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William R. Campbell  
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SERIAL: BSEP 95-0383  
10 CFR 50.90  
TSC 95TSB29

**OCT 23 1995**

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2  
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62  
REQUEST FOR LICENSE AMENDMENTS  
REACTOR COOLANT SYSTEM CONDUCTIVITY

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 the Technical Specifications for the Brunswick Steam Electric Plant (BSEP), Unit Nos. 1 and 2. These proposed amendments will revise ACTION "b" of Technical Specification 3.4.4 to allow for chemical decontamination of the reactor coolant system during refueling outages.

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

Enclosure 2 details 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 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 the issuance of the amendment.

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

Enclosure 5 provides the marked-up Technical Specification pages for Unit 1.

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

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

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

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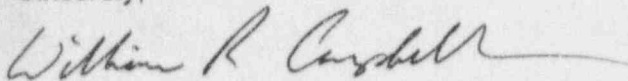
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Carolina Power & Light Company is providing, in accordance with 10 CFR 50.91(b), Mr. Dayne H. Brown of the State of North Carolina with a copy of the proposed license amendments.

Approval of these proposed license amendments is requested by December 1, 1995 in order that planning for the upcoming Unit 2 Reload 11 outage may proceed with this consideration. In order to allow time for procedure revision, orderly incorporation into copies of the Technical Specifications, CP&L requests that the proposed amendment, once approved by the NRC, be issued with an effective date of 60 days following the issuance date.

Please refer any questions regarding this submittal to Mr. George Honma at (910) 457-2741.

Sincerely,



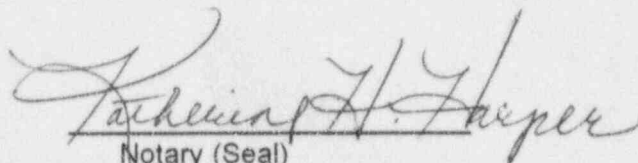
William R. Campbell

WRM/wrm

Enclosures:

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

William R. Campbell, 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, and agents of Carolina Power & Light Company.



Notary (Seal)

My commission expires: 11/14/99

pc: Mr. D. H. Brown, State of North Carolina  
Mr. S. D. Ebner, Regional Administrator, Region II  
Mr. D. C. Trimble, NRR Project Manager - Brunswick Units 1 and 2  
Mr. C. A. Patterson, Brunswick NRC Senior Resident Inspector  
The Honorable H. Wells, Chairman - North Carolina Utilities Commission

## ENCLOSURE 1

### BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2 NRC DOCKET NOS. 50-325 AND 50-324 OPERATING LICENSE NOS. DPR-71 AND DPR-62 REQUEST FOR LICENSE AMENDMENTS REACTOR COOLANT SYSTEM CONDUCTIVITY

#### BASIS FOR CHANGES

##### PROPOSED CHANGE 1:

###### Current Requirement

Technical Specification 3.4.4 requires that reactor coolant system water chemistry be maintained within the limits specified in Table 3.4.4-1. With the unit operating in other than OPERATIONAL CONDITIONS 1 or 2, this corresponds to chlorides being maintained less than 0.2 ppm and conductivity being maintained less than 10.0  $\mu$ mhos/cm at 25°C. With chlorides and/or conductivity in excess of these limits, ACTION "b" of Technical Specification 3.4.4 requires that chlorides and/or conductivity be restored within the specified limits within 48 hours.

###### Proposed Change

The proposed license amendments will revise the APPLICABILITY and ACTION "b" of Technical Specification 3.4.4 to add a note that states that Limiting Condition for Operation for reactor coolant system water chemistry does not apply during periods when chemical decontamination of the reactor coolant system is being performed (with no fuel in the reactor vessel).

###### Basis For Proposed Change

In order to reduce personnel radiation exposure during certain outage maintenance activities, portions of the reactor coolant system can be decontaminated using a chemical solvent. The chemical decontamination process typically involves filling portions of the reactor coolant system piping with a chemical solvent that facilitates removal of a portion of the oxide layer on the inside surfaces of the reactor coolant system piping and other components (such as the reactor vessel annulus). At completion of the decontamination process, the chemicals being used are removed by the process clean-up resins and reactor coolant system water chemistry will be returned to within the limits specified in Technical Specification Table 3.4.4-1.

During the chemical decontamination process, the injection of the chemical solvent causes reactor coolant system conductivity and chloride concentration to increase above the limits specified in Technical Specification Table 3.4.4-1. The existing Technical Specification, which applies at all times, specifies that the reactor coolant system conductivity/chloride values must be restored to within the limits shown in Table 3.4.4-1 within 48 hours.

Because sufficient time is needed to permit clean-up of the process stream to restore conductivity/chloride values to acceptable levels, the existing ACTION requirements can adversely impact the effectiveness of the chemical decontamination process. Premature

termination of the decontamination process adversely affects the effectiveness of the procedure and results in increased resin usage (resulting in an increase in radioactive waste generated from this evolution). In addition, premature termination of the decontamination process increases the critical path time required for completion of this outage activity.

Reactor coolant system conductivity and chloride values in excess of the limits specified in Table 3.4.4-1 may be indicative of water chemistry conditions under which ionic species aggravate corrosion of system components. High conductivity and chloride values in conjunction with reactor coolant system temperatures in excess of 200° F represent conditions under which intergranular stress corrosion cracking (IGSCC) can occur. Thus, the limits specified in Table 3.4.4-1 have been established to minimize these potential concerns.

The solvents that are selected for use in performing the chemical decontamination process have been selected, evaluated, and approved to ensure their chemical reactivity will not adversely impact components or the structural integrity of the reactor coolant system. Because decontamination activities are performed at temperatures significantly less than normal operating temperatures, the chemical reactivity of these solvents will not increase the likelihood of IGSCC occurring nor affect those IGSCC cracks that may already be present.

In addition, during the chemical decontamination process, the sample locations and in-line coolant conductivity monitors that are used during normal operation are not available. This requires the installation of a temporary sample line and valves at isolation valves G31-F002/F003 as an alternate sample point. Eliminating the need to install the temporary sample line and temporary isolation valve will save an estimated 600 millirem of personnel radiation exposure.

In summary, the proposed changes will revise Technical Specification 3.4.4 to state that the reactor coolant system water chemistry limits do not apply during periods when chemical decontamination of the reactor coolant system is being performed (with no fuel in the reactor vessel). The solvents that are selected for use in performing the chemical decontamination process have been selected, evaluated, and approved to ensure their chemical reactivity will not adversely impact the corrosion of components or the structural integrity of the reactor coolant system. Thus, using these solvents does not adversely affect the structural integrity of the reactor coolant system piping and components, and the proposed changes provided herein simply allow the chemical decontamination process to be completed with less personnel radiation exposure and less generation of radioactive waste. Upon concluding the chemical decontamination activities and prior to returning the unit(s) to service, reactor coolant system conductivity and chloride values would be restored to within the limits specified in Technical Specification Table 3.4.4-1.



## ENCLOSURE 2

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2  
NRC DOCKET NOS. 50-325 AND 50-324  
OPERATING LICENSE NOS. DPR-71 AND DPR-62  
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REACTOR COOLANT SYSTEM CONDUCTIVITY

### 10 CFR 50.92 EVALUATION

The Commission has provided standards in 10 CFR 50.92 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. Carolina Power & Light Company has reviewed these proposed license amendment requests and believes that their adoption would not involve a significant hazards consideration. The basis for this determination follows.

1. The proposed changes will allow the reactor coolant system conductivity and chlorides to exceed the limits specified in Technical Specification Table 3.4.4-1 in support of performing chemical decontamination activities. The reactor coolant system water chemistry limits have been established to prevent long-term damage to the reactor coolant system materials that are in contact with the coolant. Upon concluding the chemical decontamination activities, reactor coolant system conductivity and chloride values would be restored to within the limits specified in Technical Specification Table 3.4.4-1. Existing regulatory requirements, specifically a review in accordance with 10 CFR 50.59 to determine whether an activity involves an unreviewed safety question, provide adequate assurance that solvents selected for use in a chemical decontamination activity will not degrade the structural integrity of the reactor coolant system. Therefore, since the structural integrity of the reactor coolant system will not be adversely impacted by the chemical decontamination activities, the proposed amendments do not involve a significant increase in the probability of an accident previously evaluated.

As discussed above, the reactor coolant system water chemistry limits have been established to prevent long-term damage to the reactor coolant system materials that are in contact with the coolant. The solvents being used for a chemical decontamination activity are selected to ensure their effectiveness and to ensure that damage will not occur to the structural materials comprising the reactor coolant pressure boundary. As such, the operation of safety equipment used to mitigate a design basis accident or transient will not be affected by the proposed change of the reactor coolant system water chemistry limits during performance of chemical decontamination activities. Therefore, the proposed revision to the reactor coolant system chemistry limits will not involve a significant increase in the consequences of an accident previously evaluated.

2. The proposed change will allow the reactor coolant system conductivity and chlorides to exceed the limits specified in Technical Specification Table 3.4.4-1 in order to perform chemical decontamination activities. The reactor coolant system water chemistry limits have been established to prevent long-term damage to the reactor coolant system materials that are in contact with the coolant. Even though the solvents used for chemical decontaminations may result in reactor coolant system conductivity and chloride measurement values in excess of the limits specified in the Technical Specifications, the

existing regulatory requirements of 10 CFR 50.59 will continue to ensure that solvents being used for performing chemical decontamination have been properly evaluated and that these solvents do not adversely affect the material properties or structural integrity of the reactor coolant system. Therefore, the proposed amendments revising the reactor coolant system water chemistry limits during performance of chemical decontamination activities will not create the possibility of a new or different kind of accident from any accident previously evaluated.

2. The reactor coolant system water chemistry limits have been established to prevent long-term damage to the reactor coolant system materials that are in contact with the coolant. The solvents used for chemical decontaminations result in reactor coolant system conductivity and chloride measurement values in excess of the limits specified in the Technical Specifications; however, the solvents being used for performing chemical decontamination have been properly evaluated to ensure they will not significantly affect the material properties of the reactor coolant system piping (i.e., corrosion) nor will they significantly affect the structural integrity (i.e., wall thinning) of the reactor coolant system piping. Therefore, the proposed license amendments do not involve a significant reduction in a margin of safety.

## ENCLOSURE 3

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2  
NRC DOCKET NOS. 50-325 AND 50-324  
OPERATING LICENSE NOS. DPR-71 AND DPR-62  
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### 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 believes that the proposed amendments meet 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 of environmental assessment needs to be prepared in connection with the issuance of the amendment. The basis for this determination follows.

1. These amendments do not involve a significant hazards consideration, as shown in Enclosure 2.
2. The proposed license amendments do not result in a significant change in the types or a significant increase in the amounts of any effluent that may be released offsite. The proposed license amendments do not introduce any new equipment nor does it require any existing equipment or systems to perform a different type of function than they are presently designed to perform. The proposed license amendments do not alter the function of existing equipment and will ensure that the consequences of any previously evaluated accident do not increase. Therefore, CP&L has concluded that there will not be a significant increase in the types or amounts of any effluent that may be released offsite and, as such, does not involve irreversible environmental consequences beyond those already associated with normal operation.
3. These amendments do not result in an increase in individual or cumulative occupational radiation exposure.