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Nuclear Power Plant
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NewYorkPower Authority

L. M. Hill
Site Executive Officer

November 15, 1995
IPN-95-116

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 (Inspection Report 50-286/95-12)

Reference: NRC Letter of October 16, 1995 from Thomas T. Martin to W. J. Cahill, Jr., "NOTICE OF VIOLATION (NRC Inspection Report No. 50-286/95-12)"

Dear Sir:

This letter provides, Attachment 1, the Authority's response to the Notice of Violation in the referenced letter. The Authority agrees with the Notice of Violation.

The Authority recognizes that the corrective actions implemented as a result of the previous events of this type require supplementation to assure against recurrence. The Authority believes the additional corrective actions delineated in this reply address this need and will result in improved performance in the area of safety evaluations.

The commitments made by the Authority in this letter are contained in Attachment II.

Very truly yours,

L. M. Hill
Site Executive Officer
Indian Point 3 Nuclear Power Plant

Attachments
cc: see next page

IE01
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cc: Mr. Thomas T. Martin
Regional Administrator
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U.S. Nuclear Regulatory Commission
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Mr. Richard W. Cooper, II, Director
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U.S. Nuclear Regulatory Commission
Resident Inspectors' Office
Indian Point 3 Nuclear Power Plant

State of New York
County of Westchester

Leslie M. Hill, being duly sworn, deposes and says:

I am the Site Executive Officer of the Indian Point 3 Nuclear Power Plant of which the Power Authority of the State of New York is the owner and operator under Facility Operating License DPR-64. I have read the foregoing "Reply to Notice of Violation (Inspection Report 50-286/95-12)" and know the contents thereof; and that the statements and matters set forth therein are true and correct to the best of my knowledge, information and belief.

Leslie M. Hill

Leslie M. Hill

Subscribed and sworn to before me
this 15 day of November, 1995

Barbara Ann Taggart

Notary Public

BARBARA ANN TAGGART
NOTARY PUBLIC, State of New York
No. 4851437
Qualified in Putnam County
Commission Expires Jan. 27, 19 96

Violation

During an NRC inspection conducted on July 11 to August 7, 1995, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," (60 FR 34381; June 30, 1995), the violation is listed below:

"10 CFR Part 50.59(a), Changes Tests and Experiments, in part, permits licensees to make changes in the facility as described in the safety analysis report without prior Commission approval, unless the proposed change involves a change in the technical specifications incorporated in the licensee or an unreviewed safety question.

10 CFR Part 50.59(b)(1) requires, in part, that the licensee maintain records of changes in the facility that constitute changes in the facility as described in the Safety Analysis Report (SAR), and the records must include a written safety evaluation which provides the bases for the determination that the change does not involve an unreviewed safety question.

The Final Safety Analysis Report, Chapter 14, evaluates the safety aspects of the plant and demonstrates that the plant can be operated safely and that the exposures from credible accidents do not exceed the guidelines of 10 CFR Part 100. The accident evaluation assumes that the minimum reactor coolant system pressure shall be 2205 psig while the reactor is operating.

Contrary to the above, from July 10, 1995 to July 12, 1995, while the reactor was in an operational mode, the licensee changed the facility as described in the SAR by operating with the reactor coolant system pressure below 2205 psig, which is the minimum initial pressure assumed in the FSAR accident analysis. This change was made without prior Commission approval and without performing a written safety evaluation, which provided the basis for the determination that the change does not involve an unreviewed safety question.

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

Response to the Violation

The Authority agrees with this violation. The Power Authority did note that prior Commission approval would not have been required if a written safety evaluation had concluded that there was no unreviewed safety question. The Indian Point 3 Technical Specifications do not specify a minimum reactor coolant system normal operating pressure.

Reason for the Violation

The circumstances leading to the violation are described in Licensee Event Report (LER) 95-014. Following a turbine runback transient, a management decision was made during the beginning of the day shift on July 10, 1995, to reduce reactor coolant system (RCS) pressure temporarily to no less than 1900 psig to reseat leaking pressurizer safety relief valves. Management believed justification existed to support the decision not to bring the plant to hot shutdown based on their interpretation of Technical Specification (TS) Figure 2.1-1 and the TS basis. Also, Plant Operating Procedure POP-2.1, "Operations at Power," and Alarm Response Procedure ALP-3, "Reactor Coolant System," did not place any restrictions on reactor power during RCS pressure reduction.

Plant operation with the RCS in a reduced pressure condition began at approximately 1025 on July 10, 1995 and continued until approximately 1323 hours on July 12, 1995. Several opportunities to identify operation in an unanalyzed condition were missed as discussed in LER 95-014 which was transmitted in IPN-95-085 on August 11, 1995. LER 95-014 also reported that the Power Authority had determined that the event was due to a combination of the following causes:

Inadequate Procedures: The procedure POP- 2.1 did not specify pressure limitations for normal operation based on the design basis assumptions used for the plant accident analyses. Procedure ALP-3 did not have a valid engineering basis to specify reducing pressure for reseating safety valves while in the power operation condition.

Inadequate Procedure Adherence: Operations continued prolonged operation beyond the period specified in ARP-3. Using the ARP-3 as guidance to support the decision for prolonged operation of the plant at reduced pressure is an inappropriate application of the procedure. Also, during the previous two procedure revisions of ARP-3, Operations added a pressure reduction value to the step (which always had allowed pressure reduction without a specified value to reseat the valves) and did not adequately answer the safety applicability screen according to administrative procedure AP-3, "Procedure Preparation, Review and Approval." Therefore, they did not perform a 50.59 evaluation.

Misapplication of the Technical Specifications: Figure 2.1-1 and its basis "show the loci of points of thermal power, RCS pressure and vessel inlet temperature for which the calculated DNBR is no less than the Safety Limit DNBR value or the average enthalpy at the vessel exit is less than the enthalpy of saturated liquid." Furthermore, the basis of Section 2.3 states, "the overtemperature delta-T reactor trip provides core protection against DNB for all combinations of pressure, power, coolant temperature and axial power distribution, provided only that (1) the transient is slow with respect to piping transit delays from the core to the temperature detectors (about 3.5 seconds) and (2) pressure is within the range between high and low pressure reactor trips. With normal axial power distribution, the reactor trip limit, with allowance for errors, is always below the core safety limit as shown on Figure 2.1-1." IP3 staff incorrectly interpreted the words as justification for operation below normal RCS pressure. Since there is no technical specification defining minimum RCS pressure for normal operation, there was no specification that contradicted this interpretation.

Inappropriate Management Influence: Managers knew of other utilities that operated at reduced RCS pressure, and this knowledge supported the mindset that similar relaxation of RCS pressure was acceptable at Indian Point 3. This in-turn influenced the decision to operate the plant at reduced pressure and the subsequent decision to increase power.

Incomplete Communications: Plant Management did not solicit Corporate Reactor Engineering and Licensing early in the decision process before reducing pressure during power operation. Corporate Reactor Engineering did not clearly define limitations for low pressure operation. Operations, Licensing and Corporate Reactor Engineering were not fully effective in communicating the current operating parameters and specifying limitations on periods of low pressure operation when discussing reseating of the safety valves.

Incomplete Understanding and Use of Documents Representing the Plant's Design Basis: The decision to operate at power with a reduced RCS pressure was made without a complete understanding of all the implications of operation in this manner. The FSAR and Westinghouse were not consulted while making the decision to reduce pressure. Knowledge of, and training on, analytical assumptions for transient accident analyses, safety limits and margins were deficient. The contributors to this lack of understanding are the causes listed above and the Authority concludes that operation in an unusual or uncertain condition, except during an emergency according to 10 CFR 50.54(x), must involve greater cognizance over a wider range of supporting staff and requires evaluation in advance using applicable documents.

A team root cause analysis was performed on the violation and other events to identify any additional enhancements needed to improve human performance in plant operation. The following root causes with secondary causes were identified:

Organizational communications were not fully effective resulting in challenges to barriers that support safe plant operations.

- Management expectations were not clearly and effectively defined, communicated and enforced.

Management has not provided the leadership and values to achieve proper, thorough, timely and effective issue resolution and corrective actions.

- There was not an enforced expectation that project management skills will be employed by IP3 managers.

- Management was ineffective in holding the staff accountable for negative performance.

Management did not encourage or demonstrate the development, use or maintenance of formal processes that support effective decision making.

- Weak or inappropriate management practices disabled expected barriers that should have precluded this event.

- Independent oversight groups failed to provide effective independent oversight / assessment and identify and communicate management weaknesses.

Technical knowledge, including understanding and application of the station's licensing and design basis, was fragmented and not effectively employed.

- Expectations and instructions for the use of Licensing and Design Bases were deficient.

- Training programs did not capture both the relationship between Licensing and Design versus station activities, and issues related with day-to-day decision making.

Corrective Actions Taken

The Power Authority identified corrective actions that had been taken and made commitments to additional corrective actions in LER 95-014. The completed corrective actions and commitments in the LER can be summarized as follows:

- An independent evaluation is performed daily on the current equipment status and operating parameters of Indian Point Unit 3 as well as plans for change to any of these parameters over the following 24 hours.

- Procedure ARP-3 was changed to maintain RCS pressure above 2205 psig, and, if this requirement is not met, restore pressure within 2 hours or shutdown to hot shutdown within the next 6 hours.

- Standing Order 95-05 requires operation of safety-related systems and components within proceduralized operating ranges and a formal review if not able to maintain the range. Subsequently, Administrative Procedure AP-21 was revised to incorporate the Standing Order 95-05."

- Plant Operating Procedure POP-2.1 ("Operation at Power") was revised to specify the normal operating ranges for key operating parameters.

- The Training Department trained licensed operators and Shift Technical Advisors during their requalification training cycle on lessons learned (including affirming procedure adherence) from this event.

- Procedure AP-3 was revised to strengthen the safety screening process for procedure revisions.

  The corrective action in LER 95-014 was expanded. The Independent Safety Engineering Group (ISEG) conducted a review of all safety screens written against revisions to Operations procedures since the inception of the safety application screen program. Although there were numerous concerns associated with the proper completion of pre-screens, except for three procedures that were changed, the procedures were found acceptable following completion of appropriate safety reviews.

- Corporate Reactor Engineering prepared and submitted to training a compilation of plant conditions and equipment operability assumed in the plant transient analyses.

In addition, corrective action taken for this event and subsequent events included reorganizing the Operations Department to improve communication of expectations and standards. This was achieved by eliminating the position of General Manager of Operations and assigning the new Manager of Operations (the permanent manager had been scheduled to assume responsibility on December 5, 1995) to report directly to the Site Executive Officer.

Corrective Actions That Will Be Taken To Avoid Further Violations

The Power Authority commitments to corrective actions in LER 95-014 that are still open can be summarized as follows:

- Commitment IPN-95-085-05 (completed) - A root cause evaluation was to be performed and the LER supplemented if the causes or corrective actions changed significantly. The LER was revised to reflect two separate root cause evaluations that were performed subsequent to the issuance of the LER. The first was confined to the incidents surrounding the LER itself and probed the identified root causes in greater detail. The result of this evaluation was consistent with that of the LER, except to add greater emphasis to management influence in making the decisions to maintain low pressure and to increase reactor power. The second, a team root cause evaluation of this and similar events, was completed. The primary and secondary causes were presented in the discussion of cause for this violation. The recommendations of the root cause analysis are presented later.

- Commitment IPN-95-085-06 (completed) - The corrective action in this commitment was expanded and is still ongoing. Corporate Reactor Engineering is implementing procedural guidance to require that the interactive program (i.e., coded by operating plant parameters, it presents required maxima and/or minima for each parameter identified as applicable for the current accident analyses) used by the Training and Design Engineering Departments is controlled so that the information is updated when accident analyses are revised. This will be complete to support the next core reload. This is scheduled for completion prior to the next core reload.

- Commitment IPN-95-085-07 (scheduled for December 15, 1995) - Engineering to review selected Operations procedures (Alarm Response Procedures (ARPs), Plant Operating Procedures (POPs) and Off-Normal Operating Procedures (ONOPs)) to identify other potential operating conditions that may require further evaluation.

- Commitment IPN-95-085-08 (scheduled for December 15, 1995 - Train licensed operators and Shift Technical Advisors.

- Commitment IPN-95-085-09 (scheduled for December 29, 1995) - Train Senior Managers of Technical Groups, supervisors of system engineers.

- Commitment IPN-95-085-10 (scheduled for December 29, 1995) - Submit a Technical Specification Amendment request to define operating pressure limits.

- Commitment IPN-95-085-11 (scheduled for January 31, 1996) - Revise procedures based on Engineering's findings on ARPs, POPs and ONOPs.

IP3 Management met to review and develop an action plan to address the findings and recommendations of the team root cause evaluation. The current action plan (the plan is current because it is subject to management change) identifies implementing actions that have either been completed or are ongoing actions that are being tracked by the action tracking system (ACTS). All of the actions currently in the plan are scheduled to be completed by April 1, 1996. The action items of the current plan, grouped in to their areas of concern, and the internal schedules for those actions are as follows:

<u>Communications</u>

- A recorded phone message was established that describes plant status and this is available to staff and support organizations.

- The functionality and the informative value of the 0630 hour and 1430 hour planning meetings were enhanced by clarification of the objectives, action plan follow up, and establishing a more consistent site engineering support role.

- The relationship between PORC and the PLT was explained in the IP3 newsletter "Inside IP3" to reach a wide audience.

- The decision making process and relationships concerning the decision making authority of the Plant Leadership Team (PLT) and the PORC will be formalized. The internal schedule for completion is November 30, 1995.

- The morning report will be enhanced. The internal schedule for completion is February 15, 1996.

- A bulletin board system will be implemented to facilitate posting of the daily operating reports. The internal schedule for completion is December 30, 1995.

- Pre-job and post-job checklists have been developed and partially implemented to formalize the process and enforce expectations for job briefings. These checklists are being reviewed and revised based upon our initial experience with their use. Management expectations about use will be proceduralized. The internal schedule for completion is December 4, 1995.

Management and Supervisory Methods

- A management expectation requiring the continuous use rather than the reference use of System Operating Procedures has been established.

- ORG has an action tracking and escalation policy to ensure the timeliness of response based on the significance of a DER.

- A review of the corrective actions in the ACTs system is underway to re-prioritize them (this will be done using criteria that will be factored in to the work process review discussed later). The internal schedule for completion is December 20, 1995.

- A procedure is being developed to define the approach for assessment of trend processes. The internal schedule for completion is December 29, 1995.

- An update of the Roles and Responsibilities Handbook will be developed and issued which will recognize the decisional responsibilities of PORC and the PLT. The internal schedule for completion is November 30, 1995.

- A site wide requirement will be issued clarifying management expectations concerning procedural compliance. The internal schedule for completion is November 20, 1995.

- Procedural requirements will be developed to require the corrective actions for A, B, and trend DERs to be presented to the PLT by PLT member(s), to require Department Managers to verify the implementation of corrective actions for A, B, and trend DERs (including LERs and SOERs), and to require Department Managers to perform effectiveness reviews for all corrective actions developed in response to A, B, and trend DERs. The internal schedule for completion is November 30, 1995.

- A stop work policy is being developed for incomplete and delayed implementation of corrective actions developed in response to A, B, and trend DERs. The internal schedule for completion is November 30, 1995.

- A process is being developed for escalating overdue corrective actions and excessive use of schedular exemptions. The internal schedule for completion is December 11, 1995.

- An improved self assessment method is being established and will subsequently be proceduralized. The internal schedule for completion is March 15, 1996.

- A revised plant work prioritization process has been developed. Additional revisions are being made to assure consistency with the current plant work process priorities. The internal schedule for completion is November 17, 1995.

- The list of safety screen preparers and reviewers was reduced pending development and implementation of a more effective assessment process, from a review of industry experience, to demonstrate technical competence. The internal schedule for completion is January 30, 1996.

Knowledge Base

- Memoranda issued by site management and the discussion of management expectations within "Inside IP3" and at tailgates has restated existing expectations for a wide audience.

- The Site Executive Officer conducted a series of accountability seminars, which included the site management group, that explained his expectations, including those concerning performance monitoring.

- Operations directives provided in shift orders, standing orders and policy statements are being reviewed to identify where the instructions should be proceduralized and issuing ACTS to track procedural changes. The internal schedule for completion is December 31, 1995.

- Operations will review and analyze procedural issues (e.g., management expectations on procedural hierarchy, operations beyond procedures, operations with changing conditions and procedure application) and initiate additional procedural guidance. The internal schedule for completion is January 25, 1996.

- A DER effectiveness matrix is being developed for use in routine performance reports. The internal schedule for completion is December 11, 1995.

- A basic training module for general employee training is being developed that summarizes administrative procedures and specifically identifies the process for initiating an evaluation and resolving design basis deviations. The internal schedule for completion is March 30, 1996.

- The need for additional design basis training is being assessed based on operating events and training completed to date. The internal schedule for completion is February 28, 1996.

Decision Making Process

- The current trending functions are being expanded to consider additional sources of data and a cross functional team will be established to perform this analysis. The internal schedule for completion is December 11, 1995.

- A procedure to implement project management techniques in task planning is being developed. The internal schedule for completion is November 20, 1995.

- An event/issue response procedure is being developed. The internal schedule for completion is November 20, 1995.

- A dedicated Independent Safety Evaluation Group (ISEG) conducted a comprehensive review of operations procedures and is evaluating the need for additional review of other departments procedures based on the results. The internal schedule for completion of the evaluation is December 31, 1995.

The Date When Full Compliance Was Achieved

Compliance was achieved on 1323 hours on July 12, 1995, when the pressure was restored to within the limits used in the plant safety analyses. Subsequent evaluations by Westinghouse demonstrated that plant design limits would have been met for design basis accidents and transients when the plant is at 100 percent power with a reduced reactor coolant system pressure (as low as 1900 psig) for up to three days.

List of Commitments

Number	Commitment	Date Due
IPN-95-116-01	IP3 Management met to review and develop an action plan to address the findings and recommendations of the team root cause evaluation. The current action plan (the plan is current because it is subject to management change) identifies implementing actions that have either been completed or are ongoing actions that are being tracked by the action tracking system (ACTS).	April 1, 1996
IPN-95-116-02	Corporate Reactor Engineering is implementing procedural guidance to require that the interactive program (i.e., coded by operating plant parameters, it presents required maxima and/or minima for each parameter identified as applicable for the current accident analyses) used by the Training and Design Engineering Departments is controlled so that the information is updated when accident analyses are revised.	Prior to next core reload