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Nuclear Power Plant
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Robert J. Barrett
Site Executive Officer

July 21, 1997
IPN-97-098

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

Subject: Indian Point 3 Nuclear Power Plant
Docket No. 50-286
License No. DPR-64
Reply to Notice of Violation In NRC
Inspection Report 50-286/97-80

Dear Sir:

This letter provides, in Attachment I, the New York Power Authority's response to Violations 97-80-01, 02 and 04 identified in the Notice of Violation in NRC Region I Inspection Report 50-286/97-80. The Authority agrees with these violations.

The commitments made by the Authority with this letter are contained in Attachment II. If you have any questions, please contact Ms. C. D. Faison at (914) 736-8029.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Robert J. Barrett'.

Robert J. Barrett
Site Executive Officer
Indian Point 3 Nuclear Power Plant

Attachments

cc: See next page

IEDI/1

9707280268 970721
PDR ADOCK 05000286
G PDR



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U.S. Nuclear Regulatory Commission
Resident Inspectors' Office
Indian Point 3 Nuclear Power Plant

Reply to Notice of Violation 50-286/97-80-01, 97-80-02 and 97-80-04

RESPONSE TO NOTICE OF VIOLATION

NYP&A is responding to the Notice of Violation contained in NRC Inspection Report 50-286/97-80 in accordance with the requirements of 10 CFR 2.201. The response addresses the three violations in the same sequence as presented by the Notice of Violation and provides the reason for the violation or basis for disputing it, the corrective actions taken and results achieved, the corrective actions that will be taken to avoid repetition, and the date when full compliance will be achieved.

Violation 97-80-02

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

Contrary to the above,

- (1) Measures were not established to promptly correct a deviation between the final safety analysis report (FSAR) description and the fuel storage building ventilation system surveillance test (3PT-R32A). The FSAR, Section 9.5.2, states in part, "Prior to handling operations, when irradiated fuel is within the fuel handling building, tests are performed to verify the building leak tightness." A January 28, 1994 vendor report, "Design Basis for the IP3 FSB Ventilation System Emergency Mode of Operation," recommended that the acceptance criteria for the fuel storage building (FSB) ventilation surveillance test be revised to measure the FSB leak tightness. On January 17, 1997, the NRC identified that FSB surveillance test did not contain acceptance criteria to measure FSB leak tightness. As of April 25, 1997, although a qualitative engineering assessment indicated the required negative pressure would be maintained in the FSB, the FSB ventilation surveillance test had not been revised to verify and specifically assess FSB leak tightness.
- (2) On April 24, 1997, measures were not established to promptly identify that a FSB ventilation system supply damper failed to close. Following the identification of the failed open damper by the team, the FSB ventilation system was declared inoperable.
- (3) Measures were not established to promptly ensure that conditions adverse to quality, namely deficient components were replaced. On May 1, 1994, the licensee determined that the thermal overload heaters for two safety-related motor-operated valves (SI-MOV-887A and 887B) were undersized (IP3-CALC-ED-01074). As of April 7, 1997, the licensee had not replaced the thermal overload heaters or documented an operability determination to assess the acceptability of the existing thermal overload heaters.

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

Response to Violation 97-80-02

NYPA agrees with this violation. The Authority does not agree with one of the cited examples. The reasons for the violation or basis for dispute, corrective actions and date of achieving compliance are presented individually for the three cited examples.

Violation 97-80-02, Example number 1

NYPA does not agree with this example. The reason for this apparent violation is attributed to not having provisions to measure the actual building leak tightness. The existing procedures and Engineering tests ensured building leak tightness.

Reason for Violation

The FSAR description in Section 9.5.2 originated in response to a question of the design features for the fuel storage building (FSB). That response stated "A controlled leakage building designed for a negative pressure of 0.50 inches of water minimum, permanently encloses the fuel pool" and also noted that "Prior to handling operations when irradiated fuel is within the fuel handling building, tests will be performed to verify the building leak tightness." The FSAR further clarifies the design in Section 1.3 where, for a condition when the supply fans are off, the supply dampers are closed, the rolling door is closed and inflatable seals are inflated, it states "Under these conditions, the maximum calculated in-leakage to the building (as a result of non-air tight construction) would be 20,000 cfm with a one-half inch of water negative pressure inside the building." NYPA has interpreted the FSAR to refer to the design ability of the FSB to remain leaktight at 0.5 inches of water or more as opposed to the requirement to maintain a slight negative pressure to provide for filtration following an accident (this is similar to the Control Room requirement for a slight positive pressure following an accident to provide pressurization). NYPA has therefore not regarded it as a requirement to quantitatively measure the differential pressure in the FSB and corrective action was not considered necessary. Action has been taken to measure this differential pressure as described under corrective action.

Routine testing of the FSB ventilation system is done using surveillance tests 3PT-R32A, 3PT-Q3B, and 3PT-M33. Surveillance test 3PT-Q3B, "Fuel Storage Building Radiation Monitor Functional (R-5)," verifies that the automatic actions described in the FSAR take place. Surveillance test 3PT-R32A, "Fuel Storage Building Filtration System," provides additional testing to meet the requirements of Technical Specification 4.5.6. Surveillance test 3PT-M33, "FSB Ventilation System Functional Test," operates the FSB Ventilation System in the emergency mode for at least 15 minutes and, since June 1993, documents that there is negative pressure in the Fuel Storage Building.

Plant testing is consistent with the fuel handling accident dose calculations described in FSAR Section

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14.2.1. The dose calculations assume that there is filtration and that the release is a puff release, consistent with the fuel handling accident for the containment.

In 1974, preoperational testing recorded a FSB emergency exhaust flow of 16,550 cfm with a negative pressure of 2.9 inches of water. This test demonstrated that the building was leaktight. The continued leaktightness was demonstrated by a 1994 test used to support an FSAR change that allowed the door seal not to inflate. The FSB negative pressure was measured on May 31, 1994 with the exhaust fan running, bypassing the charcoal filter, the supply fan secured (but the dampers were open), and the door seals deflated. The measured negative pressure of the building was 0.3 inches of water at an exhaust fan flow rate of 17,803 cfm.

On January 28, 1994, UE&C made a recommendation to revise the surveillance test to measure the FSB leak tightness. At a site meeting on February 24, 1994, NYPA concluded that past tests demonstrated capability of the ventilation system to provide the required flow to ensure that a negative pressure was maintained and that adding flow measurement would be an enhancement. This decision is consistent with the FSAR interpretation. The NYPA decision indicated disagreement with the need to measure attainable negative pressure when negative pressure was being monitored (3PT-M33 had been modified in 1993 to qualitatively monitor the presence of differential pressure).

Corrective Actions Taken or To Be Taken

- 1) Surveillance test procedure 3PT-R32A was modified on April 27, 1997 to require measuring the Fuel Storage Building leak tightness (pressure differential) when the Ventilation System is in the emergency mode of operation. This will demonstrate the capability of the Ventilation System to maintain a negative pressure while in the emergency mode following a fuel handling accident.
- 2) The FSAR will be reviewed and revised as necessary to clarify the design of the fuel storage building, the fuel storage building Ventilation System, accident dose analysis assumptions and the surveillance requirements to support design basis of the system. Update to the FSAR will be following the currently planned update.

Corrective Actions to be taken to Avoid Further Violations

None

Date When Full Compliance Will Be Achieved

Not Applicable.

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Example number 2

New York Power Authority agrees with example 2 that the failure of FSB ventilation supply damper to close was not promptly identified and corrected.

Reason for Violation

The Control Room indication lights for the FSB air tempering unit 31 and 32 inlet damper are a means to remotely monitor damper positions. When the dampers are full closed, the associated damper limit switches will close providing a bright white indication light in the Control Room. When the dampers are open, the light is dim. The operators did not promptly identify and take corrective action to address the equipment failure because the operators did not recognize the dim light was due to a failed component. The cause is attributed to an inadequate system operating procedure which did not adequately describe the damper operation. The configuration of the position lights relative to the control switch location is considered a contributing factor.

Corrective Actions Taken

- 1) System Operating Procedure SOP-V-2, "Fuel Storage Building Heating and Ventilation," was revised on April 28, 1997 to confirm closure of the spring damper when the supply fans are secured and provide guidance on the indicating lights.
- 2) Shift Order was issued on April 29, 1997 to advise operators of the changes in SOP-V-2.

Corrective Actions to be Taken to Avoid Further Violations

Other indicating lights in the control room for safety related components which are on remote panels relative to the control switch location will be verified to have a system operating procedure which ensures the components change of state when the control switch is operated. This will be completed by startup from R09.

Date When Full Compliance Will be Achieved

On May 6, 1997 compliance was achieved when System Operating Procedure SOP-V-2 became effective.

Example number 3

The New York Power Authority agrees with this example in that undersized thermal overload heaters for motor operated valves SI-MOV-887A and SI-MOV-887B were not promptly corrected.

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Reason for Violation

The cause is attributed to human error that occurred when the engineering personnel involved in IP3-CALC-ED-01074 failed to ensure that corrective action requests for deficiencies identified in the calculation were not submitted under procedure EES-6 or other procedures available for initiating corrective action. A contributing factor is that the NYPA procedure which governs calculations, DCM-2, "Preparation and Control of Manual Calculations and Analyses" does not require tracking of calculation recommendations.

Calculation IP3-CALC-ED-01074, dated June 28, 1994, was performed to reconstitute the design basis for 89 motor operated valves thermal overload relay heaters. The calculation consisted of individual calculations for the 89 motor operated valves. The summary for the individual calculations concluded that three out of eighty nine motor operated valves Thermal Overload Relay Heaters should be replaced with new heaters. On June 24, 1994, an electrical distribution change control form (ECCF) was issued in accordance with EES-6, "Control of Electrical Distribution System Changes," to change the overload heater for one of the three valves (SI-MOV-1802A). The thermal overload heaters for valve SI-MOV-1802A were replaced June 25, 1994. The reason that only one ECCF was issued could not be determined. Issuance of the first ECCF prior to approval of the calculation indicates that this was done as a stand-alone action but does not explain why the preparer and verifier did not assure proper action when the calculation was performed. These people were not interviewed since they are no longer employed by the Authority.

Corrective Actions Taken

1. An Operability Determination was performed on April 25, 1997 that concluded the MOVs are capable of performing their design basis safety functions with the existing thermal overload heaters.
2. A Design Change was initiated to change the overload heaters for SI-MOV-887A&B. This is scheduled to be completed before the valves are required to be operable during this outage.
3. During the fourth quarter of 1996 and the first quarter of 1997, training was provided to design engineering personnel. This training emphasized follow-up of activities that result from calculations, including, but not limited to, revising affected procedures, and specific actions (such as initiation of a work document) mandated by the calculation results.
4. A sampling of other calculations performed by the individuals who prepared, checked and verified calculation IP3-CALC-ED-01074 will be performed to determine the extent of condition. This is scheduled to be completed by December 31, 1997.

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Corrective Actions to be Taken to Avoid Further Violations

In addition to corrective action three, above, procedure DCM-2 will be revised to include an explicit requirement that would require action to be taken if a calculation concludes that a change is required to the plant design basis. This is scheduled to be completed by December 31, 1997.

Date When Full Compliance Will Be Achieved

Compliance will be achieved by the end of Refueling Outage 9 with the replacement of the thermal overload relay heaters for SI-MOV-887A and SI-MOV-887B.

Violation 97-80-01

- "B. Technical Specification 6.8.2, requires that procedures for surveillance and test activities for safety-related equipment, and changes thereto, shall be approved prior to implementation by the appropriate responsible members of management.
Technical Specification 6.8.3, requires, in part, that temporary changes to safety-related surveillance procedures may be made provided that the change is documented, and reviewed, and approved by appropriate members of plant management.

Contrary to the above, as of April 25, 1997, several changes were made to the last safety-related surveillance tests accomplished through procedures 3PT-003A, -003B, 003C, and 003E, Safety Injection System Test, without those changes being properly documented, reviewed, and approved.

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

Response to Violation 97-80-01

NYPA agrees with this violation in that term procedure changes (TPC) were not generated in accordance with Administrative Procedures to ensure compliance with Technical Specification 6.8.2 and 6.8.3.

Reason for Violation

The cause of this violation was that Management expectations for strict procedure adherence were not effectively communicated in a consistent manner and enforced to preclude incorrect interpretation of the requirements in NYPA Administrative Procedure AP-4, "Procedure Use and Adherence".

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NYP&A Administrative Procedure AP-4 allows portions of a procedure to be marked "Not Applicable" (N/A) when specific criteria are met. Revision 13 to AP-4 was in effect at the time of the performance of the tests cited in the Notice of Violation. The criteria of this procedure allow the Job Supervisor to mark and initial steps or segments of a continuous use procedures as N/A when a review of the entire procedure, with particular emphasis on precautions, limitations, prerequisites, and final conditions, by the Job Supervisor determines that, as a minimum, the nonperformance of a step or segment will not result in omission of required work, violate the intent of the procedure, create an unsafe plant condition, violate Technical Specifications, cause a plant transient, reactor trip, or turbine trip, and the step does not apply to the scope or conditions under which the activity is performed. The Job Supervisor must explain the reason for applying an N/A.

The violation cites four procedures where changes were made to procedural steps or segments that did not meet the AP-4 criteria and therefore constituted procedural changes without documentation, review and approval by the appropriate members of plant management. These procedures should have been revised, reviewed and approved via a permanent or a term procedure change as established in administrative procedures. As a result of not adhering to AP-4, the requirements of Technical Specification 6.8.2 and 6.8.3 were not met.

Corrective Actions Taken

- 1) Management expectations for strict adherence to procedures have been further communicated, enforced and monitored. The Authority believes that the conditions that resulted in an N/A in 1995 would now result in a TPC or, for failed steps, a DER.
- 2) The procedure 3PT-R003A, B, C, and E deficiencies will be corrected prior to their next use and prior to startup.

Corrective Actions to be Taken to Avoid Further Violations

The two corrective actions described above are expected to preclude recurrence.

Date When Full Compliance Will Be Achieved

Compliance was achieved in December 1995 by issuance of a Standing Order to clarify management expectations for strict procedure adherence.

Violation 97-80-04

- "C. 10 CFR Part 50, Appendix B, Criterion III, requires that measures be established to assure that applicable regulatory requirements and the design basis,, for those structures, systems, and components to which this appendix applies are correctly translated into specifications, drawings,

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procedures, and instructions.

Contrary to the above, before April 10, 1997, the licensee failed to assure that design basis information for the 33 station battery was correctly translated into surveillance test procedures. Specifically, a memorandum IP-DEE-97-170, dated April 10, 1997, provided acceptance criteria for incorporation into the 33 battery surveillance test procedure that was not correctly derived from calculation IP3-CALC-EL-00186.

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

Response to Violation 97-80-04

The New York Power Authority agrees with this violation. The acceptance criteria for incorporation into the 33 battery surveillance test procedure was not correctly derived from calculation IP3-CALC-EL-00186.

Reason for Violation

The principal reasons for the violation were:

- Personnel error due to inattention to detail in the calculation review and verification process;
- Personnel error due to a failure to conduct a thorough review of the battery voltage drop analysis prior to transmitting new battery acceptance criterion to performance engineering; and
- Miscommunication between the contractor organization performing the calculation and NYPA design engineering regarding the purpose and utilization of the calculation.

Prior to preparing Calculation No. IP3-CALC-EL-00186, Rev. 2 an assessment performed by engineering concluded a minimum voltage of 105V DC at the battery terminals based on a revised inverter loading and minimum equipment voltage data. Calculation No. IP3-CALC-EL-00186, Rev. 2 was prepared to combine the battery sizing analysis and the system voltage profile analysis for the 33 station battery into one calculation to address potential inconsistencies between these two documents which was identified at another facility. The calculation was checked and verified by an outside contractor organization and transmitted to design engineering on 4/1/97. This calculation was subsequently reviewed and approved by NYPA on 4/4/97. The NYPA design engineering review encompassed a review of the calculation design basis data, methodology and conclusions and did not follow the DCM-4, "Design Verification" process. The individuals involved in the calculation were trained and followed NYPA procedures DCM-2, "Preparation and Control of Manual Calculations and Analyses" and DCM-4, "Design Verification." When the calculation was reviewed during the approval process, its conclusions confirmed the initial assessment that 33 station battery was sized to supply its design basis duty cycle for a minimum terminal voltage of 105V DC and no additional detailed review was performed by design engineering. The review did not detect that in the voltage analysis section of

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the calculation a minimum battery voltage of 107.49V was required during the first minute of the duty cycle. Based on the conclusions from the Calculation , NYPA Design Engineering provided Performance Engineering with input to revise the applicable battery 33 discharge test procedures. On April 10, 1997 a memorandum advised Performance that the operability and acceptance criteria for the battery discharge tests should indicate that the battery terminal voltage must be greater than or equal to 105V DC for the entire two hour duration of the test. Upon identification of the discrepancy between the 105V DC criteria and the 107.49V DC value identified in the detailed analysis section of the calculation, it became apparent that the contractor organization performing the calculation was not aware that the minimum voltage established in the calculation would be utilized in acceptance criteria for the station battery surveillance tests. This misunderstanding was one of the factors contributing to the inadequate conclusion of the calculation.

Corrective Actions Taken

- 1) In response to the Inspection team's concern, NYPA Design Engineering performed a preliminary extent of condition review. Performance was notified to disregard the acceptance criteria provided for battery 33 discharge test procedures until further analysis could be performed.
- 2) The calculation was further evaluated and it was determined that the 107.49V DC first minute requirement was based on cable lengths which were obtained from the Electrical Cable and Raceway Information System (ECRIS) but were much longer than the actual physical routing of the cables.
- 3) The discrepancy between ECRIS and the actual as-built cable lengths was assessed and the voltage drop for the 480V SWGR control circuits is much less than previously determined. Based on the as-built cable lengths the minimum voltage required at the battery terminals throughout the two hour duty cycle, including the first minute, is 105V DC.
- 4) Calculation No. IP3-CALC-EL-00186, Rev. 2, was revised as applicable and revision 3 of the calculation was issued on 5/27/97. It should be noted that the conclusions of the revision 2 version of the calculation did not change, since they already indicated that the minimum terminal voltage of the battery should be 105V DC.
- 5) A second memorandum was issued based on the revised calculation to update the Battery discharge testing procedures.
- 6) A sampling of other calculations performed by the contractor organization who prepared, checked and verified calculations will be performed to determine the extent of condition. This is scheduled to be completed by December 31, 1997.

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Corrective Actions to be Taken to Avoid Further Violations

- 1) The Electrical Design Engineering Tailgate on July 10, 1997 re-enforced expectations for use of DCM-4 and DCM-6.
- 2) Continuing training program will provided re-enforcement of the use of, Design Control Manual (DCM), DCM-4, "Design Verification" and departmental expectations for review and summary of calculations; and re-enforce the use of DCM 6, "Design Interface Control" and departmental expectations for communication and tracking of design basis information. Program updates will be completed within 90 days following the restart from the outage.

Date When Full Compliance Will Be Achieved

Compliance was achieved on 5/27/97, when Performance was given the latest design basis data to utilize in the revision of the applicable battery test discharge procedures.

List of Commitments

Number	Commitment	Due
IPN-97-098-01	The FSAR will be reviewed and revised as necessary to clarify the design of the fuel storage building, the fuel storage building Ventilation System; accident dose analysis assumptions and the surveillance requirements to support design basis of the system.	Next update following the 97 FSAR Update.
IPN-97-098-02	Other indicating lights in the control room for safety related components which are on remote panels relative to the control switch location were verified to have a system operating procedure which ensures the components change of state when the control switch is operated.	Prior to startup from R09
IPN-97-098-03	A Design Change was initiated to change the overload heaters for SI-MOV-887A&B.	To be completed before the valves are required to be operable during this outage (R09).
IPN-97-098-04	A sampling of calculations performed by the individuals who prepared, checked and verified calculation IP3-CALC-ED-01074 will be performed to determine the extent of condition.	December 31, 1997
IPN-97-098-05	DCM-2 will be revised to include an explicit requirement that would require action to be taken if a calculation concludes that a change is required to the plant design basis.	December 31, 1997
IPN-97-098-06	The procedure 3PT-R003A, B, C, and E deficiencies identified in Notice of Violation 97-80-01 will be corrected prior to their next use and prior to startup.	Prior to performance of the test & startup.
IPN-97-098-07	A sampling of other calculations performed by the contractor organization who prepared, checked and verified calculation will be performed to determine the extent of condition.	December 31, 1997.
IPN-97-098-08	Continuing training program will provided re-enforcement of the use of, Design Control Manual (DCM), DCM-4, "Design Verification" and departmental expectations for review and summary of calculations; and re-enforce the use of DCM 6, "Design Interface Control" and departmental expectations for communication and tracking of design basis information.	Within 90 days following the restart from the outage (R09)