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Robert J. Barrett
Plant Manager

May 3, 1996
IPN-96-055

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 50-286/96-01

Dear Sir:

This letter provides, in Attachment I, the New York Power Authority's response to the subject Notice of Violation. The Authority agrees with the Notice of Violation contained in NRC Region I Inspection Report 50-286/96-01, dated March 27, 1996.

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

Very truly yours,

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

For

Robert J. Barrett
Plant Manager
Indian Point 3 Nuclear Power Plant

Attachments

cc: See next page

9605130051 960503
PDR ADCK 05000286
Q PDR

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Handwritten initials 'JED' in black ink, with a vertical line to the right.

cc: Mr. Thomas T. Martin
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U.S. Nuclear Regulatory Commission
Resident Inspectors' Office
Indian Point 3 Nuclear Power Plant

Reply to Notice of Violation 50-286/96-01

VIOLATION

During an NRC inspection conducted on January 14, 1996, through March 2, 1996, violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," (60 FR 34381; June 30, 1995), the violations are listed below:

Violation (96-01-02)

- A. 10 CFR 50, Appendix B, Section III, Design Control, requires in part that design changes shall be subject to design control measures commensurate with those applied to the original design.

Contrary to the above, the design change for the Belzona Metals application to the service water flanges, DC 95-03-028, failed to address the structural design requirements of the original flange design, the design change for the emergency diesel generator lube oil check valves, DC 96-03-053, failed to address the structural requirements of the supports used by the original design, and the temporary modification of the instrument air system, TM 96-00488-03, failed to address the cleanliness requirements of the original design. This is a Severity Level IV violation. (Supplement I)

Violation (96-01-01)

- B. 10 CFR 50, Appendix B, Criterion V, Instructions, Procedures, and Drawings, requires in part that activities affecting quality shall be prescribed by documented procedures of a type appropriate to the circumstances and shall be accomplished in accordance with these procedures.

Construction procedure CON-AD-006, Revision 4, step 3.1.9 requires in part that a scaffold shall maintain at least 1" clearance with safety related equipment.

Construction procedure CON-AD-006, Revision 4, step 3.1.1 requires that scaffolds which are located in safety related areas and cannot be installed to conform with the technical requirements of this procedure shall be reviewed and approved by a designated Civil / Structural Engineer from Design Engineering-IP3 prior to use.

Contrary to the above, on February 6, 1996, the NRC identified two scaffolds located in safety related areas that were constructed without at least 1 inch clearance from safety-related equipment nor was approved by the designated Civil / Structural Engineer from Design Engineering-IP3 prior to use.

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

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A. Response to Violation 96-01-02

New York Power Authority agrees with the violation. Each of the cited examples is addressed individually. Response is provided in sequential order as described in the violation. It should be noted that the Authority is currently envisioning potential enhancements to the design change process as part of our business plan.

Response to Violation 96-01-02, Example number 1

New York Power Authority agrees that the design change was not adequately applied in the SW flange repair of January 1996.

Reason for Violation

As further described below, the reason for this violation is that a design change (DC-95-3-028), developed in early 1995 did not explicitly state that flange structural integrity needed to be evaluated prior to using the design change.

In January of 1995, DC 95-3-028 was prepared and issued in response to SW FCU flange minor surface pitting and leakage found in FCU No. 32. The deficiencies in the flanges were evaluated in response to Deficiency Event Report (DER) 95-0057. At that time, the surface pitting on the flanges (each FCU possesses sixteen pairs of SW flanges) was determined to be minimal and not adversely impacting flange structural integrity. The purpose of the DC was to identify and evaluate which Belzona product to apply in the flange repairs. These repairs were performed under Work Requests and Maintenance Procedure SYS-002-GEN, "Belzona Metals Application," which provides instructions for surface preparation and application of the various Belzona products used at Indian Point 3. DC 95-3-028 was therefore not intended to be an evaluation vehicle for flange degradation and design compliance but only a materials interaction evaluation in support of SYS-002-GEN Belzona repair of the degraded flanges. While in the process of repairing FCU 32 flanges, DC 95-3-028 was revised to include the flanges for all five FCUs (for a total of 160 flanges). Revision 1 of the DC was used in the repair of flanges on FCU 35 which were found to have minor surface pitting and leakage like the FCU 32 flanges. Following this, with no further flange work required at that time, the DC was closed out in accordance with MCM-14 (Modification Control Manual Procedure 14, Type 1 Change) in February 1995.

In January of 1996, leakage on certain SW flanges on FCUs 33, 34 and 35 was identified. On January 25, 1996, System Engineering, the NYPA Metallurgist and Maintenance Engineering developed an Action Plan (IDSE-APL-008) to address the problems, calling for examination and repair of specified FCU flanges. This plan did not identify that a formal evaluation of the flange as-found condition was required. FCU 34 flanges were opened during the January 25-26 time

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period, and it was discovered that all 32 flange faces were degraded to some degree. The System Engineer then decided that all the flanges on FCU 33, 34, 35 and 31 (which had also been added due to potential degradation) needed to be opened for inspection and Belzona repair. This decision was agreed to at the January 26 Plan of the Day Meeting. The System Engineer then requested that Quality Services conduct NDE on the specified flanges. However, prior to the NDE being performed, visual assessments of the flanges concluded that the degradation was similar in nature to the 1995 situation (i.e., not significant) and that repairs could be performed in accordance with Procedure SYS-002-GEN and DC 95-3-028, Rev. 1. The System and Maintenance Engineers' conclusions were based on engineering judgement and direct experience with the 1995 flange conditions and repairs.

Belzona repairs began in some cases just after NDE (UT) was completed on a given flange since Belzona cure time had an impact on plant schedule. No formal written evaluation of the type performed in 1995 (in response to DER 95-0057) was performed prior to these repairs, although informal comparisons of the flange conditions in 1996 and 1995 were done and indicated close similarity; thus, flange structural integrity was deemed not to be negatively affected.

DC 95-3-028, Rev. 1, was considered applicable since the same Belzona material was being utilized as in 1995, using procedure SYS-002-GEN, on the same type of flanges (same function, material, rating) with similar kind and extent of degradation. All technical aspects of the 1996 work were identical to the 1995 work and no SW system configuration changes were being introduced. However, the shortcomings of DC 95-3-028 are twofold: one, its purpose is not explicitly stated; and two, it does not clearly state the prerequisite that the physical condition and structural integrity of specific flanges have to be formally pre-evaluated to be acceptable for Belzona application prior to its (the DC's) utilization. The DC as written was not meant to be the analysis record of flange condition with respect to codes, standards, or specifications. This analysis, to be formally developed and documented prior to use of DC 95-3-028, was done as a DER response in 1995, but not performed in the required time frame in 1996.

From January 27, 1996 through January 30, 1996, NDE and Belzona repairs on FCU flanges continued without a formal evaluation being generated. On January 30, 1996, an NRC inspector expressed concern to the System Engineer over the absence of formal documentation of the flange structural integrity assessment prior to repair work commencing. Engineering subsequently developed the formal evaluation between January 31 and February 2, 1996 and documented it in the form of a J-Work Request (Engineering Work Request). This formal evaluation concluded that the degradation on all the flanges examined and repaired was relatively superficial and not impacting the structural integrity of the flange assemblies under worst case conditions (pressure, thermal, deadweight, and seismic loadings). The evaluation, reviewed and approved prior to any of the Fan Cooler Units being declared operable, agreed with the conclusions of both the 1995 evaluation and the informal, basically undocumented assessments made between January 26 and January 30, 1996.

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Corrective Actions Taken

- 1) All FCU flanges opened and examined in January 1996 were formally evaluated for the application of Belzona repair from a physical design integrity viewpoint. ANSI B31.1, ANSI B16.5, ASTM Material Specifications, flange manufacturer's standards, the Service Water Piping Specification, and other applicable documents were utilized in this evaluation. The evaluation concluded that the degradation was of such a nature that Belzona repair was applicable.
- 2) Discussions were held in Design Engineering, in a small group setting, on this issue and on the importance of stating the purpose of a design document and any prerequisites which are used to support the applicability of the evaluation/analysis and its use.

Corrective Actions to be Taken to Avoid Further Violations

DC 95-3-028 will be revised to more clearly state its purpose and prerequisites, thus defining its applicability. This will be completed by July 30, 1996.

Date When Full Compliance Will be Achieved

Evaluation for structural integrity of the flanges was completed on February 2, 1996. Compliance will be achieved when the other corrective action described in this reply is completed.

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Response to Violation 96-01-02. Example number 2

The New York Power Authority agrees with the violations that the design change failed to address structural requirements commensurate with those applied to the original design.

Reason for Violation

As further described below, inattention to detail and lack of adequate formal written documentation are the causal factors for this design change deficiency.

DC 96-3-053 was issued to replace the Emergency Diesel Generator lube oil check valve. The check valves and their associated piping and supports were originally supplied as part of the emergency diesel generators by GE Alco Power. As such, there are no existing pipe support details or pipe stress analyses for the EDG lube oil piping and support. The replacement valves were purchased as direct replacement from Coltec Industries who is the current supplier of GE Alco Power diesel parts. The replacement check valves were the same as the original check valves in form and function but slightly different in fit. Specifically, the replacement check valves were one pound less in weight, 0.24" shorter in length, and 0.28" narrower in width. The engineering change document (DC 96-3-053, Revision 0) concluded that the replacement valves would have "no adverse effect on existing piping/support systems." The support in question was comprised of a flat bar bolted on one end to the diesel engine housing and bolted on the other end to a malleable pipe strap. Engineering should have cautioned the installer that minor adjustments to the support were required.

Revision 0 of DC 96-3-053 was issued as a Type 1 "Equivalent Change" as opposed to a Type 1 "Design Change" per the requirements of modification control procedure MCM-14, "Type 1 Change." An "Equivalent Change", by definition, is not a design change and is therefore not subject to independent design reviews by engineering prior to their issue or to post-installation field verifications by engineering prior to declaring the affected equipment operable. Therefore, attention to detail is essential in Type 1 equivalent changes since this change process contains fewer inherent defenses against mistakes than Type 1 design changes. Another causal factor identified as a contributor to this design control deficiency is a lack of engineering formality. Specifically, the system engineer and maintenance engineer did not notify the design engineering organization to resolve the issue when they were notified of the problem by the maintenance supervisor. Instead, the system engineer determined that the support was unnecessary based on a qualitative comparison of the rigidity of the valve and connected piping versus the rigidity of the valve bracket.

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Corrective Actions Taken

- 1) Calculation IP3-CALC-EDG-01810, "EDG Lube Oil Check Valve Support Qualification," determined the subject support was not required to maintain the operability of the EDG lube oil system.
- 2) Revision 1 to DC 96-3-053 was issued to remove the pipe support. In accordance with MCM-14, Revision 2, the revised DC was issued as a Type 1 "Design Change" since a support was affected. This revision received the additional benefit of an independent design verification and a post-installation verification by Design Engineering as required by procedure.
- 3) A meeting was held with Procurement engineering personnel to discuss the lessons learned and the importance of attention to detail, field walkdowns and communications. The meeting was limited to the procurement engineering group since procurement engineering is the only group in the Design Engineering organization which prepares Type 1 "Equivalent Changes".
- 4) The system engineer and maintenance engineer were counseled on the need for engineering formality to ensure design control. Specifically, the appropriate design engineering organization must be notified of non-conforming design conditions in order to document the resolution and obtain the proper level of review and approval.

Corrective Actions to be Taken to Avoid Further Violations

- 1) Engineering management will hold a meeting with supervisors in maintenance and central planning to discuss the lessons learned from this event. Specifically, any field questions regarding Type 1 Changes must be directed towards and resolved by the responsible engineer who prepared the Type 1 Change. In addition, engineering will emphasize the installation specifications that maintenance department must follow when performing corrective maintenance to ensure design control is maintained. This will be completed by May 30, 1996.

THE DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Compliance was achieved on April 29, 1996 for the above corrective actions.

The other corrective action described in this reply is expected to prevent recurrence of this type of condition.

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Response to Violation 96-01-02, Example number 3

New York Power Authority agrees that the temporary modification did not address the cleanliness requirements of the original design.

Reason for Violation

As further described below, inattention to detail and lack of adequate written communication are the causal factors for this engineering deficiency.

Prior to the issuance of TM 96-00488-03, the design engineer confirmed with the equipment supplier, Ingersall Rand, that the temporary instrument air supply unit would meet the design requirements of the permanent Instrument Air System (IAS). He confirmed that the filter specifications of 0.9 microns for the filters supplied with this rental unit was the same micron rating as the permanent IAS. The design engineer also considered that the air supplied from the temporary system would still pass through the permanent IAS dryers which have their own particulate filter system, therefore, assuring that the same quality of the air was supplied.

When the equipment arrived and it was being off loaded, the design engineer verbally instructed the maintenance supervisor to inspect the air hoses which were to be connected from the rental air unit to the permanent IAS. The maintenance supervisor advised the design engineer that he had inspected the air hoses and they did not have any noticeable debris and foreign particles and were not damaged.

The design engineer assumed that standard installation practices would cover the necessary inspection, preparation and cleanliness requirements to be applied for temporary modification TM 96-00488-03. Work request WR 96-00488-093 implemented the temporary modification and contains a step which delineates the procedures to be used for system cleanliness requirements.

The Work Request was revised on March 1, 1996 add a step to blow out the air hoses and the dryer as an additional precaution to address an NRC inspectors concern about potential debris.

A DER was not originally written because the design engineer, as expressed to the NRC inspector, had reasonable assurance that the hoses were satisfactorily inspected, the temporary dryer has its own pre-filter and after-filter, the tie in for this temporary system was upstream of the permanent dryers which include pre-filters and after-filters; and the temporary modification was evaluated in accordance with 10CFR50.59. DER 96-0684 was initiated on 3/5/96 to document that the Temporary Modification did not specify a requirement to inspect the air hoses and purge the dryer.

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Corrective Actions Taken

- 1.) Work Request WR 96-00488-03 was revised to add a step to blow down the temporary instrument air unit and hoses which was performed before the rental system was tied into the permanent Instrument Air System.

Corrective Actions to be Taken to Avoid Further Violations

- 1) The temporary modification procedure, AP-13 will be revised to ensure that cleanliness requirements are identified as required. This will be completed by July 30, 1996.

Date When Full Compliance Will be Achieved

Compliance was achieved on March 2, 1996, when the temporary air lines and dryer were blown down to ensure the system was free of debris.

The other corrective actions described in this reply are expected to prevent recurrence of this type of condition.

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B. Response to Violation 96-01-01

New York Power Authority agrees with the violation.

Reason for Violation

The reason for the violation was human error related to the use of construction procedure CON-AD-006, Revision 4. A contributing cause was inadequate communication among the members of the work crew including the job supervisors. The specific causes identified by the Authority are:

- * Lack of attention to detail by the scaffolding supervisor during post installation acceptance inspection of scaffolding.
- * Poor communication between scaffolding supervisors during a shift turnover which was conducted through a third party. The on-shift scaffolding supervisor, through the third party, identified open items for the oncoming supervisor to resolve. He understood these to be the only remaining items to be resolved prior to scaffold acceptance. This misunderstanding lead to a failure to perform a complete acceptance inspection of the scaffolding.
- * Work practice of estimating rather than measuring dimensions during scaffold construction. This work practice was inappropriately applied to the 1" clearance requirement stated in the revised procedure.
- * Communication weaknesses occurred when known discrepancies identified by craft personnel during scaffold construction were not passed on to supervisory personnel to facilitate resolution during acceptance inspection.

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CORRECTIVE ACTIONS TAKEN

- 1) On February 6, 1996 the Authority performed new inspections of the two scaffolds and resolved discrepancies in accordance with CON-AD-006.
- 2) An extent of condition review was performed for all open scaffold permits involving scaffolds built in safety-related areas to verify that engineering evaluations existed. Scaffold evaluations for existing scaffolds built under the previous procedure revision were re-reviewed with engineering to verify acceptability. No additional discrepancies were identified.
- 3) The circumstances of the deviation were discussed with affected Maintenance Department and Construction Services Department personnel to emphasize the importance of verifying the 1" clearance. Craft personnel were also instructed to record known problems found during scaffold construction (using the 'Scaffold Review Form' in the procedure) to assure that this information is available during the acceptance inspection. The scaffolding supervisor who approved the two scaffolds involved with the violation, was individually counselled.
- 4) The applicable maintenance lesson plan (MCM-PRC-1) has been revised and the initial craft training package has been issued with lessons learned from this violation.

Corrective Actions to be Taken to Avoid Further Violations

After the deviation was identified, the Authority increased scaffold inspection efforts for an interim period until more experience is gained with the revised procedure. The additional inspection effort consists of increased frequency of field observations and the use of two scaffold supervisors for acceptance inspection of scaffolds in safety related areas. Following this interim period, the Authority will revise procedure CON-AD-006 to incorporate lessons learned. The procedure revision will be completed by July 1, 1996.

Date When Full Compliance Will be Achieved

Compliance was achieved on February 6, 1996 when the Authority performed new inspections of the two scaffolds and resolved deficiencies in accordance with CON-AD-006. In addition, there were no new deviations identified during the extent of condition review. The corrective actions as described above are expected to prevent reoccurrence.

LIST OF COMMITMENTS

| Number | Commitment | Due |
|---------------|---|---------------|
| IPN-96-055-01 | DC 95-3-028 will be revised to more clearly state its purpose and prerequisites, thus defining its applicability. | July 30, 1996 |
| IPN-96-055-02 | Engineering management will hold a meeting with supervisors in maintenance and central planning to discuss the lessons learned from DC 96-03-053, failing to address the structural requirements of the supports used by the original design. Specifically, any field questions regarding Type 1 Changes must be directed towards and resolved by the responsible engineer who prepared the Type 1 Change. In addition, engineering will emphasize the installation specifications that maintenance department must follow when performing corrective maintenance to ensure design control is maintained. | May 30, 1996 |
| IPN-96-055-03 | The temporary modification procedure, AP-13 will be revised to ensure that cleanliness requirements are identified as required. | July 30, 1996 |
| IPN-96-055-04 | The Authority increased scaffold inspection efforts for an interim period until more experience is gained with the revised procedure. The additional inspection effort consists of increased frequency of field observations and the use of two scaffold supervisors for acceptance inspection of scaffolds in safety related areas. Following this interim period, the Authority will revise procedure CON-AD-006 to incorporate lessons learned. | July 1, 1996 |