



**BRUCE H HAMILTON**  
Vice President  
Oconee Nuclear Station

**Duke Energy Corporation**  
ON01VP / 7800 Rochester Highway  
Seneca, SC 29672

864 885 3487

864 885 4208 fax

bhhamilton@duke-energy.com

September 5, 2006

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

**Subject: Oconee Nuclear Site**  
**Docket Nos. 50-269, -270, -287**  
**Cask Heat Transfer Report per Certificate of Compliance 72-1004,**  
**Sections 1.1.7 and 1.2.8, for the Oconee Independent Spent Fuel**  
**Storage Installation (ISFSI) Phase V Load Number 85**

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 24PHB Horizontal Storage Module (HSM) E-47 was placed in service at the Oconee Nuclear Site on August 7, 2006. The total spent fuel decay heat load of the Dry Shielded Canister (DSC) was 18.74 kilowatts (kW), which exceeds the maximum heat load of previously loaded canisters.

The heat transfer characteristics were determined for the loaded HSM as required by 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 18.74 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.

NM5501

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

Very truly yours,

A handwritten signature in black ink that reads "Bruce Hamilton". The signature is written in a cursive style with a large initial "B".

B. H. Hamilton, Vice President  
Oconee Nuclear Site

Attachments (2)

cc: W. D. Travers, Regional Administrator  
Region II

D. W. Rich, Senior Resident Inspector  
Oconee Nuclear Site

Mr. L. N. Olshan, Project Manager  
Office of Nuclear Reactor Regulation

Director, Spent Fuel Projects Office

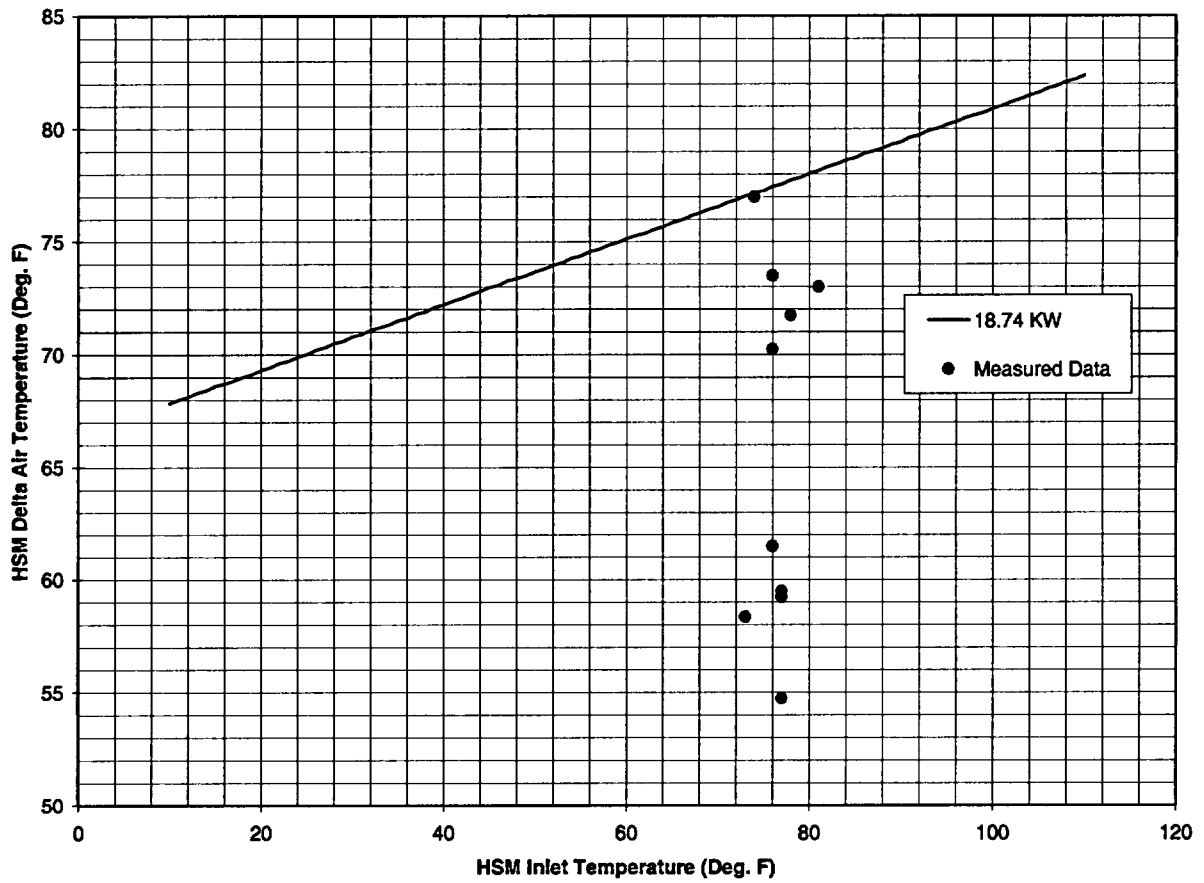
Binoy Desai, Senior Fuel Facility Inspector  
Region II

bcc

R. M. Glover  
D. A. Baxter  
L. E. Nicholson  
B. G. Davenport  
T. P. Gillespie  
C. D. Fago  
R. L. Gill (NRI&IA)  
T. C. Geer  
L. C. Arnold  
S. Perrero  
G. R. Walden  
ONS Doc Control  
ELL

ATTACHMENT 1

HSM E-47 Temperature Rise (calculated vs. predicted)



ATTACHMENT 2

Heat Transfer Characteristics for HSM E-47 at ONS

Date	Avg. Inlet Temperature (°F)	Avg. Outlet Temperature (°F)	Temperature Rise (°F)	Calculated Rise (°F)
8/7/06	75.75	137.25	61.5	77.39
8/8/06	77.5	137	59.5	77.64
8/9/06	77	131.75	54.75	77.54
8/10/06	77.15	136.38	59.22	77.57
8/11/06	77	136.25	59.25	77.54
8/12/06	73.4	131.75	58.35	77.08
8/21/06	81	154	73	78.14
8/22/06	75.75	149.25	73.5	77.39
8/23/06	78.25	150	71.75	77.77
8/24/06	74.25	151.25	77	77.17
8/25/06	75.75	146	70.25	77.39