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Carolina Power & Light Company PO Box 165 New Hill NC 27562 William R. Robinson Vice President Harris Nuclear Plant

SERIAL: HNP-97-079

APR 1 4 1997

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 REPLY TO NOTICE OF VIOLATIONS (NRC INSPECTION REPORT NO. 50-400/97-01)

Dear Sir or Madam:

Attached is Carolina Power & Light Company's reply to the Notice of Violations described in Enclosure 1 of your letter dated March 13, 1997.

Questions regarding this matter may be referred to Ms. D. B. Alexander at (919) 362-3190.

Sincerely,

Jur Schuson

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Attachment

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

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REPLY TO NOTICE OF VIOLATIONS NRC INSPECTION REPORT NO. 50-400/97-01

Reported Violation A:

10 CFR 50, Appendix B, Criterion XVI requires that measures be established to ensure that conditions adverse to quality such as deficiencies, deviations, and nonconformances are properly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition. These requirements are further delineated in Section 12 of the licensee's corporate Quality Assurance Manual, Revision 18 and in Administrative Procedure AP-615, Condition Reporting, Revision 20.

Contrary to the above, from February 23, 1996 until February 13, 1997, the licensee failed to correct a condition adverse to quality in that the corrective action for Licensee Event Report 50-400/96-003-00 used a change to the Technical Specification Basis to redefine rated thermal power for Technical Specification 3.2.3. The basis definition was in conflict with the Technical Specification definition of rated thermal power and the facility operating license. On March 20, 1996 the Basis definition was used when power was 100.1 percent and flux mapping was not performed.

This is a Severity Level IV violation (Supplement 1).

Denial or Admission of Violation:

The violation is admitted.

Reason for the Violation:

The Technical Specification (TS) Bases Change for Rated Thermal Power (Bases Section 3.2.3) inappropriately used guidance contained in NRC Inspection and Enforcement Manual Procedure 61706, "Core Thermal Power Evaluation". Harris Nuclear Plant intends to operate the reactor at or below 100.0% rated thermal power. However, due to instrument uncertainties, indicated power is occasionally slightly above 100.0%. When such a condition is identified, operators take appropriate actions to reduce power.

TS 3.2.3 requires performing a flux map within 24 hours of entering the region of prohibited operation which is partially defined by 100.0% rated thermal power. This TS bases change was intended to (1) make the Technical Specification 3.2.3 action statement requirements consistent with the guidance for reporting violations of Facility Operating License Condition C1, Maximum Power Level and to (2) clarify requirements associated with short term power indications over 100.0% rated thermal power. This TS bases change was submitted to the NRC on February 8, 1996 in preparation for implementing a continuous calorimetric capability. This incorrect guidance was the basis for the plant staff's reportability evaluation for the March 20, 1996 condition.

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Corrective Steps Taken and Results Achieved:

An Operations Night Order was issued on February 5, 1997 to inform Operations personnel of the intent to withdraw the TS Bases Change for Rated Thermal Power and that its guidance should no longer be used to determine if 100.0% power had been exceeded.

On February 13, 1997, the TS Bases Change for Rated Thermal Power was withdrawn to remove the guidance for short term power indications over 100.0% power. This returned TS Bases Section 3.2.3 to its previous wording.

Daily calorimetric values determined by procedure OST-1004 "Power Range Heat Balance, Computer Calculation, Daily Interval, Mode 1 (Above 15% Power)" for the period between January 22, 1996 and February 5, 1997 were reviewed to determine if additional instances of operation over 100.0% power had occurred and the guidance used to determine the appropriate actions. No other instances of operation over 100.0% power were found. This review was completed on March 3, 1997.

LER 97-005 was submitted to the NRC on March 17, 1997 regarding the March 20, 1996 failure to perform flux mapping following operation at 100.08% power.

Corrective Steps That Will Be Taken to Prevent Further Violations:

No further actions are required.

Date When Full Compliance Was Achieved:

Full compliance was achieved on March 17, 1997, when LER 97-005 was submitted to the NRC regarding the March 20, 1996 failure to perform flux mapping following operation at 100.08% power.

Reported Violation B:

Technical Specification 6.8.1.a requires, in part, that procedures shall be established, implemented, and maintained covering activities recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978, "Quality Assurance Program Requirements" (Operations)." Section 8.b of Regulatory Guide 1.33, Appendix A, requires specific implementing procedures for each surveillance test listed in the Technical Specifications.

Contrary to the above, on February 6, 1997, the licensee failed to have an adequate procedure for implementing Technical Specification Surveillance Requirement 4.1.1.3.b. Specifically, procedure EST-702, Revision 10, Moderator Temperature Coefficient - End-of-Life Using the Boron Method, was inadequate in that it miscalculated the effects of the burnable poison xenon on overall core reactivity. This six-year-old error resulted in non-conservative calculations of the moderator temperature coefficient for the current and previous two fuel operating cycles.

This is a Severity Level IV violation (Supplement 1).

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Denial or Admission of Violation:

The violation is admitted.

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Reason for the Violation:

EST-702, Revision 5/2 was issued on December 31, 1990. This revision, in part, enhanced the core reactivity balance calculation by accounting for Xenon effects. The procedure directs a reactivity balance twice, once after temperature is reduced and again after temperature is restored to the nominal value. Xenon was correctly accounted for in the reactivity balance after the temperature reduction. However, the Xenon worths used for the reactivity balance after temperature restoration were reversed, such that a sign change in the reactivity occurred.

The EST-702 procedure error was not found during the review process for this revision or subsequent revisions. This is due, in part, to the way algebraic signs (+ or -) are addressed in the procedure. Equations in the procedure inconsistently incorporated the algebraic signs for some parameters which made error detection difficult.

Corrective Steps Taken and Results Achieved:

When the error was confirmed, the procedure was reviewed to ensure no similar errors existed. No similar errors were found. The procedure was then revised to correct the identified error. The moderator temperature coefficient calculation was completed on February 7, 1997 using the corrected procedure.

Previously performed EST-702 procedures were reviewed which confirmed that the same error had existed for fuel cycles 3 through 6 (cycle 1 and 2 performance did not include a correction for Xenon). The corrected calculation was then performed for each of these cycles and in each case the moderator temperature coefficient was within acceptance criteria.

Corrective Steps That Will Be Taken to Prevent Further Violations:

EST-702 will be further enhanced prior to the next performance to avoid potential confusion with positive and negative reactivity changes.

Date When Full Compliance Was Achieved:

Full compliance was achieved on February 7, 1997 when the noted error in EST-702 was corrected.

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