Nebraska Public Power District
Nebraska's Energy Leader

NLS2001078
September 18, 2001

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

Gentlemen:

Subject: Response to Draft Request For Additional Information Regarding Cooper Dose Calculation Methodology for Fuel Handling Accidents
Cooper Nuclear Station, NRC Docket No. 50-298, DPR-46

References:
1. E-mail to Edward McCutchen (Nebraska Public Power District) from Mohan Thadani (Nuclear Regulatory Commission) dated August 1, 2001, Draft RAI for Fuel Handling Accident
2. Letter to U.S. Nuclear Regulatory Commission (NLS2001011) from John H. Swailes (Nebraska Public Power District) dated February 28, 2001, Proposed License Amendment Related to the Design Basis Accident Radiological Assessment Calculational Methodology

In response to the Nuclear Regulatory Commission's (NRC's) request (reference 1), a conference call was held on August 7, 2001 between Nebraska Public Power District (District) personnel and the NRC staff to respond to NRC questions relating to the review of the Cooper Nuclear Station (CNS) license amendment request of February 28, 2001 (reference 2). The purpose of this letter is to formalize the District's responses on the CNS docket.

Question 1: Calculation NEDC 99-032, "Control Room Habitability and Offsite Dose for a Fuel Handling Accident," which was included in the February 28, 2001 submittal, takes credit for 67 hours of decay. By what means is the decay time controlled to be 67 hours or greater before moving fuel?

Answer: The Technical Specification 3.9.6 Bases will be revised, as indicated in the CNS license amendment request (Reference 2), to reflect the assumption of the 67 hour decay time. Following receipt of the License Amendment, the 67 hour decay time will be incorporated into the Updated Safety Analysis Report, and applicable station refueling procedures.

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Question 2: Does the reactor building achieve 0.25" w.g. negative pressure within 90 seconds after the onset of a Fuel Handling Accident? Has this operation of the secondary containment under postulated Fuel Handling Accident conditions been tested?

Answer: CNS does not perform surveillance testing to confirm that the reactor building achieves 0.25" w.g. negative pressure (0.25" w.g. vacuum) within 90 seconds after the onset of a Fuel Handling Accident, because the current CNS license and design bases do not require secondary containment draw down surveillance testing similar to that contained in NUREG-1433, Standard Technical Specifications, Surveillance Requirement 3.6.4.1.4.

However, the current CNS Technical Specifications approved under CNS License Amendment 178 (CNS Improved Technical Specification Implementation, 7/31/1998), does require that, during normal operations, the CNS Secondary Containment is maintained at a minimum average negative pressure of 0.25" w.g.. Also, the secondary containment boundary integrity is confirmed by Surveillance Requirements 3.6.4.1.1 through 3.6.4.1.4. These surveillances verify that, at specified frequencies, secondary containment vacuum is at least 0.25" of vacuum water gauge, all secondary containment equipment hatches are closed and sealed, one secondary containment access door in each access opening is closed, and that each Standby Gas Treatment (SGT) subsystem can maintain at least 0.25" w.g. vacuum in the secondary containment for 1 hour at a flow rate of no more than 1780 cfm. Additionally, proper actuation and stroke time testing of the reactor building ventilation isolation dampers is performed per Surveillance Requirements 3.6.4.2.2 and 3.6.4.2.3.

Review of Plant Management Information System (PMIS) data following a secondary containment isolation which occurred April 14, 2000 indicated that the secondary containment remained at a negative differential pressure with respect to the outside environment throughout the duration of the secondary containment ventilation realignment from Reactor Building ventilation to SGT. The PMIS data also indicated that SGT was capable of maintaining secondary containment at 0.25" vacuum water gauge at flows well within SGT design basis flow requirements.

Question 2 second part (clarified): If secondary containment integrity is not required, has operation of the secondary containment under postulated Fuel Handling Accident conditions been tested?

Answer: With regard to the parts of the NRC question #2 related to testing under post Fuel Handling Accident conditions, CNS does not establish postulated Fuel Handling Accident conditions (such as single failure of a fast acting reactor building ventilation isolation valve) prior to performing required Technical Specification surveillance testing. Per CNS Technical Specification 3.6.4.1, secondary containment operability must be established prior to movement of irradiated fuel assemblies in the secondary containment. Therefore, irradiated fuel movement in the Reactor Building without secondary containment is not permitted under the CNS license basis.

Question 3: CNS proposed to take credit for a reduced Control Room Emergency Filtration System initiation time of 11 seconds. Has this initiation time been verified through testing?

Answer: The District is revising the Control Room Emergency Filter System (CREFS) design initiation time from the originally stated 11 seconds to 10 seconds and has submitted a revised Fuel Handling Accident Control Room Operator Dose calculation reflecting this. A system modification is required to be installed to reduce the damper actuation times to be within this time period. Accordingly, this initiation time has not been validated through testing. Modifications of CREFS to reduce the initiation time to 10 seconds or less and subsequent acceptance testing will be conducted upon receipt of the Technical Specification 3.3.7.1 license amendment request (which was also included in the February 28, 2001 submittal) which credits the revised CREFS initiation instrumentation used in the Fuel Handling Accident.

Question 4: In NEDC 99-032, Section 4.2, "Release Rate from the Refueling Area," you discuss the reactor building release rate as a function of time, considering factors such as the 90-second reactor building isolation damper closure period, fan coastdown, radiation monitor detection time and the effective hold-up time in ductwork. A summary was provided in this discussion of the calculations performed in another calculation not provided in the February 28, 2001 submittal. With regard to the calculations:

A. What was used in the calculations for the fan speed as a function of time during coastdown?

   Answer: The equipment vendor provided the coast down curves for the fan speed as a function of time. Reactor Building exhaust flows after trip of the Reactor Building exhaust fan were then calculated using the vendor supplied exhaust fan coastdown curve, vendor provided exhaust fan flow characteristics, standard fan laws, exhaust ductwork flow resistance characteristics, and the shortest exhaust duct pathway from the Reactor Building exhaust fan to the Reactor Building release point.

B. Was this information provided by the equipment manufacturer or from another means?

   Answer: The equipment vendor provided the fan coastdown curve.

Should you have any questions concerning this matter, please contact Mr. David Kunsemiller at (402) 825-5236.

Sincerely,

John H. Swailes
Vice President of Nuclear Energy

/wrv

cc: Regional Administrator
USNRC - Region IV

Senior Project Manager
USNRC - NRR Project Directorate IV-1

Senior Resident Inspector
USNRC

NPG Distribution

STATE OF NEBRASKA)
)
NEMAHA COUNTY)

John H. Swailes, being first duly sworn, deposes and says that he is an authorized representative of the Nebraska Public Power District, a public corporation and political subdivision of the State of Nebraska; that he is duly authorized to submit this correspondence on behalf of Nebraska Public Power District; and that the statements contained herein are true to the best of his knowledge and belief.

John H. Swailes

Subscribed in my presence and sworn to before me this 18th day of September 2001.

Wilma M Werner
NOTARY PUBLIC 9-18-01

Wilma M. Werner
General Notary
State of Nebraska
My Commission Expires Oct. 26, 2002

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The following table identifies those actions committed to by the District in this document. Any other actions discussed in the submittal represent intended or planned actions by the District. They are described to the NRC for the NRC's information and are not regulatory commitments. Please notify the NL&S Manager at Cooper Nuclear Station of any questions regarding this document or any associated regulatory commitments.

COMMITMENT	COMMITTED DATE OR OUTAGE
None	N/A