APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-298/87-29 Operating License: DRP-46

Docket: 50-298

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

Facility Name: Cooper Nuclear Station (CNS)

Inspection At: CNS Site, Brownville Nebraska

Inspection Conducted: December 7-10, 1987

Inspector: for R. E. Baer, Radiation Specialist, Facilities Radiological Protection Section — Date 12/29/87

Approved: for B. Murray, Chief, Facilities Radiological Protection Section — Date 12/29/87

Inspection Summary

Inspection Conducted December 7-10, 1987 (Report 50-298/87-29)

Areas Inspected: Routine, unannounced inspection of licensee's radiation protection program including external occupational exposure control and personal dosimetry; internal exposure control and assessment; control of radioactive materials, contamination, surveys, and monitoring; and radiation protection facilities and equipment.

Results: Within the areas inspected, no violations or deviations were identified.

DETAILS

1. Persons Contacted

NPPD

*G. R. Horn, Division Manager, Nuclear Operations
R. L. Beilke, Radiological Support Supervisor
*L. E. Bray, Regulatory Compliance Specialist
T. Carson, Lead Health Physics Technician
*T. J. Chard, Health Physics Supervisor
B. Hall, Health Physicist
J. H. Kuttler, Health Physics Specialist
C. H. Putnam Jr., Quality Assurance Specialist
E. M. Rotkvic, Training Instructor
*J. V. Sayer, Radiological Manager
*G. E. Smith, Quality Assurance Manager

Other Personnel

*W. R. Bennett, Senior Resident Inspector, NRC
*E. A. Plettner, Resident Inspector, NRC

*Denotes those present during the exit interview on December 10, 1987.

The NRC inspector also interviewed several other licensee employees, including health physics, maintenance, operations, and administrative personnel.

2. Licensee Action on Previous Inspection Findings

(Closed) Violation (298/8619-01): Failure to Perform Adequate Surveys - This item was identified in NRC Inspection Report 50-298/86-19 and involved the lack of adequate radiological surveys before shipping equipment to offsite facilities. The NRC inspector reviewed the licensee's response and corrective actions to the violation. The licensee had changed Procedure 9.2.4, "Surveying Material for Release Off-site," to address the timeliness of surveys before the release of equipment and materials.

(Closed) Violation (298/8619-02): Failure to Identify Shipment of Radioactive Materials - This item was identified in NRC Inspection Report 50-298/86-19 and involved the lack of labelling or marking a radioactive container. The NRC inspector reviewed the licensee's response and corrective actions to the violation. The licensee had changed Procedure 9.2.4, "Surveying Material for Release Off-site," to address the timeliness of surveys and identifying equipment or material before release.

(Closed) Violation (298/8619-03): Unauthorized Transfer of Licensed Materials - This item was identified in NRC Inspection Report 50-298/86-19

and involved transfer of equipment containing radioactive material to a vendor who was not authorized to receive the material. The NRC inspector reviewed the licensee's response and corrective actions to the violation. The licensee had changed Procedure 9.2.4, "Surveying Material for Release Off-site," to provide instructions regarding the control of material surveyed for unrestricted release to prevent radioactive materials from being shipped to unauthorized receivers.

(Closed) Open Item (298/8723-03): Quality Assurance (QA) Program for Transportation Activities - This item was identified in NRC Inspection Report 50-298/87-23 and involved the expiration of the QA Program. The licensee's QA Program for radioactive material packages was renewed by the Office of Nuclear Material Safety and Safeguards.

(Open) Open Item (298/8232-02): Beta Radiation Calibration of Portable Survey Instrumentation - This item was identified in NRC Inspection Report 50-298/82-32 and involved the lack of a full range beta radiation calibration program for portable radiation survey instruments. The licensee committed to implementing a full range beta calibration program before the scheduled 1988 refueling outage. This item remains open pending further review by the NRC of licensee actions.

3. Inspector Observations

The following are observations the NRC inspector discussed with the licensee during the exit interview on December 10, 1987. These observations are not violations, deviations, unresolved items, or open items. These observations were identified for licensee consideration for program improvement, but the observations have no specific regulatory requirements. The licensee stated that these observations would be evaluated for program improvement.

Respiratory Protection Tests Records

a. There is no designated space on Form CNS-HP-37 for individual performing respiratory protection fit tests to sign and date the form or for supervisor review.

b. The individual being tested does not sign the strip chart that provides the results of the quantitative fit test.

4. External Occupational Exposure Control and Personal Dosimetry (83524/83724)

The NRC inspector reviewed the licensee's external occupational exposure control and personal dosimetry program including: physical controls; audits and appraisals; changes in facilities/equipment/personnel and procedures; planning and preparation for maintenance and refueling outages including ALARA considerations; adequacy of the dosimetry program to meet routine and emergency needs; effectiveness of management techniques used to implement these programs; and required records, reports, and

program for agreement with the commitments contained in the updated safety analysis report.

No violations or deviations were identified.

8. Exit Interview

The NRC inspector met with the NRC resident inspectors and licensee representatives denoted in paragraph 1 at the conclusion of the inspection on December 10, 1987. The NRC inspector summarized the scope and findings of the inspection, including inspector observations. The licensee committed to implement a full range beta radiation calibration program prior to the scheduled 1988 refueling outage.

ATTACHMENT

Procedures Reviewed

9.1.1.3 "Personnel Dosimetry Program" Revision 23, dated November 25, 1987

9.1.1.4 "Special Work Permit" Revision 16, dated April 9, 1987

9.1.2.1 "Radiation, Contamination, and Airborne Radioactivity Limits," Revision 17, dated July 1, 1987

9.1.2.2 "Area Posting and Access Control," Revision 8, dated March 5, 1987

9.1.3 "Radiation Safety Standards," Revision 10, dated October 8, 1986

9.1.4 "Protective Clothing (ANTI-C)," Revision 8, dated September 23, 1987

9.1.5 "Respiratory Program," Revision

9.1.5.1 "Dyantech Model 264 Fit Test Booth Operation and Calibration," Revision 1, dated November 7, 1986

9.1.6 "Personnel Contamination," Revision 10, dated February 5, 1987

9.1.8 "Bio-Assay and Whole Body Counting," Revision 12, dated March 12, 1986

9.2.1 "Radiation and Contamination Survey Frequency," Revision 14, dated September 17, 1987

9.2.2 "Radiation Surveys," Revision 12, dated May 28, 1987

9.2.3 "Contamination Surveys," Revision 6, dated October 9, 1986

9.2.4 "Surveying Materials for Release Off-Site," Revision 1, dated July 1, 1987

8.9.3 "Radioactive Source Preparation," Revision 2, dated December 11, 1986

Documents Reviewed

QAP-900 "Chemistry, Health Physics and Environmental Monitoring," Audit No. 86-23, conducted dated November 11 through December 5, 1986

SC-900-15 Contamination Surveys, dated January 20, 1986

SC-900-09 Special Work Permits, dated February 24, 1986

SC-900-13 Personnel Dosimetry, dated February 26, 1986

SC-900-11 Radiation and High Radiation Areas, dated March 14, 1986

SC-900-03	Radiological Surveys, dated April 29, 1986
SC-900-09	Special Work Permits, dated May 5, 1986
SC-900-09	Special Work Permits, dated August 13, 1986
SC-900-15	Contamination Surveys, dated April 21, 1987
SC-900-11	Radiation and High Radiation Areas, dated April 14, 1987
SC-900-09	Special Work Permits, dated July 31, 1987
SC-900-03	Radiological Surveys, dated August 25, 1987

notifications to determine compliance with the requirements of 10 CFR Parts 19.13, 20.101(a), 20.101(b), 20.102, 20.202(a), 20.104(a), and 20.401(a).

Exposure records for licensee and contractor personnel for 1987 and 1988 were reviewed. No exposures greater than 10 CFR Part 20.101 limits were noted. The estimated total exposure dose for 1987 was projected to be 200 person-rem. As of December 5, 1987, the licensee had expended approximately 96 person-rem.

The NRC inspector reviewed the licensee's documented evaluations (Form CNS-HP-17, "Lost or damaged TLD Report") of the 26 dosimetry incidents that had been reported in 1987. The licensee had performed a sound technical evaluation and assigned proper values for the worker's exposure records. The NRC inspector also verified that reports and notifications required by 10 CFR Parts 19.13, 20.403, 20.405, and 50.72(b) had been prepared and submitted in a timely manner.

No violations of deviations were identified.

5. Internal Exposure Control and Assessment (83525/83725)

The NRC inspector reviewed the licensee's internal exposure control and assessment program including audits and appraisals; changes in facilities/equipment/personnel and procedures; assessment of individual intakes of radioactive materials; engineering and administrative controls; planning and preparations for maintenance and refueling outages including ALARA; air sampling program; respiratory projection equipment and training, and required records, reports, and notifications to determine compliance with 10 CFR Part 20.103.

The NRC inspector reviewed the licensee's respiratory protection program including the administrative and engineering controls which are employed, where practical, instead of respirators in accordance with 10 CFR Part 20.103.

The NRC inspector discussed with licensee representatives the respiratory protection training program and documentation of results of the quantitative man fit test used by the licensee. The licensee's Form CNS-HP-33, "Quantitative Man Fit Test" did not provide a space where the individual performing the test and calculations could sign and date the form, nor was there an assigned space for supervisory review. NRC Inspection Report 50-298/86-24 had previously identified that the licensee did not specify a frequency at which personnel are required to demonstrate the ability to successfully wear a respirator by performing a quantitative fit test. During this inspection, the licensee stated that the quantitative fit test would be performed on a 2-year frequency.

No violations or deviations were identified.

6. Control of Radioactive Materials and Contamination, Surveys, and Monitoring (82526/83726)

The NRC inspector reviewed the licensee's program for control of radioactive materials and contamination, surveys, and monitoring, including: audits and appraisals, adequacy of supply of protective clothing and equipment, program and procedure changes, implementation of the survey and monitoring program, radioactive materials and contamination controls, adequacy of supply, maintenance, and calibration of portable survey, sampling, and contamination monitoring instrumentation and calibration and maintenance of area and airborne radiation monitors, for compliance with 10 CFR Parts 19.11, 20.201(a), 20.203, and CNS Technical Specification.

The NRC inspector reviewed the status of Open Item (298/8232-02) which relates to the beta radiation calibration of portable survey meters. The NRC inspector determined the licensee was still performing a beta calibration at one point, 224±6 millirad per hour, with a depleted uranium slab source. The licensee had purchased a set of Thallium-204 beta sources, but had not incorporated these sources into the beta radiation calibration program. The NRC inspector discussed with licensee representatives the beta radiation calibration program to ensure that portable radiation survey instruments used for beta radiation measurements are calibrated over their full range. The licensee stated that a new calibration program should be implemented prior to the next scheduled refueling outage in 1988 that would provide full-range calibration of beta survey meters. The licensee during the exit interview on December 10, 1987, acknowledged the inspectors concern and committed to the implementation of the program.

The NRC inspector reviewed the calibration records for the survey meters, laboratory counters, portal monitors, and a laundry monitor. The NRC inspector noted the licensee had revised Procedure 8.9.3, "Radioactive Source Preparation" Revision 2, December 11, 1986, and included Section VII.A.4 on traceability, which states that sources used for calibrations shall be traceable to National Bureau of Standards (NBS) standards, either by the solution used or by comparison to calibrated instrumentation which is traceable to NBS standards.

The NRC inspector reviewed those procedures and documents listed in the Attachment to this report.

No violations or deviations were identified.

7. Facilities and Equipment (83527/83727)

The NRC inspector reviewed the licensee's facilities and equipment, including facility changes, provided to implement the radiation protection