CP&L

Carolina Power & Light Company
PO Box 165
New Hill NC 27562

James Scarola
Vice President
Harris Nuclear Plant

JUL 19 2000

SERIAL: HNP-00-102
10CFR50.90

United States Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT
DOCKET NO. 50-400/LICENSE NO. NPF-63
SUPPLEMENTAL CHANGES TO
LICENSE AMENDMENT REQUEST -
SPENT FUEL STORAGE

Dear Sir or Madam:

By letter SERIAL: HNP-98-188, dated December 23, 1998, Carolina Power & Light Company (CP&L) submitted a license amendment request to increase fuel storage capacity at the Harris Nuclear Plant (HNP) by placing spent fuel pools C & D in service. Specifically, the license amendment request included proposed revisions to Technical Specification ('Specification') Section 5.6 (Fuel Storage) to reflect the addition of rack modules to pools C and D.

Prior to submittal of the license amendment request, however, the technical reviews of the proposed Specification 5.6 revision did not disclose the inadvertent removal of current Specification 5.6.1.a.2, which is presently referenced in Specification 5.3.1 — a specification that was not included in the December 23, 1998 license amendment request. As a result, present Specification 5.3.1, along with the proposed Specification 5.6 changes submitted as Enclosure 5 to the aforementioned license amendment request, must now be revised to reinstate the requirement of current Specification 5.6.1.a.2 for pools A and B. Enclosure 2 provides these corrections to current Specification 5.3.1 (page 5-6) and proposed Specification 5.6.1 (pages 5-7 and 5-7a). The reviews conducted to ensure accuracy of this supplemental submittal also revealed that index page xvii to the HNP Technical Specifications had not been revised to reflect the addition of proposed Figure 5.6-1 to the Technical Specifications. The necessary revision to index page xvii is enclosed along with a re-submittal of proposed Figure 5.6-1 (page 5-7b). Please replace the Technical Specification pages provided in the December 23, 1998 package with the pages provided in Enclosure 2. The page change instructions are provided in Enclosure 1.

A001

The Technical Specification page changes included as Enclosure 2 to this letter are provided as a supplement to our December 23, 1998 amendment request. These proposed changes are provided to maintain an existing requirement for pools A and B and revise the Technical Specification index to reflect the addition of proposed Figure 5.6-1; they do not affect the conclusions of either the 10 CFR 50.92 evaluation or the Environmental Considerations previously submitted; nor do these changes expand upon the scope of the amendment request as initially submitted.

Please refer any questions regarding the enclosed information to Mr. Steven Edwards at (919) 362-2498.

Sincerely,

James Scarola

KWS/kws

Enclosures

James Scarola, having been first duly sworn, did depose and say that the information contained herein is true and correct to the best of his information, knowledge and belief, and the sources of his information are employees, contractors, and agents of Carolina Power & light Company.

Darlene S. Yarborough
Notary (Seal)

My commission expires: 2-21-2005

DARLENE S. YARBOROUGH NOTARY *** PUBLIC HARNETT COUNTY, NC

c: (all w/Enclosures)

Mr. J. B. Brady, NRC Senior Resident Inspector
Mr. Mel Fry, N.C. DEHNR
Mr. R. J. Laufer, NRC Project Manager
Mr. L. A. Reyes, NRC Regional Administrator – Region II

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PAGE CHANGE INSTRUCTIONS

Removed Page	Inserted Page
Index page xvii	Index page xvii
5-6	5-6
5-7	5-7
	5-7a
	5-7b

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TECHNICAL SPECIFICATION PAGES

INDEX

5.0 DESIGN FEATURES

DESIGN PRESSURE AND TEMPERATURE

5.2.2 The containment building is designed and shall be maintained for a maximum internal pressure of 45.0 psig and a peak air temperature of 380°F.

5.3 REACTOR CORE

FUEL ASSEMBLIES

5.3.1 The core shall contain 157 fuel assemblies with each fuel assembly normally containing 264 fuel rods clad with Zircaloy-4 except that limited substitution of fuel rods by filler rods consisting of Zircaloy-4, stainless steel, or by vacancies may be made in fuel assemblies if justified by a cycle-specific evaluation. Should more than a total of 30 fuel rods or more than 10 fuel rods in any one assembly be replaced per refueling a Special Report describing the number of rods replaced will be submitted to the Commission, pursuant to Specification 6.9.2, within 30 days after cycle startup. Each fuel rod shall have a nominal active fuel length of 144 inches. The initial core loading shall have a maximum enrichment of 3.5 weight percent U-235. Reload fuel shall be similar in physical design to the initial core loading and shall have a maximum enrichment of 5.0 weight percent U-235. Fuel with enrichments greater than 4.20 weight percent U-235 shall contain sufficient integral burnable absorbers such that the requirement of Specification 5.6.1.a.2 is met.

Delete

Add 5.6.1.1.b

CONTROL ROD ASSEMBLIES

5.3.2 The core shall contain 52 shutdown and control rod assemblies. The shutdown and rod assemblies shall contain a nominal 142 inches of absorber material. The nominal values of absorber material shall be 80% silver, 15% indium, and 5% cadmium, or 95% hafnium with the remainder zirconium. All control rods shall be clad with stainless steel tubing.

5.4 REACTOR COOLANT SYSTEM

DESIGN PRESSURE AND TEMPERATURE

5.4.1 The Reactor Coolant System is designed and shall be maintained:

a. In accordance with the Code requirements specified in Section 5.2 of the FSAR, with allowance for normal degradation pursuant to the applicable Surveillance Requirements,

b. For a pressure of 2485 psig, and

c. For a temperature of 650°F, except for the pressurizer which is 680°F.

VOLUME

5.4.2 The total water and steam volume of the Reactor Coolant System is 9410 ± 100 cubic feet at a nominal T_{avg} of 580.8°F.

Delete (1)

Delete (6)

5.6 FUEL STORAGE

CRITICALITY

5.6.1.a The spent fuel storage racks are designed and shall be maintained with a k_{eff} less than or equal to 0.95 when flooded with unborated water, which includes an allowance for uncertainties as described in Section 4.3.2.6 of the FSAR. This is assured by maintaining:

1. A nominal 10.5 inch center-to-center distance between fuel assemblies placed in the PWR storage racks and 6.25 inch center-to-center distance in the BWR storage racks.

2. The maximum core geometry K_∞ for PWR fuel assemblies less than or equal to 1.470 at 68°F.

5.6.1.b The k_{eff} for new fuel for the first core loading stored dry in the spent fuel storage racks shall not exceed 0.98 when aqueous foam moderation is assumed.

DRAINAGE

5.6.2 The new and spent fuel storage pools are designed and shall be maintained to prevent inadvertent draining of the pools below elevation 277.

CAPACITY

5.6.3 The new and spent fuel storage pools are designed for a storage capacity of 1832 PWR fuel assemblies and a variable number of PWR and BWR storage spaces in 48 interchangeable 7x7 PWR and 11x11 BWR racks. These interchangeable racks will be installed as needed. Any combination of BWR and PWR racks may be used.

5.7 COMPONENT CYCLIC OR TRANSIENT LIMIT

5.7.1 The components identified in Table 5.7-1 are designed and shall be maintained within the cyclic or transient limits of Table 5.7-1.

Insert Figure 5.6-1 on new page# 5-7b

Delete

Insert A

Delete

INSERT A

1. The reactivity margin is assured for pools "A" and "B" by maintaining:

   a. A nominal 10.5 inch center-to-center distance between fuel assemblies placed in the flux trap style PWR storage racks and 6.25 inch center-to-center distance in the BWR storage racks.

   b. The maximum core geometry K_{∞} for PWR fuel assemblies less than or equal to 1.470 at 68°F.

2. The reactivity margin is assured for pools "C" and "D" by maintaining a nominal 9.017 inch center-to-center distance between fuel assemblies placed in the non-flux trap style PWR storage racks and 6.25 inch center to center distance in the BWR storage racks. The following restrictions are also imposed through administrative controls:

   a. PWR assemblies must be within the "acceptable range" of the burnup restrictions shown in Figure 5.6-1 prior to storage in Pools "C" or "D".

   b. BWR assemblies are acceptable for storage in Pool "C" provided the maximum planar average enrichments are less than 4.6 wt% U235 and K_{inf} is less than or equal to 1.32 for the standard cold core geometry (SCCG).

DRAINAGE

5.6.2 The pools "A", "B", "C" and "D" are designed and shall be maintained to prevent inadvertent draining of the pools below elevation 277.

CAPACITY

5.6.3.a Pool "A" contains six (6 x 10 cell) flux trap type PWR racks and three (11 x 11 cell) BWR racks for a total storage capacity of 723 assemblies. Pool "B" contains six (7 x 10 cell), five (6 x 10 cell), and one (6 x 8 cell) flux trap style PWR racks and seventeen (11 x 11 cell) BWR racks and is licensed for one additional (11 x 11 cell) BWR rack that will be installed as needed. The combined pool "A" and "B" licensed storage capacity is 3669 assemblies.

5.6.3.b Pool "C" is designed to contain a combination of PWR and BWR assemblies. Pool "C" can contain two (11 x 9 cell) and nine (9 X 9 cell) PWR racks for storage of 927 PWR assemblies. Pool "C" can contain two (8 x 13 cell), two (8 x 11 cell), six (13 x 11 cell), and nine (13 x 13 cell) BWR racks for storage of 2763 BWR assemblies. The (9 x 9 cell) PWR racks and the (13 x 13 cell) BWR racks are dimensioned to allow interchangeability between PWR or BWR storage rack styles as required. The racks in pool "C" will be installed as needed.

5.6.3.c Pool "D" contains a variable number of PWR storage spaces. These racks will be installed as needed. Pool "D" is designed for a maximum storage capacity of 1025 PWR assemblies.

5.6.3.d The heat load from fuel stored in Pools "C" and "D" shall not exceed 1.0 MBtu/hr.

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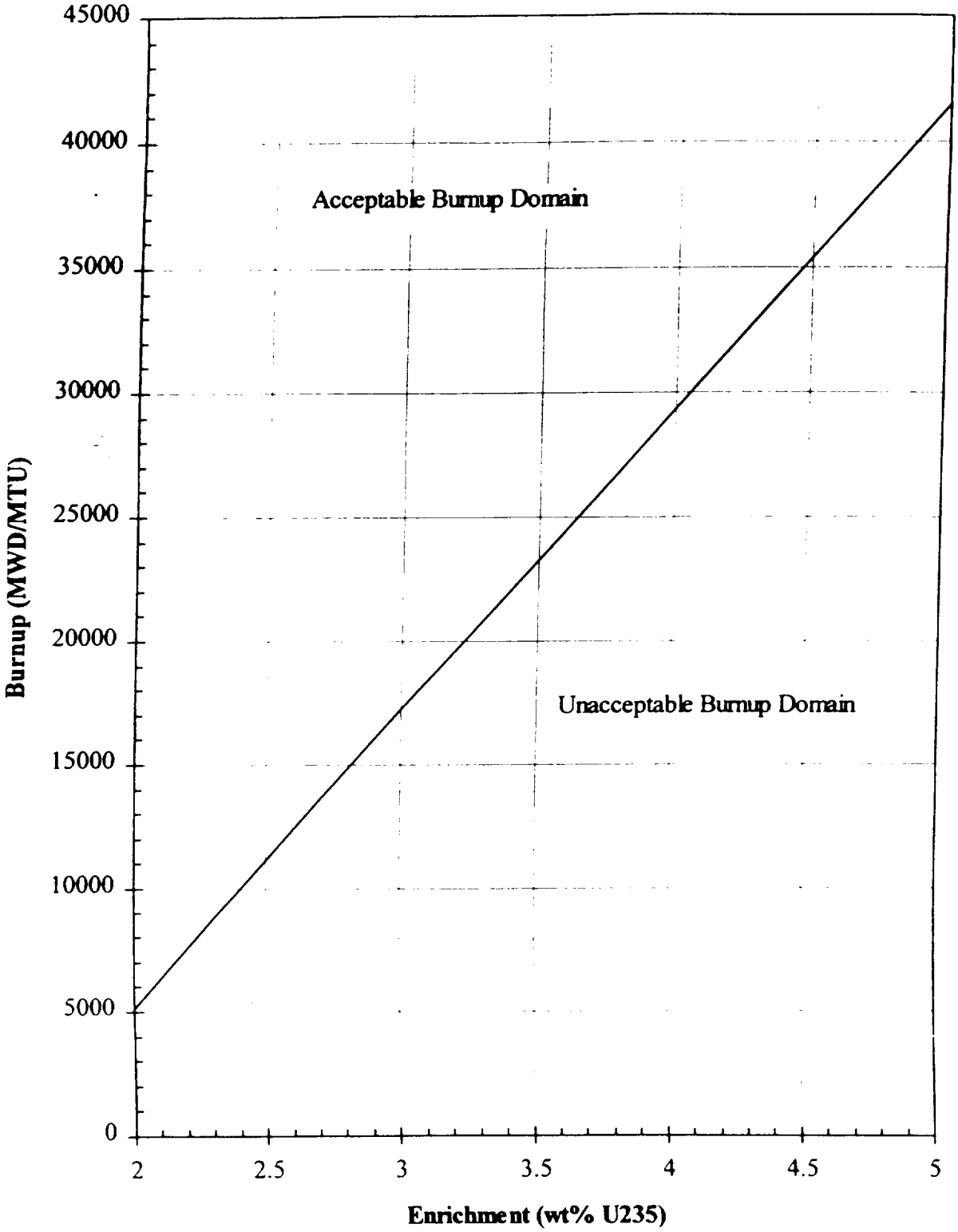

FIGURE 5.6-1
BURNUP VERSUS ENRICHMENT FOR PWR FUEL