DCS

Nebraska Public Power District

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NLS950028
January 18, 1995

Director, Office of Enforcement
U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Gentlemen:

Subject: Reply to a Notice of Violation and Proposed Imposition Civil Penalties; NRC Inspection Report Nos. 50-298/94-14, 50-298/94-16, and 50-298/94-19; Cooper Nuclear Station, NRC Docket 50-298, DPR-46

Reference: Letter from Mr. J. L. Milhoan (USNRC) to Mr. G. R. Horn (NPPD), dated December 12, 1994, Notice of Violation and Proposed Imposition of Civil Penalties - $300,000 (NRC Inspection Reports 50-298/94-14, 50-298/94-16, and 50-298/94-19).

This letter, including Attachments 1 and 2, constitute Nebraska Public Power District's (the District) reply to the referenced Notice of Violation (NOV) and Proposed Imposition of Civil Penalties in accordance with 10 CFR 2.201. Attachment 2 is a certified check in the amount of $300,000, for payment of the civil penalties. Per conversation with Mr. G. F. Sanborn, the submittal date of this response was extended to January 18, 1995.

The referenced inspection reports document the results of three NRC inspections conducted from May 23 through August 12, 1994, to specifically review the circumstances regarding: (1) the identification, in May and June, 1994, by the Cooper Nuclear Station (CNS) staff of numerous Primary Containment penetrations that were installed in configurations that were contrary to NRC requirements and had never been local leak rate tested, (2) the extent of the conditions causing both Emergency Diesel Generators (EDGs) to be declared inoperable, which had resulted in the declaration of a Notification of Unusual Event and plant shutdown on May 25, 1994, and (3) the identification by the CNS staff of numerous hardware deficiencies that resulted in the failure of the Control Room envelope pressurization test on April 11, 1994.

As discussed in Attachment 1 to this letter, each of the "problems" and violations had common causes relating to NPG management and culture. As you are aware, NPG management changes have been implemented to address these issues. The breadth of personnel changes reflect the District's commitment to incorporating broad industry experience and achieving higher performance standards. More specifically, management oversight of the Condition Reporting Process has been increased to ensure adequate rigor and urgency are applied in the evaluation of non-conforming plant conditions as they are

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identified. Also, focused attention is being placed in the review of Operational Experience, a program that is considered key in early identification and timely resolution of potential issues.

Management communications have been improved through: (a) training for NPG Managers and Supervisors on important management topics including teamwork and communications, (b) daily management meetings to communicate priorities and standards, and to ensure inter-departmental coordination, and (c) implementation of a revised corrective action program that provides focus on organizational, programmatic and human performance concerns.

In summary, the District has taken, and will continue to take aggressive actions responsive to the management issues that have negatively impacted the NPG safety culture. Steps taken that have resulted in the progress made to date have been significant, and the District believes that the CNS "culture" issue is no longer a factor with regard to the recurrence of these violations. The majority of issues and corrective actions discussed herein have been addressed in the July 28 and August 8, 1994 responses to NRC Confirmatory Action Letters (CAL) dated May 27, June 16, July 1, and August 2, 1994; during the September 16, 1994 Enforcement Conference; and in the November 7, 1994 letter to the NRC. As such, the District has not addressed in this response, any perceived differences of opinion since the cited violations should not have occurred in any event, and since they required significant attention before CNS could be considered ready for restart.

Should you have any questions concerning this matter, please contact my office.

G. R. Horn
Vice-President - Nuclear

Attachments

cc: Regional Administrator
USNRC Region IV

NRC Resident Inspector
Cooper Nuclear Station

NPG Distribution

STATE OF NEBRASKA)
)
PLATTE)

G. R. Horn, being first duly sworn, deposes and says that he is an authorized representative of the Nebraska Public Power District, a public corporation and political subdivision of the State of Nebraska; that he is duly authorized to submit this response on behalf of Nebraska Public Power District; and that the statements contained herein are true to the best of his knowledge and belief.

G. R. Horn

Subscribed in my presence and sworn to before me this 18TH day of January, 1995.

NOTARY PUBLIC

GENERAL NOTARY-State of Nebraska
RITA L. GOFF
My Comm. Exp. Dec. 19, 1995

REPLY TO DECEMBER 12, 1994 NOTICE OF VIOLATION AND
PROPOSED IMPOSITION OF CIVIL PENALTIES - EA NOS. 94-164, 94-165, 94-166
COOPER NUCLEAR STATION
NRC DOCKET NO. 50-298, LICENSE DPR-46

During NRC inspections conducted from May 23 through August 12, 1994, violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedures for NRC Enforcement Actions," 10 CFR Part 2, Appendix C, the Nuclear Regulatory Commission proposed civil penalties pursuant to Section 234 of the Atomic Energy Act of 1954, as amended, 42 U.S.C 2282, and 10 CFR 2.201.

For each of the violations and "problems," inadequate management performance significantly contributed to the existence or perpetuation of the deficiencies. Therefore, management related corrective actions addressed in the cover letter to this response and in other District correspondence to the NRC (i.e., District letters to the NRC dated July 28, 1994 (NLS940001); August 8, 1994 (NLS9400026); and November 7, 1994 (NLS940111)) should be considered part of the District's corrective actions. For brevity, this corrective action is not restated in each violation response.

The particular violations and the District's replies are set forth below:

PROBLEM AREA A- Primary Containment Integrity Violations

I. Violation A.1

Violation A.1 contained in Reference 1 cites the following:

"Technical Specification 3.7.A.2.a, "Containment Integrity," states, in part, that "primary containment integrity shall be maintained at all times when the reactor is critical or when the reactor water temperature is above 212°F and fuel is in the reactor vessel..."

"Technical Specification Surveillance Requirement 4.7.A.2.f.1, "Leak Rate Testing," states, in part, that "...local leak rate tests (LLRTs) shall be performed on the primary containment testable penetrations and isolation valves at a pressure of 58 psig during each reactor shutdown for refueling, or other convenient intervals, but in no case at intervals no greater than two years.... The total acceptable leakage rate for all valves and penetrations other than the MSIVs [main steam isolation valves] is 0.60 La.

"Technical Specification 1.Y, "Surveillance Frequency," states, in part, that "performance of a Surveillance Requirement within the specified time interval shall constitute compliance with operability requirements for an LCO [limiting condition for operation] unless otherwise required by the specification."

"Contrary to the above, from January 18, 1974, until May 27, 1994, primary containment integrity was not maintained at all times when the reactor was critical or when the reactor water temperature was above 212°F and fuel was in the reactor vessel in that the Surveillance Requirement for the local leak rate testing of 82 components had never been implemented at an interval not to exceed two years. As the result of testing conducted on June 23, 1994, Isolation Valve IA-65CV (one of the 82 components) failed the LLRT, resulting in a total leakage value that significantly exceeded the 0.60 La limit. The 0.60 La limit corresponds to a leakage rate of 5.37 scmh (189.60 scfh). The LLRT failure of Valve IA-65CV resulted in a total leakage rate that exceeded 17.66 scmh (623.57 scfh)."

Admission or Denial to Violation

The District admits the violation.

Reasons for Violation

The immediate cause for not performing local leak rate testing (LLRTs) on 82 components is that they had not been previously identified for inclusion in the CNS 10 CFR 50 Appendix J Program. As discussed in LER 94-011 Revision 1, the root cause for this failure was lack of management commitment to program implementation, in that the organizational focus for problem identification and resolution was primarily compliance-based. This resulted in insufficient attention being paid to evolving regulatory issues in this area, for which a compliance-based standard was inappropriate.

When the CNS Operating License was issued (1974), the specific testable Primary Containment penetrations and Primary Containment Isolation Valves (PCIVs) were listed in the CNS Technical Specifications. Eventually, this list was shifted to the Updated Safety Analysis Report (USAR) through a License Amendment. The original licensing basis was that performance of these specific tests constituted a method for Appendix J compliance that was acceptable to the Atomic Energy Commission (AEC). The mindset was that since the design of many of the CNS systems pre-dated the issuance of Appendix J for public comment, adherence to the Technical Specification/USAR list (along with other specific commitments that might be made) was all that was required, despite later regulatory positions that contradicted this approach. Although these deficiencies were self-identified as a result of broad corrective action in response to Inspection Report 93-17, the District duly acknowledges that this condition should have been recognized and corrected long ago.

Corrective Steps Taken and the Results Achieved

In addition to the generic NPG culture improvements that address the root cause as previously noted, other more programmatic corrective actions have been taken. As stated in LER 94-011, Revision 1, walkdowns of the Primary Containment penetrations have been performed. This activity contributed to the District's confidence that the scope of the Appendix J non-compliance has been comprehensively identified. (See also, Confirmatory Action Letter Response dated July 28, 1994.) The following courses of action were then followed:

(1) As-found testing was performed for penetrations that had not previously been Type A, B, or C tested and for which this testing was determined to be immediately practicable. Those that were not tested were either modified and then tested, or were designated as candidates for Appendix J exemption. The total as-found leak rate for the testable penetrations, except X-22 which contained drywell pneumatic supply check valve IA-CV-65CV, was 26 SCFH. With regard to penetration X-22, leakage through IA-CV-65CV was significant, preventing pressurization of the penetration using normal leak rate testing apparatus. Accordingly, worst-case leakage was examined during safety consequence assessments that were performed.

Penetration modifications and component maintenance/replacement were performed. Subsequent testing has verified that the total Primary Containment as-found leak rate is less than the Technical Specification limit.

(2) Design changes were implemented, which included addition of test connections, installation of welded caps on spare penetrations,

complete redesign of some containment isolation barriers, and installation of caps on vents, drain lines and test connections. These design changes have been completed.

(3) For penetrations and components that have been deemed impractical to test in accordance with the requirements of Appendix J, NRC exemptions have been obtained.

Corrective Steps That Will Be Taken to Avoid Further Violations

Appendix J compliance accountability has been improved by redefining "program owner" responsibilities to require the primary duty to be ensuring the integrity of the overall program, rather than merely functioning as a testing facilitator. To assist in this objective, the current licensing basis for Appendix J testing will be formally captured in an Appendix J testing basis document. This will provide a readily available, controlled source of comprehensive information to the Appendix J program owner which will facilitate the correct disposition of future Appendix J issues as they occur.

Date When Full Compliance Will Be Achieved

CNS is now in full compliance with the testing requirements necessary to demonstrate Primary Containment Integrity.

II. Violation A.2

Violation A.2 contained in Reference 1 cites the following:

"10 CFR Part 50, Appendix B, Criterion XI, "Test Control," states, in part, that "[a] test program shall be established to assure that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents."

"CNS Quality Assurance Program for Operation Policy Directive, Revision 10, Section 2.11, written to implement the requirements of 10 CFR Part 50, Appendix B, Criterion XI, requires that each type of test program performed will be defined by written procedures and instructions, and it requires that acceptance tests will be developed for structures, systems, and components to demonstrate their capability to perform satisfactorily following repairs or modification.

"Contrary to the above, the licensee did not assure that all testing was identified and performed in accordance with written test procedures which incorporated the requirements and acceptable limits. Specifically as of May 14, 1994, 68 components passing through 54 primary containment penetrations, each required to be local leak rate tested in accordance with the requirements of Technical Specification Surveillance Requirement 4.7.A.2.f.1, "Leak Rate Testing," had not been identified in a procedure as requiring local leak rate testing, as required by CNS Quality Assurance Program for Operation Policy Directive, Revision 10, Section 2.11. These components had never been local leak rate tested.

"Contrary to the above, the licensee did not assure that all testing was identified and performed in accordance with written test procedures which incorporated the requirements and acceptable limits. As of June 21, 1994, instrument pressure switches PC-PS-12A, B, C, and D; PC-PS-101A, B, C, and D; PC-PS-119A, B, C, and D; PC-PS-16; and PC-PT-512A and B, each required to be local leak rate tested in accordance with the requirements of

Technical Specification Surveillance Requirement 4.7.A.2.f.1, "Leak Rate Testing," had not been identified in a procedure as requiring local leak rate testing after being isolated from the containment integrated leak rate test, as required by CNS Quality Assurance Program for Operations Policy Directive, Revision 10, Section 2.11. These switches had never been local leak rate tested."

Admission or Denial to Violation

The District admits the violation.

Reasons for Violation

The causes for not establishing written LLRT procedures for the components listed in the violation are identical to those discussed in response to Violation A.1. A lack of rigor in the Appendix J program (caused by a compliance based management philosophy) resulted in not identifying all of the components for which Type C LLRTs were practicable, and in isolating components which should have been left unisolated for inclusion in the Type A ILRT boundary. Had all components within the Appendix J scope been previously identified and properly evaluated, they likely would have been included within this testing control program. Please refer to the discussion under Violation A.1 for a more complete review of this issue.

Corrective Steps Taken and the Results Achieved

The corrective actions discussed for Violation A.1 describe the efforts that have been made to comprehensively identify the additional components that require Appendix J testing. These efforts have been completed, and changes to the CNS Appendix J testing procedures have been made which reflect current licensing basis testing requirements.

Corrective Steps That Will Be Taken to Avoid Further Violations

As discussed in the District's response to Violation A.1, a testing basis document is being prepared that will provide a clear connection between the Appendix J requirements, the CNS licensing basis with respect to Appendix J compliance, and the testing procedures that implement the CNS licensing basis.

Date When Full Compliance Will Be Achieved

CNS is now in full compliance with the requirement to have written procedures that encompass the full scope of the 10CFR50 Appendix J testing program.

III. Violation A.3

Violation A.3 contained in Reference 1 cites the following:

"10 CFR Part 50, Appendix B, Criterion III, "Design Control," states in part, that "[m]easures shall be established to assure that...the design basis...[is] correctly translated into specifications, drawings, procedures, and instructions. These measures shall include provisions to assure that appropriate quality standards are specified and included in design documents and that deviations from such standards are controlled."

"Draft General Design Criterion 53, a measure written to comply with the requirements of 10 CFR 50, Appendix B, Criterion III, as committed to in Appendix F of the Updated Safety Analysis Report (USAR), states that "[p]enetrations that require closure for the containment function shall be

protected by redundant valving and associated apparatus.

"Draft General Design Criterion 1, as committed to in Appendix F of the USAR, states that "[t]hose systems and components of reactor facilities which are essential to the prevention of accidents which could effect the public health and safety or mitigation of their consequences shall be identified and then designed, fabricated, and erected to quality standards that reflect the importance of the safety function to be performed."

"General Electric Design Specification No. 22A1153, "Codes and Industrial Standard, "Revision 1, states, in Note 3 of the Appendix, that "[p]iping, which is an integral part of the primary containment for isolation purposes, shall have at least the same quality and levels of assurance as the primary containment."

"Contrary to Criterion III, the licensee did not assure that the above design bases were correctly translated into specifications and instructions and did not assure that deviations from quality standards were controlled. Specifically:

a. *As of May 14, 1994, numerous primary containment penetrations had no redundant valving. These penetrations included, but were not limited to, Penetrations X-21, X-22, X-25, X-29E, X-30E/F, X-33E/F, X-209A/B/C/D, and X-218.*

b. *As of February 22, 1994, 10 penetrations consisting of manually operated vents, drains, and test connections and requiring closure for the containment function, had a single manual isolation valve for containment isolation as opposed to the required redundant valving and associated apparatus.*

c. *During an NRC inspection conducted June 13, 1994, through August 12, 1994, it was determined that approximately 300 containment penetrations had not been designed, fabricated, or installed to the same standards as the primary containment because these components had not been correctly classified as essential. As a result, these penetrations had not been designed, fabricated, or erected to quality standards that reflect the importance of the safety function to be performed (e.g., some welds were not nondestructively tested, some penetrations were not local leak rate tested, and the penetrations were not treated as safety-related by the licensee's quality assurance program)."*

Admission or Denial to Violation

The District admits the violation.

Reasons for Violation

As noted in this Violation, there were two areas of non-conforming Primary Containment penetration design: (1) the lack of Primary Containment penetration barrier redundancy for all process lines passing through the Primary Containment, and (2) the improper classification and maintenance of many penetrations as non-essential. These areas are discussed in more detail below.

(1) Barrier Redundancy- The cited Primary Containment penetration barrier redundancy discrepancies involve manual valve configurations on penetrations designated for process lines. As noted by the NRC in Enclosure 2 of the NOV, these configurations were part of the original plant design. Specifically, the configurations were built to be in conformance with the 1967 Draft AEC General Design Criteria

(GDC), which did not explicitly require redundancy for process lines isolated by manual valves. In addition, the response to Final Safety Analysis Report (FSAR) Question 5.5 clearly identified the District's position with respect to GDC 55 and 56, and Safety Guide 11. In response to Question 5.5, the District stated that a single manual valve would be employed for instrument lines and lines to control systems or devices inside the Primary Containment, including pneumatic lines for valves, dampers, etc. (Regulatory Guide 1.11 still permits the use of single manual valves for some applications and the GDC still provides for the acceptability of containment isolation provisions "on some other defined basis".)

The CNS SER makes it clear that the AEC's technical review for initial licensing was performed based on 10CFR50 Appendix A criteria, within which, Criterion 55 provides more prescriptive redundancy requirements. It is unclear to what degree the AEC reviewed the redundancy issue, but the conclusion was reached in Section 3.1 of the SER that the plant conformed to the intent of the Appendix A criteria. The failure of the NPG to resolve the ambiguity of the licensing basis was a key factor in the perpetuation of non-redundant Primary Containment penetration barrier configurations, both in the original design, and after various design changes.

In two of the cited examples, it is apparent that there was a lack of rigor in maintaining configuration controls. Therefore, apart from the licensing basis ambiguities, inappropriate configuration management contributed to the existence of non-redundant or unqualified barriers.

(2) Penetration Classification- The penetration misclassifications resulted from an original design error, in that, the requirements of General Electric Specification 22A1153 for piping passing through the Primary Containment were not correctly translated into the piping specifications. The passive function of helping to maintain Primary Containment integrity was not recognized as a safety function for otherwise non-essential piping. As a result, piping segments were inappropriately procured, fabricated and maintained to the requirements of USAS B31.1, rather than to a level of quality commensurate to that applied for the Primary Containment (as in USAS B31.7). The impacts of this discrepancy were that in certain instances: (a) material traceability was not maintained as applicable for the piping and components; (b) appropriate non-destructive evaluations (NDE) were not performed on all applicable welds and piping; and (c) applicable non-destructive testing (NDT) was not performed on pressure retaining welds.

Although both of these non-conforming areas were self-identified as a result of design basis reconstitution efforts and broad corrective actions taken in response to Inspection Report 93-17, the District recognizes that these conditions should have been identified and corrected much earlier. Similar to the previous two violations, the failure to more promptly identify and correct these deficiencies was due in part to a compliance-based focus, such that, undue reliance was placed in the continuing adequacy of the original plant design, based on AEC approval during initial licensing.

Corrective Steps Taken and the Results Achieved

The District addressed actions regarding barrier redundancy and penetration classifications in a letter dated August 8, 1994. The following is a summary of corrective actions noted in that letter, as well

as additional responsive activities.

(1) Barrier Redundancy- Walkdowns of Primary Containment penetrations were conducted which verified the as-built barrier configurations. As a result of identified discrepancies associated with inadequate Primary Containment penetration barrier redundancy, design changes have been developed and completed which have brought them into conformance. Also, programmatic enhancements have been made to control vent, drain, and test line barrier configurations as discussed in the District's response to Inspection Report 94-03.

(2) Penetration Classification- A document review was performed for all Primary Containment piping and instrument penetrations to determine the scope and extent of the misclassifications. Welds in penetration-attached process lines, for which original construction NDE was insufficient, were identified. Those that were found to be in non-compliance or indeterminate were subjected to additional NDE. Five welds were found to have rejectable NDE indications and were repaired or replaced as deemed appropriate. The piping and instrument line segments up to and including the PCIVs have been determined via a Design Change to be of equivalent quality to the Primary Containment, and a reconciliation has been performed between USAS B31.1 and B31.7 for these segments. These penetrations and components are now treated as Essential IIN, and will be maintained under the District's ASME Section XI Program.

Corrective Steps That Will Be Taken to Avoid Further Violations

No further directly related corrective steps are planned. However, as stated during the Enforcement Conference, the two ongoing actions described below help to prevent recurrence of similar types of violations.

(1) To help identify other licensing basis issues stemming from the original design, the design basis reconstitution effort is being expedited.

(2) The ASME Section XI boundaries are being reviewed to identify and resolve other potential pressure boundary classification errors. A Section XI classification boundary basis document is being prepared that identifies the Section XI boundary and defines its bases.

Date When Full Compliance Will Be Achieved

CNS is now in full compliance with the requirements for Primary Containment penetration safety classification and PCIV redundancy, as the District understands that the one remaining single-valve PCIV process line is acceptable to the NRC.

PROBLEM AREA B- Operability of the 480 Volt and 4160 Volt Buses

I. Violation B.1

Violation B.1 contained in Reference 1 cites the following:

"Technical Specification 3.9.A.1.c, "Auxiliary Electrical Equipment," requires, in part, that the reactor shall not be made critical from a Cold Shutdown Condition unless the 4160 volt critical buses 1F and 1G and the 480 volt critical buses 1F and 1G are energized, and the undervoltage and loss of voltage relays, as well as their auxiliary relays, are operable.

"Technical Specification Surveillance Requirement 4.9.A.1.a, "Emergency

Buses Undervoltage relays," states that "once every 18 months, loss of voltage on emergency buses is simulated to demonstrate the load shedding from emergency buses and the automatic start of diesel generators." USAR Section 2.2.7.2.1.a, "Standby A-C Power (Diesel Generators) Test Capability," defines the function of the protective scheme as providing for the clearing the buses of all motor loads excepting supply to the 480 volt critical unit substation.

"Technical Specification 1.Y, "Surveillance Frequency," states, in part, that "performance of a Surveillance Requirement within the specified time interval shall constitute compliance with operability requirements for an LCO [limiting condition for operation] unless otherwise required by the specification.

"Contrary to the above, from January 18, 1974, until May 25, 1994, the reactor had been made critical without 4160 volt critical buses 1F and 1G, and 480 volt critical buses 1F and 1G being operable in that the undervoltage relays associated with several of the electrical loads supplied by these buses had never been tested to demonstrate their operability or upon testing, failed to perform their intended function of shedding their respective electrical loads from these buses."

Admission or Denial to Violation

The District admits the violation.

Reasons for Violation

The root cause of this violation was the CNS failure to view existing programs and methods with a self-critical and questioning attitude. With respect to fulfilling the surveillance requirements that demonstrate operability, this resulted in surveillance procedures that did not fully test the load shedding function. This function encompasses the circuit path from the sensing of undervoltage on the 4160 volt and 480 volt busses through the opening of the respective circuit breakers on undervoltage. The requirement to test this function stemmed from a 1979 License Amendment that specifically incorporated this Surveillance Requirement into the CNS Technical Specifications. The reconciliation performed in 1979 between the load sequence testing procedures and these new requirements was unsatisfactory in that all the required loads were not verified to shed on undervoltage (or loss of voltage), and that the logic system functional testing (LSFT) associated with actuation of the undervoltage relays was not comprehensive.

Numerous opportunities occurred for earlier identification. Most notably during the design basis reconstitution effort, through NRC information to the industry on Westinghouse DB-50 circuit breakers and deficient safety-related LSFTs, and through an Electrical Distribution System Functional Inspection (EDSFI) performed at CNS. However, given the NPG organizational focus that was previously in place, these opportunities were not utilized as vehicles for broader programmatic inquiry.

Corrective Steps Taken and the Results Achieved

Several steps were taken to address this violation:

(1) LSFTs for 4160 volt buses 1F and 1G, and 480 volt buses 1F and 1G were satisfactorily performed.

(2) The applicable surveillance procedures were revised to verify that the load shedding function occurs as required.

(3) An electrical calculation was performed which demonstrated that even if load shedding of all of the non-essential 480 volt loads failed to occur, the diesel generators would have performed their intended safety function.

To correct the long-term reliability issues associated with the load shedding capability of Westinghouse DB-50 circuit breakers, a Design Change was implemented which resulted in replacement of the undervoltage trip devices with shunt trip devices within those safety-related circuit breakers that are credited with shedding a non-essential load. Industry experience has shown this to be an effective configuration.

Corrective Steps That Will Be Taken to Avoid Further Violations

This violation has prompted a broader inquiry into the adequacy of the CNS Surveillance Testing Program. The intent of this effort is to verify that all of the surveillance testing requirements have been correctly translated into the surveillance procedures. This effort is more fully discussed in the corrective action for Violation B.2.

Date When Full Compliance Will Be Achieved

CNS is now in full compliance with the requirements of Technical Specifications 3.9 A.1.c and 4.9.A.1.a.

II Violation B.2

Violation B.2 contained in Reference 1 cites the following:

"10 CFR Part 50, Appendix B, Criterion XI, "Test Control," states, in part, that "[a] test program shall be established to assure that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptable limits contained in applicable design documents."

"Contrary to the above, the licensee did not assure that all testing was identified and performed in accordance with written test procedures which incorporated the requirements and acceptable limits. Specifically:

a. During an NRC inspection conducted May 23, 1994, through August 12, 1994, Procedure 6.3.4.3, "Sequential Loading of Emergency Diesel Generators," Revision 31, which is performed to satisfy Technical Specification Surveillance Requirement 4.9.A.1.a, "Loss of Voltage Relays," was determined to be inadequate because it did not assure that the emergency diesel generators and critical buses would perform satisfactorily in service in that the procedure did not contain requirements to verify that the 480-volt supply breakers for safety-related and nonsafety-related loads would shed from their electrical buses within a specified time, nor did the procedure identify that the control rod drive pump motors and station air compressors were required to be shed from the electrical bus.

b. During an inspection conducted May 23, 1994 through August 12, 1994, the NRC identified that Procedure 6.3.20.1, "RHR Service Water Booster Pump Flow Test and Valve Operability Test," Revision 27, did not provide for the testing of the load shedding feature of the supply breakers associated with the 4160 volt residual heat removal service water booster pumps."

Admission or Denial to Violation

The District admits the violation.

Reasons for Violation

The root cause for not establishing written test procedures that adequately reflect the Technical Specification requirements is attributable to the same NPG cultural issues discussed in Violations A.1 and B.1. Furthermore, as discussed in Violation B.1, this generic cause manifested itself through:

(1) Not ensuring the incorporation of all load shedding verifications (including associated LSFTs) into the surveillance procedures when they first became recognized as surveillance requirements.

(2) Failure to recognize and correct the procedural deficiency in a more timely manner, particularly with respect to the opportunities that occurred that might have prompted such recognition. These included the design basis reconstitution effort, industry operational experience with respect to Westinghouse DB-50 circuit breakers and inadequate LSFTs, and a previous EDSFI.

Corrective Steps Taken and the Results Achieved

The surveillance procedures cited in this violation have been revised to reflect appropriate load shed testing. Additionally, as discussed in the District's August 8, 1994, response to an NRC Request for Additional Information, the investigation into the deficiencies of Surveillance Procedure 6.3.20.1 prompted a review of the Logic System Functional Testing performed for several key safety systems. This review has identified significant testing omissions that are being addressed as documented in LER 94-009.

Corrective Steps That Will Be Taken to Avoid Further Violations

CNS is currently verifying that all surveillance requirements contained in the CNS Technical Specifications have been adequately translated into surveillance procedures. In summary, each Technical Specification surveillance line item is being compared with its analogous implementing procedure to determine exactly how the requirement is met, and whether the procedure is satisfactory. This judgment is being made with reference to various source documents such as elementary diagrams, flow diagrams, the USAR, and Design Criteria Documents, as applicable. Upon completion of this project, CNS will have system packages that fully document compliance with the Technical Specification surveillance requirements.

Date When Full Compliance Will Be Achieved

Verification that the key safety system surveillance requirements are adequately described by written procedures will be completed prior to startup. As discussed in the CNS Phase 1 Plan, these key systems include the Automatic Depressurization System, Core Spray System, High Pressure Coolant Injection System, Low Pressure Coolant Injection System, Reactor Protection System, Standby Gas Treatment System, Control Room HVAC System, and Reactor Building HVAC System. Verification that appropriate written procedures encompass all surveillance requirements will be achieved by July 31, 1995.

PROBLEM AREA C- Operability of the Control Room Emergency Filter System

I. Violation C.1

Violation C.1 contained in Reference 1 cites the following:

"Technical Specification 3.12.A.1, "Control Room Emergency Filter System," states, in part, that "...the Control Room Emergency Filter system...shall be operable at all times when containment integrity is required.

"The Order Confirming Licensee Commitments on Post-TMI Related Issues, dated July 10, 1981, confirms NPPD's commitment to complete NUREG-0737, "Clarification of TMI Action Plan Requirements," Item III.D.3.4, "Control Room Habitability." Item III.D.3.4 involves the review of facility design requirements against the Standard Review Plan. The NPPD response to Generic Letter 80-90, dated December 30, 1980, submitted the control room habitability evaluation, which stated, in part, "the CNS control room ventilation system is designed to maintain the control room at about 1/4 in. H_2O [0.031 kPa] positive pressure by supplying air at a high enough pressure that even when system losses and the booster exhaust fan pressures are accounted for, the control room pressure is still positive..."

"A Safety Evaluation Report for the Cooper Station from the Accident Evaluation Branch on NUREG-0737, Item No. III.D.3.4, "Control Room Habitability," dated February 24, 1982, states, in part, that "...the design meets the criteria identified in Item III.D.3.4 of NUREG-0737 and is acceptable.

"Contrary to the above, from June 1989 until April 28, 1994, the Control Room Emergency Filter system was not operable at all times when containment integrity was required in that testing failed to demonstrate that a positive pressure could be maintained in the control room during the periodic performance of the control room envelope pressurization test."

Admission or Denial to Violation

The District admits the violation.

Reasons for Violation

The circumstances surrounding the prolonged inoperability of the Control Room Emergency Filter System (CREFS) were provided to the NRC in LER 94-006. As discussed in this LER, the unrecognized inoperability of CREFS was primarily the result of a plant culture that did not approach operability issues with a self-critical and questioning attitude. Also contributing to the deficiency was an incomplete understanding of the original system design criteria, which led to unsubstantiated reliance on the adequacy of the perceived licensing basis. Several opportunities occurred to address identified deficiencies in the both the design and performance of the system. These opportunities were missed because of a design basis that was not well defined, inadequate testing, a compliance-based approach to operability, and a failure to implement adequate corrective action even though the pressurization test results were marginal. As a result of these collective deficiencies, the system should not have been considered operable.

Corrective Steps Taken and the Results Achieved

As discussed in LER 94-006, corrective actions have been taken that have restored CREFS to operability. Specifically, door seals in the Control Room envelope were repaired, penetrations were sealed and the adjacent building ventilation control systems inspected and repaired. Testing was

performed that confirmed positive pressurization between the range of +0.04" to +0.05" wg with respect to atmospheric pressure.

As discussed in the District's July 28, 1994, letter to the NRC regarding CREFS commitments, the following additional corrective actions have been taken prevent recurrence:

(1) The worst case design basis conditions for Control Room dose has been reassessed, and specific CREFS performance criteria with respect to this scenario has been established and documented.

(2) An operability limit of ≥ +0.03" wg with respect to atmosphere for the Control Room envelope has been established, together with an administrative limit of ≥ +0.04" wg (in contrast to the previous ≥ +0.01" wg acceptance criteria.) Surveillance testing to these limits is being conducted monthly. In the event the administrative limit is not met, the testing frequency would be increased to once every two weeks. The design basis for the control room envelope continues to be "positive pressure."

(3) A design change has been implemented that will eliminate the problem of Control Room and Cable Spreading Room pressure balance.

(4) To provide additional margin to its established design basis, CREFS has been modified to increase ventilation flow and pressurization. Currently, the field work has been completed. Final design change closure is awaiting acceptance testing and NRC approval of the District's proposed Technical Specification Amendment for CREFS.

Corrective Steps That Will Be Taken to Avoid Further Violations

Upon NRC approval of the Technical Specification Amendment concerning CREFS, the operability and administrative limits for Control Room pressurization will be increased.

Date When Full Compliance Will Be Achieved

The installation of the CREFS modification has greatly increased the Control Room pressurization capability. However, CREFS flow is now well in excess of the Technical Specification band of 341 CFM ±10%. The system will be returned to operability and full compliance achieved upon NRC approval the higher band proposed by the District as an amendment to the CREFS Technical Specification.

II. Violation C.2

Violation C.2 contained in Reference 1 cites the following:

"10 CFR Part 50, Appendix B, Criterion XI, "Test Control," states, in part, that "[a] test program shall be established to assure that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents.

"CNS Quality Assurance Program for Operation Policy Directive, Revision 10, Section 2.11, written to implement the requirements of 10 CFR Part 50, Appendix B, Criterion XI, requires that each type of test program performed will be defined by written procedures and instructions, and it requires that acceptance tests will be developed for structures, systems, and components to demonstrate their capability to perform satisfactorily

following repairs or modification.

"Contrary to the above, the licensee did not assure that all testing was identified and performed in accordance with written test procedures which incorporated the requirements and acceptance limits in applicable design documents. Specifically, from June 1989 until June 1994, Surveillance Procedure 6.3.17.18, "Control Room Envelope Pressurization Test," Revision 4, was not sufficiently detailed in that it did not incorporate acceptance limits to assure that the Control Room Emergency Filter System would perform satisfactorily in service and because the procedure did not prohibit the inappropriate manipulation of pressures in the adjoining buildings as a precondition for conduction the test."

Admission or Denial to Violation

The District admits the violation.

Reasons for Violation

The root cause of this violation was the CNS failure to view existing programs and methods with a self-critical and questioning attitude. With respect to the subject of this violation, a surveillance procedure resulted in inadequate guidance and acceptance criteria for CREFS operability.

In addition to the cultural issues that provided the general climate for this violation to occur, the CNS design and regulatory history of CREFS resulted in an inconsistent understanding of what the exact relationship was between positive Control Room pressurization and CREFS operability. Pressurization was part of the original system licensing basis (albeit vaguely defined), but had not been specifically included as a surveillance requirement in the CNS Technical Specifications. Given the compliance-oriented focus that was prevalent at the time, this ambiguity resulted in a surveillance procedure that required only nominal pressurization. Moreover, testing conditions were ill-defined, in that, the required pressures of areas outside the Control Room envelope during the test were not specific.

Corrective Steps Taken and the Results Achieved

The District previously addressed several corrective actions in the CAL response dated July 28, 1994. Also as discussed in the corrective actions for Violation C.1, the worst case design basis conditions for Control Room dose has been reassessed, and specific CREFS performance criteria with respect to this scenario has been established and documented.

Surveillance Procedure 6.3.17.18 has been revised to define acceptance criteria reflecting the design basis performance requirements, and to specify the testing conditions required for areas bounding the Control Room envelope.

An amendment to the CNS Technical Specifications has been submitted to the NRC to include demonstration of positive Control Room pressurization to the surveillance requirements of CREFS.

Corrective Steps That Will Be Taken to Avoid Further Violations

This violation represents a deficiency in the Surveillance Testing Program. As discussed in Violation B.2, a comprehensive effort has been undertaken to verify that the surveillance requirements of the CNS Technical Specifications (as well as other license requirements that impact operability) have been adequately translated into surveillance

procedures.

Date When Full Compliance Will Be Achieved

As discussed in Violation B.2, verification that the key safety system surveillance requirements are adequately described by written procedures will be completed prior to startup. Verification of full compliance with having written procedures that encompass all surveillance requirements will be completed by July 31, 1995.

Violations Not Assessed A Civil Penalty

Section II.A contained in Reference 1 states the following:

"10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," states, in part, that "[a]ctivities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings.

"Engineering Procedure 3.8, "Drawing Control Procedure," Revision 7, written, in part, to implement 10 CFR Part 50, Appendix B, Criterion V, requires that safety-related drawings be included on the safety-related drawing list."

A. Violation 1

"Contrary to the above, during an NRC inspection conducted June 13, 1994, through August 12, 1994, it was determined that safety-related Flow Diagram No. 2028, "Reactor Building and Drywell Equipment Drain System," Revision N27, was not included on the safety-related drawing list. As a result of this determination, the licensee subsequently identified 13 other drawings containing safety-related components that were not included on the safety-related drawing list."

Admission or Denial to Violation

The District admits that deficiencies existed in the safety-related list and that 14 drawings were identified that did not have appropriate safety-related components identified.

Reasons For The Violation

The "safety-related list" was initially developed in 1985, according to the premise that it would include the drawings of those systems that had recognized safety and plant availability functions. The purpose of this was to ensure that quality-affecting activities would only be performed with reference to final Status 1 drawings (As-built, Certified as constructed, Certified, or Certified final by vendor and signed), as opposed to Archival (Status 2) or Construction (Status 3) drawings. The list was established as an interim measure until more programmatic changes were completed. Accordingly, Procedure 3.8 was revised to define the three Status Categories, and to proceduralize the requirement that the user ensure that safety-related activities involve only Status 1 drawings. After this was accomplished, the safety-related list had no quality function with regard to this deficiency.

In 1986, a drawing verification project was initiated to validate the as-built status of selected Control Room drawings. The scope of this effort was initially confined to drawings contained on the previously identified safety-related list. Between 1986 and 1988, the list was revised numerous times as additional safety-related components were identified, which

likewise affected the drawing verification project scope.

In 1989, a step was added to Procedure 3.8 to provide a formal mechanism for making additions or deletions to the list, which would in turn signal the Configuration Management Group of additional drawings that should be screened for as-built verification.

During the above processes, information was not completely transmitted between lists and drawings.

Corrective Actions Taken and the Results Achieved

As discussed above, the Safety-Related List currently serves only as a scoping document for as-built drawing verification efforts. This is a function better served by adequate project scoping instructions than by establishment in the CNS procedures. Accordingly, reference to this set of drawings has been removed from the Procedure 3.8. The additional drawings that were identified as containing safety-related components are being separately assessed for inclusion in the as-built verification project.

Corrective Steps That Will Be Taken to Avoid Further Violations

There are no further corrective steps being planned to address this issue.

Date When Full Compliance Will Be Achieved

CNS is in full compliance with the requirement that activities affecting quality be appropriately prescribed by procedures, with respect to the activities described by CNS Procedure 3.8.

B. Violation 2

"Contrary to the above, during an NRC inspection conducted May 23, 1994, through August 12, 1994, Maintenance Procedure 7.3.2.1, "DB-25 and DB-50 Circuit Breakers - Setting, Testing, and Maintenance (With Amptectors)," Revision 3, was determined to be inappropriate to the circumstances in that the procedure did not contain a requirement to remove tie-wraps from the subject breakers following preventive maintenance, nor did the procedure provide for comprehensive post-maintenance testing of all circuit breaker functions following the completion of preventive maintenance."

Admission or Denial to Violation

The District admits the violation.

Reasons for Violation

This violation resulted from the discovery on May 16, 1994 that a tie-wrap was installed on the undervoltage trip device of the feeder breaker to MCC-N. Subsequent investigations revealed that the tie-wrap was installed as allowed during the performance of Maintenance Procedure 7.3.2.1. This procedure was found to have no explicit requirements for removing the tie-wrap, or for post-maintenance testing that would identify such discrepant conditions.

As stated in the District's July 28, 1994 response to Confirmatory Action Letter 4-94-06b, the root cause of the event was the failure of management to ensure that requirements for configuration control were adequately implemented into the maintenance procedure. Management's expectations

were not clearly communicated and effected through the procedure review and approval process. As a result, a requirement to remove the tie-wrap was not included at the conclusion of the procedural section.

A contributing factor to the procedural omission was the inappropriate assumption that such restoration steps were within the "skill of the craft," and as such, did not require specific articulation. In this case, it is clear that restoration steps should have been provided.

Corrective Steps Taken and the Results Achieved

As previously discussed in the CAL response dated July 28, 1994, the following steps have been taken to correct the immediate condition:

(1) Plant walkdowns have been performed that have verified that no other tie-wraps or other blocking devices were installed on any of the 480 volt breakers on 480 volt busses 1A, 1B, 1E, 1F, and 1G.

(2) A review was conducted of station procedures covering electrical and mechanical maintenance to determine if similar ambiguities existed with regard to blocking device removal. This resulted in 18 procedure changes. A similar review was performed for procedures controlled by the Operations, I&C, Engineering, and Radiological Departments, which likewise resulted in a number of procedure changes.

(3) A revision has been made to Maintenance Work Practice (MWP) 5.0.4 to add guidance that any impairments, changes or blocking devices installed during the performance of maintenance activities have been removed prior to completion of the procedure.

(4) Maintenance supervision has communicated to their departments the need for procedural compliance and immediate correction of procedural problems and/or incomplete understanding of procedure requirements.

Corrective Steps That Will Be Taken to Avoid Further Violations

The District is committed to broad-based action to achieve excellence in Configuration Management, as discussed in the NPG Performance Improvement Plans. These actions, in addition to the corrective actions described above will prevent further similar violations.

Date When Full Compliance Will Be Achieved

CNS is now in full compliance with the requirement that activities affecting quality be appropriately prescribed by procedures, with respect to installation and removal of temporary blocking devices.