



Carolina Power & Light Company

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10 CFR 50.90

TSC 88TSB12

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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  
NEUTRON MONITORING SURVEILLANCE REQUIREMENTS

Gentlemen:

In accordance with the Code of Federal Regulations, Title 10, Parts 50.90 and 2.101, Carolina Power & Light Company (CP&L) hereby requests a revision to the Technical Specifications for the Brunswick Steam Electric Plant (BSEP), Units 1 and 2.

The proposed amendments will revise the neutron monitoring instrumentation surveillance requirements associated with existing footnote (d) to Table 4.3.1-1 (REACTOR PROTECTION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS) and Table 4.3.4-1 (CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION SURVEILLANCE REQUIREMENTS). Footnote (d) currently requires a surveillance (channel functional test) be performed within 12 hours after changing from OPERATIONAL CONDITION 1 to OPERATIONAL CONDITION 2. The proposed revisions will clarify that, when changing from OPERATIONAL CONDITION 1 to OPERATIONAL CONDITION 2, performing the required surveillance within 12 hours is not required if performed within the previous surveillance interval specified for those instruments in OPERATIONAL CONDITION 2. This interval is seven days for those neutron monitoring instruments used to perform both reactor protection system instrumentation and control rod withdrawal block instrumentation surveillance requirements, as noted in Tables 4.3.1-1 and 4.3.4-1. In addition, a new footnote (i) will be incorporated into Table 4.3.4-1 to also clarify that, when changing from OPERATIONAL CONDITION 1 to OPERATIONAL CONDITION 2, performing the required surveillance within 12 hours is not required if performed within the previous surveillance interval specified for those instruments in OPERATIONAL CONDITION 2. This interval is 92 days for those neutron monitoring instruments used to perform control rod withdrawal block instrumentation surveillance requirements, as noted in Table 4.3.4-1.

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 hazards 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).

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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 marked-up Technical Specification pages for Unit 1.

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

Enclosure 7 provides the proposed typed Technical Specification pages for Unit 1.

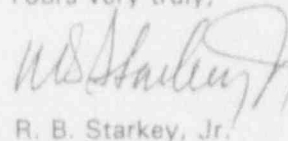
Enclosure 8 provides the proposed typed Technical Specification pages for Unit 2.

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

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 amendment.

Please refer any questions regarding this submittal to Mr. D. B. Waters at (319) 546-3678.

Yours very truly,



R. B. Starkey, Jr.

DAF/daf (neutmoni.wpf)

Enclosures:

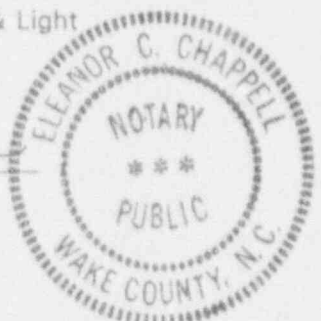
1. Basis for Change Request
2. 10 CFR 50.92 Evaluation
3. Environmental Considerations
4. Page Change Instructions
5. Technical Specification Pages - Unit 1
6. Technical Specification Pages - Unit 2
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R. B. Starkey, Jr., having been first duly sworn, 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.



Notary (Seal)

My commission expires: 2/6/96



Document Control Desk  
NLS-92-229 / Page 3

cc: Mr. Dayne H. Brown  
Mr. S. D. Ebner  
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-32 REQUEST FOR LICENSE AMENDMENT NEUTRON MONITORING SURVEILLANCE REQUIREMENTS

#### BASIS FOR CHANGE REQUEST

##### Background:

The issue of this proposed amendment request (surveillance requirement clarification) was created through previous Technical Specification amendments (Nos. 96 and 121 for BSEP Units 1 and 2, respectively). Those amendments revised surveillance requirements for the reactor protection system and the control rod block monitor instrumentation. The approved amendments allowed the performance of required surveillance tests (channel functional tests) to be completed within 12 hours after entering OPERATIONAL CONDITION 2 from OPERATIONAL CONDITION 1. Specifically, channel functional tests of the neutron monitoring instrumentation are performed for these surveillances. This change was justified because the channel functional test circuitry of some instrumentation is bypassed when the RMS (reactor mode switch) is in the run position (OPERATIONAL CONDITION 1), thereby prohibiting performance of the channel functional test before entry into OPERATIONAL CONDITION 2. The NRC approved and issued these amendments to CP&L on March 26, 1986.

##### Current Requirement:

The current surveillance requirements incorporate footnote (d) into Table 4.3.1-1 (REACTOR PROTECTION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS) and Table 4.3.4-1 (CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION SURVEILLANCE REQUIREMENTS) and state that the average power range monitors (APRMs), the intermediate range monitors (IRMs), and the source range monitors (SRMs) trip functions must be checked within 12 hours after entering OPERATIONAL CONDITION 2 from OPERATIONAL CONDITION 1.

##### Proposed Change:

The proposed amendments will revise the neutron monitoring instrumentation surveillance requirements associated with existing footnote (d) to Table 4.3.1-1 and Table 4.3.4-1. Footnote (d) currently requires a surveillance (channel functional test) be performed within 12 hours after changing from OPERATIONAL CONDITION 1 to OPERATIONAL CONDITION 2. The proposed revisions will clarify that, when changing from OPERATIONAL CONDITION 1 to OPERATIONAL CONDITION 2, performing the required surveillance within 12 hours is not required if performed within the previous surveillance interval specified for those instruments in OPERATIONAL CONDITION 2. This interval is seven days for those neutron monitoring instruments used (APRMs, SRMs, and IRMs) to perform reactor protection system instrumentation and control rod withdrawal block instrumentation surveillance requirements, as noted in Tables 4.3.1-1 and 4.3.4-1. In addition, a new footnote (i) will be incorporated into Table 4.3.4-1 to also clarify that, when changing from OPERATIONAL CONDITION 1 to OPERATIONAL CONDITION 2, performing the

required surveillance within 12 hours is not required if performed within the previous surveillance interval specified for those instruments in OPERATIONAL CONDITION 2. This interval is 92 days for those neutron monitoring instruments used (APRMs) to perform control rod withdrawal block instrumentation surveillance requirements, as noted in Table 4.3.4-1.

Basis:

The current Technical Specification requirements for the neutron monitoring system are divided in two sections: the reactor protection system instrumentation surveillance requirements (Table 4.3.1-1) and the control rod withdrawal block instrumentation surveillance requirements (Table 4.3.4-1). The neutron monitoring system consists of three subsystems: the APRMs, IRMs, and the SRMs. The neutron monitoring system provides for continuous monitoring of the neutron flux levels in the reactor at all power levels. Indication is provided on the local control panels and also in the control room.

The neutron monitoring instrumentation trip functions associated with these proposed amendments are as follows:

- (1) The IRM neutron flux high and inoperative scram inputs to the reactor protection system (Items 1.a and 1.b in Table 4.3.1-1).
- (2) The APRM neutron flux high 15% trip input to the reactor protection system (Item 2.a in Table 4.3.1-1).
- (3) The APRM neutron flux upscale (fixed) trip input to the control rod block instrumentation (Item 1.d in Table 4.3.4-1).
- (4) The IRM and SRM detector not full in, upscale trip, inoperative trip, and downscale trip inputs to the control rod block instrumentation (Items 3.a, 3.b, 3.c, 3.d, 4.a, 4.b, 4.c, and 4.d in Table 4.3.4-1).

A channel functional test is required in OPERATIONAL CONDITION 2 every seven days for the IRMs and APRMs associated with reactor protection surveillance requirements and every seven days for SRMs and IRMs associated with control rod withdrawal block instrumentation surveillance requirements. The latter also includes a 92-day (quarterly) channel functional test of the APRMs as well. Footnote (d) currently requires that, when changing from OPERATIONAL CONDITION 1 to OPERATIONAL CONDITION 2, the channel functional test be performed within 12 hours after entering OPERATIONAL CONDITION 2. Prior to the incorporation of footnote (d), a channel functional test was required for this instrumentation in OPERATIONAL CONDITION 1 before entering OPERATIONAL CONDITION 2. This test is normally required only in OPERATIONAL CONDITION 2. In addition, the channel functional test circuitry of some instrumentation is bypassed in OPERATIONAL CONDITION 1, thereby prohibiting performance of the channel functional test before entry into OPERATIONAL CONDITION 2. Footnote (d) was approved to allow the surveillances to be performed within 12 hours after entering OPERATIONAL CONDITION 2 from OPERATIONAL CONDITION 1 to ensure operability of the instrumentation in OPERATIONAL CONDITION 2 after the unit had been in OPERATIONAL CONDITION 1 for a long period of time without the surveillance being performed.

It was not taken into account at the time of proposed amendments 96 and 121 that, during startup operations after outages, frequent changes from OPERATIONAL CONDITION 1 to OPERATIONAL

CONDITION 2, and vice versa, may be necessary for testing of certain critical plant equipment. The footnote was not intended to require the channel functional tests be performed within 12 hours of every mode change, rather only if the functional test had not been performed within the surveillance interval specified for OPERATIONAL CONDITION 2.

The proposed amendments, therefore, will clarify the channel functional test surveillance requirements associated with footnote (d) to Tables 4.3.1-1 and 4.3.4-1 to re-emphasize the intent of the weekly surveillances associated with the APRMs, SRMs, and the IRMs in OPERATIONAL CONDITION 2. In addition, a new footnote (ii) will be added to Table 4.3.4-1 to re-emphasize the intent of the quarterly surveillances associated with the APRMs in OPERATIONAL CONDITION 2. The proposed clarifications will allow the previous surveillance tests, if completed within the specified time interval, to fulfill the surveillance requirements notwithstanding a change in operational condition. This clarification is expected to lessen operator burden during plant startup operations.



## 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 AMENDMENT  
NEUTRON MONITORING SURVEILLANCE REQUIREMENTS

### 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 will revise the neutron monitoring instrumentation surveillance requirements associated with existing footnote (d) to Table 4.3.1-1 and Table 4.3.4-1. Footnote (d) currently requires a surveillance (channel functional test) be performed within 12 hours after changing from OPERATIONAL CONDITION 1 to OPERATIONAL CONDITION 2. The proposed revisions will clarify that, when changing from OPERATIONAL CONDITION 1 to OPERATIONAL CONDITION 2, performing the required surveillance within 12 hours is not required if performed within the previous surveillance interval specified for those instruments in OPERATIONAL CONDITION 2. This interval is seven days for those neutron monitoring instruments used (APRMs, SRMs, and IRMs) to perform reactor protection system instrumentation and control rod withdrawal block instrumentation surveillance requirements, as noted in Tables 4.3.1-1 and 4.3.4-1. In addition, a new footnote (i) will be incorporated into Table 4.3.4-1 to also clarify that, when changing from OPERATIONAL CONDITION 1 to OPERATIONAL CONDITION 2, performing the required surveillance within 12 hours is not required if performed within the previous surveillance interval specified for those instruments in OPERATIONAL CONDITION 2. This interval is 92 days for those neutron monitoring instruments used (APRMs) to perform control rod withdrawal block instrumentation surveillance requirements, as noted in Table 4.3.4-1.

#### Basis:

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

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

The SRMs, IRMs, and APRMs monitor the core neutron flux level and, in some cases, initiate reactor trips to protect against increases in reactor power which could potentially

cause fuel damage. The proposed change does not impact the function or the trip setpoints of the neutron monitoring instrumentation. As such, the accidents evaluated in Chapter 15 of the Updated Final Safety Analysis Report (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 neutron monitoring instrumentation. In addition, the function of this instrumentation is not altered; and the trip setpoint limits for this instrumentation remain unchanged. Incorporating the additional information into footnote (d) of Tables 4.3.1-1 and 4.3.4-1 and footnote (ii) of Table 4.3.4-1 will clarify the intent of the existing surveillance requirements for both the reactor protection system instrumentation and control rod withdrawal block instrumentation; however, the proposed amendments will not change the current surveillance frequencies.

As stated previously, the neutron monitoring system surveillance requirements are divided in two parts: the reactor protection system surveillance requirements and the control rod withdrawal block instrumentation surveillance requirements. The reactor protection system initiates a scram to preserve the cladding integrity, preserve the reactor coolant system integrity, minimize the energy which must be adsorbed following a loss-of-coolant accident, and to prevent inadvertent criticality. This amendment request would not affect the consequences associated with these accidents as discussed in Chapter 15 of the UFSAR since the surveillance requirements are not being changed; and thus, the reactor protection system scram functions are not impacted.

The control rod withdrawal block instrumentation provides the appropriate rod block signals when an out of sequence rod is selected for withdrawal when within the preset power level of the rod worth minimizer. It should be noted that this instrumentation is a backup to procedural controls. The surveillance requirements ensure that the required control rod withdrawal block instrumentation channels are demonstrated operable at the frequencies shown in Table 4.3.4-1. However, since this amendment request does not change the surveillance requirements, the control rod withdrawal block instrumentation functions are not impacted. As such, the analyses and consequences of the accidents associated with control rod withdrawal errors, evaluated in Chapter 15.4 of the UFSAR (Reactivity and Power Distribution Anomalies), are not affected.

Therefore, the proposed amendments do not involve a significant increase in the consequences of any accident previously evaluated.

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

The instrumentation associated with this change, as discussed above, is provided to monitor the core neutron flux. The clarifications proposed for the surveillances on this instrumentation will not modify any safety-related equipment or safety functions and will not alter plant operation. Since the subject instrumentation only monitors reactor parameters and cannot initiate an accident, and this function is not being altered, the proposed amendments do not create the possibility of a new or different kind of accident from any accident previously evaluated.



3. The proposed amendment does not involve a significant reduction in the margin of safety.

Neutron monitoring functions, system surveillance frequencies, and instrumentation setpoints associated with this amendment request are not being changed. The proposed amendments seek to clarify the original intent of footnote (d) to Tables 4.3.1-1 and 4.3.4-1. The intent of this footnote was to allow the surveillance tests to be performed within 12 hours after entering OPERATIONAL CONDITION 2 from OPERATIONAL CONDITION 1 to ensure operability of the instrumentation in OPERATIONAL CONDITION 2 after the unit had been in OPERATIONAL CONDITION 1 for a long period of time. The neutron monitoring instrumentation will continue to perform its intended function in the same manner as it currently does. 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 AMENDMENT  
NEUTRON MONITORING SURVEILLANCE REQUIREMENTS

### 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; or (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 will revise the neutron monitoring instrumentation surveillance requirements associated with existing footnote (d) to Table 4.3.1-1 and Table 4.3.4-1. Footnote (d) currently requires a surveillance (channel functional test) be performed within 12 hours after changing from OPERATIONAL CONDITION 1 to OPERATIONAL CONDITION 2. The proposed revisions will clarify that, when changing from OPERATIONAL CONDITION 1 to OPERATIONAL CONDITION 2, performing the required surveillance within 12 hours is not required if performed within the previous surveillance interval specified for those instruments in OPERATIONAL CONDITION 2. This interval is seven days for those neutron monitoring instruments used (APRMs, SRMs, and IRMs) to perform reactor protection system instrumentation and control rod withdrawal block instrumentation surveillance requirements, as noted in Tables 4.3.1-1 and 4.3.4-1. In addition, a new footnote (i) will be incorporated into Table 4.3.4-1 to also clarify that, when changing from OPERATIONAL CONDITION 1 to OPERATIONAL CONDITION 2, performing the required surveillance within 12 hours is not required if performed within the previous surveillance interval specified for those instruments in OPERATIONAL CONDITION 2. This interval is 92 days for those neutron monitoring instruments used (APRMs) to perform control rod withdrawal block instrumentation surveillance requirements, as noted in Table 4.3.4-1.

#### 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.

The proposed amendments do not impact the function or the trip setpoints of the neutron monitoring instrumentation. The neutron monitoring instrumentation only monitors a reactor parameter and cannot initiate an accident. Therefore, the reactor protection system and control rod withdrawal block instrumentation functions, which utilize the neutron monitoring instrumentation in surveillances, are not impacted by this proposed clarification. Since these accident mitigation functions are not impacted, effluent types and amounts associated with offsite accident releases are not affected. In addition, surveillance frequencies are not being changed; nor are plant operations impacted by this amendment request. Thus, routine operational effluents are not affected.

Therefore, 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.

3. The proposed amendments do not result in an increase in individual or cumulative occupational radiation exposure.

This amendment request involves no plant or equipment modifications. Furthermore, this amendment clarification will eliminate the unnecessary repetition of surveillance tests which could otherwise involve some minimal personnel exposure. In addition, this amendment request will lessen operator burden during startup after outages by clarifying previous surveillance tests as valid if performed within the specified frequency required for OPERATIONAL CONDITION 2. Therefore, the amendment request does not result in an increase in 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  
REQUEST FOR LICENSE AMENDMENT  
NEUTRON MONITORING SURVEILLANCE REQUIREMENTS

PAGE CHANGE INSTRUCTIONS

UNIT 1

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3/4 3-51	3/4 3-51
3/4 3-52	3/4 3-52

UNIT 2

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3/4 3-9	3/4 3-9
3/4 3-51	3/4 3-51
3/4 3-52	3/4 3-52