APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-298/85-28 License: DPR-46

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

Facility Name: Cooper Nuclear Station (CNS)

Inspection At: Cooper Nuclear Station near Brownsville, Nebraska

Inspection Conducted: October 14-18, 1985

Inspector: Charles G. Hackney 12-4-85
C. A. Hackney, Emergency Preparedness Analyst, Date
Emergency Preparedness and Safeguards
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Other Accompanying
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Approved: L A Yandell 12-4-85
L. A. Yandell, Chief, Emergency Preparedness Date
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Inspection Summary

Inspection Conducted October 14-18, 1985 (Report 50-298/85-28)

Areas Inspected: Routine, announced inspection of the licensee's performance and capabilities during an exercise of the emergency plan and procedures. The inspection involved 218 inspection-hours by seven NRC inspect rs.

Results: Within the emergency response areas inspected no violations or deviations were identified. One deficiency was identified.

DETAILS

1. Persons Contacted

Principal Licensee Personnel

*L. G. Kuncl, Assistant General Manager, Nuclear
*P. V. Thomason, Division Manager of Nuclear Operations
*P. R. Windham, Emergency Planning Coordinator
*D. A. Whitman, Program Control Manager, Nuclear Power Group
*C. Goings, Regulatory Compliance Specialist
*J. Sayer, Assistant Technical Staff Manager
*C. Morgan, General Office Emergency Planning Coordinator
*J. E. Flash, Public Information Coordinator, Nuclear
*J. M. Meacham, Technical Manager

NRC

*D. L. DuBois, Senior Resident Inspector

Federal Emergency Management Agency (FEMA)

R. Leonard, Program Manager
M. Carroll, Senior Technological Hazards Specialist

The NRC inspectors also held discussions with other station and corporate personnel in the areas of health physics, operations, and emergency response organization.

*Denotes those present at the exit interview.

2. Licensee Action on Previous Inspection Findings

(Closed) Open Item (298/8208-03)(4): The licensee had developed the capability for projecting dose in the downwind direction.

(Closed) Open Item (298/8307-01): A complete staff of operations personnel were provided to participate in the exercise.

(Closed) Ope Item (298/8307-02): The operations personnel kept records during the exercise that appeared adequate.

(Closed) Open Item (298/8307-04): A procedure had been implemented to incorporate adjustments to the calculated doses and dose rates based on field measurements.

3. Exercise Scenario

The exercise scenario was reviewed to determine if provisions had been made for the level of participation by state and local agencies, and that all the major elements of the emergency response would be exercised in accordance with the requirements of 10 CFR 50 and the guidance criteria in NUREG 0654, Section II.n. The review included an evaluation of the adequacy of both operational and radiological aspects of the scenario. In addition, a review of the internal consistency and thoroughness of information provided to participants, observers, controllers and evaluators was made. Results of this review were as follows:

- The scenario contained a narrative summary of physical events which occurred and the rational behind those events.

- There were numerous scenario messages given to the players, prompting was minimal.

- Scenario events were timed such that players appeared to have adequate time to respond and react to the event.

- The scenario was written to test the reactor operations personnel, onsite and offsite monitoring personnel, and recovery functions.

- The scenario challenged the operations personnel for emergency detection, classification, and notification. Further, the onsite and offsite radiological monitoring teams had the opportunity to demonstrate the use of emergency procedures and radiological monitoring equipment.

No violations or deviations were identified.

4. Control Room

Initial conditions were given to the operations personnel prior to the initiation of the exercise:

a. The plant has been operating at 100% power and had 300 equivalent full power days and had been at power for 30 days.

b. Containment spray MO-26-A & MO-31-A was tagged closed due to major pipe break between both valves. Estimated repair dated 5 days from October 15, 1985. A defective section of pipe had been removed.

c. Site ambulance had been taken to Nebraska City for maintenance and would return on October 17, 1985.

d. Reactor water cleanup (RWCU) pump B was isolated for maintenance.

f. Spent resin (RWCU) was scheduled for transfer to a contractor for processing on October 16, 1985.

g. Reactor heat removal MO-26-B manual valve operator was broken and removed for retooling in the maintenance shop, repair to be completed on October 16, 1985.

The exercise was initiated at 7:30 a.m. with an injured, contaminated person. The licensee declared a Notification Of Unusual Event based on the contaminated and injured plant person. The plant radiological monitoring team was dispatched to the injured person (the injured person was not an objective of the drill due to the licensee demonstrating this capability with an actual contaminated injured person).

At 8:00 a.m. the seal on the RWCU transfer pump failed releasing radioactive resin into the room. The area radiation alarms indicated 1000 times normal readings and an Alert was declared. Following the Alert, the operations personnel were notified that a safety valve was leaking. Plant conditions deteriorated at 10:30 a.m. when pieces of the jet pump rams head broke off and were impinged on the core and lodged in the flow channels. A Site Area Emergency was declared due to a degraded core with a possible loss of coolant geometry.

Failure of safety valve RV-70A and the rupture of the turbine steam line were coupled with increasing drywell pressure and containment high radiation level readings. A General Emergency was declared due to loss of two of three fission product barriers with a potential loss of the third.

The NRC inspector noted that operations personnel consulted appropriate procedures and emergency operating procedures. The NRC inspectors noted that information from the control room to the TSC was maintained and timely. Additionally, notifications to the state were performed in 15 minutes, and the NRC was notified within the 1 hour requirement.

The NRC inspector noted that in a simulated event both diesel generators were allowed to idle at speed but without load for periods in excess of one hour. This occurred twice. It was also noted that for approximately 45 minutes, both diesel generators were simulated as being operated in parallel with offsite power. The NRC inspector questioned if this could result in a station blackout if offsite power were lost. Based on these observations of diesel operating practice, it is recommended that diesel operating procedures be reviewed to assure that there is no conflict with IE Notice 84-69.

No violations or deviations were identified.

5. Technical Support Center

The Technical Support Center (TSC) was activated approximately 10 minutes after the declaration of an Alert. TSC personnel were observed consulting their emergency procedures. Emergency action levels and emergency classification discussions were excellent among the TSC staff. The NRC inspectors noted that the TSC had recently been modified to allow for additional working space. Status boards were maintained with current radiological and reactor conditions. Offsite notifications were made within the required time limits. Personnel in the TSC acted in a professional manner and supported the TSC response effort during the exercise. Dose assessment provisions were timely and provided as requested. Correlations were made between projections by computer model, hand held computer, and field team data. Staff plant briefings were timely and informative.

Accountability was initially considered to have been achieved in approximately 41 minutes, however, the NRC inspectors questioned the actual time that accountability had been achieved. Further, there did not appear to have been an initial and continuous accountability system for the TSC.

The NRC inspectors observed the following deficiency:

- Initial and continuous accountability was not achieved; refer to guidance criteria NUREG-0654, J.5. (298/8528-01).

6. Dose Assessment

Dose assessment personnel in the Emergency Operations Facility (EOF) routinely compared data between the state and licensee team members. Following the General Emergency the dose assessment team made timely protective action recommendations. There appeared to be good coordination between the EOF staff and the offsite radiological monitoring team. Dose assessment personnel in the EOF and TSC appeared to be familiar with procedures and equipment. Status boards were maintained and trend information posted.

No violations or deviations were identified.

7. Medical First Aid

Credit for satisfying the medical response objective was given on the basis of an emergency at the plant. A report was issued on March 27, 1985, from P. V. Thomason, Division Manager of Nuclear Operations to R. D. Martin, Regional Administrator, NRC Region IV detailing the medical events.

No violations or deviations were identified.

8. Offsite Monitoring

The offsite radiological monitoring teams responded to the emergency in a timely manner. The offsite teams were briefed by the Radiological Assessment Coordinator on radiological conditions, the mission, and plant conditions prior to the teams departure from the EOF. The teams were given plant status and changing radiological conditions during the exercise. Team members demonstrated excellent health physics practices in radiation control, self monitoring, and contamination control.

The following are recommended improvement items:

- Consideration should be given to obtaining more than one air sample during the exercise.

- The accompanying driver should assist the health physics technician.

No violations or deviations were identified.

9. Emergency Operations Facility/Alternate Emergency Operations Facility

The Emergency Operations Facility (EOF) was activated in a timely manner. The EOF was put in stand-by upon the declaration of an Alert classification. The EOF director (EOFD) announced the transfer of exercise command, from the TSC to the EOF, to the staff. The EOF personnel were kept apprised of plant and offsite events by periodic status announcements in the EOF. Additionally, the EOFD and staff kept the state agencies informed on exercise events in a timely manner. The EOFD turned over command of the exercise to the assistant EOFD several times during the exercise. The transfer was timely and did not appear to interrupt the EOF staff emergency response efforts. Status boards were maintained and kept current with the exercise events. Protective action recommendations to the State and the State's actions were announced to the EOF personnel. Radiological monitoring for both airborne and direct radiation was performed periodically. The NRC inspectors noted that offsite personnel were not being checked for radiological contamination prior to entering the EOF.

The EOF was evacuated due to a loss of power to the EOF. The EOF interior lights were switched off. The emergency lights came on and an announcement was made for all EOF personnel to evacuate to the Alternate Emergency Operations Facility (AEOF) in Auburn, Nebraska. The EOFD transferred command of the exercise to the TSC and personnel transferred required equipment with them. The transfer of the staff from the EOF to the AEOF was completed in approximately 40 minutes. The EOFD assumed command of the exercise from the TSC and continued their emergency response functions. The NRC inspectors noted that the State of Nebraska radio was disruptive to AEOF briefings and AEOF communicators. The noise level in the AEOF was distracting to the emergency response effort.

The NRC inspectors toured the EOF prior to the exercise and noted that the facility contained only emergency response material. The licensee had removed material that had previously been stored in various EOF response rooms.

The following are recommended improvement items:

- Establish a monitoring check point for offsite personnel entering the EOF.

- Request that State of Nebraska radio operators in the AEOF use ear sets on the radios to reduce noise levels.

10. Operational Support Centers

The Operational Support Centers (OSC) were activated in a timely manner. OSC personnel were radiologically monitored during the exercise. Personnel accountability was maintained and teams dispatched from the OSC were logged in and out of their respective OSCs'. Teams were briefed on ALARA and their task prior to being dispatched from the TSC or OSC.

No violations or deviations were identified.

11. Media Response Center

The media response center was activated in a timely manner. The NRC inspector noted that NPPD press briefings were not well coordinated with the state. The NPPD representatives allowed themselves to get involved with "what if" and "how much will this cost" questions. The inspector noted that a sound system was needed for the press to hear what was being said during the briefings. The visual aids used during the briefings were inadequate. Further, a system diagram of the reactor would be of assistance during reactor status discussions.

The following are recommended improvement items:

- Install a sound system for addressing the press.

- Obtain visual aids for press presentations.

- Press presentations should be coordinated with principal speakers entering the press room together.

- Staff briefing personnel should have media training.

12. Exercise Critique

The NRC inspectors attended the post-exercise critique by the licensee staff on October 17, 1985, to evaluate the licensee's identification of deficiencies and weaknesses as required by 10 CFR 50.47(b)(14) and Appendix E of Part 50, Paragraph IV.F.5. The licensee staff identified

the deficiencies listed below. Corrective action for identified deficiencies and weaknesses listed below will be examined during a future NRC inspection:

- Site personnel were not given an evacuation route to follow for the radiological evacuation.
- Tools were not checked for contamination when leaving the controlled area.
- Operational Support Center teams status in the plant were not maintained.
- Accountability was inadequate.
- General office personnel need additional training in the use of communications equipment.
- Media response center needs sound system for briefing the media.
- Visual aids are not effectively used.

13. Exit Meeting

The NRC inspector met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on October 17, 1985. The NRC inspector summarized the purpose and the scope of the inspection and the findings. Additionally, the licensee representatives were informed that additional findings may result following a briefing of Region IV management. The licensees actions during the exercise were found to be adequate to protect the health and safety of the public.

No violations or deviations were identified.