UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

October 14, 1999

J. H. Swailes, Vice President of
Nuclear Energy
Nebraska Public Power District
P.O. Box 98
Brownville, Nebraska 68321

SUBJECT: NRC INSPECTION REPORT NO. 50-298/99-10

Dear Mr. Swailes:

This refers to the inspection conducted on September 20-23, 1999, at the Cooper Nuclear Station facility. The results of this inspection were discussed with Mr. J. A. McDonald and other members of your staff at the completion of the inspection. The enclosed report presents the results of this inspection.

This inspection was an examination of activities conducted under your license as they relate to radiation safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of a selected examination of procedures and representative records, observations of activities, and interviews with personnel. Specifically, this inspection focused on the implementation of your radiological environmental and meteorological monitoring programs and the program for unrestricted release of material from the radiological controlled area. During this inspection, no safety significant issues were identified.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be placed in the NRC Public Document Room (PDR).

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

Original signed by

Gail M. Good
Plant Support Branch
Division of Reactor Safety

Docket No.: 50-298
License No.: DPR-46

Enclosure:
NRC Inspection Report No.

50-298/99-10

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E-mail report to D. Lange (DJL)
E-Mail report to NRR Event Tracking System (IPAS)
E-Mail report to Document Control Desk (DOCDESK)

E-Mail all documents to Jim Isom for Pilot Plant Program (JAI)
E-Mail all documents to Sampath Malur for Pilot Plant Program (SKM)

bcc to DCD (IE06) - Radiological Protection Reports

bcc distrib. by RIV:

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.:	50-298
License No.:	DPR 46
Report No.:	50-298/99-10
Licensee:	Nebraska Public Power District
Facility:	Cooper Nuclear Station
Location:	P.O. Box 98 Brownville, Nebraska
Dates:	September 20-24, 1999
Inspector:	J. Blair Nicholas, Ph.D., Senior Radiation Specialist Plant Support Branch
Approved By:	Gail M. Good, Chief, Plant Support Branch Division of Reactor Safety

SUMMARY OF FINDINGS

Cooper Nuclear Station
NRC Inspection Report No. 50-298/99-10

This inspection focused on the licensee's radiological environmental and meteorological monitoring programs and the program for unrestricted release of material from the radiological controlled area.

Cornerstone: Public Radiation Safety

- No findings.

Report Details

2 RADIATION SAFETY

2PS2 Radioactive Material Processing and Shipping

a. Inspection Scope (71122.02)

The inspector observed the licensee survey materials for release from the radiological controlled area and reviewed the following items:

- Procedures, methods, and instruments used to survey, control, and release materials from the radiological controlled area
- Calibration procedures and calibration records for instruments used to perform material release radiological surveys
- Detection sensitivities of radiation survey instruments used for contamination measurements prior to release of materials from the radiological controlled area, including screening levels for commonly found site-specific surface contamination radionuclides
- Criteria used for the unrestricted release of material from the radiological controlled area

b. Observations and Findings

There were no findings identified.

2PS3 Radiological Environmental Monitoring

a. Inspection Scope (71122.03)

The inspector interviewed members of the licensee's staff responsible for implementing the radiological environmental and meteorological monitoring programs, inspected selected environmental monitoring stations (airborne and thermoluminesent dosimeter stations) and the two meteorological towers, observed the collection and preparation for shipment of airborne particulate and charcoal samples for analysis at an off-site contract laboratory, observed the meteorological instrument data displays in the emergency response facilities, and reviewed the following items:

- Implementing procedures for the radiological environmental monitoring program as described in the Offsite Dose Assessment Manual

- Number and location descriptions of the environmental sampling stations to determine that the environmental sampling program was representative of the station's effluent release pathways as specified in the Offsite Dose Assessment Manual

- Environmental sampling schedule, sample collection forms, and sample data receipt forms to determine any missed samples, inoperable samplers, and lost thermoluminescent dosimeters

- Environmental sample analytical results to determine proper analysis detection sensitivities and any positive sample analysis results

- 1997, 1998, and 1999 annual land use census reports and any resulting changes to the radiological environmental monitoring program

- Calibration procedures, calibration records, and maintenance records for air sampling equipment

- Off-site dose results calculated from liquid and gaseous effluent releases

- The contractor environmental laboratory's performance in the interlaboratory comparison program

- Calibration procedures and calibration records for meteorological monitoring instrumentation

- Meteorological instrument operability, reliability, and annual meteorological data recovery

- 1997 and 1998 Annual Radiological Environmental Reports

b. Observations and Findings

During the Offsite Dose Assessment Manual review, the inspector noted that Table D4.1-1 was written in a format that was atypical, because the licensee's environmental monitoring program was developed and implemented prior to the issuance of Branch Technical Position, Revision 1, November 1979, which provided detailed guidance for environmental program development. Table D4.1-1 did not describe the sampling locations for the radiological environmental monitoring program as outlined in the Branch Technical Position. For example, the table did not identify and describe the indicator and control sample locations for airborne particulate and radioiodine samples, river water samples, and thermoluminescent dosimeters. Specifically, the table did not indicate a control river water sample station upstream from the station; a control airborne monitoring station located 10-20 miles distant from the site in the least prevalent wind direction, when practical; and a control thermoluminescent dosimeter location. The inspector noted that the number of sampling locations for each sample media, as written in the table, did not

contradict the current licensing requirements, but the licensee was an outlier with respect to other nuclear facilities for not specifying indicator and control environmental sample locations as described in the Branch Technical Position.

Regarding the lack of a specified control river water sample location in Table D4.1-1, the licensee demonstrated that river water was sampled from two locations, one sample upstream and one sample downstream from the station as recommended in the Branch Technical Position, even though these sample locations were not described in Table D4.1-1. Also, Table D4.1-1 did not indicate or describe the locations of the indicator and control locations for the thermoluminescent dosimeters as recommended in the Branch Technical Position. However, from review of the thermoluminescent dosimeter locations listed in the annual radiological environmental reports, the inspector noted that the licensee had established a control thermoluminescent dosimeter location 10.3 miles from the site in the 3rd least affected wind direction sector.

The licensee stated that the environmental monitoring program had two historical airborne monitoring sample stations which would be used as control airborne sampling stations, if necessary. Sampling station No. 10 was located 10 miles from the site in the 15th highest prevalent wind direction sector, and sampling station No. 9 was located 7.9 miles from the site in the 11th highest prevalent wind direction sector. The licensee did not have documentation on file to justify the logic for locating the two possible control airborne sampling stations at their present locations or why it was not practical to place an airborne control station in a lesser prevalent wind direction sector. From discussions with the licensee's staff and review of historical air sampling data from the air sample stations, the inspector noted that the air sampling stations had never indicated plant related airborne radioactivity. The licensee acknowledged the inconsistency between the environmental monitoring program sampling location descriptions contained in the Offsite Dose Assessment Manual Table D4.1-1 and the recommended sampling location descriptions contained in the Branch Technical Position. On September 27, 1999, the issue was documented in Problem Identification Report 4-04439.

There were no findings identified.

4 OTHER ACTIVITIES

4OA1 Identification and Resolution of Problems

a. Inspection Scope (71122.03)

The inspector reviewed the following items:

- Audits and self-assessments
- Audit scoping plan
- Audit checklist

- Vendor audit
- Problem identification reports

b. Observations and Findings

There were no findings identified.

4OA5 Management Meetings

Exit Meeting Summary

The inspector presented the inspection results to members of licensee management at an exit meeting on September 23, 1999. The licensee acknowledged the findings presented. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

R. Bauer, Environmental Specialist, Environmental Protection
T. Chard, Manager, Radiation Protection
J. Geyer, Senior Health Physicist, Radiation Protection
G. Grotrian, Auditor, Quality Assurance
H. Hasenkamp-Gibbs, Senior Environmental Specialist, Environmental Protection
A. Lantz, Nuclear Environmental/Safety Technician
J. McDonald, Plant Manager
R. McDonald, Staff Health Physicist, Radiation Protection
J. McMahan, Acting Manager, Work Control
J. Peters, Licensing
R. Raudio, Instrument & Control Engineer, Instrument & Control Engineering
C. Stipp, Environmental/Industrial Safety Coordinator
B. Toline, Audit Supervisor, Quality Assurance
C. Weers, Radiological Support Supervisor, Radiation Protection

NRC

J. Clark, Senior Resident Inspector
M. Hay, Resident Inspector

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

None

Discussed

None

LIST OF DOCUMENTS REVIEWED

QUALITY ASSURANCE AUDIT

Quality Assurance Audit Report 98-07, “Radiological Controls,” April 7-21, 1998

ENVIRONMENTAL ASSESSMENTS

Cooper Nuclear Station 1998 Environmental Assessment Report

Cooper Nuclear Station 1999 Environmental Assessment Draft Report

RADIATION PROTECTION ASSESSMENT

Cooper Nuclear Station 1998 Radiation Protection Self Assessment

VENDOR AUDIT

NUPIC Audit 9601047, Teledyne Brown Engineering Environmental Services, August 26-30, 1996

METEOROLOGICAL MONITORING PROGRAM ASSESSMENTS

Universe Technologies Assessment of the Meteorological Monitoring Program, July 1998

Science Applications International Corporation Assessment of the Meteorological Tower and Instrumentation, April 1999

CORPORATE ENVIRONMENTAL MANUAL PROCEDURES

“CNS Radiological Environmental Monitoring Program Administration,” August 1999

“Sampling Manual for the CNS Radiological Environmental Monitoring Program,” August 1999

“Action Levels for Environmental Samples,” August 1999

“CNS Environmental Air Pump Calibration and Maintenance,” August 1999

“Annual Review of Broadleaf Vegetation Sample Locations,” August 1999

“Annual CNS Land Use Census,” August 1999

“Administering the CNS Meteorological Program,” August 1999

INSTRUMENT AND CONTROL PROCEDURES

Instrument and Control Procedure 14.3.3, “Meteorological Maintenance Procedure,” Revision 4

Instrument and Control Procedure 14.3.4., “Translator Module Calibration,” Revision 3

Instrument and Control Procedure 14.3.8, “Wind Speed and Wind Direction Transmitter Maintenance, “ Revision 3

RADIATION PROTECTION PROCEDURES

RP Procedure 9.RADOP.2, “Radiation Safety Standards and Limits,” Revision 2

RP Procedure 9.RADOP.4, “Radiation and Contamination Surveys,” Revision 4

RP Procedure 9.INST.30, “National Nuclear Corporation Waste Curie Monitor System WCM-10,” Revision 0

RP Procedure 9.INST.31, “National Nuclear Corporation Integral Tool Monitor ITM-2H,” Revision 0

RP Procedure 9.INST.32, “Tennelec LB-4100 Drawer Smear Counter,” Revision 1

RP Procedure 9.INST.33, “Tennelec LB-5100 II and APC II Operation,” Revision 0

RP Procedure 9.INST.50, “Portable Beta-Gamma GM Survey Meter Eberline Model E-140,” Revision 0

RP Procedure 9.INST.57, “Friskers,” Revision 0

REPORTS

Annual Radiological Environmental Reports - 1997 and 1998

Annual Radioactive Effluent Release Reports - 1997 and 1998

MISCELLANEOUS DOCUMENTS

Offsite Dose Assessment Manual, dated August 26, 1999

Annual Land Use Census - 1997, 1998, and 1999

Selected Problem Identification Reports