APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION

REGION IV

NRC Inspection Report: 50-298/86-10 License: DPR-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: Cooper Nuclear Station, Nemaha County, Nebraska

Inspection Conducted: March 1-31, 1986

Inspector: E. A. Plettner 4/3/86
E. A. Plettner, Resident Inspector, (RI) Date

Inspector: D L DuBois 4/3/86
D. L. DuBois, Senior Resident Inspector, (SRI) Date

Approved: J. R. Jaudon 5/1/86
J. R. Jaudon, Chief, Project Section A, Date
Reactor Project Branch

DETAILS

1. Persons Contacted

+G. R. Horn, Division Manager of Nuclear Operations
+D. L. Reeves, Training Manager
+J. Sayer, Acting Technical Staff Manager
+R. Brungardt, Operations Manager
+V. L. Wolstenholm, QA Manager
+J. M. Meacham, Technical Manager
+C. R. Goings, Regulatory Compliance Specialist
W. Crawford, Maintenance Supervisor
R. Black, Operations Supervisor
D. Vanderkamp, Shift Supervisor, Crew C
R. Beilke, Chemistry and Health Physics Supervisor
H. T. Hitch, Acting Administrative Services Manager
R. A. Jansky, Operations Training Supervisor
T. R. Sanders, SRO/RO Instructor Contractor from GE

The NRC inspectors also interviewed other licensee operations, maintenance, and administrative personnel.

+Indicates presence at exit meeting held March 31, 1986.

2. Preparation for Refueling

A previous inspection was conducted in this area during the period January 1 - February 28, 1986. That inspection concerned the receipt and interim dry storage of new fuel assemblies. The results of that inspection were documented in NRC Report 50-298/86-02. This inspection completes the inspection of refueling preparations.

The RI held discussions with fuel handling personnel, observed new fuel inspection and storage activities, verified new fuel storage pool location accountability records and status board updates, and reviewed licensee procedure and records concerning the inspection, channeling, and storage of new fuel assemblies. The Nuclear Performance Procedure (NPP) No. 10.23, "Unirradiated Fuel Inspection and Channeling and Control Blade Inspection," Revision 0, dated October 1, 1984, was reviewed for technical adequacy prior to the commencement of new fuel handling activities.

The RI reviewed the following completed licensee documents applicable to the inspection, transfer, and storage of new fuel assemblies:

NPP 10.21, Attachment "A," page 1 of 6, "Special Nuclear Material Transfer Form," and Page 3 of 6, "Fuel Movement Data Sheet - SNM Transfer other than Refueling Outage."

NPP 10.22, Attachment "A," Pages 3 of 4 and 4 of 4, "New Fuel and Channel Handling - Material and Equipment Checklists."

NPP 10.23, Attachment "A," "Fuel Assemblies Check Sheet."

NPP 10.23, Attachment "B," "General Electric Discrepancy Report."

NPP 10.23, Attachment "C," "Fuel Channel Inspection Results."

Spent Fuel Pool fuel location status boards located on the refueling floor and in the control room.

On March 21, 1986, the RI observed the following licensee activities associated with the handling, inspection, transfer, and storage of new fuel assemblies:

- Removal from metal shipping containers (MSC).
- Transfer to the inspection stand and subsequently to storage in the spent fuel pool.
- Removal of plastic shipping spacers.
- General inspection and cleaning of new fuel.
- Dimensional measurements taken of fuel rod spacings, spring lengths, channel spacing, and channel fastener torque.
- Channeling of fuel bundles in the new fuel inspection stand.

MSC No.	Fuel Bundle No.	Channel No.
I-1280	LYD 860	6826 D
I-1280	LYD 861	6856 D
I-2023	LYD 904	6900 D
I-2023	LYD 902	6853 D
I-0382	LYD 868	6818 D
I-0382	LYD 883	6817 D

These discussions, observations, and reviews were conducted to verify that the licensee used and adhered to approved and technically adequate procedures during the conduct of fuel inspection channeling, and storage activities. Also, the RI verified that documentation of the above activities was complete and accurate.

No violations or deviations were identified in this area.

3. Spent Fuel Shipment

The NRC inspectors inspected the licensee's activities associated with a shipment of spent fuel from CNS. Included in that inspection were observations and reviews of applicable procedures, documentation, surveys, inspections, and shipping document preparation.

The NRC inspectors verified by review of licensee documentation, through discussions with responsible personnel, and by independent inspection that the licensee completed the following:

- Receiving inspection of railcars and shipping casks.
- Shipping documents.
- Advance notification of and approval by affected state and federal agencies.
- Proper placarding of the transport vehicles.
- Appropriate labeling of the spent fuel shipping casks.
- Establishment of provisions for response by escorts and local law enforcement agencies.
- Training of escort personnel.
- Testing of communications systems.
- Continual manning of the licensee's communications center (Movement Control).
- Testing of fuel and cask handling cranes, hoists, and tools.
- Proper loading and sealing of the spent fuel shipping casks.
- Surveillance of area radiation monitors, ventilation systems, and spent fuel pool water level and chemistry.
- Update of fuel location and accountability records.
- Applicable quality assurance audits and inspections.
- U. S. Department of Energy and U. S. NRC "Nuclear Material Transaction Report," DOE/NRC Form 741.
- Bill of Lading.
- CNS Health Physics Procedure 9.5.3.7, "Cask IF-300 Shipment," Revision 3, dated December 26, 1985.
- CNS Nuclear Performance Procedure 10.27, "Cask IF-300 Handling and Shipping," Revision 4, dated December 21, 1986.
- CNS HP-138, "Contamination Survey - Sample Count Data Sheets."
- CNS HP-141, "Contamination Survey - Railroad Car for IF-300 Irradiated Fuel Shipping Cask."

- CNS HP-142, "Contamination Survey of IF-300 Shipping Casks."
- CNS HP-143, "Radiation Survey of IF-300 Shipping Cask."
- CNS HP-608, "Spent Fuel Shipment Checkoff Sheet and Certificate of Compliance of Number 9001 Conditions for Shipping Spent Fuel."
- CNS HP-14a, "Radioactive Material Shipment Record."

The following independent radiation and contamination surveys were performed by the NRC inspectors and verified to be satisfactory:

- Contact radiation surveys of the shipping casks
- Radiation surveys at a distance of two meters from the cask transport vehicles
- Contamination surveys of the shipping casks surfaces
- Contamination surveys of the cask transport vehicles

The SRI reviewed CNS Procedure 10.26, Revision 4, dated February 21, 1986, for detail and technical adequacy. The licensee incorporated into Procedure 10.27 specific handling instructions for the G.E. Type IF-300 spent fuel shipping cask. Also included within Procedure 10.27 was Attachment "A," "Cask IF-300 Handling and Loading" Checkoff Sheet. The checkoff sheet provided two functions: it identified important steps used in the receipt, inspection, preparation, movement, loading with fuel, leak testing, decontamination, loading of the cask onto the transport vehicle, and final preparation for shipping; and it provided a checkoff list including spaces for signatures and/or initials of personnel who performed or witnessed the performance of key steps of the procedure. The SRI verified that Attachment "A" of Procedure 10.27 was properly completed, signed, and dated.

The spent fuel shipment left the CNS on March 13, 1986. The shipment consisted of 2 spent fuel shipping casks, each of which contained 18 spent fuel bundles. The shipment was transported to the G.E. Morris Operation Complex, Morris, Illinois. The spent fuel casks identification numbers were IF-302 and IF-304.

The observations, reviews, and independent measurements were conducted to verify that spent fuel handling and shipment operations were in conformance with the requirements established in the CNS Operating License and Technical Specification.

No violations or deviations were identified in this area.

4. Non-Licensed Staff Training

The purpose of this inspection was to determine if the licensee had met the general training requirements of the Technical Specifications, paragraph 6.1.4.

Twenty individual training records encompassing the period from January 1983 to March 1986 were inspected for frequency of General Employee Training (GET). Records were selected at random and included individuals from all occupational categories. The NRC inspector noted that licensee procedure 0.17 required GET tracking annually (plus 25%), while technical specifications allowed up to two years for this training. The inspection revealed that three individuals had exceeded the procedure allowed time frame by from 6 to 34 days for Security Refresher Training. Also, two individuals had exceeded the procedural allowed time frame by from 12 to 46 days for Emergency Plan Refresher Training. All refresher training met the technical specifications requirements. The inspector concluded that this was not a violation, because Technical Specifications were not violated, but that it indicated a potential breakdown in management control.

Personnel interviews of plant personnel with various employment times and occupational classifications revealed an apparent weak general knowledge of radiological health and safety. Most individuals displayed good general knowledge in the areas of controlled access and security, emergency plan, and industrial safety.

Completion of formal classroom training plans for non-licensed staff is anticipated for the month of August 1986, when the Institute of Nuclear Power Operations (INPO) arrives for accreditation.

5. Licensed Operator Training

The purpose of this part of the inspection was to verify license compliance with requalification training requirements.

Personnel interviews with licensed operations personnel revealed that training had been given in specific tasks assigned, such as major plant system tests, refueling and special procedures.

Review of RO and SRO training records revealed proper documentation of training in all areas required by the Cooper Nuclear Power Station Requalification Plan. It should be noted that appropriate corrective measures were taken for the individuals that failed a section of the requalification exam and for those people who scored less than 80 percent in a section. As of the closing date of this report period, two individuals have not taken the required exam in the required lecture series and one individual has not attended the required lecture series and taken the required examination to fulfill the requirements of the requalification plan. These individuals have until May 1, 1986, to meet the requirements. Personnel interviews were conducted with RO's and SRO's to ensure that the actual training received corresponded to the recorded data.

The inspector did not attend any training lectures; however, training material used to give the lecture was reviewed and verified to ensure that the technical content of information was adequate. Exams given at the end of the lecture were reviewed and verified for technical content also.

The pass rate for requalification exams given by the utility and the NRC over the last three calendar years are as follows:

a. 1983 pass rate was 100% given by utility only
b. 1984 pass rate was 65% given by utility and NRC
c. 1985 pass rate was 87% given by utility and NRC

The pass rate for replacement exams administered by NRC over the last three calendar years are as follows:

1983	75% pass rate for RO's No SROs exams given
1984	86% pass rate for RO's 46% pass rate for SRO's
1985	100% pass rate for RO's 100% pass rate for SRO's

Cooper Nuclear Power station is presently anticipating training accreditation by the Institute of Nuclear Power Operations (INPO) to be completed in August 1986.

The review of formal licensee training on the use of Emergency Operating Procedures (EOPs) was reported as in progress in NRC Report 50-298/86-02. The review was completed during this reporting period.

No violations or deviations were identified in this area.

6. Operational Safety Verification

The NRC inspectors observed control room operations, instrumentation, controls, reviewed plant logs and records, conducted discussions with control room personnel, and performed system walk-downs to verify that:

- Minimum shift manning requirements were met.
- Technical Specification requirements were observed.
- Plant operations were conducted using approved procedures.
- Plant logs and records were complete, accurate, and indicative of actual system conditions and configurations.
- System pumps, valves, control switches, and power supply breakers were properly aligned.

- Licensee systems lineup procedures/checklists, plant drawings, and as-built configurations were in agreement.

- Instrumentation was accurately displaying process variables and protection system status to be within permissible operational limits for operation.

- Plant equipment that was discovered to be inoperable or was removed from service for maintenance was properly identified, redundant equipment was verified to be operable, and applicable limiting conditions for operation were identified and maintained.

- Equipment safety clearance records were complete and indicated that affected components were removed from and returned to service in a correct and approved manner.

- Maintenance work requests were initiated for equipment discovered to require repair or routine preventive upkeep, appropriate priority was assigned, and work commenced in a timely manner.

- Plant equipment conditions such as cleanliness, leakage, lubrication, and cooling water were controlled and adequately maintained.

- Areas of the plant were clean, unobstructed, and free of fire hazards. Fire suppression systems and emergency equipment were maintained in a condition of readiness. It was noted that several plastic seals were missing from fire plug indicators. Corrective action was taken by the licensee in a timely manner.

- Security measures and radiological controls were adequate.

The NRC inspectors performed a lineup verification of the following systems:

- "A" Core Spray

- "A" Residual Heat Removal

- Standby Liquid Control during verification of the line up of the standby liquid control system using the valve checklist Appendix "A" of Standby Liquid Control System Procedure 2.2.74, Revision 15, dated August 1, 1985, it was noted that four valves which deal with pressure transmitters and indicators are not shown on as-built System Drawing Number 2045. Licensee representatives indicated that these valves were shown on instrument drawings. This is considered unresolved pending a review of instrument drawings (8610-01).

The tours, reviews, and observations were conducted to verify that facility operations were performed in accordance with the requirements established in the CNS Operating License and Technical Specification.

No violations or deviations were identified in this area.

7. Monthly Surveillance Observations

The NRC inspectors observed Technical Specification required surveillance tests. Those observations verified that:

- Tests were accomplished by qualified personnel in accordance with approved procedures.
- Procedures conformed to Technical Specification requirements.
- Tests prerequisites were completed including conformance with applicable limiting conditions for operation, required administrative approval, and availability of calibrated test equipment.
- Test data was reviewed for completeness, accuracy, and conformance with established criteria and Technical Specification requirements.
- Deficiencies were corrected in a timely manner.
- The system was returned to service.

During a technical review of CNS Procedure 0.26. "Surveillance Program," Revision 0, and CNS Technical Specification, the SRI noted that the Technical Specifications do not include a listing or definition of surveillance test frequencies, e.g., daily, weekly, monthly, quarterly, semiannually, annually, and refueling. The NRC inspector found that the licensee had provided definitions in Procedure 0.26 which lists and defines surveillance test frequencies with the exception of "daily" and "refueling."

The reviews and observations were conducted to verify that facility surveillance operations were performed in accordance with the requirements established in the CNS Operating License and Technical Specification.

No violations or deviations were identified in this area.

8. Monthly Maintenance Observation

The NRC inspectors observed preventive and corrective maintenance activities on portions of the following systems components:

No. 1 Emergency Diesel Generator Switchgear and Control Cabinets

No. 2 Emergency Diesel Generator Switchgear and Control Cabinets

"C" Fire Pump

The observations were conducted to verify that:

- Limiting conditions for operation were met.
- Redundant equipment was operable.

- Equipment was adequately isolated and safety tagged.
- Appropriate administrative approvals were obtained prior to commencement to work activities.
- Work was performed by qualified personnel in accordance with approved procedures.
- Radiological controls, cleanliness practices, and appropriate fire prevention precautions were implemented and maintained.
- Quality control checks and postmaintenance surveillance testing were performed as required.
- Equipment was properly returned to service.

The following clearance orders were independently verified by the SRI for proper placement/restoration of associated components:

86-223, "C" Fire Pump

86-228, No. 2 Diesel Generator

86-229, "A" Reactor Equipment Cooling (REC) Pump

86-231, "B" REC Pump

86-232, "C" REC Pump

86-233, "D" REC Pump

86-234, No. 2 Diesel Generator

86-237, No. 1 Diesel Generator

Those reviews and observations were conducted to verify that facility maintenance operations were performed in accordance with the requirements established in the CNS Operating License and Technical Specification.

No violations or deviations were identified in this area.

9. Unresolved Item

An unresolved item is one about which more information is needed to determine if it is a violation, a deviation, or acceptable. There was one unresolved item in this report:

Paragraph	Item	Description
6	8610-01	Review of instrument "as built" drawings

10. Exit Meetings

Exit meetings were conducted at the conclusion of each portion of the inspection. The NRC inspectors summarized the scope and findings of each inspection segment at those meetings.