

December 9, 1991

Docket No. 50-395

Mr. John L. Skolds  
Vice President, Nuclear Operations  
South Carolina Electric & Gas Company  
Virgil C. Summer Nuclear Station  
P. O. Box 88  
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Dear Mr. Skolds:

SUBJECT: CORRECTION OF TECHNICAL SPECIFICATION PAGES FOR AMENDMENT  
NO. 104 - VIRGIL C. SUMMER NUCLEAR STATION, UNIT NO. 1  
(TAC NO. M80523)

On October 29, 1991, the Commission issued Amendment No. 104 to Facility  
Operating License No. NPF-12 for the Virgil C. Summer Nuclear Station, Unit  
No. 1. Because of repagination of section 6, the index needed to be  
renumbered and some minor deletions restored. The enclosed corrected pages  
reflect these changes.

We regret any inconveniences this may have caused.

Sincerely,

Original signed by:

George Wunder, Project Manager  
Project Directorate II-I  
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Enclosure:  
As stated

cc w/enclosure:  
See next page

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Virgil C. Summer Nuclear Station

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## INSTRUMENTATION

### LOOSE-PART DETECTION INSTRUMENTATION

#### LIMITING CONDITION FOR OPERATION

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3.3.3.10 The loose-part detection system shall be OPERABLE.

APPLICABILITY: MODES 1 and 2

ACTION:

- a. With one or more loose part detection system channels inoperable for more than 30 days, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the channel(s) to OPERABLE status.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

#### SURVEILLANCE REQUIREMENTS

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4.3.3.10 Each channel of the loose-part detection system shall be demonstrated OPERABLE by performance of:

- a. A CHANNEL CHECK at least once per 24 hours,
- b. An ANALOG CHANNEL OPERATIONAL TEST at least once per 31 days, and
- c. A CHANNEL CALIBRATION at least once per 18 months.

## RADIOACTIVE EFFLUENTS

### 3/4.11.1 LIQUID 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 tanks shall be limited to less than or equal to 10 curies, excluding tritium and dissolved or entrained noble gases.

- a. Condensate Storage Tank
- b. Outside Temporary Storage Tank

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 or radioactive material to the tank and within 48 hours reduce the tank contents to within the limit.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

#### SURVEILLANCE REQUIREMENTS

---

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 at least once per 7 days when radioactive materials are being added to the tank.

## RADIOACTIVE EFFLUENTS

### 3/4.11.2 GASEOUS EFFLUENTS

#### EXPLOSIVE GAS MIXTURE

#### LIMITING CONDITION FOR OPERATION

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3.11.2.5 The concentration of oxygen in the waste gas holdup system shall be limited to less than or equal to 2% by volume whenever the hydrogen concentration exceeds 4% by volume.

APPLICABILITY: At all times.

#### ACTION:

- a. With the concentration of oxygen in the waste gas holdup system greater than 2% by volume but less than or equal to 4% by volume, restore the concentration of oxygen to within the limit within 48 hours.
- b. With the concentration of oxygen in the waste gas holdup system greater than 4% by volume, immediately suspend all additions of waste gases to the system and reduce the concentration of oxygen to less than 4% by volume within 1 hour and less than or equal to 2% by volume within 48 hours.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

#### SURVEILLANCE REQUIREMENTS

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4.11.2.5 The concentration of hydrogen and oxygen in the waste gas holdup system shall be determined to be within the above limits by continuously monitoring the waste gases in the waste gas holdup system with the hydrogen and oxygen monitors required OPERABLE by Table 3.3-13 of Specification 3.3.3.9.

## 3/4.11 RADIOACTIVE EFFLUENTS

### BASES

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#### 3/4.11.1 LIQUID EFFLUENTS

##### 3/4.11.1.3 Not Used

##### 3/4.11.1.4 LIQUID HOLDUP TANKS

Restricting the quantity of radioactive material contained in the specified tanks provides assurance that in the event of an uncontrolled release of the tanks' 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 11.1.5 SETTLING PONDS

The inventory limits of the settling ponds (SP) are based on limiting the consequences of an uncontrolled release of the pond inventory. The expression in Specification 3.11.1.5 assumes the pond inventory is uniformly mixed, that the pond is located in an uncontrolled area as defined in 10 CFR 20, and that the concentration limit in Note 1 to Appendix B of 10 CFR 20 applies.

The batch limits of slurry to the chemical treatment ponds assure that radioactive material in the slurry transferred to the SP are "as low as is reasonably achievable" in accordance with 10 CFR 50.36a. The expression in Specification 4.11.1.5 assures no batch of slurry will be transferred to the SP unless the sum of the ratios of the activity of the radionuclides to their respective concentration limitation is less than the ratio of the 10 CFR 50, Appendix I, Section II.A, total body level to the 10 CFR 20, 105(a), whole body dose limitation, or that:

$$\sum_j \frac{c_j}{C_j} < \frac{3 \text{ mrem/yr}}{500 \text{ mrem/yr}} = 0.006$$

where

$c_j$  = radioactive slurry concentration for radionuclide "j" entering the unrestricted area SP, in microcuries/milliliter

$C_j$  = 10 CFR 20, Appendix B, Table II, Column 2, concentration for single radionuclide "j", in microcuries/milliliter.

For the design of filter/demineralizers using powder resin, the slurry wash volume and the weight of resin used per batch is fixed by the cell surface area and the slurry volume to resin weight ratio is constant at 100 milliliters/gram of wet, drained resin with a moisture content of approximately 55 to 60% (bulk density of about 58 pounds per cubic feet). The wet drained slurry density is

## RADIOACTIVE EFFLUENTS

### BASES

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#### 3/4 11.1.5 SETTLING PONDS (Continued)

approximately 1 gr/ml and the absorption characteristic for gamma radiation is essentially that of water. Therefore,

$$\sum_j \frac{c_j}{C_j} = \sum_j \frac{Q_j}{C_j (10^2 \text{ ml/gm})} < 0.006, \text{ and}$$
$$\sum_j \frac{Q_j}{C_j} < .6 \frac{\mu\text{Ci/gm}}{\mu\text{Ci/ml}}$$

Where the terms are defined in Specification 4.11.1.5.

The batch limits provide assurance that activity input to the SP will be minimized, and a means of identifying radioactive material in the inventory limitation of Specification 3.11.1.5.

#### 3/4.11.2 GASEOUS EFFLUENTS

##### 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 waste gas holdup system 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 hydrogen and/or 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.

##### 3/4.11.2.6 GAS STORAGE TANKS

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 total body exposure to an individual at the nearest exclusion area boundary will not exceed 0.5 rem. This is consistent with Standard Review Plan 15.7.1, "Waste Gas System Failure".