



Carolina Power & Light Company

P.O. Box 1551 • Raleigh, N.C. 27602

December 28, 1992

SERIAL: NLS-92-323
10 CFR 50.90
TSC84TSB07

R. B. STARKEY, JR.
Vice President
Nuclear Services Department

United States Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 & 50-324/LICENSE NOS. DPR-71 & DPR-62
REQUEST FOR LICENSE AMENDMENTS
STANDBY LIQUID CONTROL SYSTEM

Gentlemen:

In accordance with the Code of Federal Regulations, Title 10, Parts 50.90 and 2.101, Carolina Power & Light Company hereby requests a revision to Appendix A of Operating Licenses DPR-71 and DPR-62 (the Technical Specifications) for the Brunswick Steam Electric Plant (BSEP), Units 1 and 2.

The Technical Specification amendments propose corrections between a discrepancy in Specification 3.1.5 and (Specification) Tables 3.3.2-1 and 4.3.2-1. Operational Condition 5 is being deleted from the applicability requirements of Specification 3.1.5, Standby Liquid Control System (SLCS). The associated Action statement for Operability Condition 5 is also deleted. In addition, the proposed changes delete Operational Condition 3 from both operability and surveillance requirements in Tables 3.3.2-1 and 4.3.2-1 (Isolation Actuation Instrumentation and Surveillance Requirements, respectively) associated with the SLCS initiation.

Enclosure 1 provides a detailed description of the proposed changes and the basis for the changes.

Enclosure 2 details, in accordance with 10 CFR 50.91(a), the basis for the Company's determination that the proposed changes do not involve a significant hazard consideration.

Enclosure 3 provides an environmental evaluation which demonstrates that the proposed amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental assessment needs to be prepared in connection with issuance of the amendment.

Enclosure 4 provides page change instructions for incorporating the proposed revisions.

Enclosure 5 provides the proposed Technical Specification pages for Unit 1.

Enclosure 6 provides the proposed Technical Specification pages for Unit 2.

Carolina Power & Light Company is providing, in accordance with 10 CFR 50.91(b), Mr. Dayne H. Brown of the State of North Carolina with a copy of the proposed license amendments.

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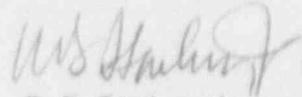
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In order to allow time for procedure revision and orderly incorporation into copies of the Technical Specifications, CP&L requests that the proposed amendments, once approved by the NRC, be issued with an effective date to be no later than 60 days from the issuance of the amendments.

Please refer any questions regarding this submittal to Mr. D. B. Waters at (919) 546-3678.

Yours very truly,



R. B. Starkey, Jr.

DAF/daf (SLCSTS)

Enclosures:

1. Basis for Change Request
2. 10 CFR 50.92 Evaluation
3. Environmental Considerations
4. Page Change Instructions
5. Technical Specification Pages - Unit 1
6. Technical Specification Pages - Unit 2

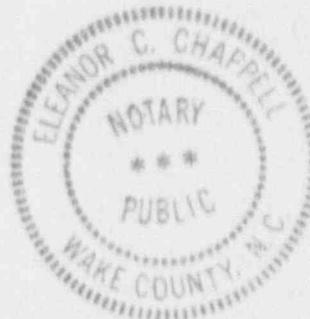
R. B. Starkey, Jr., having been first duly sworn, did depose and say that the information contained herein is true and correct to the best of his information, knowledge and belief; and the sources of his information are officers, employees, contractors, and agents of Carolina Power & Light Company.

Eleanor C. Chappell

Notary (Seal)

My commission expires: 2/6/94

cc: Mr. Dayne H. Brown
Mr. S. D. Ebnetter
Mr. R. H. Lo
Mr. R. L. Prevatte



ENCLOSURE 1

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
NRC DOCKET NOS. 50-325 & 50-324
OPERATING LICENSE NOS. DPR-71 & DPR-62
REQUEST FOR LICENSE AMENDMENTS
STANDBY LIQUID CONTROL SYSTEM

BASIS FOR CHANGE REQUEST

Background:

The original Brunswick Standard Technical Specifications incorporated a discrepancy with regard to the Standby Liquid Control System (SLCS) Limiting Condition for Operation (LCO) applicability and the isolation actuation instrumentation operability and surveillance requirements for the SLCS initiation (on the trip function for the Reactor Water Cleanup (RWCU) system isolation). This discrepancy shows that the SLCS is required operable in Operational Conditions 1, 2, and 5 while the isolation actuation instrumentation operability and surveillance requirements for SLCS initiation apply to Operational Conditions 1, 2, and 3. The operational conditions for the SLCS operability and surveillance requirements should be the same. It should be noted that this discrepancy was in the original 1976 GE Standard Technical Specifications (BWR/4) adopted by Brunswick.

Current Requirement:

The purpose of the SLCS is to provide a backup method to assist in the shutdown of the reactor from full power to cold shutdown at any time in the core life, in the unlikely event that a sufficient number of control rods cannot be inserted into the core. The system's only function is to empty the tank's liquid volume of a high neutron absorbing cross section isotope into the reactor under full reactor pressure. The isotope in mixture is sodium pentaborate stored in a tank with a gross volume of 3960 gallons. Under normal conditions the solution is 13% by weight of sodium pentaborate.

The system is normally maintained in a standby mode except when in the test mode as per the surveillance requirements of the Technical Specifications. Specification 3.1.5 requires the system be operable in Operational Conditions 1, 2, and 5. Table 3.3.2-1 (Isolation Actuation instrumentation), under the trip function for RWCU system isolation, requires operational Conditions 1, 2, and 3 for SLCS initiation. Likewise, Table 4.3.2-1 (Isolation Actuation Instrumentation Surveillance Requirements) under the trip function for reactor water cleanup system, requires SLCS surveillances for Operational Conditions 1, 2, and 3. Therefore, two discrepant and overly conservative operational conditions for the SLCS are currently in the Brunswick Technical Specifications.

Proposed Change:

The proposed amendments correct a discrepancy between Specification 3.1.5 and Tables 3.3.2-1 and 4.3.2-1. Operational Condition 5 is being deleted from the applicability requirements of Specification 3.1.5, Standby Liquid Control System. The associated Action Statement for Operability Condition 5 is also deleted. In addition, the proposed changes delete both operability

and surveillance requirements in Tables 3.3.2-1 (Isolation Actuation Instrumentation) and 4.3.2-1 (Isolation Actuation Instrumentation Surveillance Requirements) associated with the SLCS initiation while the unit is in Operational Condition 3.

A minor editorial change has also been included to add the word "OPERATIONAL" (before the word "CONDITIONS") in the APPLICABILITY and ACTION Statements of Specification 3.1.5 to match current Technical Specification terminology (i.e., "OPERATIONAL CONDITIONS" rather than "CONDITIONS").

Basis:

The SLCS operability should be consistent throughout the Technical Specifications with respect to both LCO applicability, instrumentation operability, and surveillance requirements. However, the original BWR/4 Standard Technical Specifications, issued in 1976, had the same discrepancy in operational conditions between the SLCS specification and the isolation instrumentation surveillance requirements table as presently exist in the Brunswick Technical Specifications. Therefore, upon adopting the BWR/4 Standard Technical Specifications as a Brunswick document, the particular SLCS operability conditions in the specification applicability and surveillance requirements were transferred into the Brunswick Technical Specifications.

Regardless of the origination of the Brunswick Technical Specifications, Operational Conditions 3 and 5 are not appropriate for SLCS operability or SLCS surveillance. These amendments will remove the requirements for maintaining equipment operable during plant conditions where the equipment (system) is not required to provide any mitigating functions. In addition, the system will be less subject to degradation if Operational Conditions 3 and 5 are deleted from SLCS applicability. This will allow a greater outage window for SLCS maintenance activities to be performed. Operational Conditions 1 and 2 are still applicable since in Operational Conditions 1 and 2 the special shutdown capability could be required since several control rods could be withdrawn within the core and possibly not fully reinserted. In Operational Condition 3, control rods are subject to specific restricting conditions^{1,2}. Outside of these specific conditions, the control rods remain fully inserted in Operational Condition 3. These measures provide adequate controls to assure that the reactor remains subcritical; therefore, the SLCS is not needed in Operational Condition 3. In Operational Condition 5, only a single control rod may be withdrawn from a core cell containing fuel assemblies; otherwise, control rods are required to be fully inserted. This provides adequate shutdown margin and assures that the reactor does not become critical. As such, the SLCS is not needed for this operational condition. It should be noted that, when in Operational Condition 5, there is an exception to the control rod removal as listed in Technical Specification 3.9.10.2 that allows multiple rod removal if the fuel is also removed from all four surrounding fuel cells. The requirement for removal of the surrounding fuel is an additional safety measure to prevent an inadvertent criticality.

¹ The reactor mode switch may be placed in the Run or Startup/ Hot Standby position to test the switch interlock functions provided that the control rods are verified to remain fully inserted by a second licensed operator or other technically qualified member of the unit technical staff.

² The reactor mode switch may be placed in the Refuel position while a single control rod is being moved provided that the one-rod-out interlock is OPERABLE.

The latest draft proof and review version of the NRC Standard Technical Specifications (draft NUREG-1433) at this writing (November, 1992) has corrected the discrepancy between SLCS operational conditions. Specification 3.1.7 (Standby Liquid Control (SLC) System) in this document now specifies Modes 1 and 2 as the required operable modes along with a Bases section which discusses the adequacy of reactivity controls in Modes 3, 4, and 5 without the SLCS required operable.

Conclusion:

From the discussion provided above, there is adequate justification to pursue these Technical Specification amendments.

ENCLOSURE 2

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
NRC DOCKET NOS. 50-325 & 50-324
OPERATING LICENSE NOS. DPR-71 & DPR-62
REQUEST FOR LICENSE AMENDMENTS
STANDBY LIQUID CONTROL SYSTEM

10 CFR 50.92 EVALUATION

The Commission has provided standards in 10 CFR 50.92(c) for determining whether a significant hazards consideration exists. A proposed amendment to an operating license for a facility involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated, (2) create the possibility of a new or different kind of accident from any accident previously evaluated, or (3) involve a significant reduction in a margin of safety. Pursuant to 10 CFR 50.91(a)(1), Carolina Power & Light Company has reviewed this proposed license amendment request and determined that its adoption would not involve a significant hazards consideration. The bases for this determination are as follows:

Proposed Change:

The proposed amendments correct a discrepancy between Specification 3.1.5 and Tables 3.3.2-1 and 4.3.2-1. Operational Condition 5 is deleted from the applicability requirements of Specification 3.1.5, Standby Liquid Control System. The associated Action Statement for Operability Condition 5 is also deleted. In addition, the proposed changes delete both operability and surveillance requirements in Tables 3.3.2-1 (Isolation Actuation Instrumentation) and 4.3.2-1 (Isolation Actuation Instrumentation Surveillance Requirements) associated with the SLCS initiation while the unit is in Operational Condition 3.

Justification:

The change does not involve a significant hazards consideration for the following reasons:

1. The proposed amendments do not involve a significant increase in the probability or consequences of an accident previously evaluated.

The Standby Liquid Control System (SLCS) is a special safety system not required for unit operation, and never expected to be needed for unit safety due to the large number of independent control rods available to shutdown the reactor. The SLCS has very limited capability of initiating any events. Rupture of the SLCS piping, inadvertent injection, and plant chemistry problems are all bounded by previously analyzed events (small line break, reactor water cleanup). Should the boron solution ever be injected into the reactor, either intentionally or inadvertently, after making certain that the normal reactivity controls will keep the reactor subcritical, the boron is removed from the reactor coolant system by flushing for gross dilution followed by operation of the reactor cleanup system. There is practically no effect on reactor operations when the boron concentration has been reduced below approximately 50 ppm.

The proposed amendments delete two current operational condition requirements for the SLCS because of the highly improbable chances of reactivity excursions in Operational Conditions 3 and 5. The design basis ensures that in the highly unlikely event regular reactivity controls fail, the SLCS will bring the reactor subcritical. The assumptions in the design basis are preserved by the proposed amendments. As such, the accidents evaluated in Chapter 15 of the UFSAR are not affected by the proposed changes; therefore, this amendment request does not involve a significant increase in the probability of an accident previously evaluated.

The proposed amendments make no modifications to the SLCS instrumentation. In addition, the function of the SLCS instrumentation is not altered. Special provisions for single control rod removal/multiple rod removal with surrounding fuel removal are in effect for Operational Condition 5. Operational Condition 3 is currently applicable for the SLCS in Tables 3.3.2-1 and 4.3.2-1; however, this condition has never been applicable in SLCS Specification 3.1.5. There are also special provisions for single rod removal in Operational Condition 3 to prohibit reactivity excursions. As a result, the SLCS is never expected to provide any mitigating functions in Operational Condition 3 or 5.

The Brunswick UFSAR Chapter 15 accidents associated with reactivity excursions are not affected by the proposed amendments. In addition, the proposed changes will not compromise the mitigating features of the SLCS required during a reactivity excursion if this system were initiated. As such, the Technical Specification amendments do not involve a significant increase in the consequences of an accident previously evaluated.

2. The proposed amendments do not create the possibility of a new or different kind of accident from any accident previously evaluated.

The Technical Specification amendments delete Operational Conditions 3 and 5 from SLCS applicability. In Operational Conditions 1 and 2, the special shutdown capability (SLCS) could be required since several rods could be withdrawn from the core at once and potentially not be reinserted. The SLCS will remain applicable in these operational conditions.

In Operational Condition 3, control rods are only allowed to be withdrawn under special operations for single control rod withdrawal utilizing the one-rod-out interlock. This provides adequate controls to assure that the reactor remains subcritical. In Operational Condition 5, only a single control rod can be withdrawn from a core cell containing fuel assemblies. Multiple control rod removal is allowed only if the fuel is removed from all four surrounding fuel cells. This provides adequate shutdown margin and assures that the reactor does not become critical. As such, the SLCS is not needed for this operational condition.

Correcting the noted discrepancy in the Brunswick Technical Specifications does not involve modifications to any safety-related equipment and will not alter or introduce new plant operations. As such, the proposed amendments do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The proposed amendments do not involve a significant reduction in the margin of safety.

The proposed amendments do not change safety limits, setpoints, or plant design at the Brunswick Plant. There are no functions of the system which have been compromised by

these changes. The design basis for this system has been preserved. The SLCS surveillance requirements for Operational Conditions 1 and 2 will continue to assure a high degree of reliability for this system. Therefore, the proposed amendments do not involve a significant reduction in the margin of safety.

ENCLOSURE 3

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
NRC DOCKET NOS. 50-325 & 50-324
OPERATING LICENSE NOS. DPR-71 & DPR-62
REQUEST FOR LICENSE AMENDMENTS
STANDBY LIQUID CONTROL SYSTEM

ENVIRONMENTAL CONSIDERATIONS

10 CFR 51.22(c)(9) provides criterion for and identification of licensing and regulatory actions eligible for categorical exclusion from performing an environmental assessment. A proposed amendment to an operating license for a facility requires no environmental assessment if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant hazards consideration; (2) result in a significant change in the types or significant increase in the amounts of any effluents that may be released offsite; (3) result in an increase in individual or cumulative occupational radiation exposure. Carolina Power & Light Company has reviewed this request and determined that the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment needs to be prepared in connection with the issuance of the amendment. The basis for this determination follows:

Proposed Change:

The proposed amendments correct a discrepancy between Specification 3.1.5 and Tables 3.3.2-1 and 4.3.2-1. Operational Condition 5 is being deleted from the applicability requirements of Specification 3.1.5, Standby Liquid Control System. The associated Action Statement for Operability Condition 5 is also deleted. In addition, the proposed changes delete both operability and surveillance requirements in Tables 3.3.2-1 (Isolation Actuation Instrumentation) and 4.3.2-1 (Isolation Actuation Instrumentation Surveillance Requirements) associated with the SLCS initiation while the unit is in Operational Condition 3.

Basis:

The change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) for the following reasons:

1. As demonstrated in Enclosure 2, the proposed amendments do not involve a significant hazards consideration.
2. The proposed amendments do not result in a significant change in the types or significant increase in the amounts of any effluents that may be released offsite.

Clarifying the discrepancies in the original Standard Technical Specifications (as clarified in the current NRC draft of the revised Standard Technical Specifications) will not impact the accident mitigation functions of the SLCS or plant operations.

The SLCS is a backup to reactivity controls whose main function is to prevent reactivity excursions and hence inadvertent criticality which could potentially lead to an offsite effluent release. However, since these functions are not impacted, the proposed amendments do not result in a significant change in the types or significant increase in the amount of any effluents that may be released offsite.

3. The proposed amendment does not result in an increase in individual or cumulative occupational radiation exposure.

The proposed amendments, by clarifying the noted discrepancies, will allow greater opportunity for system maintenance by personnel by eliminating unneeded applicable operational conditions for the SLCS. However, personnel functions per se are not impacted by these changes which do not involve issues of personnel exposure. Therefore, the proposed amendments have no effect on either individual or cumulative occupational radiation exposure.

ENCLOSURE 4

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
NRC DOCKET NOS. 50-325 & 50-324
OPERATING LICENSE NOS. DPR-71 & DPR-62
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PAGE CHANGE INSTRUCTIONS

UNIT 1

<u>Removed Page</u>	<u>Inserted Page</u>
3/4 1-18	3/4 1-18
3/4 3-13	3/4 3-13
3/4 3-28	3/4 3-28

UNIT 2

<u>Removed Page</u>	<u>Inserted Page</u>
3/4 1-18	3/4 1-18
3/4 3-13	3/4 3-13
3/4 3-28	3/4 3-28