



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

CAROLINA POWER & LIGHT COMPANY, et al.

DOCKET NO. 50-325

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 150  
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 July 20, 1990, 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:

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(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 150, 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

Ronnie H. Lo/for

Elinor G. Adensam, 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 20, 1990

OFC	: LA: [Signature]	: DRPR: PE: FD21: DRPR: PM: PD21: DRPR: EMCB: NRR	:	OGC	: [Signature]	: D: PD21: DRPR	:	:
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DATE	: 11/28/90	: 12/5/90	:	12/4/90	: 12/10/90	: 12/13/90	:	12/18/90

91  
SUBMIT TO  
REGISTRATION OR  
CHANGE PAGES

ATTACHMENT TO LICENSE AMENDMENT NO. 150

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.

<u>Remove Pages</u>	<u>Insert Pages</u>
3/4 0-2	3/4 0-2
3/4 0-3	3/4 0-3
3/4 4-6	3/4 4-6
B 3/4 0-3	B 3/4 0-3
B 3/4 4-2	B 3/4 4-2

## APPLICABILITY

### SURVEILLANCE REQUIREMENTS

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4.0.1 Surveillance Requirements shall be applicable during the OPERATIONAL CONDITIONS or other states specified for individual Limiting Conditions for Operation unless otherwise stated in an individual Surveillance Requirement.

4.0.2 Each Surveillance Requirement shall be performed within the specified time interval with a maximum allowable extension not to exceed 25% of the surveillance interval.

4.0.3 Performance of a Surveillance Requirement within the specified time interval shall constitute compliance with OPERABILITY requirements for a Limiting Condition for Operation and associated ACTION statements unless otherwise required by the specification. Surveillance requirements do not have to be performed on inoperable equipment.

4.0.4 Entry into an OPERATIONAL CONDITION or other specified applicable state shall not be made unless the Surveillance Requirement(s) associated with the Limiting Condition for Operation have been performed within the applicable surveillance interval or as otherwise specified.

4.0.5 Surveillance Requirements for inservice inspection and testing of ASME Code Class 1, 2, and 3 components shall be applicable as follows:

- a. Inservice inspection of ASME Code Class 1, 2, and 3 components and inservice testing of ASME Code Class 1, 2, and 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50, Section 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50, Section 50.55a(g) (6) (i).

### 3/4.0 APPLICABILITY

#### SURVEILLANCE REQUIREMENTS (Continued)

- b. Surveillance intervals specified in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda for the inservice inspection and testing activities required by the ASME Boiler and Pressure Vessel Code and applicable Addenda shall be applicable as follows in these Technical Specifications:

<u>ASME Boiler and Pressure Vessel Code and applicable Addenda terminology for inservice inspection and testing activities</u>	<u>Required frequencies for performing inservice inspection and testing activities</u>
Weekly	At least once per 7 days
Monthly	At least once per 31 days
Quarterly or every 3 months	At least once per 92 days
Semiannually or every 6 months	At least once per 184 days
Yearly or annually	At least once per 366 days

- c. The provisions of Specification 4.0.2 are applicable to the above required frequencies for performing inservice inspection and testing activities.
- d. Performance of the above inservice inspection and testing activities shall be in addition to other specified Surveillance Requirements.
- e. Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirements of any Technical Specification.
- f. The Inservice Inspection Program for piping identified in NRC Generic Letter 88-01 shall be performed in accordance with the staff positions on schedule, methods & personnel & sample expansion included in this letter.

## REACTOR COOLANT SYSTEM

### OPERATIONAL LEAKAGE

#### LIMITING CONDITION FOR OPERATION

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3.4.3.2 Reactor coolant system leakage shall be limited to:

- a. No PRESSURE BOUNDARY LEAKAGE.
- b. 5 gpm UNIDENTIFIED LEAKAGE averaged over any 24-hour period.
- c. 25 gpm total leakage averaged over any 24-hour period.
- d. 2 gpm increase in UNIDENTIFIED LEAKAGE within any 24-hour period except for the first 24 hours of reactor startup commencing with entry into OPERATIONAL CONDITION 2.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

#### ACTION:

- a. With any PRESSURE BOUNDARY LEAKAGE, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.
- b. With any reactor coolant system leakage greater than any one of the above limits, excluding PRESSURE BOUNDARY LEAKAGE, reduce the leakage rate to within the limits within 8 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

#### SURVEILLANCE REQUIREMENTS

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4.4.3.2 The reactor coolant system leakage shall be demonstrated to be within each of the above limits by:

- a. Monitoring the drywell and equipment drain sump flow rates at least once per 8 hours, and
- b. Monitoring the primary containment atmosphere particulate and gaseous radioactivity at least once per 24 hours.

## APPLICABILITY

### BASES

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4.0.5 This specification ensures that inservice inspection of ASME Code Class 1, 2, and 3 components and inservice testing of ASME Code Class 1, 2, and 3 pumps and valves will be performed in accordance with a periodically updated version of Section XI of the ASME Boiler and Pressure Vessel Code and Addenda as required by 10 CFR 50, Section 50.55a. Relief from any of the above requirements has been provided in writing by the Commission and is not a part of these technical specifications.

This specification includes a clarification of the frequencies for performing the inservice inspection and testing activities required by Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda. This clarification is provided to ensure consistency in surveillance intervals throughout these Technical Specifications and to remove any ambiguities relative to the frequencies for performing the required inservice inspection and testing activities.

Under the terms of this specification, the more restrictive requirements of the Technical Specifications take precedence over the ASME Boiler and Pressure Vessel Code and applicable Addenda. For example, the requirements of Specification 4.0.4 to perform surveillance activities prior to entry into an OPERATIONAL MODE or other specified applicability condition takes precedence over the ASME Boiler and Pressure Vessel Code provision which allows pumps to be tested up to one week after return to normal operation. And, for example, the Technical Specification definition of OPERABLE does not grant a grace period before a device that is not capable of performing its specified function is declared inoperable and takes precedence over the ASME Boiler and Pressure Vessel Code provision which allows a valve to be incapable of performing its specified function for up to 24 hours before being declared inoperable.

This specification includes a statement that the Inservice Inspection Program for pipe covered by the scope of CL 88-01 will be in conformance with the staff positions on schedule, methods and personnel, and sample expansion included in CL 88-01. This requirement may be removed from the technical specifications in the future in line with the Technical Specification Improvement programs.

## REACTOR COOLANT SYSTEM

### BASES

These specifications are based on the guidance of General Electric SIL #380, Rev. 1, 2-10-84.

#### 3/4.4.2 SAFETY/RELIEF VALVES

The reactor coolant system safety valve function of the safety-relief valves operate to prevent the system from being pressurized above the Safety Limit of 1325 psig. The system is designed to meet the requirements of the ASME Boiler and Pressure Vessel Code Section III for the pressure vessel and ANSI B31.1, 1975, Code for the reactor coolant system piping.

#### 3/4.4.3 REACTOR COOLANT SYSTEM LEAKAGE

##### 3/4.4.3.1 LEAKAGE DETECTION SYSTEMS

The RCS leakage detection systems required by this specification are provided to monitor and detect leakage from the Reactor Coolant Pressure Boundary. These detection systems are consistent with the recommendations of Regulatory Guide 1.45, "Reactor Coolant Pressure Boundary Leakage Detection Systems."

##### 3/4.4.3.2 OPERATIONAL LEAKAGE

The allowable leakage rates of coolant from the reactor coolant system have been based on the predicted and experimentally observed behavior of cracks in pipes. The normally expected background leakage due to equipment design and the detection capability of the instrumentation for determining system leakage was also considered. The evidence obtained from experiments suggests that for leakage somewhat greater than that specified for unidentified leakage, the probability is small that the imperfection or crack associated with such leakage would grow rapidly. However, in all cases, if the leakage rates exceed the values specified or the leakage is located and known to be PRESSURE BOUNDARY LEAKAGE, the reactor will be shut down to allow further investigation and corrective action. Monitoring leakage at eight hour intervals is in conformance with the 12/21/89 NRC SER for GL 88-01.

##### 3/4.4.4 CHEMISTRY

The reactor water chemistry limits are established to prevent damage to the reactor materials in contact with the coolant. Chloride limits are specified to prevent stress corrosion cracking of the stainless steel. The effect of chloride is not as great when the oxygen concentration in the coolant is low; thus, the higher limit on chlorides is permitted during full power operation. During shutdown and refueling operations, the temperature necessary for stress corrosion to occur is not present.

Conductivity measurements are required on a continuous basis since changes in this parameter are an indication of abnormal conditions. When the conductivity is within limits the pH, chlorides, and other impurities affecting conductivity must also be within their acceptable limits. With the conductivity outside the limits, additional samples must be examined to ensure that the chlorides are not exceeding the limits.





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

CAROLINA POWER & LIGHT COMPANY, et al.

DOCKET NO. 50-324

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 180  
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 July 20, 1990, 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. 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

Ronnie H. Lo/for

Elinor G. Adensam, 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 20, 1990

OFC	: LA	: PD21	: DRPR	: PE	: PD21	: DRPR	: PM	: PD21	: DRPR	: EMCB	: NRR	:	OGC	: D	: PD21	: DRPR	:	:	:
NAME	: Anderson	:	Spaulding	:	NLe	:	CYCheng	:	E Adensam	:	:	:	:	:	:	:	:	:	:
DATE	: 11/26/90	:	11/27/90	:	11/27/90	:	11/27/90	:	12/23/90	:	12/18/90	:	:	:	:	:	:	:	:

ATTACHMENT TO LICENSE AMENDMENT NO. 180

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

3/4 0-2

3/4 0-3

3/4 4-6

B 3/4 C 3

B 3/4 4-2

Insert Pages

3/4 0-2

3/4 0-3

3/4 4-6

B 3/4 0-3

B 3/4 4-2

## APPLICABILITY

### SURVEILLANCE REQUIREMENTS

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4.0.1 Surveillance Requirements shall be applicable during the OPERATIONAL CONDITIONS or other states specified for individual Limiting Conditions for Operation unless otherwise stated in an individual Surveillance Requirement.

4.0.2 Each Surveillance Requirement shall be performed within the specified time interval with a maximum allowable extension not to exceed 25% of the surveillance interval.

4.0.3 Performance of a Surveillance Requirement within the specified time interval shall constitute compliance with OPERABILITY requirements for a Limiting Condition for Operation and associated ACTION statements unless otherwise required by the specification. Surveillance requirements do not have to be performed on inoperable equipment.

4.0.4 Entry into an OPERATIONAL CONDITION or other specified applicable state shall not be made unless the Surveillance Requirement(s) associated with the Limiting Condition for Operation have been performed within the applicable surveillance interval or as otherwise specified.

4.0.5 Surveillance Requirements for inservice inspection and testing of ASME Code Class 1, 2, and 3 components shall be applicable as follows:

- a. Inservice inspection of ASME Code Class 1, 2, and 3 components and inservice testing of ASME Code Class 1, 2, and 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50, Section 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50, Section 50.55a(g) (6) (i).

SURVEILLANCE REQUIREMENTS (Continued)

- b. Surveillance intervals specified in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda for the inservice inspection and testing activities required by the ASME Boiler and Pressure Vessel Code and applicable Addenda shall be applicable as follows in these Technical Specifications:

<u>ASME Boiler and Pressure Vessel Code and applicable Addenda terminology for inservice inspection and testing activities</u>	<u>Required frequencies for performing inservice inspection and testing activities</u>
Weekly	At least once per 7 days
Monthly	At least once per 31 days
Quarterly or every 3 months	At least once per 92 days
Semiannually or every 6 months	At least once per 184 days
Yearly or annually	At least once per 366 days

- c. The provisions of Specification 4.0.2 are applicable to the above required frequencies for performing inservice inspection and testing activities.
- d. Performance of the above inservice inspection and testing activities shall be in addition to other specified Surveillance Requirements.
- e. Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirements of any Technical Specification.
- f. The Inservice Inspection Program for piping identified in NRC Generic Letter 88-01 shall be performed in accordance with the staff positions on schedule, methods & personnel & sample expansion included in this letter.

## REACTOR COOLANT SYSTEM

### OPERATIONAL LEAKAGE

#### LIMITING CONDITION FOR OPERATION

---

3.4.3.2 Reactor coolant system leakage shall be limited to:

- a. No PRESSURE BOUNDARY LEAKAGE.
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APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

#### ACTION:

- a. With any PRESSURE BOUNDARY LEAKAGE, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.
- b. With any reactor coolant system leakage greater than any one of the above limits, excluding PRESSURE BOUNDARY LEAKAGE, reduce the leakage rate to within the limits within 8 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

#### SURVEILLANCE REQUIREMENTS

---

4.4.3.2 The reactor coolant system leakage shall be demonstrated to be within each of the above limits by:

- a. Monitoring the drywell and equipment drain sump flow rates at least once per 8 hours, and
- b. Monitoring the primary containment atmosphere particulate and gaseous radioactivity at least once per 24 hours.

## APPLICABILITY

### BASES

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Under the terms of this specification, for example, during initial plant start-up or following extended plant outage, the applicable surveillance activities must be performed within the stated surveillance interval prior to placing or returning the system or equipment into OPERABLE status. Exceptions to some surveillance activities have been provided for in individual specifications.

4.0.5 This specification ensures that inservice inspection of ASME Code Class 1, 2, and 3 components and inservice testing of ASME Code Class 1, 2, and 3 pumps and valves will be performed in accordance with a periodically updated version of Section XI of the ASME Boiler and Pressure Vessel Code and Addenda as required by 10 CFR 50, Section 50.55a. Relief from any of the above requirements has been provided in writing by the Commission and is not a part of these technical specifications.

This specification includes a clarification of the frequencies for performing the inservice inspection and testing activities required by Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda. This clarification is provided to ensure consistency in surveillance intervals throughout these Technical Specifications and to remove any ambiguities relative to the frequencies for performing the required inservice inspection and testing activities.

Under the terms of this specification, the more restrictive requirements of the Technical Specifications take precedence over the ASME Boiler and Pressure Vessel Code and applicable Addenda. For example, the requirements of Specification 4.0.4 to perform surveillance activities prior to entry into an OPERATIONAL MODE or other specified applicability condition takes precedence over the ASME Boiler and Pressure Vessel Code provision which allows pumps to be tested up to one week after return to normal operation. And, for example, the Technical Specification definition of OPERABLE does not grant a grace period before a device that is not capable of performing its specified function is declared inoperable and takes precedence over the ASME Boiler and Pressure Vessel Code provision which allows a valve to be incapable of performing its specified function for up to 24 hours before being declared inoperable.

This specification includes a statement that the Inservice Inspection Program for pipe covered by the scope of CL 88-01 will be in conformance with the staff positions on schedule, methods and personnel, and sample expansion included in CL 88-01. This requirement may be removed from the technical specifications in the future in line with the Technical Specification Improvement programs.

## REACTOR COOLANT SYSTEM

### BASES

These specifications are based on the guidance of General Electric SIL #380, Rev. 1, 2-10-84.

#### 3/4.4.2 SAFETY/RELIEF VALVES

The reactor coolant system safety valve function of the safety-relief valves operate to prevent the system from being pressurized above the Safety Limit of 1325 psig. The system is designed to meet the requirements of the ASME Boiler and Pressure Vessel Code Section III for the pressure vessel and ANSI B31.1, 1967, Code for the reactor coolant system piping.

#### 3/4.4.3 REACTOR COOLANT SYSTEM LEAKAGE

##### 3/4.4.3.1 LEAKAGE DETECTION SYSTEMS

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##### 3/4.4.3.2 OPERATIONAL LEAKAGE

The allowable leakage rates of coolant from the reactor coolant system have been based on the predicted and experimentally observed behavior of cracks in pipes. The normally expected background leakage due to equipment design and the detection capability of the instrumentation for determining system leakage was also considered. The evidence obtained from experiments suggests that for leakage somewhat greater than that specified for unidentified leakage, the probability is small that the imperfection or crack associated with such leakage would grow rapidly. However, in all cases, if the leakage rates exceed the values specified or the leakage is located and known to be PRESSURE BOUNDARY LEAKAGE, the reactor will be shut down to allow further investigation and corrective action. Monitoring leakage at eight hour intervals is in conformance with the 12/21/89 NRC SER for GL 88-01.

##### 3/4.4.4 CHEMISTRY

The reactor water chemistry limits are established to prevent damage to the reactor materials in contact with the coolant. Chloride limits are specified to prevent stress corrosion cracking of the stainless steel. The effect of chloride is not as great when the oxygen concentration in the coolant is low; thus, the higher limit on chlorides is permitted during full power operation. During shutdown and refueling operations, the temperature necessary for stress corrosion to occur is not present.

Conductivity measurements are required on a continuous basis since changes in this parameter are an indication of abnormal conditions. When the conductivity is within limits, the pH, chlorides, and other impurities affecting conductivity must also be within their acceptable limits. With the conductivity outside the limits, additional samples must be examined to ensure that the chlorides are not exceeding the limits.