

APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-285/90-04

Operating License: DPR-40

Docket: 50-285

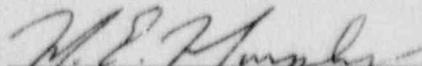
Licensee: Omaha Public Power District (OPPD)
444 South 16th Street Mall
Mail Stop BE/EP4
Omaha, Nebraska 68172-2247

Facility Name: Fort Calhoun Station (FCS)

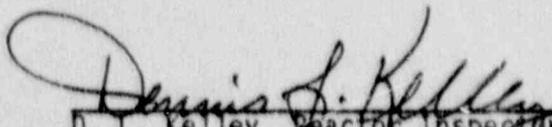
Inspection At: FCS, Blair, Nebraska

Inspection Conducted: March 26-30, 1990

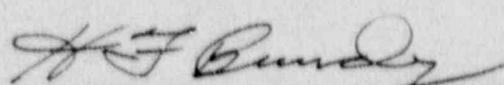
Inspectors:


M. E. Murphy, Reactor Inspector, Test Programs
Section, Division of Reactor Safety

4/30/90
Date


D. L. Kelley, Reactor Inspector, Test Programs
Section, Division of Reactor Safety

4/26/90
Date


H. F. Bundy, Reactor Inspector, Test Programs
Section, Division of Reactor Safety

4/26/90
Date

Accompanied
By:

W. C. Seidle, Chief, Test Programs Section
Division of Reactor Safety on March 29-30

Approved:


W. C. Seidle, Chief, Test Programs Section
Division of Reactor Safety

4/24/90
Date

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Inspection Summary

Inspection Conducted March 26-30, 1990 (Report 50-285/90-04)

Areas Inspected: Announced inspection for system entry retest (SERT) in the areas of design changes, temporary alterations, and maintenance activities.

Results: The licensee has a strong program for determining the need for retest and the identification of the appropriate retest type. The licensee's program for development and performance of adequate procedures for retest of structures, components, and systems following plant modifications and maintenance activities was found to be satisfactory. Weaknesses were identified in the assignment of responsibilities for the review to ensure correct retests were included in post-maintenance and temporary modification work packages. The licensee committed to strengthen these areas by administrative procedure revisions.

DETAILS

1. PERSONS CONTACTED

OPPD

R. Andrews, Division Manager, Nuclear Services
J. Bobba, Supervisor, Radiation Protection
C. Brunnert, Supervisor, Operations Quality Assurance (QA)
M. Core, Supervisor, Maintenance
D. Dale, Supervisor, Quality Control (QC)
F. Franco, Manager, Radiological Services
J. Gasper, Manager, Training
W. Gates, Division Manager, Nuclear Operations Division
S. Gerber, Supervisor, Radiological Services
D. Gorence, Lead Secondary Systems Engineer
R. Jaworski, Manager, Station Engineering
J. Keczy, Supervisor, Systems Engineering
D. Lovett, Supervisor, Radiation Protection Operations
D. Matthews, Supervisor, Station Licensing
T. McIvor, Manager, Nuclear Projects
J. O'Connor, Supervisor, Electrical/I&C Design
W. Orr, Manager, QA/QC
G. Peterson, Manager, FCS
R. Phelps, Manager, Design Engineering
P. Sepcencko, Supervisor, Outage Projects
R. Sexton, Supervisor, Radiation Health and Engineering
R. Short, Supervisor, Special Services Engineering
C. Simmons, Station Licensing Engineer
S. Swearingin, Nuclear Safety Review Specialist
T. Therkildsen, Supervisor, Nuclear Licensing
J. Tills, Assistant Plant Manager

NRC

P. Harrell, Senior Resident Inspector
T. Reis, Resident Inspector

The inspectors also interviewed other licensee personnel during the inspection.

2. INSPECTION OBJECTIVES AND METHOD

The overall objective of this inspection was to determine the licensee's performance in the area of system entry retest identification, documentation, and performance.

To accomplish this objective, the inspection was conducted to determine if retest requirements were evaluated during modification and maintenance planning and that the retest procedures met regulatory requirements, commitments, and

industry guides and standards. It was also to determine if retest requirements were considered for all system boundary violations. The inspection was also conducted to verify that the retests proved operability and assured that the design basis was satisfied for structures, systems, and components that were modified or subjected to maintenance during this refueling outage.

The inspectors reviewed the licensee's administrative procedures for design changes, maintenance, and temporary modifications. The procedures were:

- ° SO O-25, "Temporary Modification Control"
- ° SO M-100, "Conduct of Maintenance"
- ° SO M-101, "Maintenance Work Control"
- ° SO M-102, "Post Maintenance Testing"
- ° SO G-21, "Modification Control"
- ° GEI-3, "Preparation of Design Packages"
- ° GEI-28, "Preparation of Construction Work Procedures"

Work items scheduled for this refueling outage were assessed, and the inspectors selected 10 modifications, 14 maintenance work orders, and 12 temporary modifications for detailed review.

3. INSPECTION FINDINGS SUMMARY

The licensee was found to have a good program for identifying, planning, developing, and performing retests in the area of plant modifications. The licensee's program for post-maintenance testing appeared sound; however, one concern was identified. The program did not clearly establish who had primary responsibility for ensuring that appropriate post-maintenance testing was included in the maintenance work order. This will be considered an open item pending completion of the licensee's committed review and resolution (285/9004-01). The temporary modification program was found to be good; however, two apparent weaknesses were identified. There were no specific instructions to perform a review of the temporary modifications for post-installation and restoration testing, and specific responsibilities to ensure that the review was performed were not assigned. A procedure revision was issued immediately to provide for the review of the temporary modification for appropriate testing. The licensee agreed to assess the assignment of responsibility for the review and include it in the next procedure revision. Pending the procedure revision, this will be considered an open item (285/9004-02).

No violations or deviations were identified during the inspection.

4. MODIFICATIONS (72701)

The purpose of this area of the inspection was to determine the process by which a permanent modification to structures, systems, or components is developed, reviewed, installed, and tested. Of specific interest was that post-modification testing ensured that structures, systems, or components were satisfactorily proven operable and that the design basis was met.

The inspector reviewed the licensee's standing order Procedure G-21, "Modification Control," as well as supporting Engineering Instructions GEI-3, "Preparation of Design Packages" and GEI-28, "Preparation of Construction Work Procedures." Plant modifications are completely documented and controlled by the "Design Change Package" (DCP) at Fort Calhoun. This package is produced by the production engineering division and establishes both the basis for the modification and the adequacy of the design in accordance with 10 CFR 50.59. The DCP includes the detailed design, construction, and testing requirements for implementing the modification.

The typical DCP follows a multiple review and implementation process that ensures attention is given to postmodification test requirements. Once approved for implementation, the DCP must be reviewed and released by the shift supervisor. Upon completion of the installation, the DCP is reviewed and released for test by the planner, system engineer, and field supervisor. Subsequent steps ensured that test evaluation, walkdowns, drawing update, operating manual update, and training were conducted as applicable. There is a requirement for formally declaring the system, component, or structure operable by the shift supervisor.

The inspector reviewed 10 design change packages. Some of these were completed with field work, others were in various stages from draft form through partially complete field work. This review determined that the licensee was following the administrative procedures. The post-modification testing was found to be satisfactory in all cases. A particular strength in this process was Engineering Instruction GEI-28. This procedure addresses post-modification testing in a very broad but definitive and comprehensive way.

5. POST-MAINTENANCE TESTING (PMT) (62700, 62702)

This portion of the inspection dealt with the licensee's control and performance of PMT. The licensee's program for PMT appeared sound. It had been recently revised and retraining had been substantially completed by the end of 1989. As discussed below, the inspector discovered that there was some confusion concerning who had the primary responsibility for ensuring that appropriate PMT was included in the maintenance work order (MWO).

The inspector reviewed the following program documents:

- Standing Order (SO) M-100, Revision 3, "Conduct of Maintenance"
- SO M-101, Revision 4, "Maintenance Work Control"
- SO M-102, Revision 1, "PMT"
- "Critical Quality Elements List," Revision 5

Taken together, the above documents presented a sound program for PMT.

The inspector reviewed training records for selected maintenance planners and system engineers to ascertain that they had received training on the current program documents. For each individual, appropriate training had been accomplished. The following lesson plans (LPs) were reviewed to ascertain training content:

- ° LP SEAD-30, Revision 0, "Maintenance Control Student Handbook for System Engineer Training Program"
- ° LP MSP-09, Revision 0, "PMT Student Handbook for Maintenance Supervisors and Planners"

The inspector noted that several individuals reviewed an MWO for inclusion of appropriate PMT prior to releasing an MWO to the craft. Upon the completion of work, the shift supervisor reviewed the MWO for completion of PMT prior to returning the item to service. Subsequently, the MWO was reviewed, in sequence, by the discipline supervisor, the systems engineer, and quality control.

The inspector reviewed 14 MWOs for appropriate inclusion of PMT requirements. This review found that no PMT was specified for MWO 908076, which involved seal replacement for Reactor Coolant Pump (RCP) C. This MWO had been released to the craft for work. The inspector reviewed similar MWOs for the other three RCPs and discovered appropriate PMT had been identified. Also, the licensee had scheduled appropriate PMT for all four RCPs. The licensee made a field change to MWO 908076 to include the required PMT. In that appropriate PMT was scheduled to be performed for RCP C, notwithstanding the omission in MWO 908076, the safety significance of this oversight was minimal. However, the inspector was concerned that the program allowed this oversight to occur. By the time MWO 908076 had been released for work, the following four individuals had reviewed and signed the MWO:

- ° Planner
- ° System engineer
- ° Quality control (QC) supervisor
- ° Shift supervisor

The planner and the system engineer should have discovered the missing PMT in accordance with the program. It appeared that the QC supervisor was not programmatically required to discover missing PMT, and he stated to the inspector that he would not normally look for this type of error. It appeared to the inspector that the shift supervisor was programmatically required to review the MWO for inclusion of appropriate PMT in accordance with paragraph 6.2.6 of SO M-102. However, the plant manager stated at the exit meeting that he was not sure he wanted the shift supervisor to have this responsibility and committed to resolve this issue. The licensee stated that it was in the process of enhancing the MWO program by having the system engineer insert the final signature on the MWO, thereby attesting to technical correctness.

To assure that there were no similar PMT problems, the licensee reviewed approximately 2300 MWOs and found 7 with blank PMT blocks. The licensee and the inspector did not find PMT appropriate for any of the seven. The licensee stated it would investigate modifying the program to not allow any MWO blocks to be left blank.

Actions committed to by the licensee at the exit meeting together with actions already taken appeared sufficient to resolve the inspector's concerns. This will be considered an open item pending the review of the licensee's actions. (285/9004-01)

6. TEMPORARY MODIFICATION TESTING (72701)

This portion of the inspection dealt with the licensee's control and performance of post-installation and post-restoration testing of temporary modifications.

The inspector concluded that the temporary modification program lacked specificity in two areas. These areas were: (1) specific instructions to perform a review of the temporary modification for post-installation and restoration testing; and (2) the assignment of specific responsibilities to ensure that the review had been performed. However, the inspector noted that all the temporary modifications did specify testing in the appropriate areas.

The inspector reviewed the licensee's temporary modification procedure, Standing Order O-25, "Temporary Modification Control," for installation and restoration testing requirements. The procedure did not specifically address requirements for review of the temporary modification for post-installation or restoration testing. The other area noted by the inspector was that the procedure did not specify responsibility for ensuring that the temporary modification was reviewed for testing appropriate to the installation or restoration of the temporary modification. These two areas were discussed with licensee representatives. Subsequent to the discussion, the licensee's procedure was revised to require review of the temporary modification what testing was appropriate. As of the date of the exit meeting, the procedure had not been revised to assign responsibility for ensuring that the reviews would be performed. The licensee acknowledged that the responsibility should be defined in the procedure and would be included in the next procedure revision. Pending the procedure revision, this will be considered an open item (285/9004-02).

In addition to the controlling procedure review, the inspector reviewed 12 temporary modification packages to determine if testing requirements had been specified and, if so, were the tests appropriate to the work performed in installation and/or restoration of the systems or components modified. The areas covered by these temporary modifications included, for example, the reactor coolant system, radiation monitoring, auxiliary feedwater system, main steam system, and the emergency diesel generators. As noted above, the documents describing and evaluating the temporary modification did not reflect a review nor specify any testing requirements. There were, however, when appropriate, tests specified either in the maintenance work order or, if used, in a separate procedure or work instruction.

The inspector concluded that, notwithstanding the lack of review requirements or assignment of responsibilities for the review, all the temporary modifications reviewed by the inspector did specify appropriate testing.

7. EXIT MEETING

An exit meeting was held March 30, 1990, with the individuals listed in paragraph 1 of this report. At this meeting, the scope of the inspection and the findings were summarized. The licensee did not identify as proprietary any of the information provided to, or reviewed by, the inspectors.