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 CUTTER, A. B. Carolina Power & Light Co.  
 RECIP. NAME RECIPIENT AFFILIATION  
 RUBENSTEIN, L. S. PWR Project Directorate 2

SUBJECT: Forwards revised pages to Tech Specs specifying storage configuration options in new fuel vault delineated in Exxon Aug 1986 rept, per 861118 conference (ref 861013 application for amend to License DPR-23).

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DEC 11 1986

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Director of Nuclear Reactor Regulation  
Attention: Mr. Lester S. Rubenstein, Director  
PWR Project Directorate #2  
Division of PWR Licensing - A  
United States Nuclear Regulatory Commission  
Washington, DC 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2  
DOCKET NO. 50-261/LICENSE NO. DPR-23  
CLARIFICATION OF INCREASED FUEL ENRICHMENT  
LICENSE AMENDMENT REQUEST

Dear Sir:

Carolina Power & Light Company (CP&L) submitted a request for a license amendment on October 13, 1986 to allow storage of new and spent fuel with an initial enrichment up to 3.9 weight percent of U-235.

During a November 18, 1986 conference call with your staff it was agreed that CP&L would provide more specific information regarding allowable configurations for storage in the new fuel vault. This letter provides revised Technical Specification pages specifying storage configuration options delineated in the Exxon Report "Final Report, Criticality Safety Analysis, H. B. Robinson New Fuel Storage Vault with 4.2 Percent. Enriched 15 x 15 Fuel Assemblies," August 1986 (Exxon Report No. XN-NF-86-100). The storage options have been inverted and relabeled to conform to the specific configuration of the H. B. Robinson Unit 2 new fuel vault. These pages supersede corresponding pages in our October 13, 1986 submittal.

Questions regarding this matter may be referred to Mr. R. W. Prunty at (919) 836-7318.

Yours very truly,

A. B. Cutter - Vice President  
Nuclear Engineering & Licensing

JSK/kts (5069JSK)  
Enclosures

cc: Dr. J. Nelson Grace (NRC-RII)  
Mr. G. Requa (NRC)  
Mr. H. Krug (NRC Resident Inspector - RNP)  
Mr. Heyward G. Shenly (SC)  
Attorney General (SC)

A. B. Cutter, 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 officers, employees, contractors, and agents of Carolina Power & Light Company.

My commission expires: 2/18/90

  
Notary (Seal)

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## 5.4 FUEL STORAGE

### 5.4.1 SPENT FUEL PIT

The new and spent fuel pit structures are designed to withstand the anticipated earthquake loadings as Class I structures. The spent fuel pit has a stainless steel liner to ensure against loss of water.<sup>(1)</sup>

### 5.4.2 CRITICALITY

#### 5.4.2.1 NEW FUEL STORAGE RACKS

Due to the new fuel storage rack design, a nominal 21-inch center-to-center distance is maintained between fuel assemblies. To permit storage of fuel with a maximum assembly axial plane enrichment of 3.9 weight percent U-235, additional separation is maintained by use of any of the storage rack location options below<sup>(2)</sup> in order to establish a geometry which ensures that  $k_{eff}$  is less than 0.95 assuming the new fuel storage racks are flooded with unborated water and which assures that  $k_{eff}$  is less than 0.98 in an optimum moderation event.

The four listed options provide fuel storage locations which are secured to prevent fuel storage in those locations

OPTION A: B4,6,8,10 / C3,5,7,9 / D4,6,8,10 / E3,5,7,9 / F4,6,8,10 / G3,5,7,9  
H4,6,8,10 / J3,5,7,9

OPTION B: C4,5,6,7,8,9 / D4,5,6,7,8,9, / E4,5,6,7,8,9, / F4,5,6,7,8,9  
G4,5,6,7,8,9 / H4,5,6,7,8,9

OPTION C: C4,5,6,7,8,9 / D4,5,6,7,8,9 / E4,5,8,9 / F4,5,8,9 / G4,5,6,7,8,9  
H4,5,6,7,8,9

OPTION D: C4,5,6,7,8,9 / D4,5,8,9 / E4,5,8,9 / F1,4,5,8,9 / G1,4,5,8,9  
H1,4,5,6,7,8,9 / J1 / K1

#### 5.4.2.2 SPENT FUEL STORAGE PIT

A combination of nominal assembly spacing and neutron absorbent material between stored assemblies is maintained to ensure that  $k_{\text{eff}}$  is less than 0.95 when flooded with unborated water based on a maximum assembly axial plane enrichment of 3.9 weight percent U-235.

#### 5.4.3 BORON CONCENTRATION - SPENT FUEL STORAGE PIT

The spent fuel storage pit is filled with borated water at a concentration of greater than or equal to 1500 ppm during refueling operations or new fuel movement in the spent fuel storage pit. This minimum boron concentration ensures subcriticality under worst case design events.

#### 5.4.4 STORAGE CAPACITY - SPENT FUEL STORAGE PIT

The spent fuel storage pit provides a storage location for 544 fuel assemblies.

#### Reference

- (1) FSAR Section 9.1
- (2) XN-NF-86-100, "Final Report, Criticality Safety Analysis, H. B. Robinson New Fuel Storage Vault with 4.2 Percent Enriched 15 x 15 Fuel Assemblies, August, 1986"