December 9, 1994

Mr. W. R. Robinson, Vice President
Shearon Harris Nuclear Power Plant
Carolina Power & Light Company
Post Office Box 165, Mail Code: Zone 1
New Hill, North Carolina 27562-0165

SUBJECT: ISSUANCE OF AMENDMENT NO. 52 TO FACILITY OPERATING LICENSE NO. NPF-63 REGARDING STEAM GENERATOR WATER LEVEL TOTAL ALLOWANCE VALUES - SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1 (TAC NO. M90290)

Dear Mr. Robinson:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 52 to Facility Operating License No. NPF-63 for the Shearon Harris Nuclear Power Plant, Unit 1. This amendment changes the Technical Specifications in response to your request dated August 25, 1994.

The amendment will revise the Total Allowance, Z, S and Allowable Values for the steam generator (SG) level instrument calculations to reflect the enhanced knowledge of SG process measurement accuracy terms.

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:

Ngoc B. Le, Project Manager
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-400

Enclosures: 1. Amendment No. 52 to NPF-63
2. Safety Evaluation

cc w/enclosures: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

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Carolina Power & Light Company
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cc w/enclosures: See next page

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Carolina Power & Light Company

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AMENDMENT NO. 52 TO FACILITY OPERATING LICENSE NO. NPF-63 - HARRIS, UNIT 1

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

CAROLINA POWER & LIGHT COMPANY, et al.

DOCKET NO. 50-400

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 52
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 August 25, 1994, 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:

(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. 52 , 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 and shall be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

for William H. Bateman, 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:

ATTACHMENT TO LICENSE AMENDMENT NO. 52

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
2-5	2-5
3/4 3-32	3/4 3-32

TABLE 2.2-1 (continued)

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TOTAL ALLOWANCE (TA)	Z	SENSOR ERROR (S)	TRIP SETPOINT	ALLOWABLE VALUE
12. Reactor Coolant Flow-Low	2.9	1.98	0.6	≥ 90.5% of loop full indicated flow	≥ 89.5% of loop full indicated flow
13. Steam Generator Water Level Low-Low	19.2	14.06	2.97	≥ 38.5% of narrow range instrument span	≥ 36.5% of narrow range instrument span
14. Steam Generator Water Level - Low Coincident With Steam/Feedwater Flow Mismatch	19.2	2.23	2.97	≥ 38.5% of narrow range instrument span	≥ 36.5% of narrow range instrument span
	20.0	3.41	Note 6	≤ 40% of full steam flow at RTP**	≤ 43.1% of full steam flow at RTP**
15. Undervoltage - Reactor Coolant Pumps	14.0	1.3	0.0	≥ 5148 volts	≥ 4920 volts
16. Underfrequency - Reactor Coolant Pumps	5.0	3.0	0.0	≥ 57.5 Hz	≥ 57.3 Hz
17. Turbine Trip					
a. Low Fluid Oil Pressure	N.A.	N.A.	N.A.	≥ 1000 psig	≥ 950 psig
b. Turbine Throttle Valve Closure	N.A.	N.A.	N.A.	≥ 1% open	≥ 1% open
18. Safety Injection Input from ESF	N.A.	N.A.	N.A.	N.A.	N.A.

**RTP = RATED THERMAL POWER

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TOTAL ALLOWANCE (TA)	Z	SENSOR ERROR (S)	TRIP SETPOINT	ALLOWABLE VALUE
5. Turbine Trip and Feedwater Isolation (Continued)					
b. Steam Generator Water Level--High-High (P-14)	15.0	11.25	2.97	≤ 82.4% of narrow range instrument span.	≤ 84.2% of narrow range instrument span.
c. Safety Injection	See Item 1. above for Safety Injection Trip Setpoints and Allowable Values.				
6. Auxiliary Feedwater					
a. Manual Initiation	N.A.	N.A.	N.A.	N.A.	N.A.
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	N.A.
c. Steam Generator Water Level--Low-Low	19.2	14.06	2.97	≥ 38.5% of narrow range instrument span.	≥ 36.5% of narrow range instrument span.
d. Safety Injection Start Motor-Driven Pumps	See Item 1. above for all Safety Injection Trip Setpoints and Allowable Values.				
e. Loss-of-Offsite Power Start Motor-Driven Pumps and Turbine-Driven Pump	See Item 9. below for all Loss-of-Offsite Trip Setpoint and Allowable Values.				
f. Trip of All Main Feedwater Pumps Start Motor-Driven Pumps	N.A.	N.A.	N.A.	N.A.	N.A.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 52 TO FACILITY OPERATING LICENSE NO. NPF-63

CAROLINA POWER & LIGHT COMPANY

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1

DOCKET NO. 50-400

1.0 INTRODUCTION

By a letter dated August 25, 1994, Carolina Power & Light Company (CP&L or the licensee) submitted a request for changes to the Shearon Harris Nuclear Power Plant, Unit 1 (SHNPP), Technical Specifications (TS). The request would revise the steam generator (SG) level instrumentation calibration parameters including the Total Allowance, Z value, sensor error S value, and Allowable Values for the reactor trip system (RTS) in TS Table 2.2-1 and engineered safety features actuation system (ESFAS) in TS Table 3.3-4. The SG level setpoints for the RTS and ESFAS functions will not change.

2.0 EVALUATION

The licensee proposed revisions to the SG level setpoint accuracy calculations to incorporate additional information that had been provided by the Cycle 6 fuel vendor (Siemens) and by the Westinghouse Corporation, the vendor for the nuclear steam supply system. The information is related to the process measurement accuracy (PMA) bias terms that include reference leg temperature changes, downcomer subcooling effects, and fluid velocity effects. The proposed change also addresses the effects of reduced SG pressures at full load due to the reduced T_{avg} value, which was incorporated as part of Cycle 6 refueling activities. During the performance of calculations for the various plant power levels, as well as for the various SG levels, the licensee noted that uncertainty errors due to PMA bias terms and fluid velocity effects were maximum at 25 percent power level; thus for conservative results, the licensee has used these maximum errors in the calculations. The revised calculations have resulted in new values that will impact the existing Total Allowance, Z value, sensor error S value, and Allowable Values, in TS Tables 2.2-1 and 3.3-4; and thus would require revision to the following plant TS:

2.1 Proposed changes:

TS Table 2.2-1, Reactor Trip System Instrumentation Trip Setpoints

A. For Functional Unit 13, Steam Generator Water Level Low-Low - revise value of Z from 18.18 to 14.06, revise value of S from 1.5 to 2.97, and revise Allowable Value from $\geq$ 38.0% to $\geq$ 36.5%

B. For Functional Unit 14, Steam Generator Water Level-Low Coincident with Steam/Feedwater Flow Mismatch - revise value of Z from 6.68 to 2.23, revise value of S from 1.5 to 2.97, and revise Allowable Value from $\geq$ 36.8% to $\geq$ 36.5%

2.2 Proposed changes:

TS Table 3.3-4, Engineered Safety Features Actuation System Instrumentation Trip Setpoints

A. For Functional Unit 5.b, Steam Generator Water Level High-High (P-14) - revise value of Total Allowance from 7.1 to 15.0, revise value of Z from 4.28 to 11.25, and revise value of S from 1.5 to 2.97.

B. For Functional Unit 6.c, Auxiliary Feedwater, Steam Generator Water Level Low-Low - revise value of Z from 18.18 to 14.06, revise value of S from 1.5 to 2.97, and revise Allowable Value from $\geq$ 38.0% to $\geq$ 36.5%.

2.3 NRC Staff Evaluation

To confirm the adequacy of the proposed revised values in the above TS Table 2.2-2, Functional Units 13 and 14; and TS Table 3.3-4, Functional Units 5.b and 6.c; the NRC staff reviewed the licensee's calculations in HNP-I/INST-1045, Rev. 0, "Steam Generator Narrow Range Level: Low, Low-Low, and High-High Setpoints, Setpoint Accuracy Calculation / L-473 through L-476, L-483 through L-486, and L-493 through L-496."

The NRC staff reviewed the licensee's calculations and finds that the calculations conform to the guidance of ISA Standard S67.04-1988, "Setpoints For Nuclear Safety Related Instrumentation Used in Nuclear Power Plants," ISA Standard RP67.04, "Methodologies For The Determination of Setpoints For Nuclear Safety Related Instrumentation," Draft 9, and NRC Regulatory Guide 1.105, Rev. 2, "Instrument Setpoints For Safety Related Systems." The values used in the calculations were conservative and resulted in an adequate margin between the existing TS trip setpoints and the safety analysis limits.

Based on the above review, the NRC staff finds the licensee's calculation methodology and proposed revised SG level instrumentation calibration parameters acceptable. Therefore, the NRC staff concludes that the proposed change is acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the State of North Carolina official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC 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 the amendment involves no significant hazards consideration, and there has been no public comment on such finding (59 FR 49425). Accordingly, the 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 the amendment.

5.0 CONCLUSION

The Commission 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, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: S. V. Athavale

Date: December 9, 1994