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Nuclear Power Plant
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Robert J. Barrett
Site Executive Officer

July 15, 1998
IPN-98-081

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

SUBJECT: Indian Point 3 Nuclear Power Plant
Docket No. 50-286
Reply to Notice of Violation 50-286 / 98-81

REFERENCE: 1. NRC Inspection Report 50-286/98-81 and Notice of Violation,
James T. Wiggins to Robert J. Barrett, dated June 15, 1998.

Dear Sir:

This letter provides, in Attachment I, the Authority's response to the six violations documented in Reference 1. The Authority agrees with five of the six violations and has taken appropriate corrective actions. The Authority respectfully disagrees with Violation 98-81-03 regarding failure to report. The Authority understands that our staff and the NRC staff have differing viewpoints regarding reporting under the "outside design bases of the plant" category of 10CFR50.72 and 50.73. The basis for our position is stated in the attached response.

There are no new commitments made by the Authority with this letter. If you have any questions, please contact Mr. Ken Peters at (914) 736-8029.

Very truly yours,


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

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Reply to Notice of Violation 50-286 / 98-81-01

Violation 98-81-01

10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires that activities affecting quality shall be prescribed by documented instruction, procedures, or drawings, of a type appropriate to the circumstances, and shall be accomplished in accordance with these instruction, procedures, or drawings. Design Control Manual procedures DCM-2, "Preparation and Control of Calculations and Analyses (IP3)," and DCM-11, "Control, Review, Comment, & Acceptance of Vendor Documents (IP3)," were established pursuant to this requirement.

Section 6.7.2 of DCM-2 requires that as a result of revising or originating calculations any superseded or voided calculations should be annotated. For calculations where portions are to be superseded or voided, the calculation is to be revised and the appropriate sections lined through.

Section 6.3 of DCM-11 requires that a vendor-generated design document be accepted only when it is in compliance with specifications and conditions of purchase, and satisfies the needs of engineering, design, or construction activities. A document which requires re-submittal cannot be classified as accepted.

Contrary to the above, activities affecting quality were not accomplished in accordance with design control procedures in that:

- A. On June 6, 1997, draft Revision 2 of vendor calculation 83990.164-2-HVAC-092, "Control Room Air Filtration System Performance" on which design verification had not been performed, was accepted by NYPA.
- B. On May 4, 1997, calculation IP3-CALC-HVAC-00200, "Battery Room No. 34 Ventilation," dated April 5, 1991, and Technical Services Calculation No. 178, "33 Battery H2 Generation and Low Temperature Evaluation," dated May 18, 1989, which were partially superseded by Calculation IP3-CALC-ED-02563, "Station Batteries Hydrogen Evolution," were not revised and the appropriate sections were not lined through to reflect the new calculation.

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

Response to Violation 98-81-01

NYPA agrees with this violation.

Reason for Violation - Example A

The specific cause of the inappropriate use of DCM-11 with respect to Calculation 83990.164-2-HVAC-092 Draft Revision 2 is unknown. The engineer who performed the review has left NYPA. NYPA believes that the engineer misunderstood the DCM-11 requirements as stated in Section 6.3, and performed a formal DCM-11 review of a document not formally completed by the vendor.

Corrective Actions Taken

1. NYPA believes this to be an isolated case. The engineer who performed the DCM-11 review has left NYPA, so no action was taken for the individual's misunderstanding.
2. The vendor approved version of Calculation 83990.164-2-HVAC-092, Revision 2 was received by NYPA on July 25, 1997 and was subsequently superseded by Revision 3 on August 5, 1997. NYPA completed the DCM-11 approval of Revision 3 on September 9, 1997.

Date When Full Compliance Was Achieved

Compliance for Example A was achieved on September 9, 1997 when Revision 3 of Calculation 83990.164-2-HVAC-092 was approved by NYPA, using the DCM-11 review and approval process.

Reason for Violation - Example B

The reason for this example was a lack of clarity in DCM-2. The procedure allowed for engineering judgement to be exercised regarding whether or not the calculations need to be annotated. Specifically, Step 6.7.2 of DCM-2 stated that affected calculations "should" be annotated.

Corrective Actions Taken

Calculation IP3-CALC-EL-02563 was revised to incorporate the portions of Calculation IP3-CALC-HVAC-00200 and Technical Services Calculation No. 178 that were not superseded. Those two calculations were then superseded. NYPA has initiated action under the corrective action program to verify that affected documents have been identified and superseded per DCM-2. DCM-2 has been revised so that the action of Step 6.7.2 regarding the annotation of affected calculations is a requirement (i.e., "shall" instead of "should").

Date When Full Compliance Was Achieved

Compliance for Example B was achieved on July 15, 1998 when Calculation IP3-CALC-EL-02563 was revised and the two related calculations were superseded.

Reply to Notice of Violation 50-286 / 98-81-02

Violation 98-81-02

10 CFR 50, Appendix B, Criterion III, "Design Control", requires that applicable regulatory requirements and the design basis for safety-related systems and components are correctly translated into procedures.

Contrary to the above, NYPA did not correctly translate applicable regulatory requirements and the design basis for safety-related systems and components into procedures as follows:

- A. Prior to July 1997, the design basis for the minimum booster fan flow rate of control room filtration system (safety-related) was not correctly translated into surveillance procedure 3PT-R032C, "Control Room Filtration System Functional," in that the procedure's acceptance criteria were less than the flow rates necessary to ensure that the design basis flow was achieved over the 30 days assumed in the design basis. As a result, during operating cycles between 1983 and July 1997, the design basis minimum control room ventilation system booster fan flow rate assumed in the licensed design basis calculation of record for radiological control room habitability and the minimum design accident flow rate described in Technical Specification 4.5.A.5 were not achieved.
- B. Between January 27, 1982 and May 1, 1998, the design basis leakage rate limit for engineered safety feature (ESF) component's (safety-related) leakage outside of the primary containment was not correctly translated into the acceptance criterion of procedure 3PT-C01, "Total Leakage Rate Monitoring Tabulation." As a result, the design basis ESF component leakage rate assumed in the licensed design basis calculation for radiological control room habitability as described in the Final Safety Evaluation Report was exceeded during power operation approximately half of the time between 1987 and 1998.

These two examples comprise a Severity Level IV Violation (Supplement I).

Response to Violation 98-81-02

NYPA agrees with this violation.

Reason for Violation - Example A

The reason for this example was inadequate work practices when incorporating control room habitability calculation air flow requirements into the control room filtration system surveillance test. A contributing factor for this example was a lack of design control process and inadequate documentation of the system design bases.

Corrective Actions Taken

1. On July 10, 1997, surveillance procedure 3PT-R032C was revised to reflect the acceptance criteria stated in NSE 97-3-270. The revised procedure allows an air flow of 250 to 400 cfm from outside air, 1330 to 1599 cfm recirculation flow, and a maximum pressure drop across the filter train of 2 inches of water.

2. On June 30, 1998, Modification Control Manual Procedure MCM-4, Revision 7, became effective. This revision contains a requirement to review 'assumptions' that define or describe activities or controls over functions, plant configuration, plant or system operation, tasks, reviews and approvals, tests, or methods of accomplishing maintenance or calibration described in the FSAR.
3. On July 6, 1998, Modification Control Manual Procedure MCM-19, Revision 7, became effective. This revision contains a closeout process for 'engineering documents' such as modifications, calculations, safety evaluations, and classifications. The closeout process now requires that updates to other documents, such as Design Bases Documents, and the FSAR, are completed or are identified and tracked for updating.

Date When Full Compliance Was Achieved

Compliance for Example A was achieved on July 10, 1997, when the surveillance procedure 3PT-R032C was revised. The acceptance criteria were met during the test performed on July 18, 1997.

Reason for Violation - Example B

The reason for this example was a lack of design control that occurred when the ESF leak rate assumption for Control Room habitability was not identified as affecting the design basis. Consequently, procedures were not in place between January 27, 1982 and May 1, 1998 to control the leakage value assumed in the Control Room habitability evaluation.

Corrective Actions Taken

1. On May 1, 1998, Operability Determination 98-16 was completed. This documented acceptable control room habitability with an ESF leak rate of up to 2 gallons per hour (gph).
2. On May 1, 1998, NSE 98-3-075 CRHV was approved. The NSE changed the leak rate acceptance criteria in 3PT-C01 to be within the 0.7054 gph leak rate assumed in the Control Room habitability evaluation.
3. On June 30, 1998, Modification Control Manual Procedure MCM-4, Revision 7, became effective. This revision contains a requirement to review 'assumptions' that define or describe activities or controls over functions, plant configuration, plant or system operation, tasks, reviews and approvals, tests, or methods of accomplishing maintenance or calibration described in the FSAR.
4. On July 6, 1998, Modification Control Manual Procedure MCM-19, Revision 7, became effective. This revision contains a closeout process for 'engineering documents' such as modifications, calculations, safety evaluations, and classifications. The closeout process now requires that updates to other documents, such as Design Bases Documents, and the FSAR, are completed or are identified and tracked for updating.

Date When Full Compliance Was Achieved

Compliance for Example B was achieved on May 1, 1998 when the leak rate acceptance criterion was changed to be consistent with the current design basis.

Reply to Notice of Violation 50-286 / 98-81-03

Violation 98-81-03

10 CFR 50.72, "Immediate notification requirements for operating nuclear power reactors," requires that the licensee shall notify the NRC as soon as practical and in all cases within one hour of the occurrence of any event or condition during operation that results in the nuclear power plant being in a condition that is outside the design basis of the plant.

10 CFR 50.73, "Licensee event report system," requires the licensee to submit a licensee event report (LER) within 30 days after the discovery of any event or condition that resulted in the nuclear power plant being outside its design basis.

Contrary to the above, on various occasions between January 27, 1982 and April 10, 1998, NYPA did not notify the NRC of the occurrence conditions during operation that resulted in the nuclear power plant being outside the design basis of the plant; and did not submit an LER within 30 days after the discovery of a condition that resulted in the nuclear power plant being outside its design basis, as exemplified below:

- A. From 1982 to July 1997, during various operating cycles, control room filtration system booster fan flow rates were less than the minimum required by Technical Specifications and the flow rates assumed in the licensed design basis calculation for control room habitability. The condition would have resulted in post-accident control room radiological doses in excess of the licensed design basis thyroid dose limits described in Section 14.3.5 of the Final Safety Analysis Report and prescribed by General Design Criterion 19 of 10 CFR 50, Appendix A, when calculated using design basis assumptions.
- B. On various occasions between 1987 and 1993, and between April 8-10, 1998, ESF component leakage rates outside of the primary containment exceeded the value assumed in the licensed design basis calculation for control room habitability. The condition would have resulted in post-accident control room radiological doses in excess of the licensed design basis limit to the thyroid described in Section 14.3.5 of the Final Safety Analysis Report and of General Design Criterion 19 of 10 CFR 50, Appendix A, when calculated using design basis assumptions.

This a Severity Level IV Violation (Supplement I).

Response to Violation 98-81-03

NYPA denies this violation. The basis for denying this violation is discussed below.

Basis

10 CFR 50.72(b)(1)(ii) requires a one hour report for "Any event or condition during operation that....results in the nuclear power plant being:....(B) In a condition that is outside the design basis of the plant (emphasis added)." 10 CFR 50.73(a)(2)(ii) requires a 30 day report for "Any event or condition....that resulted in the nuclear power plant being:....(B) In a condition that was outside the design basis of the plant (emphasis added)."

The NRC has provided guidance for the implementation of these reporting requirements in Revision 1 to NUREG-1022. That guidance states that "Reporting at the component, system, and structure level is required under 10 CFR 50.72(b)(1)(ii) and 10 CFR 50.73(a)(2)(ii) if the event or condition resulted in the plant being....outside the plant design basis." The NUREG gives an example (example 3 on page 39) of a system that is not in compliance with its design basis but is not reportable because the system still ensures the plant design basis is met.

NYPA assessed reportability using the guidance of NUREG-1022 and the operability determinations performed using the guidance of Generic Letter 91-18 for the two examples identified in the notice of violation. When each event was discovered, an operability determination was performed. Each operability determination identified the ability of the control room ventilation system to perform its design function. The events were considered non-reportable since this function, maintaining control room doses within the limits identified in the FSAR and General Design Criterion (GDC) 19 of 10 CFR 50, Appendix A, is the plant design basis. The assumptions used, the reasonableness of the assumptions used, and the operability determinations that assumptions were used in are described in LER 1998-004-00.

Actions taken

Notwithstanding our belief that we met the reporting requirements of 10 CFR 50.72 and 10 CFR 50.73, NYPA has submitted a voluntary ENS notification and voluntary LER 1998-004-00 reporting the events that this violation identifies because of the interest of the NRC staff in this information.

Conclusion

NYPA believes no violation of NRC requirements occurred, and therefore we should not be cited for the following reasons:

- The literal wording of 10 CFR 50.72 and 10 CFR 50.73 modify the "outside design basis" reporting criteria with the phrase "of the plant."
- For the reasons cited, we believe that by maintaining the dose criteria of GDC 19 of 10CFR 50, Appendix A, the plant was still within its design basis.
- NYPA believes the guidance of NUREG-1022 is clear and provides an example supporting our understanding of the reporting criteria.

NYPA understands that the criteria for 10 CFR 50.72 and 50.73 reportability is a generic issue which the NRC plans to address in proposed rulemaking.

Reply to Notice of Violation 50-286 / 98-81-04

Violation 98-81-04

10 CFR 50.59, "Changes, tests, and experiments," states that a licensee may make changes to its facility and procedures as described in the safety analysis report with prior Commission approval, provided that the change does not involve a change in the technical specifications or an unreviewed safety question; and requires the licensee to maintain records of changes in the facility, including written safety evaluations providing the bases for the determination that the change does not involve an unreviewed safety question. A change shall be deemed to involve an unreviewed safety question if the consequences of an accident or malfunction of equipment important to safety previously evaluated in the safety analysis report may be increased.

Contrary to the above, on April 17, 1998, the acceptance criterion for ESF component leakage specified in procedure 3PT-C01, "Total Leakage Rate Monitoring Tabulation," was changed from 1.0 gallon per hour (gph) to 2.0 gph and a 10 CFR 50.59 safety evaluation was not performed for this change to a procedure described in the Final Safety Analysis Report to provide the bases for a determination that the change did not involve an unreviewed safety question. The revised criterion exceeded the 1982 licensing basis leakage rate of 0.705 gph used to calculate the control room radiological doses described in Section 14.3.5 of the Final Safety Analysis Report and the 1.09 gph leakage rate used in a 1996 Technical Specification amendment request for which a 10 CFR 50.92 significant safety hazard evaluation had been performed.

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

Response to Violation 98-81-04

NYP&A agrees with this violation.

Reason for Violation

The reason for this violation is inadequate work practices resulting in a failure to identify that a safety evaluation was required to change the procedure since the current design basis was affected.

Corrective Actions Taken

1. On May 1, 1998, NSE 98-3-075 CRHV was approved. The NSE changed the acceptance criterion in 3PT-C01 to be within the 0.7054 gallon per hour leak rate assumed in the Control Room habitability evaluation.
2. On July 10, 1998, the individual who prepared the Nuclear Safety and Environmental Impact Screen was counseled to not use calculations as a justification for not performing a 10 CFR 50.59 Nuclear Safety Evaluation.

Date When Full Compliance Was Achieved

Compliance was achieved on May 1, 1998, when 3PT-C01 was revised to be consistent with the licensed design basis.

Reply to Notice of Violation 50-286 / 98-81-05

Violation 98-81-05

10CFR Part 50.59 allows licensees to make changes in the procedures as described in the safety analysis report without prior Commission approval, unless the change involves an unreviewed safety question (USQ). 10CFR50.59 requires that the licensee maintain records of changes in the facility and of changes in procedures made pursuant to this section, to the extent that these changes constitute changes in the facility or procedures as described in the safety analysis report.

These records must include a written safety evaluation which provides the bases for the determination that the change does not involve an unreviewed safety question.

Contrary to the above, NYPA changed a procedure described in the UFSAR without performing a written safety evaluation which provided the bases for the determination that the change did not involve a USQ. Specifically, on February 23, 1998, NYPA changed the minimum flow for core cooling during the cold leg recirculation phase for a large break loss of coolant accident (LOCA) in the emergency operating procedure (EOP) ES-1.3 to 830 gpm. This flow differed from the minimum flow of 530 gpm via the low head injection lines specified in UFSAR section 6.2, "Changeover from Injection Phase to Recirculation Phase." No safety evaluation was performed to provide the bases that the change did not involve a USQ.

This is a severity level IV violation (Supplement I).

Response to Violation 98-81-05

NYPA agrees with this violation.

Reason for Violation

The reason for the violation was an error in judgement by the preparer and reviewer of the Nuclear Safety and Environmental Impact (NSEI) Screen. Their review inappropriately concluded that no Nuclear Safety Evaluation (NSE) was required to support a proposed procedure change. The error in judgement occurred because of a mind set that an NSE is not required if a parameter is changed in a conservative direction.

A NSEI Screen was prepared to support a proposed procedure change to address information provided by the Westinghouse Electric Corporation. The preparer of the Screen properly identified and documented that the proposed change used a flow rate value different from that stated in the FSAR. However, the preparer inappropriately concluded that an NSE was not required because the proposed new flow rate was "conservatively" higher than that specified in the FSAR and was an existing value in the EOP setpoint database. The reviewer of the screen did not challenge the logic used to reach the conclusion that no NSE was required.

Corrective Actions Taken

NYP&A believes that this is an isolated occurrence and the individuals involved were counseled regarding the error made on the NSEI screen. A Reasonable Assurance of Safety (RAS) was prepared to document the basis for concluding that the change to procedure ES-1.3 does not involve an unreviewed safety question. An Action Plan was prepared as part of the Indian Point 3 corrective action program to identify specific actions required to complete documentation of the new flow rate used in ES-1.3. The Action Plan will result in the preparation of a NSE to replace the RAS.

Date When Full Compliance was Achieved

Compliance was achieved on July 14, 1998 when the Reasonable Assurance of Safety documented the basis for concluding that the change to ES-1.3 does not involve an unreviewed safety question.

Reply to Notice of Violation 50-286 / 98-81-06

Violation 98-81-06

10CFR Part 50, Appendix B, Criterion III, Design Control requires that the design basis for safety-related systems is correctly translated into procedures.

Contrary to the above, on February 23, 1998 NYPA did not correctly translate the design basis for the recirculation system (a safety-related system) into an emergency operating procedure (EOP), in that the minimum flow specified in a procedure change had no basis (other than historical) or calculation to support it. Further, the change did not address the ability of operators to perform the specified procedural steps, recirculation pump net positive suction head (NPSH) and increased radiological impact, other aspects of the design basis.

This is a severity level IV violation (Supplement I).

Response to Violation

NYPA agrees with this violation.

Reason for Violation

The violation occurred because of inadequate setpoint control procedures in place in 1989 when the setpoint was added to the database. This violation is related to Violation 98-81-05 which involved a failure to prepare a Nuclear Safety Evaluation (NSE). NYPA believes that preparation of an NSE would have identified that the proposed new flowrate used in the revision to ES-1.3 did not have a basis, other than historical. The unverified flowrate was not an active setpoint in the plant emergency operating procedures when it was selected for use in the revision to ES-1.3.

Corrective Actions Taken

A Reasonable Expectation of Operability was prepared to demonstrate the operability of the Recirculation Pumps using the new flowrate value, 830 gpm. An Action Plan was prepared as discussed in the response to Violation 98-81-05 to complete documentation of the new flowrate.

Subsequent to 1989, NYPA implemented improved procedures for the control of setpoints, primarily through MCM-8, "Setpoint Control." Prior to startup from the last refueling outage (R09) in September 1997, NYPA conducted a review to verify the acceptability of setpoints actively used in emergency operating procedures.

Date When Full Compliance was Achieved

Compliance was achieved on April 23, 1998 when the Reasonable Expectation of Operability provided justification for use of the new flowrate value.