Nebraska Public Power District
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NLS2014047
May 21, 2014

72.212(b)(2)

ATTN: Document Control Desk
Director, Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Subject: Thirty-Day Notification Pursuant to 10 CFR 72.212, "Conditions of General License Issued Under § 72.210" for Storage of Spent Fuel
Cooper Nuclear Station, Docket No. 50-298, DPR-46
Cooper Nuclear Station ISFSI, Docket No. 72-66

Dear Sir or Madam:

Pursuant to 10 CFR 72.212(b)(2), Nebraska Public Power District hereby provides notification of the use of two spent fuel casks at Cooper Nuclear Station (CNS). Cask CNS-61BTH-1-C-2-012 was transferred to a Horizontal Storage Module (HSM) on May 3, 2014, and Cask CNS-61BTH-1-C-2-013 was transferred to a HSM on May 8, 2014.

Licensee Name:	Nebraska Public Power District
Licensee Address:	Cooper Nuclear Station 72676 648A Avenue Brownville, NE 68321
Reactor License No.:	DPR-46
Reactor Docket No.:	50-298
Cask Certificate No.:	1004, Amendment 10
Cask Model No.:	NUHOMS®-61BTH
Cask Identification No's.:	CNS-61BTH-1-C-2-012, CNS-61BTH-1-C-2-013
Reactor Services Program Manager:	Brian Voss

In addition, as required by Certificate of Compliance 1004, Amendment 10, CNS is providing the results of the thermal performance testing for Cask CNS-61BTH-1-C-2-013 in the Attachment to this letter as this cask had a higher heat load than those previously loaded.

This letter contains no regulatory commitments.

COOPER NUCLEAR STATION
P.O. Box 98 / Brownville, NE 68321-0098
Telephone: *(402) 825-3811 / **Fax:** (402) 825-5211*
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NMSS26

If you have any questions regarding this submittal, please contact me at (402) 825-2904.

Sincerely,

David W. Van Der Kamp
Licensing Manager

/lb

Attachment - Summary Report of Cask System Heat Removal Characteristics

cc: Regional Administrator w/attachment
USNRC - Region IV

Cooper Project Manager w/attachment
USNRC - NRR Project Directorate IV-1

Senior Resident Inspector w/attachment
USNRC - CNS

NPG Distribution w/attachment

CNS Records w/attachment

Cask Document Record w/attachment

Summary Report of Cask System Heat Removal Characteristics

This report summarizes the results of thermal performance testing required by Certificate of Compliance (C of C) 1004, Amendment 10, issued to Transnuclear, Inc. for the Standardized NUHOMS® Horizontal Modular Storage System for Irradiated Nuclear Fuel.

C of C 1004 Technical Specification Requirement 1.1.7, "Special Requirements for First System in Place," requires that the thermal performance of the cask system be assessed and reported to the Nuclear Regulatory Commission (NRC) for the first Dry Shielded Canister (DSC) placed in service for a particular cask system. The thermal performance of the cask system is assessed by measuring the Horizontal Storage Module (HSM) air inlet and outlet temperatures for normal airflow, as described in C of C 1004 Technical Specification 1.2.8b, "HSM-H Maximum Air Exit Temperature with a Loaded 61BTH DSC." A report also needs to be generated for any subsequent DSCs placed in service which contain higher heat loads. Cooper Nuclear Station (CNS) previously provided the initial thermal performance data for the NUHOMS®-61BTH DSC stored in the NUHOMS® HSM-H (reference letter NLS2014040 dated May 1, 2014). This additional report provides thermal performance data for a subsequent 61BTH DSC that was loaded with a higher heat load than previous 61BTH DSCs.

A letter report summarizing the results of the measurements is to be submitted to the NRC for evaluation and assessment of the heat removal characteristics of the cask in place within 30 days of placing the DSC in service.

DSC model NUHOMS®-61BTH, serial number CNS-61BTH-1-C-2-013, was placed in a NUHOMS® HSM-H, serial number DFS-HSM-20A, on May 8, 2014. The decay heat load is approximately 15.4722 kW.

Test Methodology

Reference 1 was used to establish maximum acceptable HSM air temperature rise (ΔT) as a function of heat load and ambient temperature, as required by C of C Technical Specification 1.2.8b. The calculation used the same methodology documented in the NUHOMS® Updated Final Safety Analysis Report (Reference 2), as required by Technical Specification 1.2.8b. As discussed in the Bases for Technical Specification 1.2.8b, "The specified temperature rise is selected to ensure the fuel clad and concrete temperatures are maintained at or below acceptable long-term storage limits."

Thermal performance testing was conducted as described in and required by Technical Specification 1.2.8b. Daily inlet air temperature (ambient) and HSM outlet air temperature measurements were performed until thermal equilibrium was reached.

Test Results

Thermal performance testing results are shown in Table 1 and Figure 1 for the five day period after the loading of DSC CNS-61BTH-1-C-2-013 into the HSM.

All test data was within the maximum acceptable HSM air temperature rise (ΔT) established by Reference 1, as shown in Table 1. Figure 1 includes the three-day rolling average delta temperature for DSC CNS-61BTH-1-2-C-013 in HSM-20A, which shows that equilibrium was reached by May 13, 2014. Figure 1 also shows some variation in the daily measurements which is attributable to both the change in ambient temperature and wind conditions. The delta temperature showed higher step increases on days with a change in ambient temperature which is attributed to the release of additional latent heat stored in the concrete.

CNS has determined that the NUHOMS® storage system is performing as designed, as demonstrated by the measured equilibrium temperature rise (ΔT).

References

1. Transnuclear Calculation NUH61BTH-0425, Revision 0, NUHOMS® HSM-H Air Temperature Rise vs. Decay Heat Calculation.

2. Transnuclear NUH-003, Revision 12, Updated Final Safety Analysis Report for the Standardized NUHOMS® Horizontal Modular Storage System for Irradiated Nuclear Fuel.

Table 1: DFS-HSM-20A with DSC CNS-61BTH-1-C-2-013 Loaded with 15.4722 kW Initial Decay Heat Load

Date/Time	Ambient Temperature (°F)	Avg. Exhaust Temperature (°F)	Measured Delta Temperature (Δ°F)	Delta Temperature Limit (Δ°F)
5/09/2014 9:12	57.9	97.2	39.3	41
5/10/2014 8:07	65.8	99.5	33.7	43
5/11/2014 10:06	69.7	94.0	24.3	43
5/12/2014 9:20	60.5	96.9	36.4	43
5/13/2014 8:47	52.5	77.2	24.7	43

Figure 1: Plot of Measured and Allowed Temperature Rise