

APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report No. 50-298/92-13

Operating License No. DPR-46

Licensee: Nebraska Public Power District (NPPD)
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Columbus, Nebraska 68602-0499

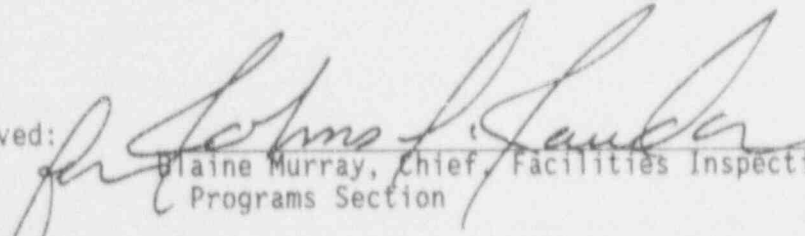
Facility Name: Cooper Nuclear Station (CNS)

Inspection At: CNS Site, Brownville, Nemaha County, Nebraska

Inspection Conducted: July 20-24, 1992

Inspector: R. E. Baer, Senior Reactor Health Physicist

Approved:


Blaine Murray, Chief, Facilities Inspection
Programs Section

8/12/92
Date

Inspection Summary

Inspection Conducted July 20-24, 1992 (Report No. 50-298/92-13)

Areas Inspected: Routine, announced inspection of the licensee's radiation protection program including organization and management controls; training and qualifications; external exposure control; control of radioactive materials and contamination, surveys, and monitoring; and facilities and equipment.

Results: Within the areas inspected, no violations or deviations were identified. The following is a summary of the inspection findings:

- o The radiological department staff has remained stable.
- o A well trained and qualified radiological staff had been maintained.
- o Excellent audits were performed.
- o The licensee's self-assessment in the radiological controls area was very good. Communication among work groups and between the radiological department and other departments was excellent.
- o Training instructors were well qualified.

- o A good program was maintained for controlling radiation exposures.
- o Improvements were noted in the areas of control of radioactive materials and contamination, surveys, and monitoring.
- o Good facilities and equipment were provided to conduct ALARA briefings.

DETAILS

1. PERSONS CONTACTED

NPPD

- *G. R. Horn, Nuclear Power Group Manager
- *R. L. Beilke, Radiological Support Supervisor
- *S. Bray, Operations Quality Assurance Supervisor
- *R. Brungardt, Operations Manager
- *T. J. Chard, Health Physics Supervisor
- *M. A. Dean, Nuclear Licensing and Safety Supervisor
- *J. Dunn, Records Specialist
- *J. R. Flaherty, Engineering Manager
- *R. L. Gardner, Plant Manager
- *C. Goebiel, Assistant Training Manager
- *E. M. Mace, Senior Manager Site Support
- *J. M. Meacham, Site Manager
- *C. R. Moeller, Technical Staff Supervisor
- *J. V. Sayer, Radiological Manager
- *G. E. Smith, Quality Assurance Manager

NRC

- *R. A. Kopriva, Senior Resident Inspector
- *M. X. Franovich, Reactor Inspector
- *D. P. Loveless, Resident Inspector, River Bend Station
- *T. O. McKernon, Reactor Inspector

*Denotes those individuals present at the exit meeting conducted on July 24, 1992.

The inspector also interviewed several other licensee and contractor employees, including health physics technicians and clerks, training, maintenance, and quality assurance personnel.

2. FOLLOWUP ON PREVIOUS INSPECTION FINDINGS

(Closed) Open Item (298/9039-01): Review Operating Procedures - Inappropriate Reference to Quality Control requirements - This item was previously discussed in NRC Inspection Report 50-298/90-39 and involved operating procedures that inappropriately referenced quality control requirements when it was intended that a second person verify a completed task. The licensee reviewed all chemistry and radioactive waste packaging and shipment procedures, and as a result, Procedure 2.5.4.1, "Solid Wet Waste Packaging, Storage, and Transfer System," Procedure 2.5.3.1, "Radioactive Waste Shipment for Burial," Procedure 9.5.3.2, "Radioactive Material Shipment," Procedure 9.5.3.9, "Solidifying and Packaging Contaminated Liquids for Burial," and CNS Form 607 had been revised.

(Closed) Violation (298/9125-01): Failure to Provide Personnel Dosimetry - This item was previously discussed in NRC Inspection Report 50-298/91-25 and involved the lack of placement for personnel monitoring equipment in the area of the body subject to the highest radiation field. The licensee revised Operating Procedure 9.1.1.3, "Personnel Dosimetry Program," to include instructions for personnel on the reason and purpose of monitoring instrumentation. The special work permit now designates the area of the body where personnel monitoring devices are to be worn and training lesson plans for contract health physics technicians had been revised to include dosimetry placement.

(Closed) Violation (298/9125-02): Failure to Specify Dosimetry on Special Work Permits - This item was previously discussed in NRC Inspection Report 50-298/91-25 and involved special work permits that did not specify the need for multiple dosimetry even though multiple dosimetry had been determined as necessary and was issued to monitor personnel radiation exposures. The licensee revised Operating Procedure 9.1.1.4, special work permit and the special work form to provide a better format and the ability to update radiological conditions and job specific requirements easily.

3. ORGANIZATION, STAFFING, AND MANAGEMENT CONTROLS (83723, 83750)

The inspector reviewed the organization, staffing, and management controls to determine compliance with Technical Specifications (TSs) 6.1.2 and 6.1.3; and agreement with Chapter XIII and Appendix D to the Updated Safety Analysis Report (USAR).

There were no changes in the organization and management controls within the radiological department since the last inspection. The licensee added two health physics technicians to their staff. The radiological department presently has an authorized staff of 43 of which 9 positions are allotted to chemistry. All positions are filled. The licensee does not routinely supplement its staff with contract personnel during nonoutage periods; however, three contract health physics technicians were onsite, and five more were expected. These contract individuals are scheduled to remain while procedures are updated to include the new 10 CFR Part 20 requirements. The licensee will officially implement the new health physics program in January 1994 and plans to run the new and old programs concurrently during 1993 to determine weaknesses and correct them prior to formal implementation.

The licensee assigned one health physics technician to the quality assurance department and a second technician to the training department. These are temporary assignments for approximately 1 year.

The inspector reviewed the quality assurance audits and surveillance conducted by the licensee on the radiation protection program. The latest audit, QAD-900 Audit 91-30, "Quality Assurance Plan, Chemistry, Health Physics and Environmental Monitoring," was conducted during the period November 6, 1991, through February 6, 1992. The audit was well defined with excellent checklists to ensure that all aspects of the radiation protection program were

reviewed. The inspector also reviewed 20 surveillance that had been conducted between February 3 and July 10, 1992. Audit and surveillance findings, observations, and recommendations had been corrected in a timely manner.

The licensee performed a CNS radiation protection program self-assessment during the period from May 15 through July 1992. This assessment was performed by members of the radiological staff with assistance from a technically qualified individual. The assessment was limited in scope to the areas of source term reduction, work control, communications, radiation protection during outages, ALARA, and radiation protection training. The self-assessment appeared to be well organized and several recommendations for program improvements had been identified.

The inspector noted communications among work groups during nonoutage conditions were very good. For example, the special work permit form was identified as a contributing factor to a violation. The licensee requested and accepted feedback from other groups (e.g., maintenance and operations) in order to make the special work permit form more effective.

No violations or deviations were identified.

Conclusion

The radiological department staff remained stable, and two health physics technicians had been added to the staff. Qualified personnel were assigned to assist in quality assurance and training departments audits. Audits performed were excellent. The licensee's self-assessment was very good. Communication among departments during normal operations is excellent.

4. TRAINING AND QUALIFICATIONS (83723, 83750)

The inspector reviewed the training and qualification of health physics personnel to determine compliance with TS 6.1.4 and 10 CFR Part 19.12.

The inspector reviewed the general orientation training provided to all personnel prior to entering radiologically controlled areas. Training Program Description-(TPD)0404, "unescorted access" was given to all personnel. In addition, TPD-0419, "Radiological Control Area Access," was given only to radiation workers. The inspector noted that the practical factors session during which personnel were required to read and understand a special work permit, dressout properly with protective clothing, and remove the protective clothing was required during requalification testing. The licensee stated that this would ensure correct dressing and undressing and would reveal any bad habits so that they could be corrected.

The inspector reviewed training activities referenced in CNS Procedure 0.17, "Selection and Training of Station Personnel," Revision 143, October 17, 1991. This procedure provides for the selection and qualification of personnel by specific position descriptions including craft contractor personnel. The inspector noted that seven health physics technicians applied to receive the

certification examination administered by the National Registry of Radiation Protection Technologists (NRRPT). The licensee provided incentives to support this professional development.

The health physics technician assigned to the training department completed the basic instructor training program as outlined in Procedure NPT-08, "Instructor Qualifications," Revision 8, April 9, 1992, and was certified to instruct health physics courses. The individual was currently providing instruction in ALARA principals, Procedure G.32.5, ALARA training program, Revision 2, March 26, 1992, to management, operations, and the maintenance department.

No violations or deviations were identified.

CONCLUSION

A well trained and qualified radiological staff had been maintained. Practical factors training was being provided annually. Training instructors were well qualified.

5. EXTERNAL OCCUPATIONAL EXPOSURE CONTROL (83524, 83750)

The inspector reviewed the licensee's external occupational exposure control and personnel dosimetry program to determine compliance with Technical Specification 6.3.4 and 10 CFR Parts 19.12, 20.101, 20.105, 20.202, and 20.203.

The inspector reviewed survey results for selected areas and performed independent confirmatory radiation measurements. The inspector reviewed posting and controls in the radiologically controlled area and discussed the licensee's hot spot tracking program. While the licensee did not have a formal procedure to track hot spots, hot spots were noted on survey forms and were immediately removed or reduced by flushing or other means.

The inspector discussed the thermoluminescent dosimeters (TLDs) used to determine the radiation exposure of personnel. The licensee uses a vendor to provide personnel monitoring devices. The TLDs were processed monthly. The results from the vendor were normally received within 10 working days. Special processing of badges takes 1 to 2 days with the vendor telephoning the results immediately after processing. The present TLD is a three chip TLD which will not provide the information required for the new 10 CFR Part 20 reporting requirements. The licensee was working with the vendor to provide a four chip badge.

The licensee's quality assurance performance testing routinely involves approximately 21 TLDs that are exposed to beta and/or gamma radiation using thallium-204 and cesium-137 radioactive sources. The licensee verified that the results were within an acceptance criteria of ± 25 percent.

The licensee receives 1000 badges each month and assigns approximately 800 to personnel. If additional badges are required, they can be obtained overnight. The inspector discussed the large number of badges assigned each month and how the licensee ensured that the dosimetry group persons were informed of personnel who terminated employment. The licensee stated that this had been a problem from time to time and that they would review the matter.

The inspector noted that the licensee had established a personnel contamination events review board. The board was composed of members from the engineering, operations, training, and health physics departments. The board reviews all personnel contamination forms to determine that the corrective actions taken are proper and sufficient to prevent recurrence. The licensee had progressively reduced the number of personnel contamination events. In 1989, 1990 and 1991 they had 390, 280, and 170 events. In the first 7 months of 1992, 35 personnel contamination events occurred.

No violations or deviations were identified

Conclusion

The licensee had implemented a good program for controlling radiation exposures. The licensee is presently upgrading the dosimetry program.

6. CONTROL OF RADIOACTIVE MATERIAL AND CONTAMINATION, SURVEYS, AND MONITORING (83526, 83750)

The inspector reviewed the licensee's for control of radioactive material and contamination, surveys, and monitoring to determine compliance with TS 6.3.4 and 10 CFR Parts 20.201, 20.203, 20.207, 20.301, and 20.401.

The licensee retained six decontamination personnel to help maintain areas clean. The licensee made significant reductions on the total amount of contaminated areas within the radiologically controlled area. At the time of this inspection a total of 5.12 percent of the total area was contaminated. This compares 7.7 percent, at the beginning of the year.

During tours of the radiologically controlled area, the inspector noted that the licensee used "dose rate signs." These signs indicated radiation dose rates in selected areas. Health physics technicians updated the signs with current dose rates when radiation surveys were performed. In addition, there were posted maps at the entrance to areas in order to designate current radiological conditions.

The licensee stated that the portal monitors at the security building were scheduled to be updated. The update will provide added sensitivity to these monitors. The inspector discussed the location of the monitors in the security building. They presently only monitor personnel prior to exiting the protected area. The licensee stated they plan to review the placement of these monitors after the radiological support system is operational. Dosimeters located in the security building will be removed and personnel will

use digital alarming dosimeters when they enter the radiologically controlled area.

The licensee source checks portable survey meters daily on each scale and prior to use except for "tour/entry" instruments that are distributed throughout the plant. These instruments are source checked weekly. On July 23, 1992, the inspector found a portable survey meter in the augmented radwaste building truckbay on the floor that had been source checked on July 22, 1992. It was later determined that the instrument had been placed in the "tour/entry" classification on July 22. The inspector discussed with licensee representatives that to prevent a "tour/entry" survey meter from being used to document a radiation survey, some type of identification should be placed on the instrument or source check record attached to the instrument. The licensee acknowledged the inspectors concern and stated that they would review this matter.

No violations or deviations were identified.

Conclusion

Improvements were noted in the areas of control of radioactive materials and contamination, surveys, and monitoring. This was evidenced by the use of dose rate signs and identification of radiation and contamination levels within the plant. Additional improvements are being considered.

7. FACILITIES AND EQUIPMENT (83750)

The inspector reviewed the licensee's facilities and equipment provided to implement the radiation protection program for agreement with the commitments contained in the USAR.

The inspector determined that the licensee used the technical support center area as an ALARA briefing area. This is considered to be an improvement over the previous method of holding these briefings in the ALARA coordinators cubicle. The "surrogate tour," a video disc program which identified each room and its components in the facility, was operational. Several work groups, including operations and maintenance, had been using the video disc program tour equipment to improve work planning and reduce radiation exposure to personnel.

The licensee received computer terminals which are part of the "Radiological Support System" a computer-based electronic dosimetry and access control system. Fifty of the alarming dosimeters had arrived, and several hundred were still on order. The licensee had also received two "drawer smear counters" which were positioned at the access control point and used to count smears taken from equipment and supplies being removed from the radiologically controlled area.

No violations or deviations were identified.

Conclusion

The licensee provided improved facilities and equipment to conduct ALARA briefings.

8. EXIT INTERVIEW

The inspector met with the resident inspector and the licensee's representatives denoted in paragraph 1 at the conclusion of the inspection on July 21, 1992, and summarized the scope and findings of the inspection as presented in this report. The licensee did not identify as proprietary any of the material provided to, or reviewed by, the inspector during the inspection.