lack of understanding of what constitutes an impairment. It is our policy that any obstruction which blocks the door frame and prevents a roll-up fire door from releasing and falling to the floor is an impairment which would require the establishment of compensatory actions. A discussion of this event was provided to maintenance personnel emphasizing the significance of impairments to roll-up fire doors. The maintenance manager reviewed the requirements and expectations for strict procedural adherence with the individuals involved, noting the use of the Stop-Think-Act-Review process and pre-job briefings. This violation has been included in the 1997 maintenance continuing training program.

- E. 10 CFR Part 50.55a(f) requires that inservice testing (IST) of certain ASME Code Class 1, 2, and 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code (the Code). Section XI of the Code (1989 Edition) incorporates by reference Parts 6 (OM-6) and 10 (OM-10) of ASME/ANSI OMa-1988. OM-6, Section 1.1, and OM-10, Section 1.1, respectively, require IST of pumps provided with an emergency power source, which are required in shutting down a reactor to the cold shutdown condition, maintaining the cold shutdown condition, or mitigating the consequences of an accident, and IST of valves that perform the functions stated above.

Contrary to the above, as of September 19, 1997, IST of certain pumps and active valves and pressure-relief devices was not performed in accordance with the requirements of OM-6 and OM-10, respectively, as evidenced by the following examples:

1. Nine instrument air component cooling water components were not included within the scope of the IST program, including: 21 and 22 cooling water pumps, and valves CC-39 and CC-39-1, 1177 and 1178, CC-56 and CC-56-1, and LCV-1130
2. Eleven service water system Code Class boundary isolation valves were not included within the scope of the IST program, including: SWN-589, 591, 593, 595, 597, 599, 46, 47, 840, and TCV-1113 and TCV-1103
3. Safety injection system relief valve 855 and check valves 858A and 858B were not included within the scope of the IST program.

This is a Severity Level IV violation (Supplement I)

- G. 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," requires that a test program shall be established to assure that all testing required to demonstrate that components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents. Section XI of the ASME Boiler and Pressure Vessel Code (1989 Edition) incorporates by reference Part 6 (OM-6) of ASME/ANSI OMa-1988. OM-6, Section 5.2, requires that an inservice test shall be conducted with the pump operating at specified test reference conditions. The resistance of the system shall be varied until the flow rate equals the reference value.

Contrary to the above, as of September 19, 1997, written procedures for the performance of testing required to demonstrate that safety injection pumps and shaft driven component cooling water pumps will perform satisfactorily in service did not incorporate the requirements and acceptance limits contained in applicable design documents in that procedures PT-Q29A(B,C), "21(22,23) Safety Injection Pump," established a range of flow reference values rather than a specific test reference condition.

This is a Severity Level IV Violation. (Supplement D)

Reply to Violation G

We acknowledge the concern addressed by this violation and agree that contrary to the requirements of OM-6 and NUREG-1482, a specific test acceptance limit with an allowable tolerance not to exceed plus or minus 2 percent had not been used to test the safety injection pumps and shaft driven component cooling water pumps. The reason for this violation was an apparent erroneous interpretation of the ASME Section XI Code requirements. Upon notification of this condition, a review of PT-Q29A(B,C) revealed that the establishment of a range of flow reference values has historically been the approach used during the inservice testing of the safety injection pumps. The reason for this was to preclude the need to adjust the flow while the particular pump was undergoing testing. It was also felt that the point on the pump curve for the specified range of flow values would be the same when evaluating pump head. The use of the specified range of flow reference values was an oversight in the development of the tests.

Con Edison's corrective actions implemented to address this concern has been to revise PT-Q29A(B,C) to incorporate a set reference value when testing the safety injection pumps and shaft driven component cooling water pumps. These tests have since been performed satisfactorily. In addition, all other Section XI code pump tests have been reviewed to insure that no similar conditions exist. None were found.

- H. 10 CFR Part 50.55a(f) requires that inservice testing of certain ASME Code Class 1, 2, and 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code (the Code). Section XI of the Code (1989 Edition) incorporates by reference Part 10 (OM-10) of ASME/ANSI OMa-1988. Sections 4.2.1 of OM-10 requires that Category A and B valves shall be exercise tested nominally every three months, or if not practicable, during cold shutdowns or refueling outages. Section 4.3.2 of OM-10 requires that check valves be full-stroke exercised in a manner which verifies obturator travel to the position required to fulfill its function during plant operation, cold shutdowns or refueling outages, or disassembled every refueling outage.

Contrary to the above, as of September 19, 1997, IST of certain Category B and C valves was not performed in accordance with Sections 4.2.1 and 4.3.2 of OM-10 as evidenced by the following examples:

1. Service water system manual isolation valves SWN-40 and SWN 40-1 were not full stroke exercised in the closed direction.

Reply to Violation E

We acknowledge the concern addressed by this violation and agree that at the time of this inspection certain pumps and valves were not included in the inservice testing program. In 1989, an evaluation of the IST program selection criteria and scope was performed. With respect to the Instrument Air system, it was Con Edison's position that operation of the safety-related instrument air system compressors was not required for accident mitigation purposes. Although re-establishment of the system is discussed in the UFSAR, this was considered to be an aid to post-accident recovery. Only certain essential portions of the system were included in the IST program. The instrument air closed cooling water system was not evaluated for inclusion in the program.

All components identified within this violation have been reviewed for inclusion in the IST program. Pending the completion of future program evaluations, all nine instrument air component cooling water components, with the exception of LCV-1130, have been added to the program and were tested during the recent maintenance outage. LCV-1130 was determined to be a component used only for system control, and is excluded from the IST program per OM-10. All eleven service water system Code Class boundary isolation valves have been added to the IST program. Previously these components were considered to be used only for system control, and were excluded from the IST program. Safety injection relief valve 855 and check valves 858A and 858B have been added to the IST program and have been tested during the recent maintenance outage. To prevent a repetition of this type of event, Con Edison will perform a reevaluation of the IST program selection criteria document and review the need to revise the IST program scope. This corrective action will be completed prior to the 1999 refueling outage.

- F. Technical Specification 6.8.1 requires that written procedures be implemented covering activities referenced in Regulatory (Safety) Guide 1.33, November 1972. Appendix A of Regulatory Guide 1.33 recommends written procedures that govern procedure adherence. Section 5.1.1 of Station Administrative Order SAO-133, "Procedure, Technical Specification, and License Adherence and Use Policy," states that procedures shall be followed. Inservice test procedures PT-Q30B, "22 Component Cooling Pump," and PT-Q35B, "22 Containment Spray Pump," state that the range of a pressure gage shall not exceed three times the measured value.

Contrary to the above, during performance of inservice testing of component cooling and containment spray pumps on August 6, 1997 and June 18, 1997, respectively, the range of the pump suction pressure gages exceeded three times the measured values.

This is a Severity Level IV violation. (Supplement I)

Reply to Violation F

We acknowledge the concern addressed by this violation and agree that contrary to OM-6 analog pressure gauges with full-scale ranges exceeding three times the reference value were used during the performance of inservice testing. Test procedures PT-Q35B and PT-Q30B contain a listing of the specific test equipment to be used. Analog pressure gauges with full-scale ranges exceeding three times the reference value were incorrectly specified in these procedures. This error was an apparent oversight in the development of the tests. In accordance with the test procedure, the type of gauges identified were the ones used by the test technicians performing the test.

Upon notification of this condition, the tests for each of the affected components were performed using the proper gauges. A data comparison with the previously performed tests revealed no significant impact. To prevent a repetition of this type of event, a review of all applicable test procedures was performed to insure that no other test gauge errors existed.