

September 8, 1998

Mr. James Scarola, 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. 80 TO FACILITY OPERATING LICENSE NO. NPF-63 REGARDING- TECHNICAL SPECIFICATION CHANGE FOR ULTIMATE HEAT SINK-SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1 (TAC NO. M97128)

Dear Mr. Scarola:

The Nuclear Regulatory Commission has issued Amendment No. 80 to Facility Operating License No. NPF-63 for the Shearon Harris Nuclear Power Plant, Unit No. 1, in response to your request dated October 31, 1996. This amendment changes Technical Specification (TS) 3/4.7.5 by reducing the maximum allowable water temperature for the Ultimate Heat Sink from 95°F to 94°F and increasing the minimum main reservoir level from 205.7 feet mean sea level to 215 feet mean sea level.

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

Sincerely,

Original signed by:

Scott C. Flanders, 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. 80 to NPF-63
2. Safety Evaluation

cc w/enclosures:
See next page

Distribution:
See next page

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OFFICE	PM:PDII-1	LA:PDII-1	D:PDII-1	DEC	
NAME	SFlanders	EDunnington	PKuo	APH	
DATE	8/7/98	8/7/98	9/8/98	8/25/98	
COPY	Yes/No	Yes/No	Yes/No	Yes/No	

OFFICIAL RECORD

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AMENDMENT NO. 80 TO FACILITY OPERATING LICENSE NO. NPF-63 - HARRIS, UNIT 1

~~Docket File~~

PUBLIC

PDII-1 Reading

J. Zwolinski

OGC

G. Hill (2)

L. Marsh

G. Hubbard

J. Tatum

ACRS

L. Plisco, RII

cc: Harris Service List

AMENDMENT NO. 80 TO FACILITY OPERATING LICENSE NO. NPF-63 - HARRIS, UNIT 1

Docket File
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Carolina Power & Light Company
Post Office Box 165, Mail Code: Zone 1
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SUBJECT: ISSUANCE OF AMENDMENT NO. 80 TO FACILITY OPERATING LICENSE NO.
NPF-63 REGARDING- TECHNICAL SPECIFICATION CHANGE FOR ULTIMATE
HEAT SINK-SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1
(TAC NO. M97128)

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Division of Reactor Projects - I/II
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OFFICE	PM:PDII-1	LA:PDII-1	D:PDII-1	PTC	PGC
NAME	SFlanders	EDunnington ETD	PKuo	APH	
DATE	1/98	8/8/98	9/8	8/2/98	
COPY	Yes/No	Yes/No	Yes/No	Yes/No	

OFFICIAL RECORD



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

September 8, 1998

Mr. James Scarola, 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. 80 TO FACILITY OPERATING LICENSE NO.
NPF-63 REGARDING- TECHNICAL SPECIFICATION CHANGE FOR ULTIMATE
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(TAC NO. M97128)

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Sincerely,

A handwritten signature in black ink, reading "Scott C. Flanders", is positioned above the typed name.

Scott C. Flanders, Project Manager
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-400

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See next page

Mr. James Scarola
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Shearon Harris Nuclear Power Plant
Unit 1

cc:

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New Hill, NC 27562-0165



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. 80
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 October 31, 1996, 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:

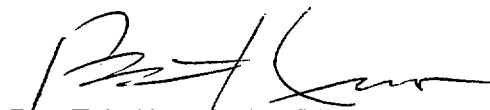
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(2) Technical Specifications and Environmental Protection Plan

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. 80 , 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



Pao-Tsin Kuo, Acting 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: September 8, 1998

ATTACHMENT TO LICENSE AMENDMENT NO. 80

FACILITY OPERATING LICENSE NO. NPF-63

DOCKET NO. 50-400

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

Remove Page

3/4 7-13

Insert Page

3/4 7-13

PLANT SYSTEMS

3/4.7.5 ULTIMATE HEAT SINK

LIMITING CONDITION FOR OPERATION

3.7.5 The ultimate heat sink shall be OPERABLE with:

- a. A minimum auxiliary reservoir water level at or above elevation 250 feet Mean Sea Level, USGS datum, and a minimum main reservoir water level at or above 215 feet Mean Sea Level, USGS datum, and
- b. A water temperature as measured at the respective intake structure of less than or equal to 94°F.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With the requirements of the above specification not satisfied, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.5 The ultimate heat sink shall be determined OPERABLE at least once per 24 hours by verifying the water temperature and water level to be within their limits.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

CAROLINA POWER & LIGHT COMPANY

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1

DOCKET NO. 50-400

1.0 INTRODUCTION

By letter dated October 31, 1996, the Carolina Power and Light Company (CP&L or the licensee) requested changes to the Technical Specifications (TS) requirements for the Harris Nuclear Plant (HNP). Specifically, the licensee requested a change to TS 3/4.7.5, "Ultimate Heat Sink," to reduce the maximum water temperature from 95°F to 94°F, and increase the minimum main reservoir level from 205.7 feet mean sea level to 215 feet mean sea level. The licensee's request was submitted to reflect the results of revised calculations and analyses that had been completed to address Generic Letter (GL) 89-13, "Service Water System Problems Affecting Safety-Related Equipment."

2.0 BACKGROUND

Section 3.7.5 of the existing HNP TS requires (in part) a minimum main reservoir water level at or above 205.7 feet Mean Sea Level, USGS datum, and a water temperature as measured at the respective intake structure of less than or equal to 95°F. In addressing GL 89-13, the licensee performed additional calculations and analyses to assure that the heat removal capability of the ultimate heat sink (UHS) was adequate. A hydraulic model of the emergency service water system (ESWS) was used to correlate service water flow rates through safety-related heat exchangers with reservoir water levels. CP&L found that under worst-case accident conditions, a minimum reservoir level of 215 feet was necessary to provide sufficient flow to assure adequate heat removal when the maximum equipment design inlet temperature of 95°F is assumed. The licensee has established an administrative limit that requires a minimum main reservoir water level of 215 feet pending NRC review and approval of this TS amendment request.

The licensee also performed an analysis to establish the maximum initial reservoir water temperature. By using the worst 10-day meteorological conditions (i.e., the 10-day period that results in the peak initial pre-accident reservoir temperature), CP&L calculated a maximum pre-accident reservoir temperature of 94.2°F. In its submittal, CP&L stated that a pre-accident reservoir temperature of 94.2°F resulted in a final reservoir temperature (30 days post-Loss of coolant accident [LOCA]) of 95.12°F. The staff noted that the Section 2.4.11 of the Final Safety Analysis Report (FSAR) states that "a pre-accident reservoir temperature of 94°F would result in a final, 30 day, post-LOCA temperature of 95.12°F." During a conference call, the licensee clarified this discrepancy by stating that the FSAR was correct. Assuming thermal stratification of the UHS, the licensee determined that the maximum resultant temperature would be 94.97°F. In order to assure that the maximum equipment design inlet temperature of 95°F is

not exceeded, the licensee has established an administrative limit of 94°F for the maximum reservoir temperature pending NRC review and approval of this TS amendment request.

3.0 EVALUATION

The staff's review criteria for the UHS is discussed in several different sections of NUREG-0800, "Standard Review Plan For The Review of Safety Analysis Reports For Nuclear Power Plants," July 1981, (SRP). The sections that are most applicable to the licensee's request are Section 2.4.11, "Cooling Water Supply," and Section 9.2.5, "Ultimate Heat Sink." Regulatory Guide 1.27, "Ultimate Heat Sink for Nuclear Power Plants," is also referred to by the SRP and provides additional guidance. In short, the UHS must be able to dissipate reactor decay heat and heat from safety-related structures, systems and components for at least 30 days following design-basis accidents. The licensee's TS amendment request to increase the minimum main reservoir level from 205.7 feet mean sea level to 215 feet mean sea level, and reduce the maximum water temperature from 95°F to 94°F, establishes requirements that are more restrictive than those previously approved by the NRC and contained in the current TS for the HNP. The licensee has determined that these changes are necessary in order to assure that design-basis heat removal requirements will be satisfied and to assure that equipment temperature limitations will not be exceeded. Although the licensee's calculations indicate that the UHS could reach up to 95.12°F (assuming no thermal stratification), which slightly exceeds the maximum design basis inlet water temperature of 95°F for some equipment, several conservatisms associated with this worst-case analysis (as described in the staff's review criteria and discussed above) make it extremely unlikely that the water temperature of the UHS will exceed 95°F. Given the conservatism in the calculation, the staff concludes that the difference of 0.12°F (between the calculated maximum UHS temperature and the design basis inlet water temperature for some equipment) is insignificant in this application and is considered to be acceptable.

4.0 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.

5.0 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 (61 FR 64382). 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.

6.0 CONCLUSION

Based on the information provided by the licensee, the staff finds that the changes are appropriate and necessary to establish requirements that are consistent with the plant design-basis.

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: J.Tatum

Date: September 8, 1998