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 ROBINSON, W.R.      Carolina Power & Light Co.  
 RECIPIENT NAME      RECIPIENT AFFILIATION  
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SUBJECT: Submits info re estimated effect of error identified in ECCS model, per 10CFR50.46(a)(3)(ii). Error results in reduction of PCT for large break LOCA analysis be amount greater than 50 F.

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

William R. Robinson  
 Vice President  
 Harris Nuclear Plant

JUN - 2 1998

SERIAL: HNP-98-081  
 10 CFR 50.46

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  
 EMERGENCY CORE COOLING SYSTEM EVALUATION CHANGES

Dear Sir or Madam:

Carolina Power & Light Company (CP&L) hereby submits information required pursuant to 10 CFR 50.46(a)(3)(ii) for the Harris Nuclear Plant (HNP), regarding the estimated effect of an error identified in the Emergency Core Cooling System (ECCS) evaluation model. The error results in a reduction of the fuel Peak Clad Temperature (PCT) for the Large Break Loss of Coolant Accident (LBLOCA) analysis by an amount greater than 50 °F. Thus, this letter fulfills the 10 CFR 50.46 requirement for a 30-day report.

The HNP ECCS performance following a LBLOCA is calculated by HNP's fuel vendor, Siemens Power Corporation (SPC), using the EXEM/PWR LBLOCA model. By letter dated May 5, 1998, SPC provided information to CP&L regarding a RELAP4 (part of the EXEM/PWR LBLOCA) computer code variability problem. It was identified that small changes in the input to RELAP4 can result in large changes in the calculated PCT during a LBLOCA. This variability problem was reported by SPC to the NRC as a reportable defect per 10 CFR Part 21 on May 1, 1998.

The SPC letter to CP&L includes an estimate of the impact of the error on the PCT for HNP. The error reduces the HNP PCT for the LBLOCA by approximately 135 °F. The previous LBLOCA PCT reported for HNP was 1993 °F, as submitted to the NRC by letter dated October 1, 1997. Since the error's impact on the PCT is in the conservative direction, HNP will not incorporate the error into its existing PCT value at this time. The LBLOCA PCT value for HNP will remain as 1993 °F. Because this PCT value is less than 2200°F for the LBLOCA analysis, HNP remains in compliance with the requirements specified in 10 CFR 50.46(b).

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SPC plans to submit a topical report to the NRC by August 31, 1998 which will describe the code changes needed to correct the RELAP4 excessive variability and to modify the Dougall-Rohsenow correlation. A re-analysis of the HNP LBLOCA PCT will be performed within nine (9) months of NRC approval of the revised SPC ECCS model.

Questions regarding this matter may be referred to Mr. J. H. Eads at (919) 362-2646.

Sincerely,



AEC/aec

c: Mr. J. B. Brady (NRC Senior Resident Inspector, HNP)  
Mr. L. A. Reyes (NRC Regional Administrator, Region II)  
Mr. S. C. Flanders (NRR Project Manager, HNP)