

May 1, 1995

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. 58 TO FACILITY OPERATING LICENSE  
NO. NPF-63 REGARDING RADIOLOGICAL EFFLUENT TECHNICAL SPECIFICATIONS  
- SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1 (TAC NO. M90265)

Dear Mr. Robinson:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 58 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 19, 1994, as supplemented November 3, 1994.

The amendment requests a line-item improvement to the radiological effluent TS pursuant to the guidance of Generic Letter 89-01 and incorporates the requirements of the revised 10 CFR Part 20 and 10 CFR 50.36a.

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)

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. 58 to NPF-63
2. Safety Evaluation

cc w/enclosures:  
See next page

DOCUMENT NAME: G:\HARRIS\HAR90265.AMD

\*See previous concurrence *has been*

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

May 1, 1995

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Shearon Harris Nuclear Power Plant  
Carolina Power & Light Company  
Post Office Box 165, Mail Code: Zone 1  
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Sincerely,

A handwritten signature in cursive script, appearing to read "Ngoc B. Le".

Ngoc B. Le, 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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cc w/enclosures:  
See next page

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Carolina Power & Light Company

Shearon Harris Nuclear Power Plant  
Unit 1

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AMENDMENT NO. 58 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. 58  
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 19, 1994, as supplemented November 3, 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:

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P PDR

(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. 58, 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 120 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



David B. Matthews, 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 1, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 58

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.

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xii  
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1-5  
1-6  
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3/4 3-82  
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## DEFINITIONS

### MASTER RELAY TEST

1.18 A MASTER RELAY TEST shall be the energization of each master relay and verification of OPERABILITY of each relay. The MASTER RELAY TEST shall include a continuity check of each associated slave relay.

### MEMBER(S) OF THE PUBLIC

1.19 MEMBER(S) OF THE PUBLIC shall include all persons who are not occupationally associated with the plant. This category does not include employees of the licensee, its contractors, or vendors. Also excluded from this category are persons who enter the site to service equipment or to make deliveries. This category does include persons who use portions of the site for recreational, occupational, or other purposes not associated with the plant.

### OFFSITE DOSE CALCULATION MANUAL

1.20 The OFFSITE DOSE CALCULATION MANUAL (ODCM) shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring Alarm/Trip Setpoints, and in the conduct of the Environmental Radiological Monitoring Program. The ODCM shall also contain (1) the Radioactive Effluent Controls and Radiological Environmental Monitoring Programs required by Section 6.8.4 and (2) descriptions of the information that should be included in the Annual Radiological Environmental Operating and Annual Radioactive Effluent Release Reports required by Specifications 6.9.1.3 and 6.9.1.4.

### OPERABLE - OPERABILITY

1.21 A system, subsystem, train, component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified function(s), and when all necessary attendant instrumentation, controls, electrical power, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its function(s) are also capable of performing their related support function(s).

### OPERATIONAL MODE - MODE

1.22 An OPERATIONAL MODE (i.e., MODE) shall correspond to any one inclusive combination of core reactivity condition, power level, and average reactor coolant temperature specified in Table 1.2.

### PHYSICS TESTS

1.23 PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation: (1) described in Chapter 14.0 of the FSAR, (2) authorized under the provisions of 10 CFR 50.59, or (3) otherwise approved by the Commission.

### PRESSURE BOUNDARY LEAKAGE

1.24 PRESSURE BOUNDARY LEAKAGE shall be leakage (except steam generator tube leakage) through a nonisolable fault in a Reactor Coolant System component body, pipe wall, or vessel wall.

## DEFINITIONS

### PROCESS CONTROL PROGRAM

1.25 The PROCESS CONTROL PROGRAM (PCP) shall contain the current formulas, sampling, analyses, test, and determinations to be made to ensure that processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Parts 20, 61, and 71 and State regulations, burial ground requirements, and other requirements governing the disposal of solid radioactive waste.

### PURGE - PURGING

1.26 PURGE or PURGING shall be any controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration or other operating condition, in such a manner that replacement air or gas is required to purify the confinement.

### QUADRANT POWER TILT RATIO

1.27 QUADRANT POWER TILT RATIO shall be the ratio of the maximum upper excore detector calibrated output to the average of the upper excore detector calibrated outputs, or the ratio of the maximum lower excore detector calibrated output to the average of the lower excore detector calibrated outputs, whichever is greater. With one excore detector inoperable, the remaining three detectors shall be used for computing the average.

### RATED THERMAL POWER

1.28 RATED THERMAL POWER shall be a total reactor core heat transfer rate to the reactor coolant of 2775 MWt.

### REACTOR TRIP SYSTEM RESPONSE TIME

1.29 The REACTOR TRIP SYSTEM RESPONSE TIME shall be the time interval from when the monitored parameter exceeds its Trip Setpoint at the channel sensor until loss of stationary gripper coil voltage.

### REPORTABLE EVENT

1.30 A REPORTABLE EVENT shall be any of those conditions specified in Section 50.73 of 10 CFR Part 50.

### SHUTDOWN MARGIN

1.31 SHUTDOWN MARGIN shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming all rod cluster assemblies (shutdown and control) are fully inserted except for the single rod cluster assembly of highest reactivity worth which is assumed to be fully withdrawn.

### SITE BOUNDARY

1.32 For these Specifications, the SITE BOUNDARY shall be identical to the EXCLUSION AREA BOUNDARY defined above.

## DEFINITIONS

### SLAVE RELAY TEST

1.33 A SLAVE RELAY TEST shall be the energization of each slave relay and verification of OPERABILITY of each relay. The SLAVE RELAY TEST shall include a continuity check, as a minimum, of associated testable actuation devices.

### SOLIDIFICATION

1.34 Deleted from Technical Specifications and relocated to the PCP. |

### SOURCE CHECK

1.35 A SOURCE CHECK shall be the qualitative assessment of channel response when the channel sensor is exposed to a source of increased radioactivity.

### STAGGERED TEST BASIS

1.36 A STAGGERED TEST BASIS shall consist of:

- a. A test schedule for n systems, subsystems, trains, or other designated components obtained by dividing the specified test interval into n equal subintervals, and
- b. The testing of one system, subsystem, train, or other designated component at the beginning of each subinterval.

### THERMAL POWER

1.37 THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

### TRIP ACTUATING DEVICE OPERATIONAL TEST

1.38 A TRIP ACTUATING DEVICE OPERATIONAL TEST shall consist of operating the Trip Actuating Device and verifying OPERABILITY of alarm, interlock and/or trip functions. The TRIP ACTUATING DEVICE OPERATIONAL TEST shall include adjustment, as necessary, of the Trip Actuating Device such that it actuates at the required Setpoint within the required accuracy.

### UNIDENTIFIED LEAKAGE

1.39 UNIDENTIFIED LEAKAGE shall be all leakage which is not IDENTIFIED LEAKAGE or CONTROLLED LEAKAGE.

### UNRESTRICTED AREA

1.40 An UNRESTRICTED AREA shall be any area at or beyond the SITE BOUNDARY access to which is not controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials, or any area within the SITE BOUNDARY used for residential quarters or for industrial, commercial, institutional, and/or recreational purposes.



INSTRUMENTATION

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

Specification 3/4.3.3.10 has been deleted from Technical Specifications and has been relocated to the ODCM. |

Pages 3/4 3-76 through 3/4 3-81 have been deleted. |

## INSTRUMENTATION

### EXPLOSIVE GAS MONITORING INSTRUMENTATION\*

#### LIMITING CONDITION FOR OPERATION

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3.3.3.11 The explosive gas monitoring instrumentation channels shown in Table 3.3-13 shall be OPERABLE with their Alarm/Trip Setpoints set to ensure that the limits of Specification 3.11.2.5 are not exceeded.

APPLICABILITY: As shown in Table 3.3-13.

#### ACTION:

- a. With an explosive gas effluent monitoring instrumentation channel Alarm/Trip Setpoint less conservative than required by the above specification declare the channel inoperable and take the ACTION shown in Table 3.3-13.
- b. With the number of OPERABLE explosive gas monitoring instrumentation channels less than the Minimum Channels OPERABLE, take the ACTION shown in Table 3.3-13. Restore the inoperable instrumentation to OPERABLE status within 30 days, and if unsuccessful, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 to explain why this inoperability was not corrected in a timely manner.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

#### SURVEILLANCE REQUIREMENTS

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4.3.3.11 Each explosive gas monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, CHANNEL CALIBRATION and ANALOG CHANNEL OPERATIONAL TEST at the frequencies shown in Table 4.3-9.

\* Note: The radioactive gaseous effluent monitoring portions of Specification 3/4.3.3.11 have been deleted from Technical Specifications and have been relocated to the ODCM.

Page 3/4 3-84 has been deleted.

TABLE 3.3-13  
EXPLOSIVE GAS MONITORING INSTRUMENTATION

| <u>INSTRUMENT</u>   | <u>MINIMUM CHANNELS<br/>OPERABLE</u> | <u>APPLICABILITY</u> | <u>ACTION</u> |
|---|--------------------------------------|----------------------|---------------|
| 1. GASEOUS WASTE PROCESSING SYSTEM--HYDROGEN AND OXYGEN ANALYZERS |                                      |                      |               |
| a. Recombiner Outlet Hydrogen Monitor                             | 1/recombiner                         | *                    | 50            |
| b. Recombiner Outlet Oxygen Monitor                               | 1/recombiner                         | *                    | 48            |
| c. Compressor Discharge Oxygen Monitor                            | 1                                    | *                    | 48            |

TABLE 3.3-13 (Continued)

TABLE NOTATIONS

\* During GASEOUS WASTE PROCESSING SYSTEM operation

ACTION STATEMENTS

|           |   |   |
|-----------|---|---|
| ACTION 45 | - | (NOT USED)  |
| ACTION 46 | - | (NOT USED)  |
| ACTION 47 | - | (NOT USED)  |
| ACTION 48 | - | With the number of channels OPERABLE less than the Minimum Channels OPERABLE requirement, operation may continue provided grab samples are taken and analyzed at least once per 4 hours during degassing operations and at least once per 24 hours during other operations. |
| ACTION 49 | - | (NOT USED)  |
| ACTION 50 | - | With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement, suspend oxygen supply to the recombiner.  |
| ACTION 51 | - | (NOT USED)  |
| ACTION 52 | - | (NOT USED)  |

TABLE 4.3-9

EXPLOSIVE GAS MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

| <u>INSTRUMENT</u>   | <u>CHANNEL CHECK</u> | <u>CHANNEL CALIBRATION</u> | <u>ANALOG CHANNEL OPERATIONAL TEST</u> | <u>MODES FOR WHICH SURVEILLANCE IS REQUIRED</u> |
|---|----------------------|----------------------------|--|---|
| 1. GASEOUS WASTE PROCESSING SYSTEM--<br>HYDROGEN AND OXYGEN ANALYZERS |                      |                            |  |   |
| a. Recombiner Outlet Hydrogen Monitor                                 | D                    | Q(4)                       | M                                      | *   |
| b. Recombiner Outlet Oxygen Monitor                                   | D                    | Q(5)                       | M                                      | *   |
| c. Compressor Discharge Oxygen Monitor                                | D                    | Q(5)                       | M                                      | *   |

TABLE 4.3-9 (Continued)

TABLE NOTATIONS

\* During GASEOUS WASTE PROCESSING SYSTEM operation.

- (1) (NOT USED)
- (2) (NOT USED)
- (3) (NOT USED)
- (4) The CHANNEL CALIBRATION shall include the use of standard gas samples containing hydrogen and nitrogen.
- (5) The CHANNEL CALIBRATION shall include the use of standard gas samples containing oxygen and nitrogen.

3/4.11 RADIOACTIVE EFFLUENTS

3/4.11.1 LIQUID EFFLUENTS

Specifications 3/4.11.1.1, 3/4.11.1.2 and 3/4.11.1.3 have been deleted from Technical Specifications and relocated to the ODCM.

Pages 3/4 11-2 through 3/4 11-6 have been deleted.

## RADIOACTIVE EFFLUENTS

### LIQUID HOLDUP TANKS\*

#### LIMITING CONDITION FOR OPERATION

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3.11.1.4 The quantity of radioactive material contained in each of the following unprotected outdoor tanks shall be limited to less than or equal to 10 Curies, excluding tritium and dissolved or entrained noble gases:

- a. Outside temporary tank, excluding demineralizer vessels and liners used to solidify or to dewater radioactive wastes.

APPLICABILITY: At all times.

#### ACTION:

- a. With the quantity of radioactive material in any of the above listed tanks exceeding the above limit, immediately suspend all additions of radioactive material to the tank, within 48 hours reduce the tank contents to within the limit, and describe the events leading to this condition in the next Annual Radioactive Effluent Release Report, pursuant to Specification 6.9.1.4.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

#### SURVEILLANCE REQUIREMENTS

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4.11.1.4 The quantity of radioactive material contained in each of the above listed tanks shall be determined to be within the above limit by analyzing a representative sample of the tank's contents within 7 days following any addition of radioactive material to the tank.

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\*Tanks included in this specification are those outdoor tanks that are not surrounded by liners, dikes, or walls capable of holding the tank contents and that do not have tank overflows and surrounding area drains connected to the Liquid Radwaste Treatment System.



RADIOACTIVE EFFLUENTS

3/4.11.2 GASEOUS EFFLUENTS

Specifications 3/4.11.2.1, 3/4.11.2.2, 3/4.11.2.3 and 3/4.11.2.4 have been deleted from Technical Specifications and relocated to the ODCM.

Pages 3/4 11-9 through 3/4 11-14 have been deleted.

## RADIOACTIVE EFFLUENTS

### GAS STORAGE TANKS

#### LIMITING CONDITION FOR OPERATION

---

3.11.2.6 The quantity of radioactivity contained in each gas storage tank shall be limited to less than or equal to  $1.05 \times 10^5$  Curies of noble gases (considered as Xe-133 equivalent).

APPLICABILITY: At all times.

#### ACTION:

- a. With the quantity of radioactive material in any gas storage tank exceeding the above limit, immediately suspend all additions of radioactive material to the tank, within 48 hours reduce the tank contents to within the limit, and describe the events leading to this condition in the next Annual Radioactive Effluent Release Report, pursuant to Specification 6.9.1.4.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

#### SURVEILLANCE REQUIREMENTS

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4.11.2.6 The quantity of radioactive material contained in each gas storage tank shall be determined to be within the above limit at least once per 24 hours when radioactive materials are being added to the tank.

RADIOACTIVE EFFLUENTS

3/4.11.3 SOLID RADIOACTIVE WASTES

Specification 3/4.11.3 has been deleted from Technical Specifications and relocated to the PCP.

Page 3/4 11-18 has been deleted.

RADIOACTIVE EFFLUENTS

3/4.11.4 TOTAL DOSE

Specification 3/4.11.4 has been deleted from Technical Specifications and relocated to the ODCM.

3/4.12 RADIOLOGICAL ENVIRONMENTAL MONITORING

Specifications 3/4.12.1, 3/4.12.2 and 3/4.12.3 have been deleted from Technical Specifications and relocated to the ODCM.

Pages 3/4 12-2 through 3/4 12-14 have been deleted.

## INSTRUMENTATION

### BASES

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#### REMOTE SHUTDOWN SYSTEM (Continued)

This capability is consistent with General Design Criterion 3 and Appendix R to 10 CFR Part 50.

#### 3/4.3.3.6 ACCIDENT MONITORING INSTRUMENTATION

The OPERABILITY of the accident monitoring instrumentation ensures that sufficient information is available on selected plant parameters to monitor and assess these variables following an accident. This capability is consistent with the recommendations of Regulatory Guide 1.97, Revision 3, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant Conditions During and Following an Accident," May 1983 and NUREG-0737, "Clarification of TMI Action Plan Requirements," November 1980.

#### 3/4.3.3.7 DELETED

#### 3/4.3.3.8 DELETED

#### 3/4.3.3.9 METAL IMPACT MONITORING SYSTEM

The OPERABILITY of the Metal Impact Monitoring System ensures that sufficient capability is available to detect loose metallic parts in the Reactor System and avoid or mitigate damage to Reactor System components. The allowable out-of-service times and surveillance requirements are consistent with the recommendations of Regulatory Guide 1.133, "Loose-Part Detection Program for the Primary System of Light-Water-Cooled Reactors," May 1981.

#### 3/4.3.3.10 DELETED

## INSTRUMENTATION

### BASES

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#### 3/4.3.3.11 EXPLOSIVE GAS MONITORING INSTRUMENTATION

This instrumentation provides for monitoring and controlling the concentrations of potentially explosive gas mixtures in the GASEOUS RADWASTE TREATMENT SYSTEM. The OPERABILITY and use of this instrumentation is consistent with the requirements of General Design Criteria 60, 63, and 64 of Appendix A to 10 CFR Part 50.

#### 3/4.3.4 DELETED

## 3/4.11 RADIOACTIVE EFFLUENTS

### BASES

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#### 3/4.11.1 LIQUID EFFLUENTS

3/4.11.1.1 DELETED

3/4.11.1.2 DELETED

3/4.11.1.3 DELETED

#### 3/4.11.1.4 LIQUID HOLDUP TANKS

The tanks listed in this specification include all those outdoor radwaste tanks that are not surrounded by liners, dikes, or walls capable of holding the tank contents and that do not have tank overflows and surrounding area drains connected to the Liquid Radwaste Treatment System.

Restricting the quantity of radioactive material contained in the specified tanks provides assurance that in the event of an uncontrolled release of the tank's contents, the resulting concentrations would be less than the limits of 10 CFR Part 20, Appendix B, Table II, Column 2, at the nearest potable water supply and the nearest surface water supply in an UNRESTRICTED AREA.

#### 3/4.11.2 GASEOUS EFFLUENTS

3/4.11.2.1 DELETED

3/4.11.2.2 DELETED

3/4.11.2.3 DELETED

3/4.11.2.4 DELETED

#### 3/4.11.2.5 EXPLOSIVE GAS MIXTURE

This specification is provided to ensure that the concentration of potentially explosive gas mixtures contained in the GASEOUS RADWASTE TREATMENT SYSTEM downstream of the hydrogen recombiners is maintained below the flammability limits of hydrogen and oxygen. Automatic control features are included in the system to prevent the hydrogen and oxygen concentrations from reaching these flammability limits. These automatic control features include isolation of the source of oxygen to reduce the concentration below the flammability limits. Maintaining the concentration of hydrogen and oxygen below their flammability limits provides assurance that the releases of radioactive materials will be controlled in conformance with the requirements of General Design Criterion 60 of Appendix A to 10 CFR Part 50.



RADIOACTIVE EFFLUENTS

BASES

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3/4.11.2.6 GAS STORAGE TANKS

The tanks included in this specification are those tanks for which the quantity of radioactivity contained is not limited directly or indirectly by another Technical Specification. Restricting the quantity of radioactivity contained in each gas storage tank provides assurance that in the event of an uncontrolled release of the tank's contents, the resulting whole body exposure to a MEMBER OF THE PUBLIC at the nearest SITE BOUNDARY will not exceed 0.5 rem. This is consistent with Standard Review Plan 11.3, Branch Technical Position ETSB 11-5, "Postulated Radioactive Releases Due to a Waste Gas System Leak or Failure," in NUREG-0800, July 1981.

3/4.11.3 DELETED

3/4.11.4 DELETED

Pages B 3/4 11-3 through B 3/4 11-6 have been deleted.

3/4.12 RADILOGICAL ENVIRONMENTAL MONITORING

BASES

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3/4.12.1 DELETED

3/4.12.2 DELETED

3/4.12.3 DELETED

Page B 3/4 12-2 has been deleted.

PROCEDURES AND PROGRAMS (Continued)

h. Radioactive Effluent Controls Program

A program shall be provided conforming with 10 CFR 50.36a for the control of radioactive effluents and for maintaining the doses to MEMBERS OF THE PUBLIC from radioactive effluents as low as reasonably achievable. The program (1) shall be contained in the ODCM, (2) shall be implemented by operating procedures, and (3) shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

- 1) Limitations on the operability of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination in accordance with the methodology in the ODCM,
- 2) Limitations on the concentrations of radioactive material released in liquid effluents to UNRESTRICTED AREAS conforming to 10 times the concentration values in Appendix B, Table 2, Column 2 to 10 CFR 20.1001 - 20.2402,
- 3) Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents pursuant to 10 CFR 20.1302 and with the methodology and parameters in the ODCM,
- 4) Limitations on the annual and quarterly doses or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released from each unit to UNRESTRICTED AREAS conforming to Appendix I to 10 CFR Part 50,
- 5) Determination of cumulative and projected dose contributions from radioactive effluents for the current calendar quarter and current calendar year in accordance with the methodology and parameters in the ODCM at least every 31 days,
- 6) Limitations on the operability and use of the liquid and gaseous effluent treatment systems to ensure that the appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a 31-day period would exceed 2 percent of the guidelines for the annual dose or dose commitment conforming to Appendix I to 10 CFR Part 50,
- 7) Limitations on the dose rate resulting from radioactive material released in gaseous effluents from the site to areas at and beyond the SITE BOUNDARY (see Figure 5.1-1) shall be limited to the following:
  - a. For noble gases: less than or equal to a dose rate of 500 mrem/yr to the total body and less than or equal to a dose rate of 3000 mrem/yr to the skin, and
  - b. For Iodine-131, for Iodine-133, for tritium, and for all radionuclides in particulate form with half-lives greater than 8 days: less than or equal to a dose rate of 1500 mrem/yr to any organ.

ADMINISTRATIVE CONTROLS

PROCEDURES AND PROGRAMS (Continued)

h. Radioactive Effluent Controls Program (Cont.)

- 8) Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50,
- 9) Limitations on the annual and quarterly doses to a MEMBER OF THE PUBLIC from Iodine-131, Iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50, and
- 10) Limitations on the annual dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources conforming to 40 CFR Part 190.

i. Radiological Environmental Monitoring Program

A program shall be provided to monitor the radiation and radionuclides in the environs of the plant. The program shall provide (1) representative measurements of radioactivity in the highest potential exposure pathways, and (2) verification of the accuracy of the effluent monitoring program and modeling of environmental exposure pathways. The program shall (1) be contained in the ODCM, (2) conform to the guidance of Appendix I to 10 CFR Part 50, and (3) include the following:

- 1) Monitoring, sampling, analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters in the ODCM,
- 2) A Land Use Census to ensure that changes in the use of areas at and beyond the SITE BOUNDARY are identified and that modifications to the monitoring program are made if required by the results of this census, and
- 3) Participation in a Interlaboratory Comparison Program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.

## ADMINISTRATIVE CONTROLS

### ANNUAL REPORTS (Continued)

film badge measurements. Small exposures totaling less than 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total whole-body dose received from external sources should be assigned to specific major work functions;

- b. The results of specific activity analyses in which the reactor coolant exceeded the limits of Specification 3.4.8. The following information shall be included: (1) reactor power history starting 48 hours prior to the first sample in which the limit was exceeded (in graphic and tabular format); (2) results of the last isotopic analysis for radioiodine performed prior to exceeding the limit, results of analysis while limit was exceeded and results of one analysis after the radioiodine activity was reduced to less than limit. Each result should include date and time of sampling and the radioiodine concentrations; (3) cleanup flow history starting 48 hours prior to the first sample in which the limit was exceeded; (4) graph of the I-131 concentration ( $\mu\text{Ci/gm}$ ) and one other radioiodine isotope concentration ( $\mu\text{Ci/gm}$ ) as a function of time for the duration of the specific activity above the steady-state level; and (5) the time duration when the specific activity of the reactor coolant exceeded the radioiodine limit.
- c. Documentation of all challenges to the pressurizer power-operated relief valves (PORVs) and safety valves.

### ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

6.9.1.3 The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted before May 1 of each year. The report shall include summaries, interpretations, and analysis of trends of the results of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the objectives outlined in (1) the ODCM and (2) Sections IV.B.2, IV.B.3, and IV.C of Appendix I to 10 CFR Part 50.

ADMINISTRATIVE CONTROLS

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ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

6.9.1.4 The Annual Radioactive Effluent Release Report covering the operation of the unit during the previous year shall be submitted prior to May 1 of each year. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be (1) consistent with the objectives outlined in the ODCM and PCP and (2) in conformance with 10 CFR 50.36a and Section IV.B.1 of Appendix I to 10 CFR Part 50.

## ADMINISTRATIVE CONTROLS

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### MONTHLY OPERATING REPORTS

6.9.1.5 Routine reports of operating statistics and shutdown experience shall be submitted on a monthly basis to the Director, Office of Resource Management, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, with a copy to the Regional Administrator of the Regional Office of the NRC, no later than the 15th of each month following the calendar month covered by the report.

RECORD RETENTION (Continued)

effective at specified times and QA records showing that these procedures were followed;

- o. Records of facility radiation and contamination surveys;
- p. Records of independent reviews; and
- q. Records of reviews performed for changes made to the OFFSITE DOSE CALCULATION MANUAL and the PROCESS CONTROL PROGRAM.

6.11 RADIATION PROTECTION PROGRAM

6.11.1 Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained, and adhered to for all operations involving personnel radiation exposure.

6.12 HIGH RADIATION AREA

6.12.1 Pursuant to Paragraph 20.203(c)(5) of 10 CFR Part 20, in lieu of the "control device" or "alarm signal" required by Paragraph 20.203(c), each high radiation area, as defined in 10 CFR Part 20, in which the intensity of radiation is equal to or less than 1000 mR/h at 45 cm (18 in.) from the radiation source or from any surface which the radiation penetrates shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (RWP). Individuals qualified in radiation protection procedures (e.g., Health Physics Technicians) or personnel continuously escorted by such individuals may be exempt from the RWP issuance requirement during the performance of their assigned duties in high radiation areas with exposure rates equal to or less than 1000 mR/h, provided they are otherwise following plant radiation protection procedures for entry into such high radiation areas. Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

- a. A radiation monitoring device that continuously indicates the radiation dose rate in the area; or
- b. A radiation monitoring device that continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate levels in the area have been established and personnel have been made knowledgeable of them; or
- c. An individual qualified in radiation protection procedures, with a radiation dose rate monitoring device, who is responsible for providing positive control over the activities within the area and who shall perform periodic radiation surveillance at the frequency specified by the Radiation Control Supervisor in the RWP.

6.12.2 In addition to the requirements of Specification 6.12.1, accessible areas with radiation levels greater than 1000 mR/h at 45 cm (18 in.) from the radiation source or from any surface which the radiation penetrates, shall be provided with locked doors to prevent unauthorized entry, and the keys shall be maintained under the administrative control of the shift Foreman on duty



HIGH RADIATION AREA (Continued)

and/or health physics supervision. Doors shall remain locked except during periods of access by personnel under an approved RWP which shall specify the dose rate levels in the immediate work areas and the maximum allowable stay time for individuals in that area. In lieu of the stay time specification of the RWP, direct or remote (such as closed circuit TV cameras) continuous surveillance may be made by personnel qualified in radiation protection procedures to provide positive exposure control over the activities being performed within the area. During emergency situations that involve personal injury or actions taken to prevent major equipment damage, continuous surveillance and radiation monitoring of the work area by a qualified individual may be substituted for the routine RWP procedure.

For accessible individual high radiation areas, with radiation levels of greater than 1000 mR/h, that are located within large areas, such as PWR containment, where no enclosure exists for purposes of locking and where no enclosure can be reasonably constructed around the individual area, that individual area shall be barricaded and conspicuously posted, and a flashing light shall be activated as a warning device.

6.13 PROCESS CONTROL PROGRAM (PCP)

Changes to the PCP:

- a. Shall be documented and records of reviews performed shall be retained as required by Specification 6.10.3p. This documentation shall contain:
  - 1) Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and
  - 2) A determination that the change will maintain the overall conformance of the solidified waste product to existing requirements of Federal, State, or other applicable regulations.
- b. Shall become effective after review and acceptance by the PNSC and the approval of the Plant General Manager.

6.14 OFFSITE DOSE CALCULATION MANUAL (ODCM)

Changes to the ODCM:

- a. Shall be documented and records of reviews performed shall be retained as required by Specification 6.10.3p. This documentation shall contain:
  - 1) Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and

OFFSITE DOSE CALCULATION MANUAL (Continued)

- 2) A determination that the change will maintain the level of radioactive effluent control required by 10 CFR 20.1302, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50 and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations.
- b. Shall become effective after review and acceptance by the PNSC and the approval of the Plant General Manager.
  - c. Shall be submitted to the Commission in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Annual Radioactive Effluent Release Report for the period of the report in which any change to the ODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (e.g., month/year) the change was implemented.
- 6.15 Specification 6.15 has been deleted from Technical Specifications and has been relocated to the ODCM and PCP, as appropriate.

Page 6-29 has been deleted.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 58 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 letter dated August 19, 1994, as supplemented November 3, 1994, Carolina Power & Light Company (CP&L or licensee) submitted proposed changes to the Shearon Harris Nuclear Power Plant, Unit 1 (SHNPP), Technical Specifications (TS) in support of its plan to implement Generic Letter (GL) 89-01, "Implementation of Programmatic Controls for Radiological Effluent Technical Specifications in the Administrative Control Section of the Technical Specifications and the Relocation of Procedural Details of RETS to the Offsite Dose Calculation Manual or to the Process Control Program," dated January 31, 1989. The proposed changes also include programmatic controls for radioactive effluents and radiological environmental monitoring that conform to the guidance in GL 89-01 with three exceptions. The three exceptions deal with the manner in which specific limits are referenced in the administrative controls section of the TS (see new TS 6.8.4.h.2 and TS 6.8.4.h.7) and the reporting requirements for the effluent release report (see revised TS 6.9.1.4). The changes proposed by the licensee and the related no significant hazards consideration determination were noticed in the Federal Register on October 12, 1994 (59 FR 51617); and, as a result, two (2) public comments on the changes were received. The licensee's November 3, 1994, letter provided retyped TS pages that reflect the same changes proposed in the August 19, 1994, letter and did not change the initial proposed no significant hazards consideration determination or expand the scope of the original Federal Register notice.

Section 182a of the Atomic Energy Act (the "Act") requires that applicants for nuclear power plant operating licenses state TS and that these TS be included as a part of the license. The Commission's regulatory requirements related to the content of TS are set forth in 10 CFR 50.36. That regulation requires that the TS include items in five specific categories including: (1) safety limits, limiting safety system settings and limiting control settings; (2) limiting conditions for operation; (3) surveillance requirements; (4) design features; and (5) administrative controls, and it also states that the Commission may include such additional TS as it finds to be appropriate. However, the regulation does not specify the particular TS to be included in a plant's license.

The Commission has provided guidance for the contents of TS in its "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors" (Final Policy Statement), issued on July 22, 1993 (58 FR 39132), in which the Commission indicated that compliance with the Final Policy Statement satisfies Section 182a of the Act. In particular, the Commission indicated that certain items could be relocated from the TS to licensee-controlled documents, and consistent with this approach, the Final Policy Statement identified four criteria to be used in determining whether a particular matter is required to be included in the TS, as follows: (1) installed instrumentation that is used to detect and indicate in the control room a significant abnormal degradation of the reactor coolant pressure boundary; (2) a process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of, or presents a challenge to, the integrity of a fission product barrier; (3) a structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier; (4) a structure, system, or component which operating experience or probabilistic safety assessment has shown to be significant to public health and safety. As a result, the existing Limiting Condition for Operation (LCO) requirements that fall within or satisfy any of the criteria in the Final Policy Statement must be retained in the TS, while those LCO requirements which do not fall within or satisfy these criteria may be relocated to other appropriate licensee-controlled documents.

The evaluation by the NRC staff of the proposed changes is given below. The NRC staff's responses to the public comments received are contained in the Enclosure.

## 2.0 EVALUATION

In its letter of August 19, 1994, as supplemented November 3, 1994, the licensee proposes to revise the SHNPP TS to incorporate the guidance of GL 89-01 and to include wording that is consistent with revised 10 CFR Part 20 and 10 CFR 50.36a, with three exceptions. The three exceptions are the following: (1) incorporate a reference to the revised 10 CFR Part 20 for the plant radiological liquid effluents control program, (2) modify terminology for the gaseous effluent release rate limits to maintain the same level of effluent control to meet the design objectives of Appendix I to 10 CFR Part 50, and (3) change the reporting requirements for effluent release reports in accordance with the revised 10 CFR 50.36a.

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The Commission recently promulgated a proposed change to 10 CFR 50.36, pursuant to which the rule would be amended to codify and incorporate these criteria (59 FR 48180, September 20, 1994). The Commission's Final Policy Statement specified that the Reactor Core Isolation Cooling, Isolation Condenser, Residual Heat Removal, Standby Liquid Control, and Recirculation Pump Trip are included in the TS under Criterion 4 (58 FR 39132, July 22, 1993).

## 2.1 TS Changes To Implement GL 89-01

The staff reviewed the licensee-proposed changes and finds that the request to relocate the SHNPP radiological effluent TS (RETS) conforms to the staff guidance for line-item improvements given in GL 89-01. The line-item improvements allow (1) the relocation of the existing procedural details of the current RETS to the plant's offsite dose calculation manual (ODCM) or process control program (PCP), as appropriate, and (2) the incorporation of programmatic controls for radioactive effluent, radiological environmental monitoring and solid radioactive wastes in the administrative controls section of the SHNPP TS. The staff considers that any future changes to the relocated RETS will be adequately controlled by 10 CFR 50.59, and, therefore, the radiological effluents control program at a licensee facility does not need to be controlled by the plant TS. Additionally, should the licensee determine that any future change to plant design involves any unreviewed safety question, because of either (1) an increase in the probability or consequences of accidents or malfunctions of equipment important to safety, (2) the creation of a possibility for an accident or malfunction of a type different from any evaluated previously, or (3) a reduction in the margin of safety, then NRC approval and a license amendment would be required before implementation of the change. The NRC inspection and enforcement programs also enable the staff to monitor facility changes and licensee adherence to its commitments in the updated final safety analysis report (UFSAR) and to take any remedial action that may be appropriate.

Details of the staff evaluation are as follows:

### (1) Definition 1.20, OFFSITE DOSE CALCULATION MANUAL

The licensee proposes to update Definition 1.20 to reflect the change in the scope of the ODCM. The words "due to" are changed to "resulting from," and a new paragraph "The ODCM shall...Specifications 6.9.1.3 and 6.9.1.4." is added to describe the content of the ODCM.

The change is administrative and consistent with GL 89-01 and is acceptable.

### (2) Definition 1.25, PROCESS CONTROL PROGRAM

The licensee proposes to update Definition 1.25 to reflect the change in the scope of the process control program (PCP). The word "tests" is changed to "test," the words "Federal and" are deleted, and the word "solid" is added.

The change is administrative and is acceptable.

### (3) Definition 1.34, SOLIDIFICATION

The licensee proposes to relocate Definition 1.34 to the PCP.

The change is consistent with GL 89-01 and is acceptable.

(4) TS 3/4.3.3.10, RADIOACTIVE LIQUID EFFLUENT MONITORING  
INSTRUMENTATION

The licensee proposes to remove this TS and relocate the existing procedural details and associated limiting condition for operation, surveillance requirements, and Tables 3.3-12 and 4.3-8 to the ODCM. Related programmatic controls are included in the new TS 6.8.4.h, element 1.

The change is consistent with GL 89-10 and 10 CFR 50.36 and is acceptable.

(5) TS 3/4.3.3.11, RADIOACTIVE GASEOUS EFFLUENT MONITORING  
INSTRUMENTATION

The licensee proposes to relocate part of the TS related to radioactive gaseous effluent monitoring and associated procedural details, limiting condition for operation, surveillance requirements, and associated portion of Tables 3.3-13 and 4.3-9 to the ODCM. The remaining part of TS 3/4.3.3.11 and the associated portion of Tables 3.3-13 and 4.3-9 are modified, and the TS title will be changed to "Explosive Gas Monitoring Instrumentation." The programmatic control for the relocated portion of this TS will be added to the administration control section of the TS as a new TS.6.8.4.h. element 1.

The change is consistent with GL 89-01 and 10 CFR 50.36a and is acceptable.

(6) TS 3/4.11.1.1, LIQUID EFFLUENTS: CONCENTRATION

The licensee proposes to remove this TS and relocate the existing procedural details, associated limiting condition for operation, surveillance requirements, and Table 4.11-1 to the ODCM. Programmatic control for this requirement is as stated in new TS 6.8.4.h, elements 2 and 3.

The change is consistent with GL 89-01 and 10 CFR 50.36, except for the wording in the new TS 6.8.4.h, element 2. The licensee previously received approval, in Amendment No. 40, to revise TS 3/4.11.1.1 to use a factor of 10 for liquid effluents. The licensee proposes to continue to use this approved wording in the new TS 6.8.4.h, in lieu of the wording in GL 89-01. The licensee proposes this change to retain operational flexibility consistent with Appendix I to 10 CFR Part 50, concurrent with the implementation of revised 10 CFR Part 20. The proposed change retains the same overall level of effluent control required to meet the design objectives of Appendix I to 10 CFR Part 50, is consistent with GL 89-10 and 10 CFR 50.36a, and therefore is acceptable.

(7) TS 3/4.11.1.2, LIQUID EFFLUENTS: DOSE

The licensee proposes to remove this TS and relocate the existing procedural details, associated limiting condition for operation and surveillance requirements to the ODCM. Programmatic control for this requirement is as stated in new TS.6.8.4.h, elements 4 and 5.

The change is consistent with GL 89-01 and 10 CFR 50.36a and is acceptable.

## (8) TS 3/4.11.1.3, LIQUID EFFLUENTS: LIQUID WASTE TREATMENT SYSTEM

The licensee proposes to remove this TS and relocate the existing specification procedural details to the ODCM. Programmatic control for this requirement is as stated in the new TS.6.8.4.h, element 6.

The change is consistent with GL 89-01 and 10 CFR 50.36a and is acceptable.

## (9) TS 3/4 11.2.1, GASEOUS EFFLUENTS: DOSE RATE

The licensee proposes to remove this TS and relocate the existing procedural details and associated Table 4.11-2 to the ODCM. Programmatic control for this requirement is as stated in the new TS 6.8.4.h, elements 3 and 7.

The change is consistent with GL 89-10 and 10 CFR 50.36a and is acceptable.

## (10) TS 3/4 11.2.2, GASEOUS EFFLUENTS: DOSE - NOBLE GASES

The licensee proposes to remove this TS and relocate the existing procedural details to the ODCM. Programmatic control for this requirement is as stated in the new TS 6.8.4.h, elements 5 and 8.

The change is consistent with GL 89-01 and 10 CFR 50.36a and is acceptable.

(11) TS 3/4 11.2.3, GASEOUS EFFLUENTS: DOSE - IODINE 131, TRITIUM,  
AND RADIOACTIVE MATERIAL IN PARTICULATE FORM

The licensee proposes to remove this TS and relocate the existing procedural details to the ODCM. Programmatic control for this requirement is as stated in new TS 6.8.4.h, elements 5 and 9.

The change is consistent with GL 89-01 and 10 CFR 50.36a and is acceptable.

(12) TS 3/4 11.2.4, GASEOUS EFFLUENTS: GASEOUS RADWASTE TREATMENT or  
VENTILATION EXHAUST TREATMENT SYSTEM

The licensee proposes to remove this TS and relocate the existing procedural details to the ODCM. Programmatic control for this requirement is as stated in the new TS 6.8.4.h, element 6.

The change is consistent with GL 89-01 and 10 CFR 50.36a and is acceptable.

## (13) TS 3/4 11.3, SOLID RADIOACTIVE WASTES

The licensee proposes to remove and relocate the existing procedural details to the PCP.

The change is consistent with the guidance of GL 89-01 and 10 CFR 50.36 and is acceptable.

## (14) TS 3/4 11.4, RADIOACTIVE EFFLUENTS: TOTAL DOSE

The licensee proposes to remove this TS and relocate the existing procedural details to the ODCM. Programmatic control for this requirement is as stated in new TS 6.8.4.h, element 10.

The change is consistent with GL 89-01 and 10 CFR 50.36a and is acceptable.

## (15) TS 3/4 12.1, RADIOLOGICAL ENVIRONMENTAL MONITORING: MONITOR PROGRAM

The licensee proposes to remove this TS and relocate the existing procedural details and associated Tables 3.12-1, 3.12-2, and 4.12-1 to the ODCM. Programmatic control for this requirement is as stated in the new TS 6.8.4.i, item 1.

The change is consistent with the relocated program contained in the ODCM and with GL 89-01 and Appendix I to 10 CFR Part 50 and is acceptable.

## (16) TS 3/4 12.2, RADIOLOGICAL ENVIRONMENTAL MONITORING: LAND USE CENSUS

The licensee proposes to remove this TS and relocate the existing procedural details to the ODCM. Programmatic control for this existing requirement is as stated in the new TS 6.8.4.i, item 2.

The change conforms with the program contained in the ODCM and with GL 89-01 and Appendix I to 10 CFR Part 50 and is acceptable.

## (17) TS 3/4 12.3, RADIOLOGICAL ENVIRONMENTAL MONITORING: INTERLABORATORY COMPARISON PROGRAM

The licensee proposes to remove this TS and relocate the existing procedural details to the ODCM. Programmatic control for this existing requirement is as stated in the new TS 6.8.4.i, item 3.

The change conforms with the program contained the ODCM and GL 89-01 and Appendix I to 10 CFR Part 50 and is acceptable.

## (18) Deletion of RETS-associated BASES From the Plant TS:

The licensee proposes to remove the following bases sections associated with the above changes from the existing TS and relocate them to the ODCM in accordance with GL 89-01, except for TS 3/4 3.3.11, a portion of which the licensee proposes to retain in the TS:

- B 3/4 3.3.10, RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION
- B 3/4 3.3.11, RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

The portion related to radioactive liquid effluent monitoring instrumentation in this TS is deleted. The remaining portion is modified, and the title is changed to "EXPLOSIVE GAS MONITORING INSTRUMENTATION." The change is consistent with GL 89-10 and is acceptable.



- B 3/4 11.1.1, CONCENTRATION
- B 3/4 11.1.2, DOSE
- B 3/4 11.1.3, LIQUID RADWASTE TREATMENT SYSTEM
- B 3/4 11.2.1, DOSE RATE
- B 3/4 11.2.2, DOSE - NOBLE GASES
- B 3/4 11.2.3, DOSE - IODINE-131, IODINE-133, TRITIUM, AND RADIOACTIVE MATERIAL IN PARTICULATE FORM
- B 3/4 11.2.4, GASEOUS, RADWASTE TREATMENT SYSTEM
- B 3/4 11.3, SOLID RADIOACTIVE WASTE
- B 3/4 11.4, TOTAL DOSE
- B 3/4 12.1, MONITORING PROGRAM
- B 3/4 12.2, LAND USE CENSUS
- B 3/4 12.3, INTERLABORATORY COMPARISON PROGRAM

The removal of the above TS Bases is consistent with GL 89-01 and is acceptable.

## 2.2 Changes To TS Administrative Controls Section To Implement GL 89-01

### (1) New TS 6.8.4.h, PROCEDURES AND PROGRAMS

The licensee proposes to add ten (10) new items to TS 6.8.4.h (elements h.1 through h.10) to retain the administrative control of existing program requirements for the plant radioactive effluent control program. These new TS elements provide administrative control for the radiological effluent activities for which the specifications are being relocated to the ODCM and PCP as discussed in the above Section 2.1 (5) through 2.1 (14). The new TS items also contain remedial actions to be taken whenever program limits are exceeded. The staff finds that new TS 6.8.4.h (elements h.1 through h.10) covers the same requirements of 10 CFR 50.36a as were covered in the original RETS. As stated in 10 CFR 50.36a, the NRC staff requires licensees to maintain control over radioactive material in gaseous and liquid effluents in unrestricted areas, produced during normal reactor operations, to levels that are as low as is reasonably achievable (ALARA). For power reactors, Appendix I to 10 CFR Part 50 contains the numerical guidance to meet the ALARA requirement. Except for TS 6.8.4.h.2, TS 6.8.4.h.7, and TS 6.9.1.4 (which are discussed in Section 2.2 below), the proposed changes and related staff evaluations are as follows:

- New TS 6.8.4.h.1

The licensee proposes to provide administrative control for the relocated RETS limitations on operability of radioactive liquid and gaseous monitoring instrumentation and the associated detailed procedural requirements.

The change is consistent with current RETS requirements and is acceptable.

- New TS 6.8.4.h.2

The proposed change is evaluated in Section 2.3

- New TS 6.8.4.h.3

The licensee proposes to provide administrative control for the existing RETS requirements regarding monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with the methodology and parameters that are being relocated to the ODCM pursuant to 10 CFR 20.1302.

The change is consistent with current RETS requirements and is acceptable.

- New TS 6.8.4.h.4

The licensee proposes to provide administrative control for the existing RETS requirements regarding limitations on the annual and quarterly doses or dose commitment to a member of the public pursuant to Appendix I to 10 CFR Part 50 that are being relocated to the ODCM.

The change is consistent with current RETS requirements and is acceptable.

- New TS 6.8.4.h.5

The licensee proposes to provide administrative control for the relocated RETS to retain the requirement that the licensee determine cumulative and projected dose contributions from radioactive effluents at least every 31 days for the current calendar quarter and current calendar year in accordance with the methodology and parameters.

The change is consistent with current RETS requirements and is acceptable.

- New TS 6.8.4.h.6

The licensee proposes to provide administrative control for the relocated RETS requirements regarding limitations on the operability and use of the liquid and gaseous effluent treatment systems to ensure that the appropriate portions of these systems are used to reduce releases of radioactivity when the projected dose in a 31-day period exceeds 2 percent of the guidelines for the annual dose or dose commitment is conforming to Appendix I to 10 CFR Part 50.

The change is consistent with current RETS requirements and is acceptable.

- New TS 6.8.4.h.7

The change is evaluated in Section 2.3

- New TS 6.8.4.h.8

The licensee proposes to provide administrative control for the relocated RETS requirements to ensure limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents to areas beyond the site boundary is conforming to Appendix I to 10 CFR Part 50.

The change is consistent with current RETS requirements and is acceptable.

- New TS 6.8.4.h.9

The licensee proposes to provide administrative control for the relocated RETS requirements to ensure limitations on the annual and quarterly doses to a member of the public from iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released to areas beyond site boundary are conforming to Appendix I to 10 CFR Part 50.

The change is consistent with current RETS requirements and is acceptable.

- New TS 6.8.4.h.10

The licensee proposes to provide administrative control for the relocated RETS requirements to ensure limitations on the annual or dose commitment to any member of the public due to release of radioactivity and to radiation from uranium fuel cycle sources are conforming to 40 CFR Part 190.

The change is consistent with current RETS requirements and is acceptable.

On the basis of its review, the NRC staff finds that the proposed relocation of the existing procedures and programs and associated procedural details for the existing SHNPP RETS to the ODCM or the PCP is acceptable because (1) their inclusion in the SHNPP TS is not specifically required by 10 CFR 50.36 or Section 182a of the Atomic Energy Act, and are not required in order to provide adequate protection to the health and safety of the public, (2) the relocated requirements are not required to avert an immediate threat to the public health and safety, (3) the relocated requirements do not fall within any of the four criteria in the Commission's Final Policy Statement for inclusion in the TS, and (4) any future changes that deem to involve an unreviewed safety question will require prior NRC approval in accordance with 10 CFR 50.59(c) to ensure that future changes to these requirements are acceptable.

(2) TS 6.8.4.i, PROCEDURES AND PROGRAM:

The licensee proposes to add TS 6.8.4.i to cover existing procedural details for the radiological environmental monitoring program.

The proposed program will cover the three elements contained in the existing RETS that are being relocated to the ODCM. New TS 6.8.4.i conforms to GL 89-01 and is acceptable.

(3) TS 6.9.1.3, REPORTING REQUIREMENTS: ANNUAL RADIOLOGICAL OPERATING REPORT

The licensee proposes to revise the TS wording and relocate the existing reporting details to the ODCM.

The change conforms to the objectives outlined in the ODCM and Sections IV.B.2, IV.B.3, and IV.C of Appendix I to 10 CFR Part 50 and is acceptable.

(4) Revised TS 6.9.1.4, REPORTING REQUIREMENTS: ANNUAL RADIOACTIVE EFFLUENTS RELEASE REPORT

The change is evaluated in Section 2.3.

(5) TS 6.10.p., RECORD RETENTION

The licensee proposes to add TS 6.10.p. to include a requirement for the retention of records of reviews for changes made to the ODCM and PCP. The change is consistent with GL 89-01 and is acceptable.

(6) TS 6.13, PROCESS CONTROL PROGRAM

The change simplifies the specification of documentation requirements for the plant PCP.

The change is consistent with GL 89-01 and is acceptable.

(7) TS 6.14, OFFSITE DOSE CALCULATION MANUAL (ODCM)

The change simplifies the specification of documentation requirements for the plant ODCM.

The change is acceptable.

(8) TS 6.15, MAJOR CHANGES TO LIQUID, GASEOUS, AND SOLID RADWASTE TREATMENT SYSTEMS

The licensee proposes to relocate the existing procedural details to the plant ODCM or PCP, as appropriate.

The change is consistent with GL 89-01 and is acceptable.

2.3 Revised References for Specific Limits and Reporting Requirements:

The staff evaluation of the three exceptions from the guidance of GL 89-01 follows:

(1) Revised References for Liquid Effluents Specific Limits:

- New TS 6.8.4.h.2

The licensee proposes to provide administrative control for the relocated RETS limitations on the concentrations of radioactive material released in liquid effluents to unrestricted areas and associated detailed procedural requirements that are being relocated to the ODCM.

The change is consistent with GL 89-01 and 10 CFR 50.36, except for the wording in new TS.6.8.4.h, element 2), which reads:

Limitations on the concentrations of radioactive material released in liquid effluents to UNRESTRICTED AREAS conforming to 10 times the concentration values in Appendix B, Table 2, Column 2 to 10 CFR 20.1001 - 20.2402.

The licensee previously received approval in Amendment No. 40 to revise TS 3.11.1.1 to use a factor of 10 for liquid effluents. The licensee proposes to continue to use this approved wording in TS 6.8.4, in lieu of the wording in GL 89-01. The licensee proposes this change in order to retain operational flexibility consistent with Appendix I to 10 CFR Part 50, concurrent with the implementation of the revised 10 CFR Part 20. The proposed change retains the same overall level of effluent control required to meet the design objectives of Appendix I to 10 CFR Part 50.

The requirements for the content of the licensee's TS concerning radioactive effluents are contained in 10 CFR 50.36a, which requires licensees to maintain control over radioactive material in gaseous and liquid effluents to unrestricted areas, produced during normal reactor operations, to levels that are ALARA. For power reactors, Appendix I to 10 CFR Part 50 contains the numerical guidance to meet the ALARA requirement. The dose values specified in Appendix I to 10 CFR Part 50 are small percentages of the limits in 10 CFR 20.1301. As secondary controls, the instantaneous release concentration rates required by this TS were chosen by the staff to help maintain annual average releases of radioactive material in liquid effluents to within the dose values specified in Appendix I to 10 CFR Part 50. For the purposes of this TS, 10 CFR Part 20 is used as a source of reference values only. The referenced concentrations in the old 10 CFR Part 20 are specific values that if continuously released relate to an annual dose of 500 mrem. However, the licensee's TS limit annual doses to a member of the public from radioactive materials in liquid effluents to the ALARA dose values in Appendix I to 10 CFR Part 50. In revised 10 CFR Part 20, the liquid effluent radioactive effluent concentration limits given in Table 2, Column 2 of Appendix B to 10 CFR 20.1001 - 20.2401 are based on an annual dose of 50 mrem total effective dose equivalent. Since an instantaneous release concentration corresponding to a dose rate of 500 mrem/year has been acceptable as a TS limit for liquid effluents, which applies at all times to ensure that the ALARA dose values in Appendix I to 10 CFR Part 50 are not likely to be exceeded, it is not necessary to reduce the effluent concentration limit by a factor of 10 when using revised 10 CFR Part 20.

The licensee's use of effluent concentration values, as applied on an instantaneous maximum basis, that are 10 times those listed in Table 2, Column 2, Appendix B to 10 CFR 20.1001 - 20.2401 are not expected to have a negative impact on the ability to continue to operate within the design objectives in Appendix I to 10 CFR Part 50 and 40 CFR Part 190. The use of the Appendix B, Table 2, effluent concentration values with a factor of 10 is not an exemption from the requirements of 10 CFR Part 20. The licensee's TS applies those effluent concentrations on an instantaneous maximum basis, whereas 10 CFR Part 20 allows the effluent concentrations to be averaged on an annual basis. Therefore, the use of effluent concentration values that are ten times those listed in Appendix B, Table 2, Column 2 to 10 CFR 20.1001-20.2401 will not have a negative impact on the ability to continue to operate within the design objectives in Appendix I to 10 CFR Part 50 and 40 CFR Part 190.

On the basis of the above, it is acceptable that the instantaneous limits associated with the liquid release rate TS are based on 10 times the effluent concentration values given in Table 2, Column 2, Appendix B, 10 CFR 20.1001 - 20.2401, to apply at all times.

(2) Revised References for Liquid Effluents Specific Limits:

- New TS 6.8.4.h.7

The licensee proposes that the new TS 6.8.4.h.7 reads as follows:

Limitations on the dose rate resulting from radioactive material released in gaseous effluents from the site to areas at or beyond the SITE BOUNDARY (see Figure 5.1-1) shall be limited to the following:

- a. For Noble gases: Less than or equal to a dose rate of 500 mrems/yr to the total body and less than or equal to a dose rate of 3000 mrems/yr to the skin, and
- b. For Iodine-131, Iodine-133, Tritium, and for all radionuclides in particulate form with half-lives greater than 8 days: Less than or equal to a dose rate of 1500 mrems/yr to any organ.

The licensee proposes to continue to use the approved wording in existing TS 3/4 11.2.1, in lieu of the wording in GL 89-01. The licensee proposes this change in order to retain operational flexibility consistent with 10 CFR Part 50, Appendix I, concurrent with the implementation of revised 10 CFR Part 20. The proposed change retains the same overall level of effluent control required to meet the design objectives of Appendix I to 10 CFR Part 50.

The requirements for the content of the licensee's TS concerning radioactive effluents are contained in 10 CFR 50.36a, which requires licensee to maintain control over radioactive material produced during normal reactor operations in gaseous and liquid effluents to unrestricted areas to levels that are ALARA. For power reactors, Appendix I to 10 CFR Part 50 contains the numerical guidance to meet the ALARA requirement. The dose values specified in

Appendix I to 10 CFR Part 50 are small percentages of the limits in 10 CFR 20.1301. As secondary controls, the instantaneous release dose rates required by this specification were chosen by the staff to help maintain annual average releases of radioactive material in gaseous and liquid effluents to within the ALARA dose values specified in Appendix I of 10 CFR Part 50. For the purpose of the bases of this TS, 10 CFR Part 20 is used as a source of reference values only. The use of the effluent dose rate TS limits is not an exemption from the dose limit to a member of the public specified in 10 CFR 20.1301. The licensee's TS limits annual doses to a member of the public from radioactive material in gaseous effluents to the ALARA dose values in Appendix I to 10 CFR Part 50.

This new specification, which is based on guidance in NUREG-0133, is acceptable as a TS dose rate limit for gaseous effluents, which applies at all times as an assurance that the values in Appendix I to 10 CFR Part 50 are not likely to be exceeded.

The use of the proposed TS is not expected to have a negative impact on the ability to continue to operate within the design objectives in Appendix I to 10 CFR Part 50 and 40 CFR Part 190.

On the basis of the above, it is acceptable that the gaseous release rate TS for radioactive material be based on the stated dose rates; therefore, the proposed change is acceptable.

(3) Revised Reporting Requirements for the Annual Radioactive Effluent Release Report:

- Revised TS 6.9.1.4 - REPORTING REQUIREMENTS: ANNUAL RADIOACTIVE EFFLUENTS RELEASE REPORT

The licensee simplifies and relocates the existing reporting details to the ODCM or PCP, as appropriate. The proposed change is consistent with the objectives outlined in the ODCM and PCP and is in conformance with 10 CFR 50.36a and Section IV.B.1 of Appendix I to 10 CFR Part 50.

The change is consistent with the revised reporting requirements in 10 CFR 50.36a. The revised submittal date of "...prior to May 1..." will allow the licensee adequate time to prepare a complete report containing the prior year's data. The date is also consistent with Commission guidance for submitting a similar report (i.e., annual radiological environmental operating report). The proposed change is acceptable.

### 3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the appropriate 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 requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes the surveillance requirements. The amendment also relates to changes in record keeping, reporting, or administrative procedures or requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts or types of effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission had previously issued a proposed finding that the amendment involves no significant hazards consideration (59 FR 51617). Two set of comments on the changes were received. The staff responses to these comments are given in the Enclosure to this safety evaluation. The comments do not affect the staff's proposed no significant hazards consideration determination. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and (10). 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, on the basis of 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 Contributors: N. Le  
S. Klementowicz

Date: May 1, 1995





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

RESPONSE TO PUBLIC COMMENTS  
BY THE NUCLEAR REGULATORY COMMISSION  
REGARDING CAROLINA POWER & LIGHT COMPANY  
SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1  
DOCKET NO. 50-400

By letter dated August 19, 1994, as supplemented November 3, 1994; Carolina Power & Light (the licensee), submitted proposed changes to the Shearon Harris Nuclear Plant Technical Specifications (TS) in support of its plan to implement Generic Letter 89-01 (GL 89-01) with selected changes to incorporate revised 10 CFR Part 20 and 10 CFR 50.36a. In response to the licensee's application, two sets of comments were received: one from the Clean Water Fund of North Carolina, dated October 31, 1994; and the other from the County of Chatham, dated December 17, 1994.

The comments collectively address four issues and the NRC staff responses to these comments are as follows:

COMMENT: The licensee has requested an exemption from the 100 mrem annual public dose limit in 10 CFR Part 20. The comment opposes the granting of such an exemption.

RESPONSE:

The licensee's proposed TS changes are not exemptions from the annual dose limit to a member of the public in 10 CFR Part 20.

10 CFR Part 20, Standards for Protection Against Radiation applies to all NRC licensed facilities. In addition to the radiation protection standards in 10 CFR Part 20, power reactors are licensed under the requirements of 10 CFR Part 50, Domestic Licensing of Production and Utilization Facilities. NRC regulation 10 CFR 50.36a specifically requires power reactors to maintain control over radioactive material released in gaseous and liquid effluents to unrestricted areas where the public may be present, to levels that are as low as reasonably achievable (ALARA). Appendix I to 10 CFR Part 50 contains the numerical guidance for power reactor licensees to meet the ALARA requirement. The annual whole body dose values specified in Appendix I of 10 CFR Part 50 are 3 mrem from liquid effluents and 5 mrem from gaseous effluents. These doses (3 and 5 mrem) are a small percentage of the annual 100 mrem limit allowed in 10 CFR Part 20.

As a clarification, the licensee's proposed TS for liquid and gaseous

effluents are release rate limits, not an annual dose limit. The release rate limits required by the TS were chosen by NRC staff to ensure that the licensee maintains releases of radioactive material in both liquid and gaseous effluents to within the annual whole body dose values specified in Appendix I of 10 CFR Part 50 of 3 mrem from liquid effluents and 5 mrem from gaseous effluents respectively. For the purposes of the licensee's TS, this release rate limitation must be viewed as a type of "governor" to restrict the amount of radioactive material released at any time. In addition to the rate limitation, the license's TS contain annual dose limits specified in Appendix I to 10 CFR Part 50 as discussed above.

The TS changes proposed by the licensee meet the requirements of 10 CFR 50.36a to control the release of radioactive liquid and gaseous effluents so that the annual dose to a member of the public do not exceed the annual whole body dose values specified in Appendix I of 10 CFR Part 50 (3 mrem from liquid effluents and 5 mrem from gaseous effluents). These values are a small percentage of the annual limit of 100 mrem allowed in 10 CFR Part 20.

COMMENT: The NRC is relinquishing its control over the licensee by allowing specific TS to be relocated to documents under the control of the licensee.

RESPONSE: The NRC issued GL 89-01 on January 31, 1989. The GL endorsed action by licensees to relocate selected TS to licensee controlled documents. In the introduction paragraph of the Generic Letter, it was stated that "The NRC staff has examined the contents of the Radiological Effluent Technical Specifications (RETS) in relation to the Commission's Interim Policy Statement on Technical Specification Improvements. The staff has determined that programmatic controls can be implemented in the Administrative Controls section of the Technical Specifications (TS) to satisfy existing regulatory requirements for RETS. At the same time, the procedural details of the current TS on radioactive effluents and radiological environmental monitoring can be relocated to the Offsite Dose Calculational Manual (ODCM)...." These actions simplify the RETS, meet the regulatory requirements for radioactive effluents and radiological environmental monitoring, and are provided as a line-item improvement of the TS, consistent with the goals of the Commission's Final Policy Statement (58 FR 39132) dated July 22, 1993.

While it may appear that the licensee is now in total control of the requirements for radioactive effluents and radiological monitoring, that is not the case. Generic Letter 89-01 requires that new programmatic controls for radioactive effluents and radiological environmental monitoring be incorporated into the administrative controls section of the TS. The TS require the licensee to conform to the regulatory requirements of 40 CFR Part 190, 10 CFR Part 20, 10 CFR 50.36a and the Appendix I to 10 CFR Part 50 ALARA dose values. In addition, the NRC staff finds that sufficient regulatory controls exist under 10 CFR 50.59 to ensure that future changes to these requirements are acceptable; and any changes made by the licensee to the ODCM are subject to review by NRC inspectors during routine inspections. The inspector will review the licensee's program to ensure compliance with the applicable regulations and TS.

COMMENT: Radioactive effluents at the level proposed by the licensee will be in excess of the dose limits in 10 CFR Part 61 and will result in radioactive contamination that will confound and mask activity measurements from a nearby proposed 10 CFR Part 61 low level waste disposal facility.

RESPONSE: As discussed above, the licensee has TS that require conformance to the regulatory requirements of 40 CFR Part 190, 10 CFR Part 20, 10 CFR 50.36a and the Appendix I to 10 CFR Part 50 ALARA dose values. These regulatory requirements do not permit the licensee to release radioactive effluents that will result in doses to a member of the public in excess of 10 CFR Part 61 limits. Rather, the Part 61 limits exceed the limits specified in 10 CFR 50.36a that each reactor licensee must comply to ensure that the annual dose limits to a member of the public do not exceed the annual whole body dose values specified in Appendix I of 10 CFR Part 50 (3 mrem from liquid effluents and 5 mrem from gaseous effluents). With respect to the concern that releases from the plant could "mask" releases from a nearby proposed low level waste disposal facility, the releases authorized by this amendment are no greater than those authorized by the existing Shearon Harris licenses. Accordingly, any such masking, if it occurs at all, will not result from the staff's approval of this amendment. Furthermore, it is a requirement that for any proposed low level waste disposal facility to be licensed, the facility owner must submit the appropriate application to the State of North Carolina, Division of Radiation Protection, for the State officials to review; and this review will ensure that the effluents released by that facility are properly monitored and are within applicable dose limits in accordance with the requirements of State regulations and/or 10 CFR Part 61.

COMMENT: Semiannual monitoring, that is currently performed, may not provide adequate information about radioactive material released from the nuclear power plant and will mask the radioactive material released from the proposed 10 CFR Part 61 facility, so a proposed change by the licensee to perform annual monitoring is opposed.

RESPONSE: The comment does not accurately reflect the change proposed by the licensee. The change proposed by the licensee concerns the frequency of submitting effluent release reports to the NRC. It does not change the type of monitoring or frequency of monitoring that is performed by the licensee. The licensee's current TS require the effluent release reports to be submitted to the NRC on a semiannual basis. On October 1, 1992, 10 CFR 50.36a, the regulation on which the TS is based was revised to change the frequency for submittal of the radioactive effluent release report from semiannual to annual. The licensee has proposed to revise its TS in conformance with the regulation.