



Nebraska Public Power District

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NLS960037
February 27, 1996

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

Gentlemen:

Subject: Generic Letter 89-10, NRC Notification of Completion
Cooper Nuclear Station, NRC Docket 50-298, DPR-46

Reference: Generic Letter 89-10, "Safety Related Motor-Operated Valve Testing and Surveillance"

NRC Generic Letter (GL) 89-10, "Safety Related Motor-Operated Valve Testing and Surveillance," requires licensees to notify the NRC in writing after the actions described in item i of the GL have been completed. The purpose of this letter is to notify the NRC that these items have been completed.

In response to GL 89-10, the Nebraska Public Power District (District) developed and implemented a program to verify the design basis capability of motor-operated valves (MOV's) within the scope of the GL. The GL 89-10 program MOV's at Cooper Nuclear Station (CNS) have been tested and set up with the best available data. Programmatic activities necessary to maintain the design basis capability of the CNS GL 89-10 program MOV's will continue. Additional information regarding the closure of the District's GL 89-10 program is enclosed.

Sincerely,

G. R. Horn
Vice-President, Nuclear

/crm
Enclosure

cc: Regional Administrator
USNRC - Region IV

Senior Resident Inspector
USNRC

Senior Project Manager
USNRC - NRR Project Directorate IV-1

NPG Distribution

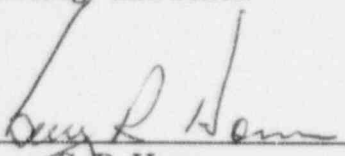
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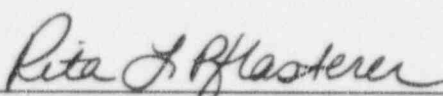
G. R. Horn, being first duly sworn, deposes and says that he is an authorized representative of the Nebraska Public Power District, a public corporation and political subdivision of the State of Nebraska; that he is duly authorized to submit this correspondence on behalf of Nebraska Public Power District; 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

27TH day of February, 1996.



NOTARY PUBLIC

 GENERAL NOTARY-State of Nebraska
RITA L. PFLASTERER
My Comm. Exp. Dec. 28, 1998

CLOSURE RESPONSE TO NRC GENERIC LETTER 89-10

Introduction

The following discussion summarizes the Cooper Nuclear Station (CNS) Motor-Operated Valve (MOV) Program developed in response to Generic Letter (GL) 89-10, "Safety-Related Motor-Operated Valve Testing and Surveillance."

The NRC issued GL 89-10 on June 28, 1989, followed by Supplements 1 through 7. GL 89-10 was issued due to the NRC concern that, unless additional measures were taken, failure of certain MOVs to operate under design-basis conditions could occur more often than had previously been estimated. GL 89-10 expanded the scope of the program outlined in Bulletin 85-03 and its Supplement 1 to include all safety-related, position-changeable MOVs and recommended that licensees develop a program that would provide necessary assurance that MOVs would function when subjected to design basis conditions.

Letters previously submitted by the District to the NRC regarding GL 89-10 are listed at the end of this enclosure.

Scope

A comprehensive review of all CNS MOVs was performed. As a result, 82 valves were determined to be within the scope of the GL 89-10 Program. The 82 valves include 58 gate valves, 14 globe valves, and 10 butterfly valves.

The MOV Project Procedures implement the MOV Program Plan which establishes the program to comply with the GL 89-10 requirements, including design basis determination, baseline testing, and initial MOV setup. With the completion of the Project Phase of the CNS GL 89-10 Program, these Project Procedures are currently being converted into CNS Engineering Procedure 3.33, "Motor Operated Valve Program," which will establish the maintenance phase of the GL 89-10 MOV program.

Schedule

By letter dated December 28, 1989, the District requested one additional refueling outage to implement GL 89-10, which would have extended the allotted five year schedule by approximately six months. The schedule extension was accepted by the NRC on May 18, 1990.

By letter dated January 8, 1995, the District requested additional schedule extension as a result of an extended outage. This letter contained the following schedule revisions.

1. Complete initial testing upon completion of RE-16.
2. Complete additional testing and modifications prior to restart from the then current outage.
3. Review all valves against current industry information, set up with best available data, and retest if necessary prior to restart from current outage.

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4. Complete static testing on all 82 valves prior to restart.
5. Complete dynamic testing on 35 valves prior to restart.
6. Complete dynamic testing on 52 valves prior to startup from RE-16.
7. Complete documentation for closure and provide letter to NRC 120 days following RE-16.

By letter dated January 27, 1995, the District revised the January 8, 1995, extension request to defer dynamic testing of MS-MOV-MO77 until RE-16.

In response to the extension request, the NRC issued a letter on February 6, 1995, which granted an extension for 60 days following RE-16 versus 120 days.

By letter dated September 6, 1995, the District proposed elimination of several dynamic tests previously scheduled for completion prior to startup from RE-16 based upon implementing a high margin approach on individual valves. NRC letter dated November 27, 1995, provided concurrence with the proposed elimination of dynamic tests based upon high margin methodology.

Design Review

One of the primary requirements of NRC GL 89-10 was to review and document the design basis of operation for each MOV within the program scope. Since these MOVs must be able to operate under their design basis conditions for the operational life of CNS, this design basis review required both a program to initially review and document the design basis of operation for each program MOV and a follow-on program to maintain the design basis review documentation up to date. The program to perform the initial review and production of supporting design basis documentation was accomplished within the scope of the CNS MOV Program Project. The ongoing maintenance of the MOV Program design basis documentation will be accomplished via the implementation of CNS Engineering Procedure 3.33, which is currently under development. Until such time CNS Engineering Procedure 3.33 is approved, the MOV Program Project Procedures will remain in effect.

The CNS MOV Program design basis review and supporting calculations are contained in the following controlled engineering calculations.

1. Limiting Component Analysis (LCAs) - LCAs (or Allis Chalmers reports for PC-MOV-230MV through 233MV) were generated for all program MOVs to determine the rated maximum thrust/torque that each subject valve can withstand prior to any significant material yielding which could initiate component failure. Currently, the District is preparing to enhance the existing LCA calculations to use electronic media with standard templates and correct GL 89-10 MOV Program related configuration discrepancies discovered and screened for operability during the RE-16 outage.
2. System Level Design Basis Reviews (SLRs) - An SLR exists for each plant system containing program MOVs. These reviews determine the design basis system operating conditions for each program MOV.
3. Electrical Design Basis Review - An electrical design basis review exists which establishes the bounding electrical conditions for each program MOV.

4. Component Level Design Basis Reviews (CLRs) - CLRs were completed for all program MOVs to determine the minimum required thrust/torque at the design basis conditions, to establish the maximum allowable thrust/torque, and to evaluate MOV capability. Currently, the District is preparing to enhance the existing CLR calculations to convert existing calculations to electronic media with standard templates and correct GL 89-10 MOV Program related configuration discrepancies discovered and screened for operability during the RE-16 outage.

Testing

MOVs in the GL 89-10 MOV Program were tested using the Valve Operation Test and Evaluation System (VOTES) supplied by Liberty Technologies. In some cases, Displacement Measuring Transducers (DMT) supplied by MOVATS were used in conjunction with VOTES data acquisition equipment.

Approximately 52% of the program MOVs were dynamically tested under maximum practicable differential pressure (dP) and flow conditions. Valve factor and rate of loading results from this testing were compared to the original design assumptions and corrective actions taken as applicable. In applications where dynamic testing was not practicable or where meaningful results could not be obtained, the results for similarly configured MOVs were reviewed for potential impact and margins added as appropriate. Based on this approach, and as stated in the District's letter dated September 6, 1995, several high margin valves were deleted from planned dynamic testing.

In addition to dynamic testing, all MOVs were tested under static conditions. The MOVs tested only under static conditions have been qualified as stated above.

Supplement 5 of GL 89-10 requested licensees to take actions with respect to their MOV program on the basis of new information on MOV diagnostic equipment inaccuracy. By letter dated October 4, 1993, the District provided a response to Supplement 5 of GL 89-10.

Actions were taken to reevaluate and retest several MOVs to resolve the diagnostic equipment inaccuracy.

Pressure Locking And Thermal Binding

The District performed a pressure locking and thermal binding susceptibility evaluation of GL 89-10 Program valves. This evaluation was completed in May 1993. A revision to this evaluation was completed in November 1994. In August 1995, the District received GL 95-07, "Pressure Locking and Thermal Binding of Safety-Related Power-Operated Gate Valves." The District's February 13, 1996, letter to the NRC provides the results of the susceptibility evaluation in accordance with GL 95-07.

Post-Maintenance Testing and Trending

Maintenance Procedure 7.0.5, "Post-Maintenance Testing," identifies the appropriate test(s) to be conducted after each type of maintenance to ensure that the valve design basis capability has not been affected.

Trending requirements to monitor valve performance and failures have been established as part of MOV Project Procedures. These Project Procedures are currently being incorporated into CNS Engineering Procedure 3.33, "Motor Operated Valve Program."

Periodic Verification Program

The purpose of the periodic verification program is to verify that correct switch settings are maintained. GL 89-10 requires that the surveillance interval of the verification be based on the licensee's evaluation of the safety importance of each MOV, as well as MOV maintenance and performance history. The surveillance interval should not exceed 5 years or three refueling outages, whichever is longer, unless a longer interval can be justified for any MOV.

The District plans to follow the current GL 89-10 guidance for periodic verification. CNS Engineering Procedure 3.33, "Motor Operated Valve Program," which is currently being developed, will delineate the requirements for implementing periodic verification requirements. Following the receipt of the proposed Generic Letter specifically addressing MOV periodic verification, these requirements will be re-assessed.

Marginal Motor Operated Valves

The District is currently evaluating options to increase operating margins on those MOVs having less than 10% operating margin. Options include equipment modifications, removal of excessive conservatism from LCAs, and retesting with more accurate test equipment.

Although these valves are identified as marginal, the operability of these valves is ensured by the minimum specified thrust requirements, which are based on very conservative assumptions and test equipment error analysis.

District Correspondence to the NRC Regarding GL 89-10

1. NLS8900469, December 28, 1989, Response to NRC Generic Letter 89-10, "Safety-Related Motor-Operated Valve Testing and Surveillance"
2. NLS9000065, February 15, 1990, Motor-Operated Valve (MOV) Testing
3. NLS9000559, December 10, 1990, 30-Day Response to Generic Letter 89-10, Supplement 3
4. NLS9100159, March 11, 1991, 120-Day Response to Generic Letter 89-10, Supplement 3
5. NLS9100479, August 7, 1991, Response to NRC for Additional Information Concerning Generic Letter 89-10, Supplement 3
6. NLS9100657, October 15, 1991, Generic Letter 89-10, Supplement 3 Information
7. NSD9311118, October 4, 1993, Response to Generic Letter 89-10, Supplement 5, "Inaccuracy of Motor-Operated Valve Diagnostic Equipment"

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8. NSD931287, November 8, 1993, Reply to a Notice of Violation, NRC Inspection Report No. 50-298/93-08
9. NSD940204, February 18, 1994, NRC Inspection Report No. 50-298/93-08
10. NSD940224, March 9, 1994, Generic Letter 89-10 Tracking and Trending Procedures
11. NLS940149, December 31, 1994, Generic Letter 89-10 Testing Schedule
12. NLS950006, January 8, 1995, Request for Schedule Extension
13. NLS950043, January 27, 1995, Revision to Request for Schedule Extension
14. NLS950182, September 6, 1995, Changes to Commitments with Justification and Clarification

Correspondence No: NLS960037

The following table identifies those actions committed to by the District in this document. Any other actions discussed in the submittal represent intended or planned actions by the District. They are described to the NRC for the NRC's information and are not regulatory commitments. Please notify the Licensing Manager at Cooper Nuclear Station of any questions regarding this document or any associated regulatory commitments.

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