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

SEP 2 0 2000

SERIAL: HNP-00-132
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:

The purpose of this letter is to submit information required by 10 CFR 50.46 for Carolina Power & Light Company's (CP&L) Harris Nuclear Plant (HNP) concerning the estimated effect of changes to or errors in the Emergency Core Cooling System (ECCS) evaluation models. A recent model change results in an increase in the fuel Peak Clad Temperature (PCT) for the Large Break Loss of Coolant Accident (LBLOCA) analysis by an amount greater than 50°F. Therefore, this letter fulfills the requirement for a 30-day report in accordance with 10 CFR 50.46(a)(3)(ii). This submittal also satisfies HNP's requirement for annual reporting of evaluation model changes.

The HNP ECCS performance following a LBLOCA is calculated by HNP's fuel vendor, Siemens Power Corporation (SPC), using the SEM/PWR-98 ECCS Evaluation Model for LBLOCA Applications. By letter dated August 24, 2000, SPC provided information to CP&L regarding a deficiency in the modeling of the upper plenum to downcomer bypass for the LBLOCA. The deficiency consisted of the use of an inconsistent flow area for the bypass outlet compared to the bypass inlet. This deficiency is estimated to increase the HNP LBLOCA PCT by 181°F. The previous LBLOCA PCT reported for HNP was 1830°F, as documented by letter to the NRC dated May 30, 2000. Since that time, there has been one additional minor change to the LBLOCA PCT. This change was a decrease of 1°F due to an error in the analyzed cladding type. Therefore, the cumulative impact of these two changes is a LBLOCA PCT increase of 180°F, resulting in a LBLOCA PCT of 2010°F. This fulfills the requirement for a 30-day report in accordance with 10 CFR 50.46(a)(3)(ii).

This submittal also satisfies HNP's requirement for 10 CFR 50.46 annual reporting of evaluation model changes. The ECCS performance following postulated accidents is currently calculated for HNP by SPC using the EXEM PWR Small Break LOCA Model for Small Break Loss of Coolant Accidents (SBLOCAs) and the LBLOCA model noted above. SPC has provided updates to CP&L regarding changes and errors affecting the HNP LBLOCA and SBLOCA PCTs. The PCT impacts of the changes and errors in the LOCA evaluation models are summarized in Tables 1 and 2 for LBLOCA and SBLOCA, respectively.

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Table 1: PCT Impact of Changes in Large Break LOCA Model

CHANGED CONDITION	PCT IMPACT (°F)
Error in Flow Blockage Model in TOODEE2	0
Error in RODEX2-2A	0
Cycle 10 Changes	-95
SEM/PWR-98 Model Implementation	-71
Gadolinia Bearing Fuel Rod Model Enhancement	0
Harris Nuclear Plant Cycle 10 Safety Analysis Report	-11
Error in the Analyzed Cladding Type	-1
Improper REFLEX Modeling of Upper Plenum to Downcomer Bypass	+181
Cumulative Impact	**+3**

Table 2: PCT Impact of Changes in Small Break LOCA Model

CHANGED CONDITION	PCT IMPACT (°F)
Error in Flow Blockage Model of TOODEE2	-8
Cumulative Impact	**-8**

HNP's previous annual report to the NRC, dated September 27, 1999, documented a SBLOCA PCT of 1985°F and a LBLOCA PCT of 2007°F. A 30-day report was provided to the NRC on May 30, 2000 which discussed the -95°F, -71°F, and -11°F changes in the LBLOCA Model. The resulting cumulative impact of +3°F from Table 1 results in a LBLOCA PCT of 2010°F. The cumulative impact of -8°F from Table 2 results in a SBLOCA PCT of 1977°F. Analysis by SPC has demonstrated that:

(1) The values for PCT, maximum cladding oxidation, and maximum hydrogen generation remain below the limits specified in 10 CFR 50.46(b),
(2) The core remains amenable to cooling during the transient, and
(3) Long term cooling following the transient is maintained.

Therefore, HNP remains in compliance with the requirements specified in 10 CFR 50.46(b).

Please refer any questions regarding this submittal to Mr. E. McCartney at (919) 362-2661.

Sincerely,

R. J. Field
Manager, Regulatory Affairs
Harris Plant

ONW/onw

c: Mr. J. B. Brady, NRC Sr. Resident Inspector
Mr. Rich Laufer, NRC Project Manager
Mr. L. A. Reyes, NRC Regional Administrator