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August 28, 2006  
LIC-06-0097

U. S. Nuclear Regulatory Commission  
ATTN.: Document Control Desk  
Director, Spent Fuel Office  
Office of Nuclear Material Safety and Safeguards  
Washington, DC 20555

Reference: Docket No. 50-285

**SUBJECT: Fort Calhoun Station Unit No. 1, Independent Spent Fuel Storage  
Installation (ISFSI) Cask Registration and Summary Report of Cask Heat  
Removal Characteristics**

In compliance with the requirements of 10CFR72.212(b)(1)(ii), this letter hereby registers the initial use of the third and fourth dry fuel storage casks utilized at Fort Calhoun Station Unit No. 1 (FCS) by providing the following information:

Licensee's Name	Omaha Public Power District
Licensee's Address	Fort Calhoun Station Unit No. 1 9750 Power Lane Blair, NE 68008
Reactor License Number	DPR-40
Reactor Docket Number	50-285
ISFSI Docket Number	72-054
Cask Certificate Number	72-1004, Amendment 8
Cask Model Number	NUHOMS-32PT (HSM Model 202)
Cask Identification Number	DFS-HSM-03, DFS-HSM-04
Date of Initial Use	August 10, 2006 for DFS-HSM-03 August 17, 2006 for DFS-HSM-04

Additionally, Attachment 1 contains the summary report of the heat removal characteristics of the NUHOMS<sup>®</sup> 32PT cask systems placed in service at FCS. The report contains the results obtained for the first, second and fourth cask placed in service. The second and fourth casks exceed the heat load of the first cask placed in service. The heat load of the third cask is not reported since its heat load is less than that of the first cask. This report is provided in accordance with Certificate of Compliance 72-1004, Technical Specification 1.1.7, "Special Requirements for First System in Place."

Dry shielded canister (DSC), serial number DSC FCS32PT-S100-A-HZ02 was placed in horizontal storage module (HSM), serial number DFS-HSM-02, at FCS on July 29, 2006 at 0050 hours. The decay heat load is approximately 9.88 kW.

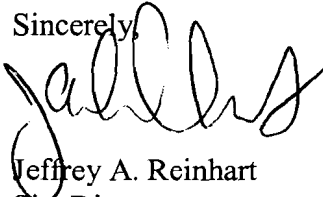
DSC, serial number DSC FCS32PT-S100-A-HZ01 was placed in HSM, serial number DFS-HSM-01, at FCS on August 4, 2006 at 1206 hours. The decay heat load is approximately 10.10 kW.

DSC, serial number DSC FCS32PT-S100-A-HZ08, was placed in HSM, serial number DFS-HSM-04, at FCS on August 17, 2006 at 1330 hours. The decay heat load is approximately 10.52 kW.

If you have any questions concerning this submittal or storage of spent fuel under the general license at FCS, please contact Stephen Andersen at (402) 533-7388.

No commitments are made to the NRC in this letter.

Sincerely,



Jeffrey A. Reinhart  
Site Director  
Fort Calhoun Station

JAR/TRB/trb

Attachment 1 - Summary Report of Cask System Heat Removal Characteristics

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Attachment 1  
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## **ATTACHMENT 1**

### **Summary Report of Cask System Heat Removal Characteristics**

## ATTACHMENT 1

### Summary Report of Cask System Heat Removal Characteristics

#### Purpose

This report summarizes the results of the initial thermal performance testing per Certificate of Compliance 72-1004, Technical Specification 1.2.8, "HSM [horizontal storage module] Maximum Air Exit Temperature". The testing was conducted and is being reported on the following casks:

Dry shielded canister (DSC), serial number DSC FCS32PT-S100-A-HZ02 was placed in HSM, serial number DFS-HSM-02, at Fort Calhoun Station, Unit No. 1 (FCS) on July 29, 2006 at 0050 hours. The decay heat load is approximately 9.88 kW.

DCS, serial number DSC FCS32PT-S100-A-HZ01 was placed in HSM, serial number DFS-HSM-01, at FCS on August 4, 2006 at 1206 hours. The decay heat load is approximately 10.10 kW.

DSC, serial number DSC FCS32PT-S100-A-HZ08, was placed in HSM, serial number DFS-HSM-04, at FCS on August 17, 2006 at 1330 hours. The decay heat load is approximately 10.52 kW.

DFS-HSM-01 and DFS-HSM-04 have heat loads that exceed the heat load of the first NUHOMS<sup>®</sup> 32PT system placed in service at FCS. Therefore, Certificate of Compliance 72-1004, Technical Specification 1.1.7, "Special Requirements for the First System in Place," applies. Technical Specification 1.1.7 requires a summary report, due 30 days from placing the DSC in service, which summarizes the heat removal characteristics of the cask.

#### Test Methodology

In accordance with the 10CFR72.7 specific exemption which was approved by Reference 1, the heat load was restricted to a maximum of 11 kW for each DSC. Reference 2 was used to establish maximum DSC temperature rise ( $\Delta T$ ) as a function of heat load and ambient temperature using the same methodology documented in the Final Safety Analysis Report.

The thermal performance test conducted on the DSC involved recording daily inlet air temperature (ambient) and HSM outlet air temperature measurements for the following dates until equilibrium was reached:

DFS-HSM-02	July 29, 2006 - August 3, 2006
DFS-HSM-01	August 5, 2006 - August 10, 2006
DFS-HSM-04	August 18, 2006 - August 22, 2006

### **Test Results**

The results obtained during the initial thermal performance testing for DFS-HSM-02 are provided in Table 1 and shown in Figure 1. The results obtained during the initial thermal performance testing for DFS-HSM-01 are provided in Table 2 and shown in Figure 2. The results obtained during the initial thermal performance testing for DFS-HSM-04 are provided in Table 3 and shown in Figure 3.

The test data obtained for each of the casks was within established acceptance criteria. The Omaha Public Power District (OPPD) has determined that the storage system is performing as designed, since the equilibrium temperature rises measured do not exceed the calculated values. This ensures the fuel clad temperature and concrete temperatures are maintained at or below acceptable long-term limits.

**Table 1**  
**DFS-HSM-02 Data**

<b>Date / Time</b>	<b>Ambient Temperature (°F)</b>	<b>Avg. Exhaust Temperature (°F)</b>	<b>Temperature Delta (°F)</b>	<b>Calculated Delta (°F)</b>
7/29/06 18:00	96.4	97.0	0.6	34.0
7/30/06 23:15	85.6	97.3	11.7	33.5
8/1/06 0:10	85.6	95.4	9.8	33.5
8/2/06 1:45	76.2	94.8	18.6	32.5
8/2/06 23:15	72.0	93.2	21.2	32.5
8/3/06 21:00	78.5	95.1	16.6	32.5

**Table 2**  
**DFS-HSM-01 Data**

<b>Date / Time</b>	<b>Ambient Temperature (°F)</b>	<b>Avg. Exhaust Temperature (°F)</b>	<b>Temperature Delta (°F)</b>	<b>Calculated Delta (°F)</b>
8/5/06 14:00	94.0	94.0	0.0	34.0
8/6/06 19:30	74.3	92.8	18.5	32.5
8/8/06 0:50	67.8	90.5	22.7	32.5
8/8/06 23:45	72.4	91.0	18.6	32.5
8/10/06 0:00	78.9	93.2	14.3	33.0

**Table 3**  
**DFS-HSM-04 Data**

<b>Date / Time</b>	<b>Ambient Temperature (°F)</b>	<b>Avg. Exhaust Temperature (°F)</b>	<b>Temperature Delta (°F)</b>	<b>Calculated Delta (°F)</b>
8/18/06 13:45	87.2	88.4	1.2	33.5
8/19/06 9:45	74.1	85.8	11.7	33.0
8/20/06 13:15	77.5	91.5	14.0	33.0
8/21/06 16:15	86.5	94.1	7.6	33.5
8/22/06 13:30	88.0	93.7	5.7	35.0

**Figure 1 - DFS-HSM-02 Temperature Data**

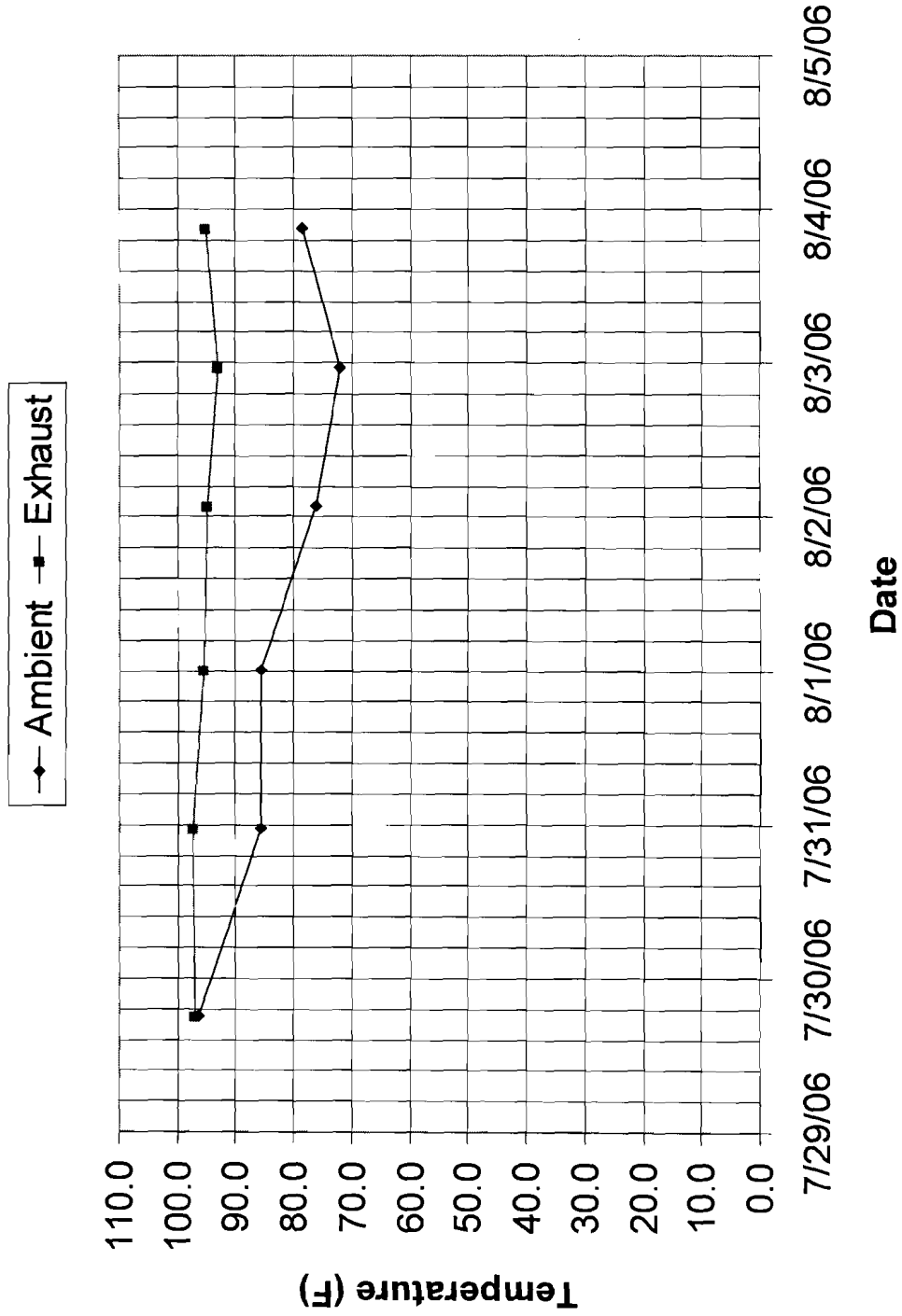
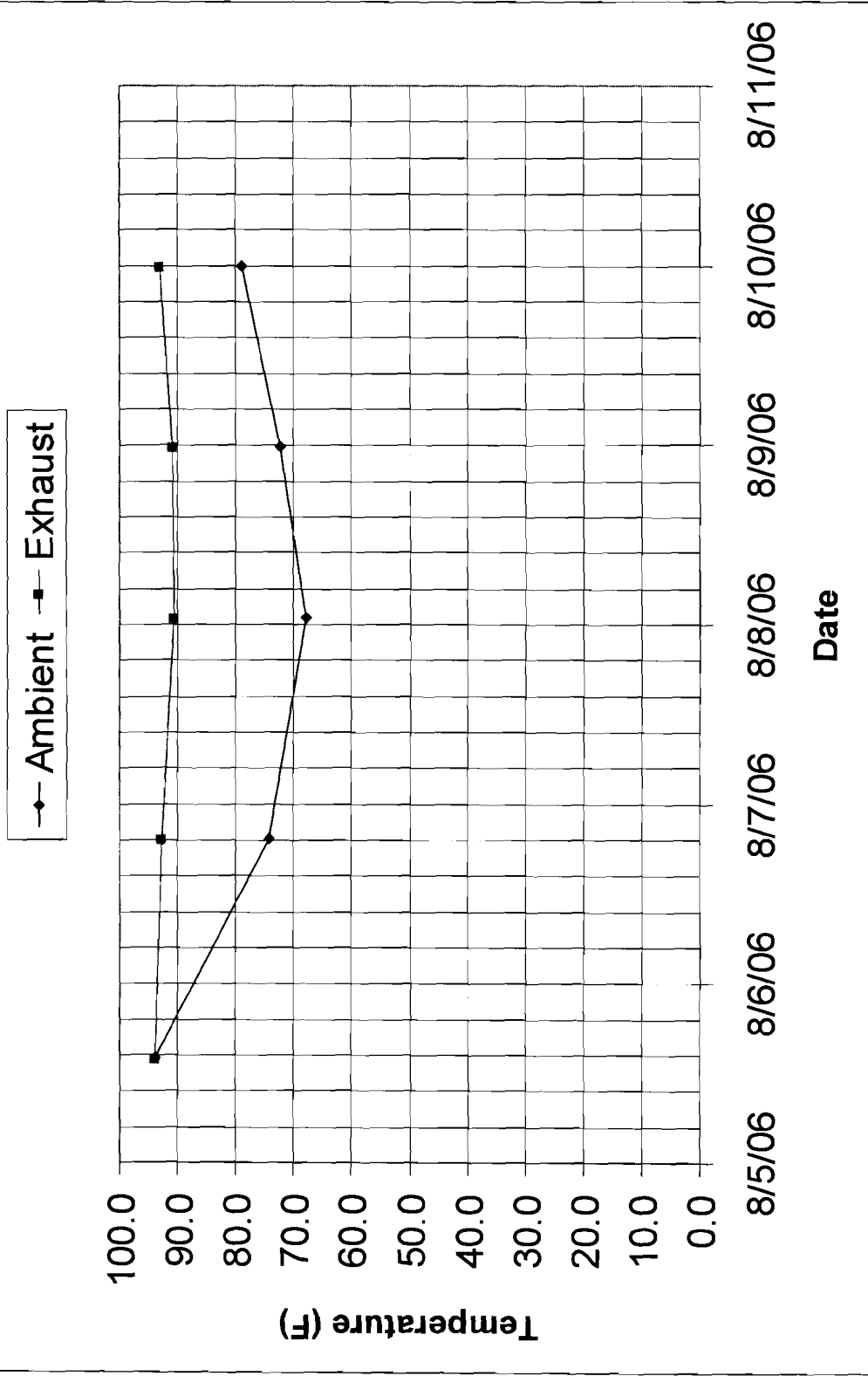
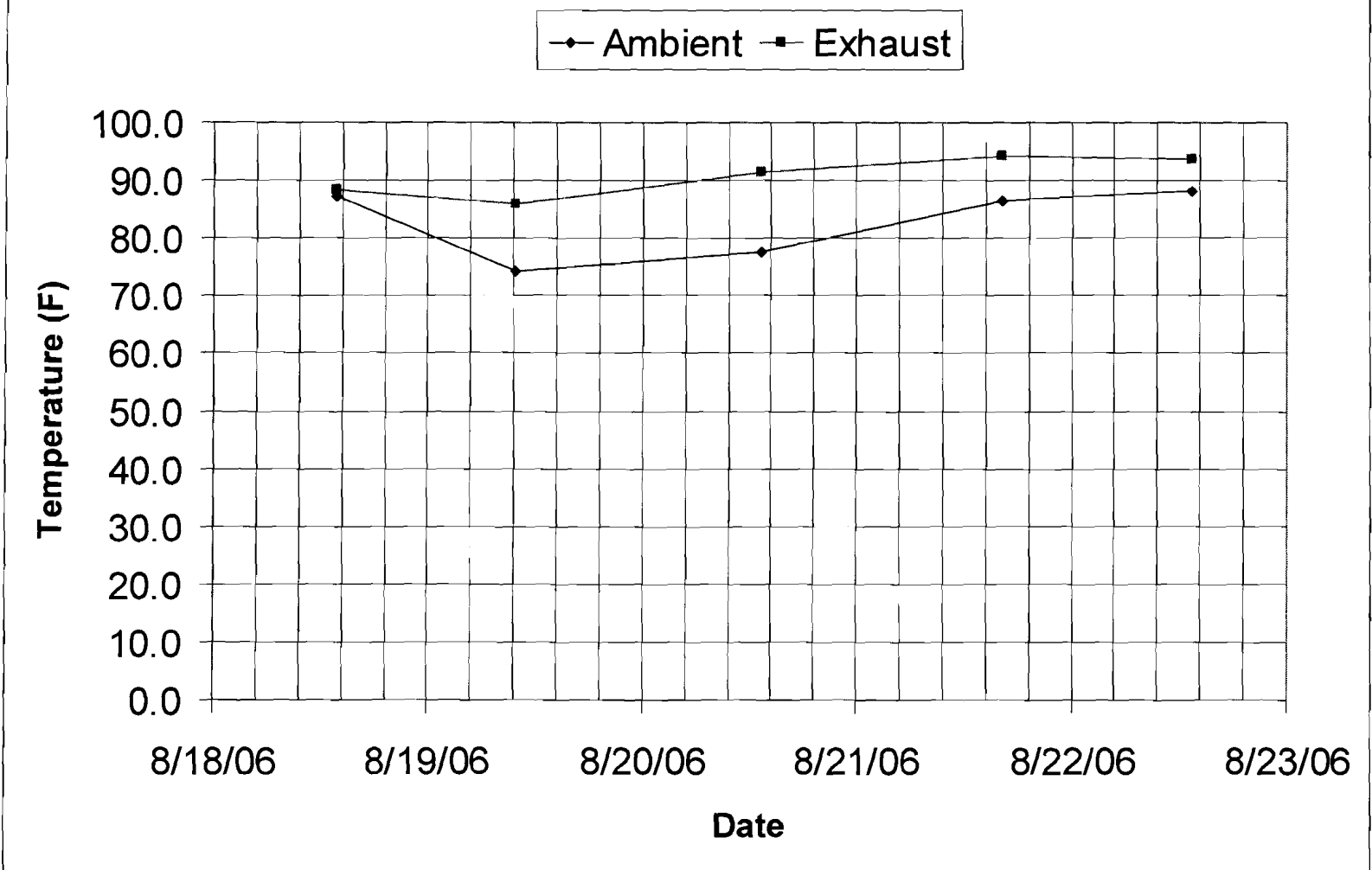


Figure 2 - DFS-HSM-01 Temperature Data





**Figure 3 - DFS-HSM-04 Temperature Data**



**References**

1. Letter from William H. Ruland (NRC) to Ross Ridenoure (OPPD) date July 19, 2006, Exemption from 10 CFR 72.48, 10 CFR 72.212 and 10 CFR 72.214 for Dry Fuel Storage Activities – Fort Calhoun (TAC No. L23984) (NRC-06-0089) (ML062000153)
2. Transnuclear Calculation, NUH004-0432, “HSM Model 202 Thermal Performance Analysis in Support of 72.48 Evaluation”