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 FACIL: 50-400 Shearon Harris Nuclear Power Plant, Unit 1, Carolina 05000400  
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 ZIMMERMAN, S. R. Carolina Power & Light Co.  
 RECIP. NAME RECIPIENT AFFILIATION  
 DENTON, H. R. Office of Nuclear Reactor Regulation, Director (post 851125)

SUBJECT: Notices of completion of reanalysis of large break LOCA for  
 plant. Results indicate local water-zirconium reaction of  
 4.616% & total core water-zirconium reaction less than 0.3%  
 w/2113 F peak clad temp.

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NOTES: Application for permit renewal filed. 05000400

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Carolina Power & Light Company

AUG 26 1986

SERIAL: NLS-86-316

Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
United States Nuclear Regulatory Commission  
Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT  
UNIT NO. 1 - DOCKET NO. 50-400  
LOCA REANALYSIS

Dear Mr. Denton:

Carolina Power & Light Company (CP&L) has completed reanalysis of the Large Break LOCA for the Shearon Harris Nuclear Power Plant (SHNPP). Westinghouse performed this reanalysis for CP&L utilizing the 1981 ECCS Evaluation Model with BART per WCAP-9561, Addendum 3, Revision 1. The limiting break ( $C_D = 0.4$ ) was reanalyzed using the initial conditions specified in CP&L's May 22, 1986 Letter NLS-86-167 utilizing an  $F_q$  limit of 2.28 and a steam generator tube plugging limit of 6 percent.

The results show a local water-zirconium reaction of 4.616 percent, and a total core water-zirconium reaction of less than 0.3 percent with a peak clad temperature of 2113°F.

This analysis does not require any changes to the proposed final Technical Specifications and demonstrates conformance to 10 CFR 50.46 for the SHNPP ECCS Large Break LOCA Analysis.

If you have any questions on this subject, please contact me at (919) 836-6242.

Yours very truly,

S. R. Zimmerman  
Manager

Nuclear Licensing Section

DCM/vaw (4060JDK)

cc: Mr. B. C. Buckley (NRC)  
Mr. G. F. Maxwell (NRC-SHNPP)  
Dr. J. Nelson Grace (NRC-RII)

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