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Document Control Desk  
Director, Division of Spent Fuel Storage and Transportation  
Office of Nuclear Material Safety and Safeguards  
United States Nuclear Regulatory Commission  
Washington, DC 20555-0001

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2  
DOCKET NO. 50-261/LICENSE NO. DPR-23

INDEPENDENT SPENT FUEL STORAGE INSTALLATION  
DOCKET NO. 72-60

REGISTRATION OF USE OF SPENT FUEL CASKS AND NUHOMS® - 24PTH SYSTEM -  
THERMAL PERFORMANCE MEASUREMENTS

Ladies and Gentlemen:

Pursuant to 10 CFR 72.212(b)(2), Carolina Power & Light Company (CP&L), now doing business as Progress Energy Carolinas, Inc., hereby provides the following information to register the use of two casks to store spent nuclear fuel in dry storage in an Independent Spent Fuel Storage Installation (ISFSI) at the H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, site. The fuel is stored under the conditions of a general license.

Common information for the casks:

Licensee Name: Carolina Power and Light Company, also known as Progress Energy Carolinas (PEC), Inc.

Licensee Address: H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2  
3581 West Entrance Road  
Hartsville, SC 29550

Reactor License Number: DPR-23

Reactor Docket Number: 50-261

ISFSI Docket Number: 72-60

Progress Energy Carolinas, Inc.  
Robinson Nuclear Plant  
3581 West Entrance Road  
Hartsville, SC 29550

NHSS26

Common information for the casks (continued):

Information Contact: Rich Rogalski  
Supervisor – Licensing/Regulatory Programs  
843-857-1626

Cask Certificate Number: 1004, Amendment 10

Cask Model Number: NUHOMS®- 24PTH

Cask Specific Information:

<b>Cask Identification Number</b>	<b>Date Placed in Service</b>	<b>Horizontal Storage Module Number</b>	<b>Heat Load (kW)</b>
RNP-24PTH-L-1C-HZ13	07/06/2011	HSM21	31.67
RNP-24PTH-L-1C-HZ14	07/13/2011	HSM22	34.0

Dry Fuel Storage Cask Certificate of Compliance (CoC) No. 1004, Amendment No. 10, Technical Specification 1.1.7, “Special Requirements for First System in Place,” requires that the first user of a system take special temperature measurements and provide the results of those measurements to the NRC. This letter fulfills that Technical Specification requirement.

The NUHOMS®- 24PTH system is designed to store fuel with a heat load of up to 40.8 kW per DSC. PEC could not load a DSC with a 40.8 kW heat load due to restrictions placed on the heat load of individual assemblies as described in the NRC letter dated August 4, 2005. The previous highest heat load for the DSCs loaded was:

<b>DSC Number</b>	<b>Date HSM Loaded</b>	<b>Heat Load (kW)</b>
RNP24PTH-L-2C-HZ04	September 1, 2005	29.35

Based on the requirements of Technical Specification 1.1.7 and the above loading history, special temperature measurements were required for the DSC identified in this registration since they exceeded the heat load of DSC HZ04 above.

The attachment provides the calculation that was used to determine the limiting temperature differential between the HSM air inlet and air outlet for the four heat loads specified above.

The calculated temperature differential limit is a function of both the DSC heat load and the ambient temperature. For DSC HZ13, the heat load was 31.67 kW and the ambient temperature each day, at the time of the temperature measurements, was between 69°F and 87°F. Based on these conditions and using Table 7-1 in the attachment, the maximum allowable temperature rise is approximately 72°F. The HSM for the first DSC was closed on July 06, 2011, and the temperature rise reached equilibrium by July 15, 2011. On July 15, 2011, the air inlet


temperature was 69.66°F (based on an average of three measurements) and the air outlet temperature was 123.1°F (based on an average of four measurements). This gives an actual temperature rise of 53.44°F, which is significantly less than the allowable conservative limit of 72°F shown in Table 7.1.

For DSC HZ14, the heat load was 34.0 kW and the ambient temperature each day, at the time of the temperature measurements, was between 69°F and 101°F. Based on these conditions and using Table 7-1 in the attachment, the maximum allowable temperature rise is approximately 77.5°F. The HSM for DSC HZ14 was closed on July 13, 2011, and the temperature rise reached equilibrium by July 17, 2011. On July 17, 2011, the air inlet temperature was 84.66°F (based on an average of three measurements) and the air outlet temperature was 117.95°F (based on an average of four measurements). This gives an actual temperature rise of 33.29°F, which is significantly less than the allowable conservative limit of 77.5°F.

Based on these measurements, it can be concluded that the thermal analyses, as described in the Amendment No. 10 NUHOMS® - 24PTH FSAR, are conservative.

If you have any questions concerning this matter, please contact me at 843-857-1626.

Sincerely,

A handwritten signature in black ink, appearing to read 'R Rogalski', with a stylized flourish at the end.

Rich Rogalski  
Supervisor – Licensing/Regulatory Programs

RJR/rjr

c: V. M. McCree, NRC, Region II  
B. L. Mozafari, NRC, NRR  
NRC Resident Inspector  
Mr. L. R. Wharton, NRC, NMSS