

APPENDIX B

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-298/85-01 License: DPR-46

Docket: 50-298

Licensee: Nebraska Public Power District (NPPD)
P. O. Box 499
Columbus, Nebraska 68601

Facility Name: Cooper Nuclear Station (CNS)

Inspection At: CNS Site, Brownville, Nebraska

Inspection Conducted: January 7-11, 1985

Inspectors: *I. Barnes* 2-14-85
I. Barnes, Reactor Inspector
Project Section A (pars. 1, 2.a, 2.b, 3, 6) Date

W. R. Bennett 2/15/85
W. R. Bennett, Reactor Inspector
Project Section A (par. 4) Date

C. C. Harbuck 2-15-85
C. C. Harbuck, Reactor Inspector
Project Section A (pars. 2.c, 2.d, 5) Date

Approved: *J. P. Jaudon* 2/15/85
J. P. Jaudon, Chief, Project Section A
Reactor Project Branch 1 Date

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Inspection Summary

Inspection Conducted January 7-11, 1985 (Report 50-298/85-01)

Areas Inspected: Routine, unannounced inspection of piping replacement activities, requalification training, design changes and modifications, and licensee action on previous inspection findings. The inspection involved 99 inspector-hours onsite by three NRC inspectors.

Results: Within the four areas inspected, two violations were identified (failure to identify discrepancies in vendor material documentation, paragraph 3; failure to follow procedure in minor design changes, paragraph 5).

DETAILS

1. Persons Contacted

NPPD

- *P. V. Thomason - Division Manager, Nuclear Operations
- *G. Horn - CNS Construction Manager
- *D. A. Whitman - Technical Staff Manager
- *V. L. Wolstenholm - CNS QA Manager
- *D. L. Reeves, Jr. - Training Manager
- *J. Sayer - Senior Tech/Rad Advisor
- *G. E. Smith - CNS Senior QA Specialist
- J. Meacham - Technical Manager
- E. Mace - Supervisor, Plant Engineering
- N. M. Pendleton - IGSCC QA/QC Supervisor
- *C. R. Goings - Regulatory Compliance Specialist
- R. A. Jansky - Operations Training Supervisor
- T. Sandner - Requalification Instructor (General Electric)

NRC

- *D. L. Dubois - Senior Resident Inspector, Region IV, CNS

In addition to those listed, the NRC inspectors held discussions with several other licensee employees.

*Denotes those present at the exit interview.

2. Licensee Action on Previous Inspection Findings

- a. (Closed) Unresolved Item (298/8414-01): Lack of apparent provisions for performance of Section XI of the ASME Code baseline inspection of replacement piping welds.

The NRC inspector reviewed Purchase Order (PO) No. 230682 dated September 5, 1984, to the Apparatus and Engineering Services Operation of General Electric Company for performing preservice and in-service Section XI of the ASME Code examinations. Items 2 and 3 of the PO pertained, respectively, to preservice examination of shop and field welds in the replacement piping. The NRC inspector additionally verified during review of Task Work Package 39F01-2, Revision 1, "Remove and Replace N2F Safe End and Thermal Liner," that requirements had been included for performing necessary weld surface conditioning to permit Section XI examinations to be made.

This item is considered closed.

- b. (Open) Open Item (298/8422-05): Golden tint on recirculation spool pieces and thermal or etching discoloration on a cross piece.

The NRC inspector visually examined replacement spool pieces which were being maintained in locked storage in the multi-purpose facility. The majority of the spool pieces were golden in color, with two pieces being seen which showed no coloration. A comparison review was made of contract requirements and vendor documentation for one spool exhibiting a golden coloration and one spool showing no coloration; i.e., Spool RL-A-9B, golden; Spool RL-B-11-S-1, no coloration. It was established from this review that there was one difference in processing for the two spools. The inside surfaces of Spool RL-A-9B had received a passivation treatment, whereas Spool RL-B-11-S-1, which had been ordered as a spare, had not been required by the NPPD contract to be passivated. The NRC inspector concluded from review of the passivation cycle that the golden coloration resulted from exposure of the material to the temperature range utilized in the passivation process. No deleterious aspects were noted with respect to either the coloration or the thermal cycle utilized in the passivation process.

The discoloration on the cross piece was not examined during this inspection. This item will therefore remain open pending component examination and determination of the nature of and reasons for the noted discoloration.

- c. (Closed) Violation (298/8326-03): Failure of Safety Review and Audit Board (SRAB) to review Minor Design Change (MDC) safety evaluations.

The NRC inspector discussed the corrective action for this violation with a licensee representative responsible for scheduling SRAB meeting agenda for MDCs and reviewed a computer printout of MDCs that had been formally reviewed in SRAB meetings during 1984. The NRC inspector found that a SRAB review process was in place for MDCs and that all MDCs approved in 1984 by the Station Operations Review Committee had either been reviewed by the SRAB or were on the agenda for review at a future SRAB meeting. All reviews appeared to have been accomplished in a timely manner. This item is considered closed.

- d. (Open) Violation (298/8326-04): Failure to follow administrative procedures in performing MDCs.

The NRC inspectors reviewed training records to verify that corrective action committed to by the licensee in the violation response letter NLS 8400026 to the NRC on January 5, 1984, was being carried out adequately.

Part of the corrective action was to give "refresher training to individuals responsible for design initiation and review of the governing procedures for design changes." The NRC inspectors noted that as of January 5, 1984, only site engineering personnel had received this training, although the letter stated that all such training was completed. Training records did indicate, however, that General Office Engineering personnel in Columbus, Nebraska, had received this training in March 1984.

The committed action to preclude recurrence was to provide training to new employees on the governing procedures for design initiation, change, and review. The NRC inspectors found that the licensee's records of training personnel transferred to site engineering did not appear to account for training all recent additions. Since this was found just prior to the exit interview, it was not determined if the committed training had been completed. Accordingly, this item remains open pending further review of training records.

The NRC inspector further noted that one of the persons for which there were no records to show performance of training was the design engineer for MDC 84-100 which is discussed elsewhere in this report as part of a violation (298/8501-02), "Failure to Follow Procedure in Minor Design Changes."

3. Piping Replacement Activities

The purpose of this inspection was to ascertain whether or not selected activities associated with replacement of recirculation, core spray and reactor water clean-up piping were being accomplished in conformance with licensee commitments. Subjects included in this inspection were receiving inspection, design changes and modifications, and nuclear welding.

- a. Receiving Inspection: The NRC inspector reviewed CNS Administrative Services Procedure No. 1.5, "Receiving," Revision 0. Three replacement piping spools (i.e., RL-A-9B, RL-B-11-S-1, RL-A-16) which were located in the multi-purpose facility storage area were examined for damage and material identity control. One safe end, RL-N-2-4, was also selected at this time for subsequent review. This item was tagged as being Heat No. D431701, but verification of identity marking could not be made as a result of the item being encased in packaging. Receiving inspection records for the four components were reviewed for verification of completeness and adequacy of criteria used for vendor documentation review. The NRC inspector then performed a detailed review of the technical and quality assurance requirements contained in NPPD Contract 83-41. Upon completion of this review, an assessment was made of vendor compliance for the four selected components.

Review of the vendor record package for the RL-N-2-4 recirculation discharge safe end showed that the material heat number was identified as D431701 on the certified material test report for the item. This number, as referenced above, was in agreement with the identity listed on the tag attached to the item. Similarly, the liquid penetrant examination record furnished for the item showed the same identity. The heat treatment record contained in the package showed, however, that a 2800mm length of material from Heat No. D432804 had been solution annealed. The ultrasonic examination records for circumferential direction shear wave and axial direction longitudinal wave examination of the material also all showed Heat No. D432804 as being applicable. Mill Work No. TTD9406 was noted to be listed on both the certified material test report and the ultrasonic examination records, despite the conflict in reported material heat number. Both the Chicaco Bridge & Iron Stores Receiving Inspection Report dated December 1, 1984, and the CNS Receipt Inspection Report dated December 18, 1984, identified the safe end as being Heat No. D431701. As a result of these anomalies, the NRC inspector reviewed the documentation for recirculation discharge safe end RL-N-2-5. This record package showed the same identity anomalies as RL-N-2-4. The failure of CNS to detect these conditions during documentation review for the items is a violation (298/8501-01).

Review of vendor records for the three selected pipe spools showed compliance with the technical and quality assurance requirements of Contract 83-41. During this review, the NRC inspector noted that technical requirements such as, (1) material grain size, and (2) ASTM A262 Practice A verification testing for lack of susceptibility to intergranular stress corrosion cracking, were required by Contract 83-41 to be performed only by the material manufacturer. The fabricator, Ishikawajima-Harima Heavy Industries (IHI), had, however, been required to solution anneal shop welds. The reported data for those material items which were subsequently incorporated by IHI into subassemblies, would therefore not necessarily be fully representative of the as-furnished condition, owing to the possibility of grain coarsening during the post-weld solution anneal heat treatment cycle. The Contract 83-41 requirements were not ascertained, however, to conflict with existing regulatory or material specification requirements.

- b. Design Changes and Modifications: This activity was performed as part of the inspection which is documented in paragraph 5 of this report. The NRC inspector reviewed the applicable MDC, 84-150, which was dated as being originated by the NPPD General Office on August 16, 1984. The content and processing was found to be consistent with the requirements of NPPD General Office Procedure NEP-10 and, with the exception of copy distribution, to comply with the requirements

of the current NPPD procedure for design change control, Procedure No. 3.4, "Station Design Changes," Revision 0, dated September 26, 1984.

Within this area of the inspection, no violations or deviations were identified.

- c. Nuclear Welding: The NRC inspector reviewed NPPD Contract 84-2, "Removal and Installation of IGSCC-Related and Extraction Steam Piping Systems," through Amendment 2, approved December 3, 1984, with respect to the welding requirements imposed on Chicago Bridge and Iron Company. Welding procedure specifications (WPSs) and supporting procedure qualification records which were applicable to recirculation discharge safe end and thermal sleeve replacement activities, were reviewed for evidence of NPPD approval and compliance with ASME Section IX Code and contract requirements. Specific WPSs reviewed included WPS GTAW ER 316L(H)/43700, Revision 2; WPS GR 2N, Revision 0; WPS GTAW-ER 82(A)/43700, Revision 3; WPS GTAW-ER316L(HI)/43700, Revision 2; WPS GTAW-ER82(H)/43700, Revision 2; and WPS GTAW-ER82(CRC)/43700, Revision 2.

Within this area of the inspection, no violations or deviations were identified.

4. Requalification Training

The objective of this portion of the inspection was to verify that the requalification training program is conducted in accordance with regulatory requirements. The NRC inspector reviewed the latest requalification examinations for all personnel holding NRC operator's licenses. The NRC inspector determined that the grading of the examinations was consistent with the accompanying answer key. All personnel who had not passed the requalification exam were removed from shift, placed in an accelerated training program, and successfully retested in accordance with the licensee's requalification training plan.

The NRC inspector reviewed the licensee's requalification training schedule, determined that the licensee had properly identified deficient areas based on the latest requalification exam, and determined that the identified deficient areas were properly covered in the lecture schedule. All licensed personnel are required to attend lectures based on areas in which their last requalification exam demonstrated that they were deficient. All licensed personnel had been notified of the lectures which they were required to attend and the training department was maintaining a record of attendance at all lectures. The NRC inspector determined that four licensed operators had not attended required lectures which had been completed, and were not scheduled to be given again. The licensee stated

that the lectures would be rescheduled and that all required personnel would attend prior to the next annual requalification exam.

The NRC inspector reviewed two lesson plans and attended one requalification lecture. The lecture and lesson plans were determined to be accurate in technical content of presented information.

No violations or deviations were identified in this area of the inspection.

5. Design Changes and Modifications

The purpose of this part of the inspection was to verify that design changes and modifications are in conformance with the requirements of the Technical Specifications and 10 CFR Part 50.59.

The NRC inspectors reviewed licensee procedure 3.4, "Station Design Changes," Revision 0, approved on September 26, 1984, which superceded the following two licensee procedures: CNS Administrative Procedure 1.13, "Station Design Changes," and Nebraska Public Power District Procedure NEP-10, "Design Control." Licensee procedure 3.4 requirements were found to be essentially the same as those found in the superceded procedures, with a few exceptions designed to eliminate any conflict with 10 CFR Part 50.59 requirements. The NRC inspectors thus concluded that MDCs begun under a previous procedure and completed under the new procedure were not subject to any significant changes in requirements for their initiation, review and approval, and implementation. Licensee procedure 3.4 appeared to adequately implement 10 CFR Part 50.59 and CNS Technical Specification requirements for design changes.

The NRC inspector reviewed several MDCs noted below to verify licensee compliance with the requirements of the applicable design change procedures discussed above. Those chosen had been initiated and/or completed since the identification of the violation (298/8326-04) "Failure to Follow Procedure in Minor Design Changes" in October 1983, and the initiation of corrective action by the licensee (discussed in paragraph 2 of this report).

The following completed MDCs appeared to comply with requirements:

- 84-048 Replacement of Unqualified Terminal Blocks
- 84-107 Replacement of turbine bypass valve supply trap station, MS-AOV-195AV

The following uncompleted MDCs also appeared to comply with requirements:

- 84-075 Soft Seat Check Valves (RHR and HPC1 systems)

84-094 Replacement of RWCU-V-158 and 338 (Radwaste System)

84-150 IGSCC Piping Replacement (see paragraph 3.b)

The NRC inspectors additionally reviewed completed MDCs 83-30, "Agastat Relay Upgrade," and 84-100, "Monorail Hoist Control Cable Removable Extension," and noted the following:

During the implementation of MDC 83-30, which involved the replacement of various models of existing Agastat relays with those which were environmentally qualified, a technician had noted in writing in the margin on pages 14 and 16 of the implementation procedure that GE Drawings 791E264 (RCIC system) and 791E271 (HPCI system) did not reflect the actual, apparently correct, wiring configuration for four model 7012 Agastat relays that were part of the MDC. In all four cases the drawings showed that the auxiliary switch contact should be connected to the normally closed (NC) position instead of the as installed normally open (NO) position. Visual inspection of the two relays for the HPCI system (23A-K33 and 23A-K43) showed that the new relays were installed as the original relays had been. The NRC inspector surmised that the other two RCIC system relays (13A-K12 and 13A-K32) were also installed in a similar manner.

The NRC inspector noted that although all of the Agastat relay replacement and testing was completed by April, 1984, the "Design Change Completion Report" (Attachment "D" to CNS Engineering Procedure 3.4, "Station Design Changes") was not submitted and approved until October 1984. This report along with all supporting MDC 83-30 documentation had been individually reviewed by all station operations review committee members; however, the noted drawing errors have yet to be corrected.

Review of acceptance criteria for the replacement relays showed that each relay was to be bench tested a minimum of three times; however, upon inspection of the approximately 26 licensee "relay test reports", the NRC inspector found only one report with bench test data recorded in the appropriate spaces on the back side of the form. All others had no test data recorded. The Design Change Completion Report stated that all required bench testing was done. A licensee representative stated that the subsequent surveillance testing of the relays after installation demonstrated their ability to perform as designed. The NRC inspector was unable to review this surveillance test data due to limited available onsite inspection time.

MDC 84-100 involved the manufacture and installation of a removable extension cable to the Monorail Hoist Control Box to allow operation of the hoist by an operator stationed approximately 35 feet lower than normal near the reactor pressure vessel flange, which would facilitate certain specified maintenance evaluations. The MDC specified no drawing changes,

apparently because the cable was removable. The NRC inspector disagreed. Although the cable was removable it was not temporary; the licensee apparently intends to use it whenever it might facilitate a maintenance evolution in future outages.

This failure to make a drawing change and the uncorrected drawing errors identified under the discussion of MDC 83-30 were identified as a single violation (298/8501-02).

The NRC inspector noted that the quality of work implementation instructions for design procedures varied greatly and concluded that review of MDCs by the Station Operations Review Committee appeared to be weak in this area.

6. Exit Interview

An exit interview was conducted on January 11, 1985, at the CNS site with those personnel denoted in paragraph 1 of this report. The NRC inspectors summarized the scope and findings of the inspection. During the meeting, licensee personnel indicated that a total of six safe ends had been found to show the conditions described in paragraph 3 of this report.