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August 8, 2007

Director, Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Duke Power Company LLC d/b/a Duke Energy Carolinas, LLC
Oconee Nuclear Station, Units 1, 2, and 3
Docket Numbers 50-269, 50-270, and 50-287
Independent Spent Fuel Storage Installation (ISFSI) - General License
Cask Certificate of Compliance, Docket No.: 72-1004
30-day Report for Higher Canister Heat Loading per General
Requirement Section 1.1.7

In accordance with the subject Certificate of Compliance (CofC) sections, Duke Power Company LLC d/b/a Duke Energy Carolinas, LLC (Duke), hereby submits the subject report to the Commission. NUHOMS 24PHBL Horizontal Storage Module (HSM) W-51 was placed in service at the Oconee Nuclear Site on July 13, 2007. The total spent fuel decay heat load of the Dry Shielded Canister (DSC) was 18.95 kilowatts (kW), which exceeded the maximum heat load of previously loaded canisters and, pursuant to General Requirement 1.1.7, a 30-day report is required whenever this situation occurs (up to 24 kW).

The heat transfer characteristics were determined for the loaded HSM as required by Technical Specification 1.2.8 of the subject CofC. The difference between the average HSM inlet and outlet temperatures was used to calculate a temperature rise. This value was compared to a predicted maximum temperature rise (as a function of average inlet temperature and DSC heat load). The methodology for this predicted temperature rise is documented in the General License Certified Safety Analysis Report for the HSM, and in Trans-Nuclear West calculation NUH004.0420.

The calculated temperature rise for the HSM is plotted with the predicted temperature difference rise for an 18.95 kW DSC in Attachment 1. Temperature measurements and the calculated temperature rise for the HSM are shown in Attachment 2. Since the equilibrium temperature rises measured do not exceed the calculated values, the HSM and DSC have been verified to be performing as designed.

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If there are any questions regarding this submittal, please contact Stephen C. Newman, Oconee Regulatory Compliance Group at (864) 885-4388.

Very truly yours,

Bruce Hamilton

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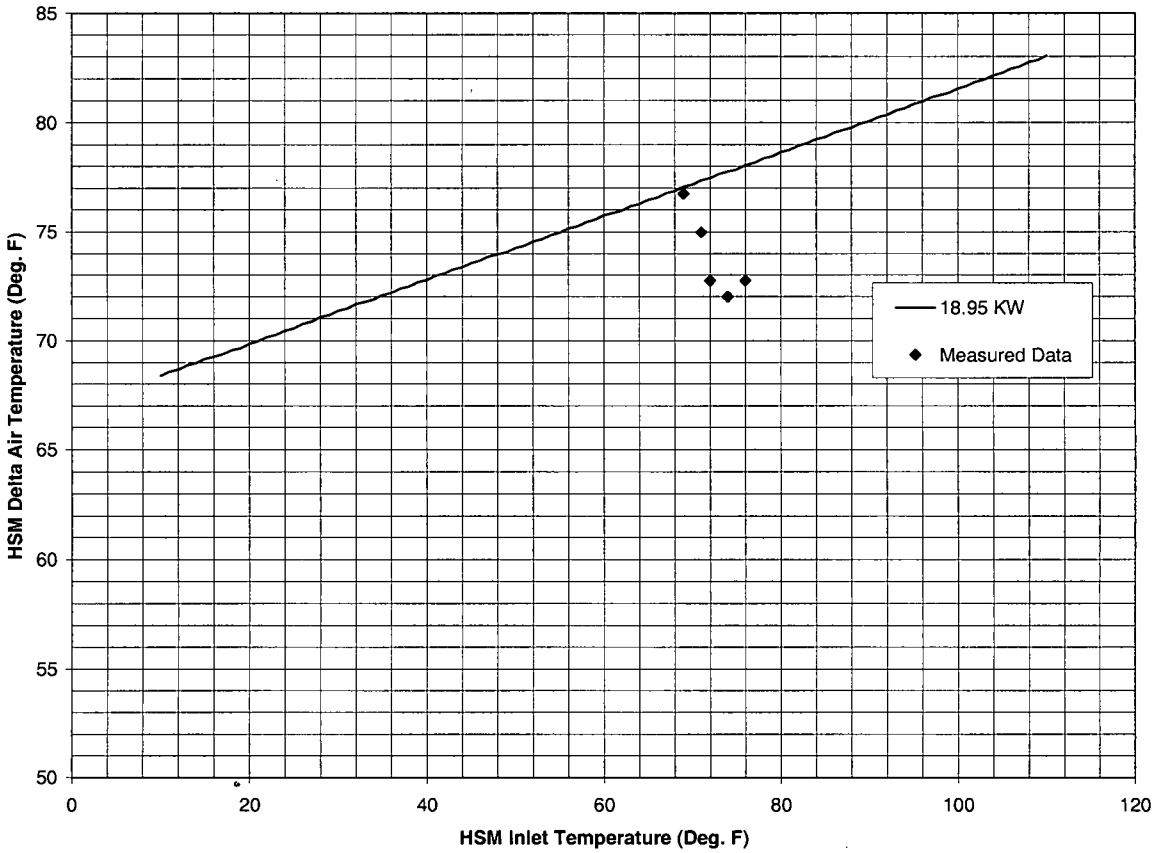
ATTACHMENT 1

HSM W-51 Temperature Rise (calculated vs. predicted)



ATTACHMENT 2

Heat Transfer Characteristics for HSM W-51 at ONS

Date	Avg. Inlet Temperature (°F)	Avg. Outlet Temperature (°F)	Temperature Rise (°F)	Calculated Rise (°F)
7/13/07	75.5	148.25	72.75	77.96
7/14/07	69.5	146.25	76.75	77.11
7/15/07	71.75	144.5	72.75	77.43
7/16/07	71.25	146.25	75	77.38
7/17/07	74.25	146.25	72	77.78