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

CAROLINA POWER & LIGHT COMPANY, et al.

DOCKET NO. 50-325

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 180
License No. DPR-71

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment filed by Carolina Power & Light Company (the licensee), dated October 23, 1995, 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. DPR-71 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 180 , are hereby incorporated in the license. Carolina Power & Light Company shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Bart C. Buckley for

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: December 13, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 180

FACILITY OPERATING LICENSE NO. DPR-71

DOCKET NO. 50-325

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

Remove Pages	Insert Pages
3/4 4-7	3/4 4-7
3/4 4-9	3/4 4-9
B 3/4 4-3	B 3/4 4-3
B 3/4 4-4	B 3/4 4-4

3/4.4.4 CHEMISTRY

LIMITING CONDITION FOR OPERATION

3.4.4 The chemistry of the reactor coolant system shall be maintained within the limits specified in Table 3.4.4-1.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3, 4, and 5*.

ACTION:

a. In OPERATIONAL CONDITIONS 1, 2, and 3:

1. With the conductivity or chloride concentration exceeding the limits specified in Table 3.4.4-1, but less than 10 μmho/cm at 25°C and less than 0.5 ppm, respectively, operation may continue for up to 24 hours and this condition need not be reported to the Commission provided that operation under these conditions shall not exceed 336 hours per year. The provisions of Specification 3.0.4 are not applicable.

2. With the conductivity or chloride concentration exceeding the limits specified in Table 3.4.4-1 for more than 24 hours during one continuous time interval or with the conductivity exceeding 10 μmho/cm at 25°C or chloride exceeding 0.5 ppm, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. In OPERATION CONDITIONS 4 and 5* with the conductivity and/or chloride concentration of the reactor coolant in excess of the limit specified in Table 3.4.4-1, restore the conductivity and/or chloride concentration to within the limit within 48 hours.

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*Except during planned chemical decontamination activities (with the reactor vessel defueled).

TABLE 3.4.4-1

REACTOR COOLANT SYSTEM CHEMISTRY LIMITS

OPERATIONAL CONDITION	CHLORIDES	CONDUCTIVITY (μmhos/cm @ 25°C)
1	< 0.5 ppm	< 2.0
2	< 0.2 ppm	< 2.0
3, 4, and 5*	< 0.2 ppm	<10.0

*Except during planned chemical decontamination activities (with the reactor vessel defueled).

The surveillance requirements provide adequate assurance that concentrations in excess of the limits will be detected in sufficient time to take corrective action.

In order to reduce personnel radiation exposure, chemical decontamination of portions of the reactor coolant system may be performed during shutdown. During the chemical decontamination process, the injection of chemical solvents may cause the reactor coolant system conductivity and chloride measurements to increase above the limits. The solvents that are selected for use in performing the chemical decontamination process are selected and evaluated to ensure their chemical reactivity will not adversely impact components or the structural integrity of the reactor coolant system. Because decontamination activities are performed at temperatures significantly less than normal operating temperatures, the chemical reactivity of these solvents will not increase the likelihood of stress corrosion occurring nor affect those stress corrosion cracks that may already be present.

3/4.4.5 SPECIFIC ACTIVITY

The limitations on the specific activity of the primary coolant ensure that the 2-hour thyroid and whole body doses resulting from a main steam line failure outside the containment during steady state operation will not exceed small fractions of the dose guidelines in 10CFR 100. Permitting operation to continue for limited time periods with higher specific activity levels accommodates short-term iodine spikes which may be associated with power level changes, and is based on the fact that a steam line failure during these short time periods is considerably less likely. Operation at the higher activity levels, therefore, is restricted to a small fraction of the unit's total operating time. The upper limit of coolant iodine concentration during short-term iodine spikes ensures that the thyroid dose from a steam line failure will not exceed 10 CFR Part 100 dose guidelines.

Information obtained on iodine spiking will be used to assess the parameters associated with spiking phenomena. A reduction in frequency of isotopic analysis following power changes may be permissible, if justified by the data obtained.

Closing the main steam line isolation valves prevents the release of activity to the environs should the steam line rupture occur. The surveillance requirements provide adequate assurance that excessive specific activity levels in the reactor coolant will be detected in sufficient time to take corrective action.

3/4.4.6 PRESSURE/TEMPERATURE LIMITS

All components in the Reactor Coolant System are designed to withstand the effects of cyclic loads due to system temperature and pressure changes. These cyclic loads are introduced by normal load transients, reactor trips, and start-up and shutdown operations. The various categories of load cycles used for design purposes are provided in Section 4.2 of the FSAR. During

PRESSURE/TEMPERATURE LIMITS (Continued)

start-up and shutdown, the rates of temperature and pressure changes are limited so that the maximum specified heatup and cooldown rates are consistent with the design assumptions and satisfy the stress limits for cyclic operation.

During heatup, the thermal gradients in the reactor vessel wall produce thermal stresses which vary from compressive at the inner wall to tensile at the outer wall. Thermal-induced compressive stresses tend to alleviate the tensile stresses induced by the internal pressure. During cooldown, thermal gradients to be accounted for are tensile at the inner wall and compressive at the outer wall.

The reactor vessel materials have been tested to determine their initial RT_{NDT}. The results of these tests are shown in GE NEDO 24161. Reactor operation and resultant fast neutron, E>1 Mev, fluence will cause an increase in the RT_{NDT}. Therefore, an adjusted reference temperature, based upon the fluence, can be predicted using the proper revision of Regulatory Guide 1.99. The pressure-temperature limit curve Figures 3.4.6.1-1, 3.4.6.1-2, and 3.4.6.1-3a through 3.4.6.1-3c include predicted adjustments for this shift in RT_{NDT} at the end of indicated EFPY, as well as adjustments to account for the location of the pressure-sensing instruments.

The actual shift in RT_{NDT} of the vessel material will be checked periodically during operation by removing and evaluating, in accordance with ASTM E185-82, reactor vessel material irradiation surveillance specimens installed near the inside wall of the reactor vessel in the core area. Since the neutron spectra at the irradiation samples and vessel inside radius vary little, the measured transition shift for a sample can be adjusted with confidence to the adjacent section of the reactor vessel.

The pressure-temperature limit lines shown in Figures 3.4.6.1-1, 3.4.6.1-2 and 3.4.6.1-3a through 3.4.6.1-3c have been provided to assure compliance with the minimum temperature requirements of the 1983 revision to Appendix G of 10CFR50. The conservative method of the Standard Review Plan has been used for heatup and cooldown.

The number of reactor vessel irradiation surveillance specimens and the frequencies for removing and testing these specimens are provided in Table 4.4.6.1.3-1 to assure compliance with the requirements of ASTM E185-82.

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CAROLINA POWER & LIGHT COMPANY, et al.

DOCKET NO. 50-324

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 211
License No. DPR-62

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment filed by Carolina Power & Light Company (the licensee), dated October 23, 1995, 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. DPR-62 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 211, are hereby incorporated in the license. Carolina Power & Light Company shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Bart C. Buckley for

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: December 13, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 211

FACILITY OPERATING LICENSE NO. DPR-62

DOCKET NO. 50-324

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

Remove Pages	Insert Pages
3/4 4-7	3/4 4-7
3/4 4-9	3/4 4-9
B 3/4 4-3	B 3/4 4-3
B 3/4 4-4	B 3/4 4-4

3/4.4.4 CHEMISTRY

LIMITING CONDITION FOR OPERATION

3.4.4 The chemistry of the reactor coolant system shall be maintained within the limits specified in Table 3.4.4-1.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3, 4, and 5*.

ACTION:

a. In OPERATIONAL CONDITIONS 1, 2, and 3:

1. With the conductivity or chloride concentration exceeding the limits specified in Table 3.4.4-1, but less than 10 μmho/cm at 25°C and less than 0.5 ppm, respectively, operation may continue for up to 24 hours and this condition need not be reported to the Commission provided that operation under these conditions shall not exceed 336 hours per year. The provisions of Specification 3.0.4 are not applicable.

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b. In OPERATIONAL CONDITIONS 4 and 5* with the conductivity and/or chloride concentration of the reactor coolant in excess of the limit specified in Table 3.4.4-1, restore the conductivity and/or chloride concentration to within the limit within 48 hours.

*Except during planned chemical decontamination activities (with the reactor vessel defueled).

TABLE 3.4.4-1

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3/4.4.5 SPECIFIC ACTIVITY

The limitations on the specific activity of the primary coolant ensure that the 2-hour thyroid and whole body doses resulting from a main steam line failure outside the containment during steady state operation will not exceed small fractions of the dose guidelines in 10CFR 100. Permitting operation to continue for limited time periods with higher specific activity levels accommodates short-term iodine spikes which may be associated with power level changes, and is based on the fact that a steam line failure during these short time periods is considerably less likely. Operation at the higher activity levels, therefore, is restricted to a small fraction of the unit's total operating time. The upper limit of coolant iodine concentration during short-term iodine spikes ensures that the thyriod dose from a steam line failure will not exceed 10 CFR Part 100 dose guidelines.

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PRESSURE/TEMPERATURE LIMITS (Continued)

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The pressure/temperature limit lines shown in Figures 3.4.6.1-1, 3.4.6.1-2, and 3.4.6.1-3a through 3.4.6.1-3c have been provided to assure compliance with the minimum temperature requirements of the 1983 revision to Appendix G of 10CFR50. The conservative method of the Standard Review Plan has been used for heatup and cooldown.

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