May 22, 1989

Docket No. 50-400

DISTRIBUTION
See attached list

Mr. Lynn W. Eury
Executive Vice President
Power Supply
Carolina Power & Light Company
Post Office Box 1551
Raleigh, North Carolina 27602

Dear Mr. Eury:

SUBJECT: ISSUANCE OF AMENDMENT NO. 11 TO FACILITY OPERATING LICENSE NO. NPF-63 - SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1, REGARDING REVISION OF END-OF-CYCLE NEGATIVE MODERATOR TEMPERATURE COEFFICIENT TECHNICAL SPECIFICATION (TAC NO. 72259)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 11 to Facility Operating License No. NPF-63 for the Shearon Harris Nuclear Power Plant, Unit 1 (Harris). This amendment consists of changes to the Technical Specifications in response to your request dated February 22, 1989.

The amendment would modify (1) the most negative moderator temperature coefficient (MTC) limiting condition for operation (LCO), (2) the associated surveillance requirements (SR), and (3) the affected basis. The purpose of this LCO and SR is to ensure that the most negative MTC at end-of-cycle (EOC) remains within the bounds of the Harris safety analysis, in particular, for those transients and accidents that can lead to a moderator temperature decrease (cooldown) or, equivalently, a moderator density increase.

A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's regular Bi-weekly Federal Register notice.

Sincerely,

Original Signed By:

Richard A. Becker, Project Manager
Project Directorate II-1
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

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P PDC

Enclosures:
1. Amendment No. 11 to NPF-63
2. Safety Evaluation

cc w/enclosures:
See next page

[SHARRIS AMEND 72259]

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OFC	:LA:PD21:DRPR	:PM:PD21:DRPR	:D:PD21:DRPR	:	:	:
NAME	:PAnderson:	: RBecker	: EAdensam	:	:	:
DATE	:05/9/89	:05/8/89	:05/10/89	:		

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AMENDMENT NO. 11 TO FACILITY OPERATING LICENSE NO. NPF-63 - HARRIS, UNIT 1

Docket File
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

CAROLINA POWER & LIGHT COMPANY, et al.

DOCKET NO. 50-400

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 11
License No. NPF-63

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Carolina Power & Light Company (the licensee), dated February 22, 1989, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications, as indicated in the attachment to this license amendment; and paragraph 2.C.(2) of Facility Operating License No. NPF-63 is hereby amended to read as follows:

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(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, as revised through Amendment No.11 , are hereby incorporated into this license. Carolina Power & Light Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed By:

Elinor G. Adensam, Director
Project Directorate II-1
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 22, 1989

OFC	:LA:PD21:DRPR	:PM:PD21:DRPR	: OGC	:D:PD21:DRPR	:	:	:
NAME	:PAnderson:	: RBecker	: MYoung	: EAdensam	:	:	:
DATE	:05/9/89	:05/8/89	:05/12/89	:05/22/89	:	:	:

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ATTACHMENT TO LICENSE AMENDMENT NO. 11

FACILITY OPERATING LICENSE NO. NPF-63

DOCKET NO. 50-400

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised areas are indicated by marginal lines.

Remove Pages	Insert Pages
3/4 1-4	3/4 1-4
3/4 1-5	3/4 1-5
B 3/4 1-2	B 3/4 1-2
B 3/4 1-2a	B 3/4 1-2a

MODERATOR TEMPERATURE COEFFICIENT

LIMITING CONDITION FOR OPERATION

3.1.1.3 The moderator temperature coefficient (MTC) shall be:

a. Less positive than +5 pcm/°F for power levels up to 70% RATED THERMAL POWER and a linear ramp from that point to 0 pcm/°F at 100% RATED THERMAL POWER; and

b. Less negative than -49 pcm/°F for all rods withdrawn, end of cycle life (EOL), RATED THERMAL POWER condition.

APPLICABILITY: Specification 3.1.1.3a. - MODES 1 and 2* only**.
Specification 3.1.1.3b. - MODES 1, 2, and 3 only**.

ACTION:

a. With the MTC more positive than the limit of Specification 3.1.1.3a. above, operation in MODES 1 and 2 may proceed provided:

1. Control rod withdrawal limits are established and maintained sufficient to restore the MTC to within the above limits within 24 hours or be in HOT STANDBY within the next 6 hours. These withdrawal limits shall be in addition to the insertion limits of Specification 3.1.3.6;

2. The control rods are maintained within the withdrawal limits established above until a subsequent calculation verifies that the MTC has been restored to within its limit for the all rods withdrawn condition; and

3. A Special Report is prepared and submitted to the Commission, pursuant to Specification 6.9.2, within 10 days, describing the value of the measured MTC, the interim control rod withdrawal limits, and the predicted average core burnup necessary for restoring the positive MTC to within its limit for the all rods withdrawn condition.

b. With the MTC more negative than the limit of Specification 3.1.1.3b. above, be in HOT SHUTDOWN within 12 hours.

*With k_{eff} greater than or equal to 1.

**See Special Test Exceptions Specification 3.10.3.

SURVEILLANCE REQUIREMENTS

4.1.1.3 The MTC shall be determined to be within its limits during each fuel cycle as follows:

a. The MTC shall be measured and compared to the BOL limit of Specification 3.1.1.3a., above, prior to initial operation above 5% of RATED THERMAL POWER, after each fuel loading; and

b. The MTC shall be measured at any THERMAL POWER and compared to -41.5 pcm/°F (all rods withdrawn, RATED THERMAL POWER condition) within 7 EFPD after reaching an equilibrium boron concentration of 300 ppm. In the event this comparison indicates the MTC is more negative than -41.5 pcm/°F, the MTC shall be remeasured, and compared to the EOL MTC limit of Specification 3.1.1.3b., at least once per 14 EFPD during the remainder of the fuel cycle.

MODERATOR TEMPERATURE COEFFICIENT (Continued)

The most negative MTC, value equivalent to the most positive moderator density coefficient (MDC), was obtained by incrementally correcting the MDC used in the FSAR analyses to nominal operating conditions. These corrections involved: (1) a conversion of the MDC used in the FSAR safety analyses to its equivalent MTC, based on the rate of change of moderator density with temperature at RATED THERMAL POWER conditions, and (2) subtracting from this value the largest differences in MTC observed between EOL, all rods withdrawn, RATED THERMAL POWER conditions, and those most adverse conditions of moderator temperature and pressure, rod insertion, axial power skewing, and xenon concentration that can occur in normal operation and lead to a significantly more negative EOL MTC at RATED THERMAL POWER. These corrections transformed the MDC value used in the FSAR safety analyses into the limiting MTC value of -49 pcm/°F. The MTC value of -41.5 pcm/°F represents a conservative MTC value at a core condition of 300 ppm equilibrium boron concentration, and is obtained by making corrections for burnup and soluble boron to the limiting MTC value of -49 pcm/°F.

The Surveillance Requirements for measurement of the MTC at the beginning and near the end of the fuel cycle are adequate to confirm that the MTC remains within its limits since this coefficient changes slowly due principally to the reduction in RCS boron concentration associated with fuel burnup.

3/4.1.1.4 MINIMUM TEMPERATURE FOR CRITICALITY

This specification ensures that the reactor will not be made critical with the Reactor Coolant System average temperature less than 551°F. This limitation is required to ensure: (1) the moderator temperature coefficient is within its analyzed temperature range, (2) the trip instrumentation is within its normal operating range, (3) the pressurizer is capable of being in an OPERABLE status with a steam bubble, and (4) the reactor vessel is above its minimum RT_{NDT} temperature.

3/4.1.2 BORATION SYSTEMS

The Boron Injection System ensures that negative reactivity control is available during each mode of facility operation. The components required to perform this function include: (1) borated water sources, (2) charging/safety injection pumps, (3) separate flow paths, (4) boric acid transfer pumps, and (5) an emergency power supply from OPERABLE diesel generators.

With the RCS average temperature above 350°F, a minimum of two boron injection flow paths are required to ensure single functional capability in the event an assumed failure renders one of the flow paths inoperable. The boration capability of either flow path is sufficient to provide the required SHUTDOWN MARGIN as defined by Specification 3/4.1.1.2 after xenon decay and cooldown to 200°F. The maximum expected boration capability requirement occurs at BOL

BORATION SYSTEMS (Continued)

from full power equilibrium xenon conditions and requires 21,400 gallons of 7000 ppm borated water be maintained in the boric acid storage tanks or 436,000 gallons of 2000-2200 ppm borated water be maintained in the refueling water storage tank (RWST).

With the RCS temperature below 350°F, one boron injection flow path is acceptable without single failure consideration on the basis of the stable reactivity

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 11 TO FACILITY OPERATING LICENSE NO. NPF-63

CAROLINA POWER & LIGHT COMPANY, et al.

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1

DOCKET NO. 50-400

1.0 INTRODUCTION

By letter dated February 22, 1989 (Reference. 1), Carolina Power & Light Company (CP&L) submitted a request for changes to the Technical Specifications (TS) for Shearon Harris Nuclear Power Plant, Unit 1 (Harris). The proposed changes would modify (1) the most negative moderator temperature coefficient (MTC) limiting condition for operation (LCO), (2) the associated surveillance requirements (SR), and (3) the affected basis. The purpose of this LCO and SR is to ensure that the most negative MTC at end-of-cycle (EOC) remains within the bounds of the Harris safety analysis, in particular, for those transients and accidents that can lead to a moderator temperature decrease (cooldown) or, equivalently, a moderator density increase. The limiting event for this class of events is the steamline break accident. Transients other than cooldown events are also affected by the most negative MTC.

The Harris SR involve an MTC measurement at any thermal power within 7 effective full power days (EFPD) after reaching an equilibrium primary coolant boron concentration of 300 ppm. After corrections are made, the measured value is compared to the all rods out (ARO), hot full power (HFP) core condition SR limits. In the event that the measured MTC is more negative than the SR limit, then the MTC must be remeasured and compared with the EOC MTC LCO value at least once per every 14 EFPD during the remainder of the cycle. The Harris LCO and SR values for the most negative MTC are conservative (less negative) when compared to the value of the MTC (actually moderator density coefficient (MDC) which is simply related to the MTC) which is used in the safety analysis.

Harris is currently in Cycle 2. CP&L anticipates that the measured value of MTC near EOC will result in an MTC that will be more negative than the SR limit. This will then require CP&L to make MTC measurements once every 14 EFPD until the EOC 2. Failure to meet the SR MTC does not necessarily mean that either the most negative MTC that would occur near EOC 2 would be exceeded or that the safety analysis MTC would be exceeded. CP&L states that these additional MTC measurements, if needed to comply with the SR, would be an undue burden to the plant.

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CP&L proposes to change the LCO 3.1.1.3b most negative MTC value from -42 pcm/°F to -49 pcm/°F, where a pcm (percent milli-rho) is equal to a reactivity of 10^{-5} delta k/k. The SR 4.1.1.3b would be changed from -33 pcm/°F to -41.5 pcm/°F. These changes would remove about 1.5 pcm/°F from the difference between the SR and the EOC LCO MTC value. These values would still be bounded by the Harris safety analysis value of the MTC of -55 pcm/°F, which is used for the maximum negative reactivity feedback analyses. These changes apply to the current and future reload cycles of Harris and are supported by an evaluation provided in a Westinghouse topical report (Reference 2) submitted by Reference 1.

The staff's review of these proposed changes to the most negative MTC LCO, SR, and associated basis follows.

2.0 EVALUATION

2.1 Methodology

The current method used to determine the most negative MTC is described in the Westinghouse Standard Technical Specifications (STS) in Basis Section 3/4.1.1.3 (Reference 3). The method is based on incrementally correcting the conservative MDC used in the safety analysis to obtain the most negative MTC value or, equivalently, the most positive MDC at nominal HFP core conditions. The corrections involve subtracting the incremental change in the MDC, which is associated with a core condition of all rods inserted (ARI), to an ARO core condition. The MTC is then equal to the MDC times the rate of change of moderator density with temperature at rated thermal power conditions. This STS method of determining the most negative MTC LCO value results in an ARO MTC, which is significantly less negative than the MTC used in the safety analysis and may even be less negative than the best estimate EOC ARO MTC for extended burnup reload cores. This has the potential for requiring the plant to be placed in a hot shut-down condition by TS 3.1.1.3 even though substantial margin to the safety analysis MDC exists. This problem with the current STS method is caused by adjusting the MDC from a HFP ARI to a HFP ARO condition in defining the most negative MTC. The HFP ARI condition is not allowed by TS on control rod positions for allowable power operation in which the shutdown banks are completely withdrawn from the core and the control banks must meet rod insertion limits (RIL).

In Reference 2 Westinghouse provides a Harris specific alternative method for adjusting the safety analysis MDC to obtain a most negative MTC. This method is termed the Most Negative Feasible (MNF) MTC. The MNF MTC method seeks to determine the conditions for which a core will exhibit the most negative MTC value that is consistent with operation allowed by the TS. For example, the MNF MTC method would not require the conversion assumption of the ARI HFP condition but would require the conversion assumption that all control rod banks are inserted the maximum amount permitted by the TS. Westinghouse uses the MNF MTC method to determine EOC MTC sensitivities to those design and operational parameters that directly impact the MTC in such a way that the sensitivity to one parameter is independent of the assumed values for the other parameters. The parameters considered with this MNF MTC method include:

1. soluble boron concentration in the coolant
2. moderator temperature and pressure
3. control rod insertion
4. axial power shape
5. xenon concentration

The MNF MTC approach uses this sensitivity information to derive an EOC ARO HFP MTC TS value based on the safety analysis value of the MDC.

Westinghouse determined the sensitivity of the above parameters on the EOC MTC for three different reload designs representative of 17x17 three loop plants. These reload designs included fuel designs, discharge burnups, cycle lengths, and operating temperatures which are typical of those expected for Harris. The soluble boron concentration was not used in the sensitivity analysis because the EOC HFP ARO MTC TS value is assumed to be at 0 ppm of boron, the definition of EOC, and because the most negative MTC occurs at 0 ppm of boron in the coolant.

The sensitivity study did not include the radial power distribution which can vary under normal operation and can affect the MTC. The operational activities that affect the radial power distribution do so through the movement of control rods and activities that affect the xenon concentration. The allowed changes in the radial power distribution are implicitly included in the MTC sensitivity to control rod insertion and xenon concentration. In Reference 2 Westinghouse states that the SR MTC value would be obtained in the same manner as currently described in the STS Bases. The SR MTC value is obtained from the EOC HFP ARO MTC value by making corrections for burnup and boron at a core condition of 300 ppm of boron.

This MNF MTC method has, according to Westinghouse, a number of advantages over the previous method for determining the most negative MTC LCO value. The MNF MTC will be sufficiently negative so that repeated MTC measurements from a 300 ppm core condition to EOC would not be required. The MNF MTC Method does not change the safety analysis moderator feedback assumption. The safety analysis value of MDC is unchanged. The MNF MTC method is a conservative and reasonable basis to assume for an MTC value of a reload core prior to a transient and is consistent with plant operation defined by other TS. Finally, the MNF MTC method retains the SR on MTC at the 300 ppm core condition to verify that the core is operating within the bounds of the safety analysis.

The staff has reviewed the assumptions and basis for the MNF MTC method described above and concludes that they are acceptable because they will result in conservative most negative MTC LCO and SR values that could result from allowed operation of Harris under nominal conditions and because the MTC measurement at 300 ppm of boron core condition will assure, using the SR value of MTC, that the safety analysis MDC will not be exceeded.

2.2 Harris Accident Analysis MDC Assumption

Westinghouse uses a MDC for performing accident analyses. For events sensitive to maximum negative moderator feedback, a constant value of the MDC of 0.43 delta K/gm/cc is assumed throughout the analysis. For Harris at HFP and full flow nominal operating conditions, the temperature and pressure are 588.8°F and 2250 psia, respectively. At these conditions, the MTC, equivalent to the MDC of 0.43 delta K/gm/cc, is about -55 pcm/°F. We will refer to this MTC as the safety analysis MTC. Based on its review, the staff concludes that the evaluation of the MTC from the MDC is acceptable because it conforms to the relationship of MTC to MDC, that is, the MTC is equal to the MDC times the rate of change of density with temperature at the nominal pressure and temperature of the coolant.

2.3 Sensitivity Results

Harris TS 3.2.5 provides the LCO values of the Departure from Nucleate Boiling (DNB) parameters, reactor coolant system average temperature (T_{avg}) and pressurizer pressure. The minimum allowable indicated pressurizer pressure is 2205 psig and a maximum allowable T_{avg} is 592.6°F. These values of the minimum pressurizer pressure and maximum T_{avg} were also assumed for the safety analysis. The current nominal design T_{avg} for Harris is 588.8°F so that the safety analysis represents a 3.8°F maximum allowable increase in T_{avg} nominal conditions. The current nominal design pressure is 2250 psia so that the safety analysis represents a 30 psi maximum allowable decrease from nominal pressurizer pressure. Based on these maximum allowed system variations, a maximum allowable limit is placed on the moderator density variation. Using the sensitivity of the MTC to temperature and pressure, derived from the analysis of the three reload designs, Westinghouse obtained for a bounding delta MTC (a proprietary value) for Harris associated with these maximum allowable coolant temperature and pressure deviations from nominal conditions.

Harris TS 3.1.1.3 requires an ARO configuration in the evaluation of the MTC. TS 3.1.3.5 requires that all shutdown banks be withdrawn from the core during normal power operation (that is, while in Modes 1 and 2). TS 3.1.3.6 limits control bank insertion by Rod Insertion Limits (RIL) in Modes 1 and 2. All control rods can be inserted at hot zero power (HZP) coincident with a reactor trip. In general, greater control rod insertion results in a more negative MTC assuming that all other parameters are held constant. However, greater control rod insertion will also cause a reduction in core power and T_{avg} which causes the MTC to become more positive. This effect is more pronounced at lower powers with the positive change being more important than the negative change in the MTC. Based on this line of reasoning, Westinghouse determined that the most negative MTC configuration will occur at HFP with control rods inserted to the RIL. Westinghouse analyzed three reload core designs, using a bounding value of Control Bank D insertion at HFP with no soluble boron in the coolant. This analysis gave Harris a bounding delta MTC (a proprietary value) associated with the control bank inserted to the RIL.

The axial power shape produces changes in the MTC caused primarily by the rate at which the moderator is heated as it flows up the core, with the MTC sensitivity to extremes of axial power shapes being small. This effect can be correlated with the axial flux difference (AFD), which is the difference in the power in the top half of the core minus the power in the lower half of the core. Harris TS include limits on the AFD. Westinghouse determined that the more negative the AFD the more negative the MTC. Westinghouse analyzed the three reload designs and determined the sensitivity of the MTC to AFD. For Harris, this analysis gave a bounding delta MTC (a proprietary value) for an assumed bounding value of AFD.

Although no TS limits exist on either the xenon distribution or concentration, the axial xenon distribution is effectively limited by TS limits on the AFD. The physics of the xenon buildup and decay process limits the xenon concentration. The effect of xenon axial distribution is quantified in the effect of the axial power shape on the MTC, as discussed previously. The effect of the overall xenon concentration on the MTC needs to be evaluated separately. Westinghouse determined that the MTC became more negative with no xenon in the core. Therefore, Westinghouse analyzed the three reload core designs at EOC HFP ARO with no xenon present. For Harris, this analysis gave a delta MTC (a proprietary value) for the xenon concentration factor.

All of the delta MTCs described above are summed to provide a total delta MTC for Harris based on the allowed deviations of the various factors from nominal values.

The staff has reviewed the discussion and analysis of the primary factors of the MNF MTC method and concludes that the results obtained are acceptable because approved methods were used to generate the data.

2.4 Harris EOC MTC TS Value

Using the total delta MTC obtained with the MNF MTC method, Westinghouse determined that the Harris safety analysis MTC of -55 pcm/°F should be increased by the total delta MTC plus an additional amount for conservatism. The resulting EOC HFP ARO MTC for Harris is -49 pcm/°F. This value replaces the -42 pcm/°F current TS value. Thus, determination that an MTC for the EOC HFP ARO reload core is less negative than -49 pcm/°F provides assurance that the safety analysis MTC remains bounding.

Westinghouse also performed an analysis to determine the SR value of the ARO reload core at 300 ppm of boron. Analysis of reload cores similar to Harris future reload designs resulted in a value of 7.50 pcm/°F to bound the expected difference in MTCs between the 300 ppm of boron core condition to EOC. Thus, the SR MTC value is -41.5 pcm/°F as compared to the present TS value of -33 pcm/°F.

The staff has reviewed this determination of the most negative MTC LCO and SR and concludes that they are acceptable.

Based on the review discussed above, the staff concludes that the proposed changes to the most negative MTC Technical Specification, the Surveillance Requirement MTC value at or near a 300 ppm of boron core condition, and associated Basis are acceptable for the following reasons:

1. The most negative feasible MTC method considered the important factors affecting the MTC and the limits on these factors.

2. Approved computer codes and methods (in some cases updated versions) were used in the analysis.

3. The MTC measurement for a HFP ARO core condition at or near 300 ppm of boron will provide assurance that the MTC at EOC HFP conditions will be less negative than the safety analysis MTC.

4. Future reloads for Harris will be analyzed to confirm the most negative MTC Technical Specification at EOC and the Surveillance Requirements on MTC at a core condition of 300 ppm of boron.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment changes a requirement with respect to installation or use of a facility component located within the restricted areas as defined in 10 CFR Part 20 and changes to the surveillance requirements. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration, and there has been no public comment on such finding. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

4.0 CONCLUSION

The Commission made a proposed determination that this amendment involves no significant hazards consideration which was published in the Federal Register (54 FR 15823) on April 19, 1989, and consulted with the State of North Carolina. No public comments or requests for hearing were received, and the State of North Carolina did not have any comments.

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

5.0 REFERENCES

1. Letter (NLS-89-030) from M.A. McDuffie (CP&L) to USNRC, dated February 22, 1989.

2. "Safety Evaluation Supporting a More Negative EOL Moderator Temperature Coefficient Technical Specification for the Shearon Harris Nuclear Power Plant," WCAP-11914 (proprietary), WCAP-11939 (nonproprietary), August 1988.

3. "Standard Technical Specifications for Westinghouse Pressurized Water Reactors," NUREG-0452, Revision 4, issued Fall 1981.

Principal Contributors: D. Fieno
R. Becker

Dated: May 22, 1989