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. 146
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 February 28, 1990, as supplemented May 8, 1990, September 21, 1990, and September 27, 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:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 146, 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

Original Signed By:

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: October 11, 1990

OFC	:LA:PD2A	:DRPR	:PM:PD21	:DRPR	:SPLB	:	OGC	:D:PD21	:DRPR	:	:
NAME	: PAnderson	:NLe	:CMcCracken		: RAuluard J.C for J. Partlow		: EHoller	: EAdensam		:	:
DATE	:10/1/90	:10/1/90	:10/2/90		:10/9/90		:10-11-90			:	

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ATTACHMENT TO LICENSE AMENDMENT NO. 146

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
XI	XI
XII	XII
3/4 7-2	3/4 7-2
-	3/4 7-2a
-	3/4 7-2b
B 3/4 7-1	B 3/4 7-1
-	B 3/4 7-1a

INDEX

BASES

INDEX

BASES

PLANT SYSTEMS

SERVICE WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.2 The service water system shall be OPERABLE with at least:

In OPERATIONAL CONDITIONS 1, 2, and 3:

Two OPERABLE nuclear service water pumps, and two OPERABLE conventional service water pumps capable of supplying the nuclear and conventional headers.

In OPERATIONAL CONDITIONS 4 and 5:

Three OPERABLE site nuclear service water pumps, and two operable Unit 1 service water pumps, nuclear and/or conventional, powered from separate emergency buses and capable of supplying the nuclear header.

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

ACTION:

a. In OPERATIONAL CONDITION 1, 2, or 3:

1. With two OPERABLE conventional service water pumps and only one nuclear service water pump OPERABLE, restore the remaining nuclear service water pump to OPERABLE status within 7 days or be in HOT SHUTDOWN within 12 hours and COLD SHUTDOWN within the following 24 hours.

2. With no OPERABLE nuclear service water pumps, regardless of conventional service water pump status, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the following 24 hours.

3. With two OPERABLE nuclear service water pumps and only one conventional service water pump OPERABLE, restore at least one additional conventional service water pump to OPERABLE status within 7 days or be in HOT SHUTDOWN within 12 hours and COLD SHUTDOWN within the following 24 hours.

4. With two OPERABLE nuclear service water pumps and no conventional service water pump OPERABLE, restore at least one conventional service water pump to OPERABLE status within 72 hours and restore the remaining conventional service water pump to OPERABLE status within 7 days from the time of the loss of the first pump. Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

5. With only one nuclear service water pump and one conventional service water pump OPERABLE, restore at least one additional service water pump, nuclear or conventional, to OPERABLE status within 72 hours and restore the remaining service water pump to OPERABLE status within 7 days from the time of the loss of the first pump. Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

6. With one OPERABLE nuclear service water pump and no OPERABLE conventional service water pumps, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. In OPERATIONAL CONDITION 4 or 5:

1. With one less than the required number of nuclear service water pumps OPERABLE per site, restore at least one additional nuclear service water pump to OPERABLE status within 14 days or declare the diesel generators inoperable and take the ACTION required by Specification 3.8.1.2.

2. With the service water system nuclear header inoperable, or no Unit 1 nuclear service water pumps OPERABLE, operation may continue provided that the service water system conventional header is OPERABLE with at least two conventional service water pumps OPERABLE. Restore the service water system nuclear header to OPERABLE status within 14 days or declare the Core Spray System and the LPCI System inoperable and take the ACTION required by Specifications 3.5.3.1 and 3.5.3.2. Also, declare the diesel generators inoperable and take the ACTION required by Specification 3.8.1.2.

3. With less than two OPERABLE site nuclear service water pumps, declare the diesel generators inoperable and take the ACTION required by Specification 3.8.1.2.

4. With only one Unit 1 service water pump OPERABLE, restore at least one additional Unit 1 pump, either nuclear or conventional, powered from a separate emergency bus, to OPERABLE status within 7 days or declare the Core Spray System and the LPCI System inoperable and take the ACTION required by Specifications 3.5.3.1 and 3.5.3.2.

SURVEILLANCE REQUIREMENTS

4.7.1.2 The service water system shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) servicing safety related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position.

b. At least once per 18 months during shutdown, by verifying that each automatic valve servicing safety-related equipment actuates to its correct position on the appropriate ECCS actuation test signals.

c. In OPERATIONAL CONDITION 4 or 5 with service water system nuclear header inoperable, verify that the service water system conventional header is lined up to supply cooling water to vital ECCS loads and that the Unit 2 nuclear header is lined up to supply cooling water for the diesel generators by verifying that each valve servicing the diesel generators that is not locked open is administratively controlled in the proper position.

3/4.7.1 SERVICE WATER SYSTEMS

During the initial stage of a DBA (0-10 minutes), the service water system provides lube water and service water cooling to the diesel generators. The service water system design allows either unit's nuclear header to supply diesel generator cooling water. Two pumps are necessary to supply sufficient flow to cool all four diesel generators under worst-case scenarios while also supplying flow to other safety and non-safety related components. Therefore, any combination of three OPERABLE nuclear service water pumps per site will meet the single failure criteria and assure diesel generator cooling. The requirement for two OPERABLE nuclear service water pumps associated with a unit in OPERATIONAL CONDITIONS 1, 2, or 3 and at least three OPERABLE nuclear service water pumps per site when one or both units are in OPERATIONAL CONDITIONS 4 or 5 ensures that emergency diesel generator cooling requirements are met.

After the initial ten minutes of a DBA, additional loads require cooling water. These loads include RHR and CS pump room coolers, RHR service water heat exchangers, and RHR pump seal heat exchangers. Evaluations have determined that the RHR pump seals, as well as the equipment in rooms serviced by the RHR and CS room coolers, remain within the manufacturers' temperature limits for the first ten minutes of a DBA. To meet the additional loads during the post-ten minute stage of a DBA, two service water pumps on the affected unit must be in service. In order to assure single failure criteria is met, the Technical Specification requires two OPERABLE conventional service water pumps per unit while in OPERATIONAL CONDITION 1, 2, or 3.

As discussed above, when in OPERATIONAL CONDITIONS 4 and 5, the reduced core decay heat load and the accessibility to the reactor building for manual operator action reduce the requirement for OPERABLE service water pumps after an accident/transient to one. Therefore, when in OPERATIONAL CONDITIONS 4 or 5, two OPERABLE service water pumps (any combination of nuclear and/or conventional) capable of supplying the nuclear header are required provided that there are at least three OPERABLE nuclear service water pumps per site. Maintaining two OPERABLE service water pumps (nuclear and/or conventional) on the unit while in OPERATIONAL CONDITIONS 4 or 5 assures long-term cooling can be supplied, even after application of the single failure criteria. Stipulating at least three OPERABLE nuclear service water pumps per site assures diesel generator cooling will be available following any DBA, regardless of which unit suffers the accident/transient.

The allowed out-of-service times and compensatory measures established in the ACTION Statements are conservative. In particular, ACTION Statement a.2 for OPERATIONAL CONDITIONS 1, 2, and 3 requires the unit to be in HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the following 24 hours with no OPERABLE nuclear service water pumps. Analyses have been performed which

3/4.7.1 SERVICE WATER SYSTEMS (Continued)

demonstrate operation in OPERATIONAL CONDITIONS 1 through 3 with no OPERABLE nuclear service water pumps is acceptable provided that at least two nuclear service water pumps are OPERABLE on the opposite unit and two conventional pumps are OPERABLE on the affected unit. Specific ACTION statements and LCO time limits for this situation have not been developed since a more conservative ACTION Statement has been established in order to minimize the risk of personnel error in administrating this situation.

3/4.7.2 CONTROL ROOM EMERGENCY FILTRATION SYSTEM

The OPERABILITY of the control room ventilation system ensures that 1) the ambient air temperature does not exceed the allowable temperature for continuous duty rating for the equipment and instrumentation cooled by this system and 2) the control room will remain habitable for operations personnel during and following all credible accident conditions. The OPERABILITY of this system in conjunction with control room design provisions is based on limiting the radiation exposure to personnel occupying the control room to 5 rem or less, whole body, or its equivalent. This limitation is consistent with the requirements of General Design Criteria 10 of Appendix "A", 10 CFR Part 50.

3/4.7.3 FLOOD PROTECTION

The limitation on flood protection ensures that facility protective actions will be taken and operation will be terminated in the event of flood conditions. The limit of elevation 17'6" Mean Sea Level is based on the maximum elevation at which facility flood control measures provide protection to safety-related equipment.

3/4.7.4 REACTOR CORE ISOLATION COOLING SYSTEM

The reactor core isolation cooling system (RCICS) is provided to assure adequate core cooling in the event of reactor isolation from its primary heat sink and the loss of feedwater flow to the reactor vessel without requiring actuation of any of the Emergency Core Cooling equipment. RCICS is conservatively required to be OPERABLE whenever reactor pressure exceeds 113 psig even though the Residual Heat Removal (RHR) system provides adequate core cooling up to 150 psig. The condensate storage tank provides sufficient water to reduce the reactor coolant temperature and pressure to permit the RHR system to be operated.

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. 177
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 February 28, 1990, as supplemented May 8, 1990, September 21, 1990, September 27, 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. 177, 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

Original Signed By:

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: October 11, 1990

R.Arnaud J.C. for Fredrick

OFC	:LA:PD21:DRPR	:PM:PD21:DRPR	:SPLB	: OGC	:D:PD21:DRPR	:	:
NAME	: PAnderson	:NLe:	:CMcracken	: EHoller	:EAdensam	:	:
DATE	:10/ /90	:10/ /90	:10/ /90	:10/9/90	:10/ /90	:	:

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ATTACHMENT TO LICENSE AMENDMENT NO. 177

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
XI	XI
XII	XII
3/4 7-2	3/4 7-2
-	3/4 7-2a
-	3/4 7-2b
B 3/4 7-1	B 3/4 7-1
-	B 3/4 7-1a

BASES

BASES

PLANT SYSTEMS

SERVICE WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.2 The service water system shall be OPERABLE with at least:

In OPERATIONAL CONDITIONS 1, 2, and 3:

Two OPERABLE nuclear service water pumps, and two OPERABLE conventional service water pumps capable of supplying the nuclear and conventional headers.

In OPERATIONAL CONDITIONS 4 and 5:

Three OPERABLE site nuclear service water pumps; and two OPERABLE Unit 2 service water pumps, nuclear and/or conventional, powered from separate emergency buses and capable of supplying the nuclear header.

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

ACTION:

a. In OPERATIONAL CONDITION 1, 2, or 3:

1. With two OPERABLE conventional service water pumps and only one nuclear service water pump OPERABLE, restore the remaining nuclear service water pump to OPERABLE status within 7 days or be in HOT SHUTDOWN within 12 hours and COLD SHUTDOWN within the following 24 hours.

2. With no OPERABLE nuclear service water pumps, regardless of conventional service water pump status, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the following 24 hours.

3. With two OPERABLE nuclear service water pumps and only one conventional service water pump OPERABLE, restore at least one additional conventional service water pump to OPERABLE status within 7 days or be in HOT SHUTDOWN within 12 hours and COLD SHUTDOWN within the following 24 hours.

4. With two OPERABLE nuclear service water pumps and no conventional service water pump OPERABLE, restore at least one conventional service water pump to OPERABLE status within 72 hours and restore the remaining conventional service water pump to OPERABLE status within 7 days from the time of the loss of the first pump. Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

5. With only one nuclear service water pump and one conventional service water pump OPERABLE, restore at least one additional service water pump, nuclear or conventional, to OPERABLE status within 72 hours and restore the remaining service water pump to OPERABLE status within 7 days from the time of the loss of the first pump. Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

6. With one OPERABLE nuclear service water pump and no OPERABLE conventional service water pumps, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. In OPERATIONAL CONDITION 4 or 5:

1. With one less than the required number of nuclear service water pumps OPERABLE per site, restore at least one additional nuclear service water pump to OPERABLE status within 14 days or declare the diesel generators inoperable and take the ACTION required by Specification 3.8.1.2.

2. With the service water system nuclear header inoperable, or no Unit 2 nuclear service water pumps OPERABLE, operation may continue provided that the service water system conventional header is OPERABLE with at least two conventional service water pumps OPERABLE. Restore the service water system nuclear header to OPERABLE status within 14 days or declare the Core Spray System and the LPCI System inoperable and take the ACTION required by Specifications 3.5.3.1 and 3.5.3.2. Also, declare the diesel generators inoperable and take the ACTION required by Specification 3.8.1.2.

3. With less than two OPERABLE site nuclear service water pumps, declare the diesel generators inoperable and take the ACTION required by Specification 3.8.1.2.

4. With only one Unit 2 service water pump OPERABLE, restore at least one additional Unit 2 pump, either nuclear or conventional, powered from a separate emergency bus, to OPERABLE status within 7 days or declare the Core Spray System and the LPCI System inoperable and take the ACTION required by Specifications 3.5.3.1 and 3.5.3.2.

SURVEILLANCE REQUIREMENTS

4.7.1.2 The service water system shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) servicing safety related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position.

b. At least once per 18 months during shutdown, by verifying that each automatic valve servicing safety-related equipment actuates to its correct position on the appropriate ECCS actuation test signals.

c. In OPERATIONAL CONDITION 4 or 5 with service water system nuclear header inoperable, verify that the service water system conventional header is lined up to supply cooling water to vital ECCS loads and that the Unit 1 nuclear header is lined up to supply cooling water for the diesel generators by verifying that each valve servicing the diesel generators that is not locked open is administratively controlled in the proper position.

3/4.7.1 SERVICE WATER SYSTEMS

During the initial stage of a DBA (0-10 minutes), the service water system provides lube water and service water cooling to the diesel generators. The service water system design allows either unit's nuclear header to supply diesel generator cooling water. Two pumps are necessary to supply sufficient flow to cool all four diesel generators under worst-case scenarios while also supplying flow to other safety and non-safety related components. Therefore, any combination of three OPERABLE nuclear service water pumps per site will meet the single failure criteria and assure diesel generator cooling. The requirement for two OPERABLE nuclear service water pumps associated with a unit in OPERATIONAL CONDITIONS 1, 2, or 3 and at least three OPERABLE nuclear service water pumps per site when one or both units are in OPERATIONAL CONDITIONS 4 or 5 ensures that emergency diesel generator cooling requirements are met.

After the initial ten minutes of a DBA, additional loads require cooling water. These loads include RHR and CS pump room coolers, RHR service water heat exchangers, and RHR pump seal heat exchangers. Evaluations have determined that the RHR pump seals, as well as the equipment in rooms serviced by the RHR and CS room coolers, remain within the manufacturers' temperature limits for the first ten minutes of a DBA. To meet the additional loads during the post-ten minute stage of a DBA, two service water pumps on the affected unit must be in service. In order to assure single failure criteria is met, the Technical Specification requires two OPERABLE conventional service water pumps per unit while in OPERATIONAL CONDITION 1, 2, or 3.

As discussed above, when in OPERATIONAL CONDITIONS 4 and 5, the reduced core decay heat load and the accessibility to the reactor building for manual operator action reduce the requirement for OPERABLE service water pumps after an accident/transient to one. Therefore, when in OPERATIONAL CONDITIONS 4 or 5, two OPERABLE service water pumps (any combination of nuclear and/or conventional) capable of supplying the nuclear header are required provided that there are at least three OPERABLE nuclear service water pumps per site. Maintaining two OPERABLE service water pumps (nuclear and/or conventional) on the unit while in OPERATIONAL CONDITIONS 4 or 5 assures long-term cooling can be supplied, even after application of the single failure criteria. Stipulating at least three OPERABLE nuclear service water pumps per site assures diesel generator cooling will be available following any DBA, regardless of which unit suffers the accident/transient.

The allowed out-of-service times and compensatory measures established in the ACTION Statements are conservative. In particular, ACTION Statement a.2 for OPERATIONAL CONDITIONS 1, 2, and 3 requires the unit to be in HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the following 24 hours with no OPERABLE nuclear service water pumps. Analyses have been performed which

3/4.7.1 SERVICE WATER SYSTEMS (Continued)

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3/4.7.2 CONTROL ROOM EMERGENCY FILTRATION SYSTEM

The OPERABILITY of the control room ventilation system ensures that 1) the ambient air temperature does not exceed the allowable temperature for continuous duty rating for the equipment and instrumentation cooled by this system and 2) the control room will remain habitable for operations personnel during and following all credible accident conditions. The OPERABILITY of this system in conjunction with control room design provisions is based on limiting the radiation exposure to personnel occupying the control room to 5 rem or less, whole body, or its equivalent. This limitation is consistent with the requirements of General Design Criteria 10 of Appendix "A", 10 CFR Part 50.

3/4.7.3 FLOOD PROTECTION

The limitation on flood protection ensures that facility protective actions will be taken and operation will be terminated in the event of flood conditions. The limit of elevation 17'6" Mean Sea Level is based on the maximum elevation at which facility flood control measures provide protection to safety-related equipment.

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