

Docket No. 50-400

July 22, 1987

Mr. E. E. Utley, Senior Executive Vice President
Power Supply and Engineering & Construction
Carolina Power & Light Company
Post Office Box 1551
Raleigh, North Carolina 27602

Dear Mr. Utley:

SUBJECT: ISSUANCE OF AMENDMENT NO. 1 TO FACILITY OPERATING LICENSE NO.
NPF-63 - SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1, (TAC NO. 65363)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 1 to Facility Operating License No. NPF-63 for the Shearon Harris Nuclear Power Plant, Unit 1. This amendment consists of changes to the Technical Specifications in response to your request dated May 14, 1987.

The amendment modifies Technical Specification (TS) Table 3.3-11, "Radioactive Liquid Effluent Monitoring Instrumentation," by adding an action statement to the Secondary Waste Sample Tank Discharge Monitor to allow continuous, as well as batch, release of secondary waste liquid effluents. TS Table 4.3-8, "Radioactive Effluent Monitoring Instrumentation Surveillance," is also modified by adding a monthly source check requirement of the Secondary Waste Sample Tank Discharge Monitor when the Secondary Waste System is in the continuous release mode. Moreover, TS Table 4.11-1, "Radioactive Liquid Waste Sampling and Analysis Program," is modified to identify the required sampling and analysis of liquid effluent when the Secondary Waste Water System is in the continuous release mode.

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

A revision to the Offsite Dose Calculation Manual to address necessary corrections, delineated in the enclosed Safety Evaluation, is to be submitted with the next semi-annual radioactive effluent report.

Sincerely,

ISJ

Bart C. Buckley, Senior Project Manager
Project Directorate II-1
Division of Reactor Projects I/II

Enclosures:

1. Amendment No. 1 to NPF-63
2. Safety Evaluation

cc: w/enclosures
See next page

LA:PD21:DRPR
P Anderson
7/7/87

KTE for
PM:PD21:DRPR
BBuckley/dsf
7/7/87

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Mr. E. E. Utley
Carolina Power & Light Company

Shearon Harris

cc:
Thomas A. Baxter, Esq.
Shaw, Pittman, Potts & Trowbridge
2300 N Street, NW
Washington, DC 20037

Ms. Carol Love
100 Park Drive
P.O. Box 12276
Research Triangle Park, NC 27709

Mr. D. E. Hollar
Associate General Council
Carolina Power & Light Company
P.O. Box 1551
Raleigh, North Carolina 27602

Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
101 Marietta Street
Suite 2900
Atlanta, Georgia 30303

Resident Inspector/Harris NPS
c/o U.S. Nuclear Regulatory Commission
Route 1, Box 315B
New Hill, North Carolina 27562

Mr. J. L. Willis
Plant General Manager
Harris Nuclear Plant
P.O. Box 165
New Hill North Carolina 27562

Mr. R. A. Watson
Vice President
Harris Nuclear Plant
P.O. Box 165
New Hill, North Carolina 27562

Mr. Dayne H. Brown, Chief
Radiation Protection Section
Division of Facility Services
N.C. Department of Human Resources
701 Barbour Drive
Raleigh, North Carolina 27603-2008



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

CAROLINA POWER & LIGHT COMPANY
NORTH CAROLINA EASTERN MUNICIPAL POWER AGENCY
DOCKET NO. 50-400
SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 1
License No. NPF-63

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment filed by Carolina Power & Light Company acting for itself and North Carolina Eastern Municipal Power Agency (the licensees), dated May 14, 1987, 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. 1, 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

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 22, 1987

LA:PD21:DRPR
PAnderson
7/7/87

NTE
PM:PD21:DRPR
BBuckley/dsf
7/7/87

DGC-8
7/10/87

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EAdensam
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ATTACHMENT TO LICENSE AMENDMENT NO. 1

FACILITY OPERATING LICENSE NO. NPR-63

DOCKET NO. 50-400

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages as indicated. The revised pages are identified by amendment number and contain vertical lines indicating area of change. The corresponding overleaf pages are also provided to maintain document completeness.

Remove Pages

3/4 3-76
3/4 3-77
3/4 3-79
3/4 3-81
3/4 11-2
3/4 11-4

Insert Pages

3/4 3-76
3/4 3-77
3/4 3-79
3/4 3-81
3/4 11-2
3/4 11-4

TABLE 3.3-12

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>ACTION</u>
1. Radioactivity Monitors Providing Alarm and Automatic Termination of Release		
a. Liquid Radwaste Effluent Lines		
1) Treated Laundry and Hot Shower Tanks Discharge Monitor	1	35
2) Waste Monitor Tanks and Waste Evaporator Condensate Tanks Discharge Monitor	1	35
3) Secondary Waste Sample Tank Discharge Monitor	1	35, 36*
b. Turbine Building Floor Drains Effluent Line	1	36
c. Outdoor Tank Area Drain Transfer Pump Monitor	1	37
2. Radioactivity Monitors Providing Alarm But Not Providing Automatic Termination of Release		
a. Normal Service Water System Return From Waste Processing Building to the Circulating Water System	1	39
b. Normal Service Water System Return From the Reactor Auxiliary Building to the Circulating Water System	1	39
3. Flow Rate Measurement Devices		
a. Liquid Radwaste Effluent Lines		
1) Treated Laundry and Hot Shower Tanks Discharge	1	38
2) Waste Monitor Tanks and Waste Evaporator Condensate Tanks Discharge	1	38

SHEARON HARRIS - UNIT 1

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Amendment No. 1

TABLE 3.3-12ⁱ (Continued)RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>ACTION</u>
3. Flow Rate Measurement Devices (Continued)		
3) Secondary Waste Sample Tank	1	38
b. Cooling Tower Blowdown	1	38

*When the Secondary Waste System is being used in the continuous release mode, Action 36 shall be taken when the monitor is inoperable. In the batch release mode, Action 35 is applicable.

TABLE 4.3-8

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

SHEARON HARRIS - UNIT 1

3/4 3-79

Amendment No. 1

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>DIGITAL CHANNEL OPERATIONAL TEST</u>
1. Radioactiity Monitors Providing Alarm and Automatic Termination of Release				
a. Liquid Radwaste Effluent Lines				
1) Treated Laundry and Hot Shower Tanks Discharge Monitor	D	P	R(3)	Q(1)
2) Waste Monitor Tanks and Waste Evaporator Condensate Tanks Discharge Monitor	D	P	R(3)	Q(1)
3) Secondary Waste Sample Tank Discharge Monitor	D	P, M(5)	R(3)	Q(1)
b. Turbine Building Floor Drains Effluent Line	D	M	R(3)	Q(1)
c. Outdoor Tank Area Drain Transfer Pump Monitor	D	M	R(3)	Q(1)
2. Radioactivity Monitors Providing Alarm But Not Providing Automatic Termination of Release				
a. Normal Service Water System Return From the Waste Processing Building to the Circulating Water System	D	M	R(3)	Q(2)

TABLE 4.3-8 (Continued)

TABLE NOTATIONS

- (1) The DIGITAL CHANNEL OPERATIONAL TEST shall also demonstrate that automatic isolation of this pathway and control room alarm annunciation occur if any of the following conditions exists:
 - a. Instrument indicates measured levels above the Alarm/Trip Setpoint, or
 - b. Circuit failure (monitor loss of communications (alarm only), detector loss of counts (Alarm only) or monitor loss of power), or
 - c. Detector check source test failure (alarm only), or
 - d. Detector channel out of service (alarm only), or
 - e. Monitor loss of sample flow (alarm only).
- (2) The DIGITAL CHANNEL OPERATIONAL TEST shall also demonstrate that control room alarm annunciation occurs if any of the following conditions exists:
 - a. Instrument indicates measured levels above the Alarm Setpoint, or
 - b. Circuit failure (monitor loss of communications (alarm only), detector loss of counts, or monitor loss of power), or
 - c. Detector check source test failure, or
 - d. Detector channel out of service, or
 - e. Monitor loss of sample flow.
- (3) The initial CHANNEL CALIBRATION shall be performed using one or more of the reference standards certified by the National Bureau of Standards (NBS) or using standards that have been obtained from suppliers that participate in measurement assurance activities with NBS. These standards shall permit calibrating the system over its intended range of energy and measurement range. For subsequent CHANNEL CALIBRATION, sources that have been related to the initial calibration shall be used.
- (4) CHANNEL CHECK shall consist of verifying indication of flow during periods of release. CHANNEL CHECK shall be made at least once per 24 hours on days on which continuous, periodic, or batch releases are made.
- (5) When the Secondary Waste System is being used in the batch release mode, the source check shall be prior to release. When the system is being used in the continuous release mode, the source check shall be monthly.

TABLE 4.11-1
RADIOACTIVE LIQUID WASTE SAMPLING AND ANALYSIS PROGRAM

LIQUID RELEASE TYPE	SAMPLING FREQUENCY	MINIMUM ANALYSIS FREQUENCY	TYPE OF ACTIVITY ANALYSIS	LOWER LIMIT OF DETECTION (LLD) ⁽¹⁾ ($\mu\text{Ci/ml}$)
1. Batch Waste Release Tanks ⁽²⁾	P Each Batch	P Each Batch	Principal Gamma Emitters ⁽³⁾	5×10^{-7}
			I-131	1×10^{-6}
a. Waste Monitor Tanks	P One Batch/M	M	Dissolved and Entrained Gases (Gamma Emitters)	1×10^{-5}
b. Waste Evaporator Condensate Tank	P Each Batch	M Composite ⁽⁴⁾	H-3	1×10^{-5}
			Gross Alpha	1×10^{-7}
c. Secondary Waste Sample Tank ⁽⁸⁾	P Each Batch	Q Composite ⁽⁴⁾	Sr-89, Sr-90	5×10^{-8}
			Fe-55	1×10^{-6}
d. Treated Laundry and Hot Shower Tanks				
2. Continuous Releases ⁽⁵⁾⁽⁷⁾	Continuous ⁽⁶⁾	W Composite ⁽⁶⁾⁽⁷⁾	Principal Gamma Emitters ⁽³⁾	5×10^{-7}
a. Cooling Tower Weir	M ⁽⁷⁾ Grab Sample	M ⁽⁷⁾	Dissolved and Entrained Gases (Gamma Emitters)	1×10^{-5}
b. Secondary Waste Sample Tank ⁽⁸⁾			I-131	1×10^{-6}
	Continuous ⁽⁶⁾	M Composite ⁽⁶⁾⁽⁷⁾	H-3	1×10^{-5}
			Gross Alpha	1×10^{-7}
	Continuous ⁽⁶⁾	Q Composite ⁽⁶⁾⁽⁷⁾	Sr-89, Sr-90	5×10^{-8}
			Fe-55	1×10^{-6}

TABLE 4.11-1 (Continued)

TABLE NOTATIONS (Continued)

- (3) The principal gamma emitters for which the LLD specification applies include the following radionuclides: Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, and Ce-141. Ce-144 shall also be measured but with a LLD of 5×10^{-6} . This list does not mean that only these nuclides are to be considered. Other gamma peaks that are identifiable, together with those of the above nuclides, shall also be analyzed and reported in the Semiannual Radioactive Effluent Release Report pursuant to Specification 6.9.1.4 in the format outlined in Regulatory Guide 1.21, Appendix B, Revision 1, June 1974.
- (4) A composite sample is one in which the quantity of liquid sampled is proportional to the quantity of liquid waste discharged and in which the method of sampling employed results in a specimen that is representative of the liquids released.
- (5) A continuous release is the discharge of liquid wastes of a nondiscrete volume, e.g., from a volume of a system that has an input flow during the continuous release.
- (6) To be representative of the quantities and concentrations of radioactive materials in liquid effluents, samples shall be collected continuously in proportion to the rate of flow of the effluent stream. Prior to analyses, all samples taken for the composite shall be thoroughly mixed in order for the composite sample to be representative of the effluent release.
- (7) These points monitor potential release pathways only and not actual release pathways. The potential contamination points are in the Normal Service Water (NSW) and Secondary Waste (SW) Systems. Action under this specification is as follows:
- a) If the applicable (NSW or SW) monitors in Table 3.3-12 are OPERABLE and not in alarm, then no analysis under this specification is required but weekly composites will be collected.
 - b) If the applicable monitor is out of service, then the weekly analysis for principal gamma emitters will be performed.
 - c) If the applicable monitor is in alarm or if the principal gamma emitter analysis indicates the presence of radioactivity as defined in the ODCM, then all other analyses of this specification shall be performed at the indicated frequency as long as the initiating conditions exist.
- (8) The Secondary Waste System releases can be either batch or continuous. The type of sample required is determined by the mode of operation being used.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 1 TO FACILITY OPERATING LICENSE NO. NPF-63

CAROLINA POWER & LIGHT COMPANY

NORTH CAROLINA EASTERN MUNICIPAL POWER AGENCY

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1

DOCKET NO. 50-400

1.0 INTRODUCTION

By letter dated May 14, 1987, the Carolina Power & Light Company (CP&L or the licensee) submitted an amendment to the Technical Specifications (TS) for the Shearon Harris Nuclear Power Plant, Unit 1 (SHNPP). This submittal requested changes in the Technical Specifications which will permit operation of SHNPP with continuous discharges of liquid effluent from releases currently permitted by the TS. This change would permit greater operational flexibility, particularly during periods when high volumes of liquids are required to be processed. The licensee has also proposed changes to the monitoring and surveillance requirements appropriate for operation in the proposed manner.

2.0 EVALUATION

The FSAR for SHNPP indicates that the maximum expected effluent from the Secondary Waste System (SWS) is 25,000 gallons per day. This effluent flows from the SWS Tank past the radioactive effluent monitor designated REM-3542 to the cooling tower blowdown line where it becomes mixed with the blowdown flow before flowing into Lake Harris. In the current mode of operation, batches of secondary system liquid waste are discharged in this way, with monitor REM-3542 set to alarm and terminate flow if radioactive concentrations exceed the limits specified in 10 CFR 20, Appendix B, Table II, Column 2.

The changes to the TS proposed by the licensee would permit continuous releases. These releases would be monitored for flow and radioactivity with provisions for alarm and release termination should the activity levels of the effluent exceed the limits specified in 10 CFR 20, Appendix B, Table II, Column 2. The change in the mode of operation will affect parts of the Offsite Dose Calculation Manual which concern adjusting the setpoints of radioactive liquid effluent monitors to maintain concentrations less than those stipulated in 10 CFR 20, Appendix B, Table II, Column 2 to address the case of simultaneous releases and for lower-limit radioactivity detection.

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Other parts of the ODCM must also be corrected to address procedures for continuous releases and the accounting of all radioactive quantities in liquid effluents. A revision to the ODCM, containing the necessary corrections, must be submitted with the next semi-annual radioactive effluent report.

No changes are being made in the daily volume released; nor will the concentration of the effluent exceed the limits of 10 CFR 20, Appendix B, Table II. Therefore, the dose limits of 10 CFR 50, Appendix I, Section II.A will not be exceeded, based on the analysis in the Final Environmental Statement Related to the Operation of Shearon Harris Nuclear Power Plants, Units 1 and 2, NUREG-0972, October 1983. Thus, the discharge of radioactivity can be maintained as low as is reasonably achievable.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes in 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 the amendment involves no significant hazards consideration which was published in the Federal Register (52 FR 20797) on June 3, 1987, 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.

Principal Contributor: Jerry J. Swift

Dated: July 22, 1987

AMENDMENT NO. 1

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

DISTRIBUTION:

Docket No. 50-400

NRC PDR

Local PDR

PD21 r/f

S. Varga

G. Lainas

P. Anderson

B. Buckley

OGC-B

D. Hagan

E. Jordan

J. Partlow

T. Barnhart (4)

Wanda Jones

E. Butcher

J. Swift

ACRS (10)

GPA/PA

ARM/LFMB