

APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Inspection Report: 50-298/94-05

License: DPR-46

Licensee: Nebraska Public Power District
P.O. Box 499
Columbus, Nebraska

Facility Name: Cooper Nuclear Station

Inspection At: Brownville, Nebraska

Inspection Conducted: January 31 through February 4, 1994

Inspector: Anthony D. Gaines, Radiation Specialist
Facilities Inspection Programs Branch

Approved:

B. Murray
B. Murray, Chief, Facilities Inspection
Programs Branch

2/28/94
Date

Inspection Summary

Areas Inspected: Routine, announced inspection of the radiation protection program, including audits and appraisals, program changes, training and qualifications of personnel, and the program to maintain occupational exposures as low as reasonably achievable (ALARA).

Results:

- Audits and surveillances were performed by technically qualified personnel and responses to audit findings were timely and technically appropriate (Section 1.1).
- The move to a Condition Report system to track and trend problems in the radiation protection area was good (Section 1.1).
- The radiation protection department's initiative to increase the number of deficiency reports written in preparation for the Condition Report system was very good (Section 1.1).
- There were no major changes in organization or personnel and the radiation protection department continues to have a very stable work force (Section 1.2).

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- The Radiological Data Management System, when operational, will be a very good addition to the radiation protection program (Section 1.2).
- Advanced radiation worker training and systems training was very good (Section 1.3).
- The rotational assignments of radiation protection personnel to quality assurance and training were very good (Section 1.3).
- Management showed good support for professional registration (Section 1.3).
- ALARA goals are set, tracked, and reviewed periodically, and the plant was slightly under their person-rem goal for 1993 (Section 1.4).
- ALARA job packages were good and contained the required reviews (Section 1.4).
- The adoption of a cobalt reduction program was under review and would be a very good ALARA initiative (Section 1.4).
- The number of ALARA suggestions had declined and may indicate decreased worker involvement in the ALARA program (Section 1.4).

Attachment:

- Attachment - Persons Contacted and Exit Meeting

DETAILS

1 OCCUPATIONAL EXPOSURE (83750)

The licensee's program was inspected to determine compliance with Technical Specifications 6.1.2, 6.1.3, and 6.1.4 and the requirements of 10 CFR Part 20, and agreement with the commitments of Chapter XIII of the Final Safety Analysis Report.

1.1 Audits and Appraisals

NRC Inspection Report 50-298/93-10 indicated that the NRC inspector had reviewed a draft report of the licensee's audit of the radiation protection program performed November 2, 1992, through January 8, 1993, but did not evaluate the radiation protection department's responses to the findings, because the report had not been issued. During this inspection, the responses to the audit findings were reviewed and were found to be appropriate and timely.

The inspector reviewed Audit 93-30, QAP-900 Health Physics, performed October 11, 1993, through November 15, 1993. The inspector noted that a technically qualified individual from another reactor facility and a radiation protection technician on rotational assignment to the quality assurance department were on the audit team. The audit was comprehensive and identified one finding and had one recommendation. Radiation protection department responses to the finding and recommendation were timely and appropriate.

The inspector also reviewed quality assurance surveillances and noted that they were performed in sufficient number and covered a wide range of activities in the radiation protection area. The surveillances reviewed were performed by qualified individuals in the quality assurance department and represented a good overview of the daily radiation protection performance.

The inspector reviewed and discussed with the licensee's staff changes in the audit organization and the audit program. The audit organization was reorganized, and six individuals were moved from corporate headquarters to the plant. A new section called quality assurance assessment was formed to be able to trend problems and to review special problem areas when they are assigned. The inspector noted that the audit frequency of the radiation protection programs had been changed from 12 months to 24 months. This change received an appropriate 10 CFR 50.59 review and was approved on September 23, 1993, by the licensee's Station Operations Review Committee.

The inspector reviewed the licensee's radiological reporting system. There were three Radiological Safety Incident Reports written in 1993. Guidance as to the types of events to be reported were set forth by procedure. The events documented in the reports were properly investigated. Corrective actions were developed and implemented based on the findings of the investigation. There were no provisions for trending the causes for the events. The inspector

reviewed selected Deficiency Reports written in 1993 and 1994 that pertained to the radiation protection area. Corrective actions for the deficiencies were appropriate and timely.

The inspector was briefed on the upcoming changes to incorporate Radiological Safety Incident Reports and Deficiency Reports into a station Condition Report system. The implementation of the Condition Report system was considered an improvement, because the radiation protection items would have a high priority and would be trended. The initiative made by the radiation protection department to have their staff to begin writing more Deficiency Reports in preparation for the Condition Report system was a very good one.

1.2 Changes

There were no major changes in the radiation protection department organization or personnel. On December 6, 1993, the Radiological Manager (Radiation Protection Manager) was placed in a 3-month temporary assignment as an Assistant to the Plant Manager. The radiation protection department staff was then appropriately shifted to cover this absence, with the Radiological Support Supervisor performing the duties of the Radiological Manager. The individual assigned as the temporary Radiation Protection Manager satisfied the qualification requirements in Regulatory Guide 1.8.

The radiation protection department had a very stable work force with only a turnover of a dosimetry clerk during 1993.

The inspector discussed the acquisition of new equipment with the radiation protection department staff. The staff indicated that since the last NRC inspection of this area they had acquired a whole-body counter, a portable gamma spectroscopy system, and were going to implement their Radiological Data Management System. The Radiological Data Management System will be a very good addition to the radiation protection program. The Radiological Data Management System computer system will help handle functions like access control, historical dose records, station work permits/radiological controlled area work permits, and ALARA. When the Radiological Data Management System comes online, there will be standing radiological controlled area work permits to enter the radiological controlled area, and all persons entering the radiological controlled area will be issued electronic alarming dosimeters. The licensee's staff indicated that they were close to implementing the Radiological Data Management System and that the implementation may occur near the end of the first quarter.

1.3 Training and Qualifications of Personnel

The radiation protection department participated in a rotational program that involved the exchange of a radiation protection technician for a specialist in the quality assurance department and an instructor from the training department. Representatives from the radiation protection, quality assurance, and training departments were interviewed and stated that they considered the program was beneficial to all departments. Another good rotational program

the radiation protection department participated in was the swapping of jobs for one week, between radiation protection technicians and individuals in other departments.

The inspector reviewed lesson plans, course feedback forms, and had discussions with the licensee's staff on the advanced radiation worker training course. The course was given to the instrument and control department as a pilot program. The licensee had internal discussions on extending the training to other departments.

The inspector reviewed lesson plans, course feedback forms, and had discussions with the licensee's staff on the systems training provided the radiation protection technicians. The training was very good. The inspector discussed with the licensee's staff how this training would be incorporated into their training program. The licensee discussed incorporating the systems training into continuing training. The inspector noted that incorporating the system training into continuing training would be good for the staff.

The inspector noted that managers and supervisors had received professional development training at the proper frequency. Also, radiation workers had been appropriately trained on the changes in 10 CFR Part 20.

The licensee has ten individuals registered with the National Registry of Radiation Protection Technologists, nine are in the radiation protection department and one in the training department. The licensee supports National Registry of Radiation Protection Technologists registration by providing study materials, a contractor to give a one week preparation course, and paying application fees. The licensee stated that they have seven individuals preparing to take the exam this year.

1.4 Maintaining Occupational Exposures ALARA

There had been no changes in the ALARA program's organization, aside from the shift in radiation protection staff to cover temporary assignments. This shift left the ALARA section short one person. Since 1994 was a nonrefueling outage year, the inspector was informed that the staffing was sufficient and, if help was needed an individual would be assigned to the ALARA area. The licensee had supplemented the ALARA staff with three individuals for the 1993 refueling outage.

The inspector randomly selected a number of ALARA job packages to review. The packages were good quality and contained the required pre-job, in-progress, and post-job ALARA reviews. ALARA personnel used appropriate checklists to ensure important ALARA items were not missed, including a new respiratory evaluation checklist.

At the beginning of 1993, an ALARA goal of 394 person-rem was established for the year. The inspector noted that the goal was tracked and reviewed periodically throughout the year. The licensee expended approximately 390 person-rem for 1993, which was 4 person-rem under their goal for 1993.

During the outage in 1993, the licensee used mock-ups, videocameras, shielding, and hydrolazing to reduce person-rem. The licensee had such a success using videocameras for job coverage that they have submitted an engineering work request for more videocameras for the next outage. The licensee also stated that they have had good results with videotaping ALARA pre-job briefings. The licensee noted that there seemed to be more participation in the briefings, and the videos were a good briefing tool when other individuals needed to be added to the job later.

The inspector asked the licensee if they had a source term reduction program. The licensee stated that they did not have a formal source term reduction program. The inspector noted that when the licensee replaces control rod blades, rollers, and pins, that they are replaced with low stellite ones. The licensee stated that they have studied a cobalt reduction program at another facility, and the development of a cobalt reduction program at Cooper Nuclear Station was under review. The inspector noted that the adoption of a cobalt reduction program for the plant would be a very good ALARA initiative.

The inspector reviewed ALARA committee minutes for 1993. Meetings were held at the proper frequency and had appropriate attendance. The inspector noted that the ALARA committee reviewed and discussed items such as outage work greater than five person-rem, temporary shielding, status of ALARA suggestions, and design changes.

The inspector reviewed the ALARA suggestion program. The program had only 5 suggestions in 1993, which was a decrease from previous years that averaged approximately 13 to 15. The suggestions were properly reviewed and answered in a timely manner. The inspector discussed with the licensee that the lower number of suggestions may indicate a decrease in worker involvement in the ALARA program.

The inspector noted that ALARA training had been provided to each department in late 1992 and early 1993.

1.5 Conclusions

Audits of the radiation protection program were good. Responses to audit findings were timely and technically appropriate. Audits were performed by technically qualified personnel. Surveillances were good and performed in sufficient numbers to adequately assess the radiation protection program. The move to a Condition Report system to track and trend problems in the radiation protection area was good. The radiation protection department's initiative to increase the number of deficiency reports written in preparation for the Condition Report system was very good.

There were no major changes in organization or personnel in the radiation protection department. The radiation protection department continues to have a very stable work force with only a dosimetry clerk turnover in 1993. The Radiological Data Management System, when operational, will be a very good addition to the radiation protection program.

Advanced radiation worker training and systems training provided the radiation protection technicians was very good. The rotational assignments of radiation protection personnel to quality assurance and training were very good. Management showed good support for professional registration.

There were no major changes in the ALARA program's organization. ALARA goals were set, tracked, and reviewed periodically. The plant was slightly under their person-rem goal for 1993. ALARA job packages were good and contained the required reviews. The adoption of a cobalt reduction program was under review and would be a very good ALARA initiative. The number of ALARA suggestions has declined and may indicate decreased worker involvement in the ALARA program.

ATTACHMENT

1 PERSONS CONTACTED

1.1 Licensee Personnel

- *R. L. Beilke, Acting Radiological Manager
- *L. Bray, Regulatory Compliance Specialist
- *R. Brungardt, Operations Manager
- *T. J. Chard, Health Physics Supervisor
- *M. A. Dean, Nuclear Licensing and Safety Supervisor
- *J. W. Dutton, Nuclear Training Manager
- *R. Gardner, Plant Manager
- *B. L. Hall, Acting Radiological Support Supervisor
- *H. T. Hitch, Site Services Manager
- *G. Horn, Vice President Nuclear
- *J. E. Lynch, Engineering Manager
- *E. M. Mace, Senior Manager Site Support
- *J. M. Meacham, Senior Division Manager of Safety Assessment
- *C. R. Moeller, Technical Staff Manager
- D. P. Oshlo, Acting Health Physicist
- *D. R. Robinson, Quality Assessment Manager
- *J. V. Sayer, Technical Assistant to the Plant Manager
- *G. E. Smith, Quality Assurance Operations Manager
- *R. L. Wenzl, Nuclear Engineering Department Site Manager
- J. J. Whisler, Acting ALARA Coordinator
- *V. L. Wolstenholm, Division Manager Quality Assurance

1.2 NRC Personnel

- *R. Kopriva, Senior Resident Inspector

*Denotes personnel that attended the exit meeting. In addition to the personnel listed, the inspector contacted other personnel during this inspection period.

2 EXIT MEETING

An exit meeting was conducted on February 4, 1994. During this meeting, the inspector reviewed the scope and findings of the report. The licensee did not identify as proprietary, any information provided to, or reviewed by the inspector.