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June 19, 2008

SERIAL: BSEP 08-0083
TSC-2008-03

10 CFR 50.90

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Subject: Brunswick Steam Electric Plant, Unit Nos. 1 and 2
Docket Nos. 50-325 and 50-324/License Nos. DPR-71 and DPR-62
License Amendment Request for Adoption of TSTF-484, Revision 0 - Use
of TS 3.10.1 for Scram Time Testing Activities.

Ladies and Gentlemen:

In accordance with the Code of Federal Regulations, Title 10, Part 50.90, Carolina Power & Light Company (CP&L), now doing business as Progress Energy Carolinas, Inc., is requesting a revision to the Technical Specifications (TS) for the Brunswick Steam Electric Plant (BSEP), Unit Nos. 1 and 2.

The proposed amendment would revise LCO 3.10.1, and the associated Bases, to expand its scope to include provisions for temperature excursions greater than 212 degrees F as a consequence of inservice leak and hydrostatic testing, and as a consequence of scram time testing initiated in conjunction with an inservice leak or hydrostatic test, while considering operational conditions to be in Mode 4. This change is consistent with NRC approved Revision 0 to Technical Specification Task Force (TSTF) Improved Standard Technical Specification Change Traveler, TSTF-484, "Use of TS 3.10.1 for Scram Time Testing Activities." The availability of the TS 3.10.1 revision was announced in the **Federal Register** on October 27, 2006 (71 FR 63050) as part of the consolidated line item improvement process (CLIP).

Enclosure 1 provides an evaluation of the proposed change. Enclosure 2 provides the existing Unit 1 TS pages marked-up to show the proposed changes. Identical changes are being requested for the Unit 2 TSs. Enclosures 3 and 4 provide the proposed TS changes in final typed format for Units 1 and 2, respectively. Enclosure 5 provides the existing Unit 1 TS Bases pages marked-up to show the proposed changes. Identical changes are being proposed for the Unit 2 TS Bases.

CP&L is providing, in accordance with 10 CFR 50.91(b), a copy of the proposed license amendment to the designated representative for the State of North Carolina.

CP&L requests approval of the proposed license amendment by January 16, 2009, and that once approved, the amendment shall be implemented within 60 days.

P.O. Box 10429
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A001
NRR

There are no regulatory commitments contained in this submittal. Please refer any questions regarding this submittal to Mr. Gene Atkinson, Supervisor - Licensing/Regulatory Programs, at (910) 457-2056.

I declare, under penalty of perjury, that the foregoing is true and correct. Executed on June 19, 2008.

Sincerely,



Benjamin C. Waldrep

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Enclosures:

1. Evaluation of Proposed License Amendment Request
2. Marked-up Technical Specification Pages - Unit 1
3. Typed Technical Specification Pages - Unit 1
4. Typed Technical Specification Pages - Unit 2
5. Marked-up Technical Specification Bases Pages - Unit 1 (For Information Only)

cc (with enclosures):

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Evaluation of Proposed License Amendment Request

Subject: License Amendment Request for Adoption of TSTF-484, Revision 0 - Use of TS 3.10.1 For Scram Time Testing Activities

1.0 Description

This letter is a request by Carolina Power & Light Company (CP&L), now doing business as Progress Energy Carolinas, Inc., to amend the Technical Specifications (TS) of Renewed Facility Operating Licenses DPR-71 and DPR-62 for the Brunswick Steam Electric Plant (BSEP), Unit Nos. 1 and 2.

The proposed amendment would revise LCO 3.10.1, and the associated Bases, to expand its scope to include provisions for temperature excursions greater than 212 degrees F as a consequence of inservice leak and hydrostatic testing, and as a consequence of scram time testing initiated in conjunction with an inservice leak or hydrostatic test, while considering operational conditions to be in Mode 4. This change is consistent with NRC approved Revision 0 to Technical Specification Task Force (TSTF) Improved Standard Technical Specification Change Traveler, TSTF-484, "Use of TS 3.10.1 for Scram Time Testing Activities." The availability of the TS 3.10.1 revision was announced in the **Federal Register** on October 27, 2006 (71 FR 63050) as part of the consolidated line item improvement process (CLIIP).

2.0 Proposed Change

Consistent with the NRC approved Revision 0 of TSTF-484, the proposed TS changes include a revised TS 3.10.1, "Inservice Leak and Hydrostatic Testing Operation." Proposed revisions to the TS Bases are also included in this application. Adoption of the TS Bases associated with TSTF-484, Revision 0 is an integral part of implementing this TS amendment. The changes to the affected TS Bases pages will be incorporated in accordance with the TS Bases Control Program.

This application is being made in accordance with the CLIIP. CP&L is not proposing variations or deviations from the TS changes described in TSTF-484, Revision 0, or the NRC staff's model safety evaluation (SE) published on October 27, 2006 (71 FR 63050) as part of the CLIIP Notice of Availability.

3.0 Background

The background for this application is adequately addressed by the NRC Notice of Availability published on October 27, 2006 (71 FR 63050).

4.0 Technical Analysis

CP&L has reviewed the safety evaluation (SE) published on October 27, 2006 (71 FR 63050) as part of the CLIIP Notice of Availability. CP&L has concluded that the technical justifications presented in the SE prepared by the NRC staff are applicable to BSEP Unit Nos. 1 and 2 and therefore justify this amendment for the incorporation of the proposed changes to the BSEP TS.

5.0 Regulatory Analysis

5.1 No Significant Hazards Consideration Determination

CP&L has reviewed the no significant hazards determination published on August 21, 2006 (71 FR 48561) as part of the CLIIP Notice for Comment. The no significant hazards determination was made available on October 27, 2006 (71 FR 63050) as part of the CLIIP Notice of Availability. CP&L has concluded that the determination presented in the notice is applicable to BSEP Unit Nos. 1 and 2 and the determination is hereby incorporated by reference to satisfy the requirements of 10 CFR 50.91(a).

5.2 Applicable Regulatory Requirements / Criteria

A description of the proposed TS change and its relationship to applicable regulatory requirements was provided in the NRC Notice of Availability published on October 27, 2006 (71 FR 63050).

6.0 Environmental Evaluation

CP&L has reviewed the environmental evaluation included in the safety evaluation (SE) published on October 27, 2006 (71 FR 63050) as part of the CLIIP Notice of Availability. CP&L has concluded that the staff's findings presented in that evaluation are applicable to BSEP Unit Nos. 1 and 2 and the evaluation is hereby incorporated by reference for this application.

7.0 References

1. **Federal Register** Notice, Notice of Availability published on October 27, 2006 (71 FR 63050).
2. **Federal Register** Notice, Notice for Comment published on August 21, 2006 (71 FR 48561)
3. TSTF-484 Revision 0, "Use of TS 3.10.1 for Scram Times Testing Activities"

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Enclosure 2

Markup of Technical Specification Pages - Unit 1

3.10 SPECIAL OPERATIONS

3.10.1 Inservice Leak and Hydrostatic Testing Operation

LCO 3.10.1 The average reactor coolant temperature specified in Table 1.1-1 for MODE 4 may be changed to "NA," and operation considered not to be in MODE 3; and the requirements of LCO 3.4.8, "Residual Heat Removal (RHR) Shutdown Cooling System—Cold Shutdown," may be suspended, to allow performance of an inservice leak or hydrostatic test, provided the following MODE 3 LCOs are met:

- a. LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation," Functions 1 and 3 of Table 3.3.6.2-1;
- b. LCO 3.6.4.1, "Secondary Containment";
- c. LCO 3.6.4.2, "Secondary Containment Isolation Dampers (SCIDs)"; and
- d. LCO 3.6.4.3, "Standby Gas Treatment (SGT) System."

APPLICABILITY: MODE 4 with average reactor coolant temperature > 212°F.

reactor coolant temperature > 212°F:

- For performance of an inservice leak or hydrostatic test,
- As a consequence of maintaining adequate pressure for an inservice leak or hydrostatic test, or
- As a consequence of maintaining adequate pressure for control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test,

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Enclosure 3

Typed Technical Specification Pages - Unit 1

3.10 SPECIAL OPERATIONS

3.10.1 Inservice Leak and Hydrostatic Testing Operation

LCO 3.10.1

The average reactor coolant temperature specified in Table 1.1-1 for MODE 4 may be changed to "NA," and operation considered not to be in MODE 3; and the requirements of LCO 3.4.8, "Residual Heat Removal (RHR) Shutdown Cooling System—Cold Shutdown," may be suspended, to allow reactor coolant temperature > 212°F:

- For performance of an inservice leak or hydrostatic test,
- As a consequence of maintaining adequate pressure for an inservice leak or hydrostatic test, or
- As a consequence of maintaining adequate pressure for control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test,

provided the following MODE 3 LCOs are met:

- a. LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation," Functions 1 and 3 of Table 3.3.6.2-1;
- b. LCO 3.6.4.1, "Secondary Containment";
- c. LCO 3.6.4.2, "Secondary Containment Isolation Dampers (SCIDs)"; and
- d. LCO 3.6.4.3, "Standby Gas Treatment (SGT) System."

APPLICABILITY: MODE 4 with average reactor coolant temperature > 212°F.

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Enclosure 4

Typed Technical Specification Pages - Unit 2

3.10 SPECIAL OPERATIONS

3.10.1 Inservice Leak and Hydrostatic Testing Operation

LCO 3.10.1

The average reactor coolant temperature specified in Table 1.1-1 for MODE 4 may be changed to "NA," and operation considered not to be in MODE 3; and the requirements of LCO 3.4.8, "Residual Heat Removal (RHR) Shutdown Cooling System—Cold Shutdown," may be suspended, to allow reactor coolant temperature > 212°F:

- For performance of an inservice leak or hydrostatic test,
- As a consequence of maintaining adequate pressure for an inservice leak or hydrostatic test, or
- As a consequence of maintaining adequate pressure for control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test,

provided the following MODE 3 LCOs are met:

- a. LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation," Functions 1 and 3 of Table 3.3.6.2-1;
- b. LCO 3.6.4.1, "Secondary Containment";
- c. LCO 3.6.4.2, "Secondary Containment Isolation Dampers (SCIDs); and
- d. LCO 3.6.4.3, "Standby Gas Treatment (SGT) System."

APPLICABILITY: MODE 4 with average reactor coolant temperature > 212°F.

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Enclosure 5

Marked-up Technical Specification Bases Pages - Unit 1
(For Information Only)

Bases Inserts

Insert 1

or to allow completing these reactor coolant pressure tests when the initial conditions do not require temperatures > 212°F. Furthermore, the purpose is to allow continued performance of control rod scram time testing required by SR 3.1.4.1 or SR 3.1.4.4 if reactor coolant temperatures exceed 212°F when the control rod scram time testing is initiated in conjunction with an inservice leak or hydrostatic test. These control rod scram time tests would be performed in accordance with LCO 3.10.4, Single Control Rod Withdrawal - Cold Shutdown," during MODE 4 operation.

Insert 2

However, even with required minimum reactor coolant temperatures < 212°F, maintaining RCS temperatures within a small band during the test can be impractical. Removal of heat addition from recirculation pump operation and reactor core decay heat is coarsely controlled by control rod drive hydraulic system flow and reactor water cleanup system non-regenerative heat exchanger operation. Test conditions are focused on maintaining a steady state pressure, and tightly limited temperature control poses an unnecessary burden on the operator and may not be achievable in certain instances.

Insert 3

The RCS hydrostatic and/or RCS system leakage tests require increasing reactor pressure to approximately 1050 psig. Scram time testing required by SR 3.1.4.1 and SR 3.1.4.4 requires reactor pressures \geq 800 psig. Other testing may be performed in conjunction with the allowances for inservice leak or hydrostatic tests and control rod scram time tests.

Insert 4

during, or as a consequence of, hydrostatic or leak testing, or as a consequence of control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test,

Insert 5

Additionally, even with required minimum reactor coolant temperatures < 212°F, RCS temperatures may drift above 212°F during the performance of inservice leak and hydrostatic testing or during subsequent control rod scram time testing, which is typically performed in conjunction with inservice leak and hydrostatic testing. While this Special Operations LCO is provided for inservice leak and hydrostatic testing, and for scram time testing initiated in conjunction with an inservice leak or hydrostatic test, parallel performance of other tests and inspections is not precluded.

Insert 6

and for control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test.

Insert 7

, or as a consequence of, hydrostatic or leak testing, or as a consequence of control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test,

B 3.10 SPECIAL OPERATIONS

B 3.10.1 Inservice Leak and Hydrostatic Testing Operation

BASES

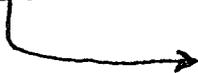
BACKGROUND

The purpose of this Special Operations LCO is to allow certain reactor coolant pressure tests to be performed in MODE 4 when the metallurgical characteristics of the reactor pressure vessel (RPV) or plant temperature control capabilities during these tests require the pressure testing at temperatures > 212°F (normally corresponding to MODE 3) **Insert 1**

Inservice hydrostatic testing and system leakage pressure tests required by Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Ref. 1) are performed prior to the reactor going critical after a refueling outage. Recirculation pump operation, decay heat, and a water solid RPV are used to achieve the necessary temperatures and pressures required for these tests. The minimum temperatures (at the required pressures) allowed for these tests are determined from the RPV pressure and temperature (P/T) limits required by LCO 3.4.9, "Reactor Coolant System (RCS) Pressure and Temperature (P/T) Limits." These limits are conservatively based on the fracture toughness of the reactor vessel, taking into account anticipated vessel neutron fluence.

With increased reactor vessel fluence over time, the minimum allowable vessel temperature increases for a given pressure. Periodic updates to the RCS P/T limit curves are performed as necessary, based upon the results of analyses of irradiated surveillance specimens removed from the vessel. Hydrostatic and leak testing may eventually be required with minimum reactor coolant temperatures > 212°F. **Insert 2**

Insert 3 as new paragraph



Insert 4

APPLICABLE

SAFETY ANALYSES

Allowing the reactor to be considered in MODE 4 **during hydrostatic or leak testing**, when the reactor coolant temperature is > 212°F, effectively provides an exception to MODE 3 requirements, including OPERABILITY of primary containment and the full complement of redundant Emergency Core Cooling Systems. Since the **hydrostatic or leak** tests are performed water solid, at low decay heat values, and near MODE 4 conditions, the stored energy in the reactor core will be very low. Under these conditions, the potential for failed fuel and a subsequent increase in

(continued)

BASES

APPLICABLE
SAFETY ANALYSES
(continued)

coolant activity above the LCO 3.4.6, "RCS Specific Activity," limits are minimized. In addition, the secondary containment will be OPERABLE, in accordance with this Special Operations LCO, and will be capable of handling any airborne radioactivity or steam leaks that could occur during the performance of hydrostatic or leak testing. The required pressure testing conditions provide adequate assurance that the consequences of a steam leak will be conservatively bounded by the consequences of the postulated main steam line break outside of primary containment described in References 2 and 3. Therefore, these requirements will conservatively limit radiation releases to the environment.

In the event of a large primary system leak, the reactor vessel would rapidly depressurize, allowing the low pressure core cooling systems to operate. The capability of the low pressure coolant injection and core spray subsystems, as required in MODE 4 by LCO 3.5.2, "ECCS—Shutdown," would be more than adequate to keep the core flooded under this low decay heat load condition. Small system leaks would be detected by leakage inspections before significant inventory loss occurred.

For the purposes of this test, the protection provided by normally required MODE 4 applicable LCOs, in addition to the secondary containment requirements required to be met by this Special Operations LCO, will ensure acceptable consequences during normal hydrostatic test conditions and during postulated accident conditions.

As described in LCO 3.0.7, compliance with Special Operations LCOs is optional, and therefore, no criteria of 10 CFR 50.36(c)(2)(ii) (Ref. 4) apply. Special Operations LCOs provide flexibility to perform certain operations by appropriately modifying requirements of other LCOs. A discussion of the criteria satisfied for the other LCOs is provided in their respective Bases.

LCO

As described in LCO 3.0.7, compliance with this Special Operations LCO is optional. Operation at reactor coolant temperatures > 212°F can be in accordance with Table 1.1-1 for MODE 3 operation without meeting this Special Operations LCO or its ACTIONS. This option may be required

(continued)

*No changes to this page,
included for information.*

BASES

LCO
(continued)

due to P/T limits, however, which require testing at temperatures > 212°F, while performance of inservice leak and hydrostatic testing results in the inoperability of subsystems required when > 212°F (i.e., MODE 3). ← **Insert 5**

If it is desired to perform these tests while complying with this Special Operations LCO, then the MODE 4 applicable LCOs and specified MODE 3 LCOs must be met. This Special Operations LCO allows changing Table 1.1-1 temperature limits for MODE 4 to "NA" and suspending the requirements of LCO 3.4.8, "Residual Heat Removal (RHR) Shutdown Cooling System—Cold Shutdown." The additional requirements for secondary containment LCOs to be met will provide sufficient protection for operations at reactor coolant temperatures > 212°F for the purpose of performing **either** an inservice leak or hydrostatic test. ← **Insert 6**

This LCO allows primary containment to be open for frequent unobstructed access to perform inspections, and for outage activities on various systems to continue consistent with the MODE 4 applicable requirements **that are in effect immediately prior to and immediately after this operation.**

, or as a consequence of,

APPLICABILITY

The MODE 4 requirements may only be modified for the performance of **inservice leak or hydrostatic tests**, so that these operations can be considered as in MODE 4, even though the reactor coolant temperature is > 212°F. The additional requirement for secondary containment OPERABILITY according to the imposed MODE 3 requirements provides conservatism in the response of the unit to any event that may occur. Operations in all other MODES are unaffected by this LCO.

Insert 7

ACTIONS

A Note has been provided to modify the ACTIONS related to inservice leak and hydrostatic testing operation. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the

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