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Serial: BSEP 18-0001  
LCP-0063

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  
Renewed Facility Operating License Nos. DPR-71 and DPR-62  
Docket Nos. 50-325 and 50-324  
Application to Revise Technical Specifications to Adopt TSTF-551, "Revise  
Secondary Containment Surveillance Requirements"

Ladies and Gentlemen:

Pursuant to 10 CFR 50.90, Duke Energy Progress, LLC (Duke Energy), is submitting a request for an amendment to the Technical Specifications (TS) for the Brunswick Steam Electric Plant (BSEP), Unit Nos. 1 and 2.

The proposed change revises TS 3.6.4.1, "Secondary Containment," Surveillance Requirement (SR) 3.6.4.1.2. SR 3.6.4.1.2 is modified to acknowledge that Secondary Containment access openings may be open for entry and exit.

Enclosure 1 provides a description and assessment of the proposed changes. Enclosures 2 and 3 provide the existing TS pages, for Units 1 and 2, marked to show the proposed change. Enclosures 4 and 5 provide revised (i.e., typed) TS pages. Enclosure 6 provides existing Unit 1 TS Bases pages marked to show associated TS Bases changes and is provided for information only.

Approval of the proposed amendment is requested by January 23, 2019. Once approved, the amendment shall be implemented within 120 days.

In accordance with 10 CFR 50.91, Duke Energy is providing a copy of the proposed license amendment to the designated representative for the State of North Carolina.

This document contains no regulatory commitments.

Please refer any questions regarding this submittal to Mr. Lee Grzeck, Manager - Regulatory Affairs, at (910) 832-2487.

I declare, under penalty of perjury, that the foregoing is true and correct. Executed on  
January 23, 2018.

Sincerely,

A handwritten signature in black ink, appearing to read 'W. R. Gideon', written in a cursive style.

William R. Gideon

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Enclosures:

1. Description and Assessment
2. Proposed Technical Specification Change (Mark-Up) - Unit 1
3. Proposed Technical Specification Change (Mark-Up) - Unit 2
4. Revised Technical Specification Page - Unit 1
5. Revised Technical Specification Page - Unit 2
6. Proposed Technical Specification Bases Changes (Mark-Up) - Unit 1 (For Information Only)

cc (with Enclosures):

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## **Description and Assessment**

### **1.0 Description**

The proposed change revises Technical Specification (TS) 3.6.4.1, "Secondary Containment," Surveillance Requirement (SR) 3.6.4.1.2. SR 3.6.4.1.2 is modified to acknowledge that Secondary Containment access openings may be open for entry and exit.

### **2.0 Assessment**

#### **2.1 Applicability of Published Safety Evaluation**

Duke Energy Progress, LLC (Duke Energy), has reviewed the Safety Evaluation for TSTF-551 provided to the Technical Specifications Task Force in a letter dated September 21, 2017. This review included a review of the NRC staff's evaluation, as well as the information provided in TSTF-551. Duke Energy has concluded that the justifications presented in TSTF-551 and the Safety Evaluation prepared by the NRC staff are applicable to the Brunswick Steam Electric Plant (BSEP), Unit Nos. 1 and 2, and justify this amendment for the incorporation of the changes to the BSEP TS.

The Loss-Of-Coolant Accident (LOCA) radiological consequence analysis for BSEP, Units 1 and 2, was approved by the NRC on March 2, 2006 (i.e., Accession No. ML060540205), and is documented in Updated Final Safety Analysis Report (UFSAR) Section 15.6.4, "Loss-of-Coolant Accident (LOCA)." Duke Energy has confirmed that the brief, inadvertent, simultaneous opening of both an inner and outer personnel access door during normal entry and exit conditions, and their prompt closure by normal means, is bounded by the radiological dose consequence analysis. In the unlikely event that a LOCA would occur when both personnel access doors are open for entry or exit, the brief time required to close one of the doors is small compared to the 10 minutes assumed in the accident analysis for reducing the post-accident Secondary Containment pressure to 0.25 inch of vacuum water gauge, and will not result in an increase in any onsite or offsite dose.

The Fuel Handling Accident (FHA) radiological consequence analysis for BSEP, Units 1 and 2, was approved by the NRC on March 14, 2002 (i.e., Accession No. ML020790479) and is documented in UFSAR Section 15.7.1, "Refueling Accident." The analysis of this event assumes that all leakage is immediately released to the environment from Secondary Containment without holdup, plateout, or dilution. Additionally, the analysis does not credit Standby Gas Treatment System operation. Therefore, the proposed change will not result in an increase in any onsite or offsite dose.

#### **2.2 Variations**

Duke Energy is proposing the following variations from the TS changes described in the TSTF-551 or the applicable parts of the NRC staff's Safety Evaluation. These variations do not affect the applicability of TSTF-551 or the NRC staff's Safety Evaluation to the proposed license amendment.

- The BSEP TSs do not contain an SR equivalent to SR 3.6.4.1.1 modified by TSTF-551. Therefore, the addition of the SR 3.6.4.1.1 Note is not applicable.

- The BSEP TSs do not contain an SR equivalent to SR 3.6.4.1.4 modified by TSTF-551. Therefore, the revision of the SR 3.6.4.1.4 is not applicable.
- SR 3.6.4.1.2 of the BSEP TSs is equivalent to Standard Technical Specification (STS) SR 3.6.4.1.3 modified by TSTF-551. Therefore, the changes made to STS SR 3.6.4.1.3 are applied to BSEP TS SR 3.6.4.1.2.
- The Traveler and Safety Evaluation discuss the applicable regulatory requirements and guidance, including the 10 CFR 50, Appendix A, General Design Criteria (GDC). As stated in the NRC's "Safety Evaluation of the Brunswick Steam Electric Station Units 1 and 2," dated November 1973, BSEP meets the intent of the GDC, published in the Federal Register on May 21, 1971, as Appendix A to 10 CFR Part 50. This difference does not alter the conclusion that the proposed change is applicable to BSEP.

### **3.0 Regulatory Analysis**

#### **3.1 No Significant Hazards Consideration Analysis**

Duke Energy requests adoption of TSTF-551, "Revise Secondary Containment Surveillance Requirements," which is an approved change to the Standard Technical Specifications (STS), into the Brunswick Steam Electric Plant (BSEP), Unit Nos. 1 and 2, Technical Specifications (TS). The proposed change revises TS Surveillance Requirement (SR) 3.6.4.1.2. SR 3.6.4.1.2 is modified to acknowledge that Secondary Containment access openings may be open for entry and exit.

Duke Energy has evaluated the proposed change against the criteria of 10 CFR 50.92(c) to determine if the proposed change results in any significant hazards. The following is the evaluation of each of the 10 CFR 50.92(c) criteria:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No

The proposed change addresses conditions during which Secondary Containment SR 3.6.4.1.2 is not met. The Secondary Containment is not an initiator of any accident previously evaluated. As a result, the probability of any accident previously evaluated is not increased. The consequences of an accident previously evaluated while utilizing the proposed change is no different than the consequences of an accident while utilizing the existing eight hour Completion Time for an inoperable Secondary Containment. As a result, the consequences of an accident previously evaluated are not significantly increased.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

The proposed change does not alter the protection system design, create new failure modes, or change any modes of operation. The proposed change does not involve a physical alteration of the plant; and no new or different kind of equipment will be installed. Consequently, there are no new initiators that could result in a new or different kind of accident.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No

The proposed change addresses conditions during which Secondary Containment SR 3.6.4.1.2 is not met. The allowance for both an inner and outer Secondary Containment door to be open simultaneously for entry and exit does not affect the safety function of the Secondary Containment as the doors are promptly closed after entry or exit, thereby restoring the Secondary Containment boundary.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, Duke Energy concludes that the proposed change presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

### 3.2 Conclusions

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

### 4.0 Environmental Evaluation

The proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

## Proposed Technical Specification Change (Mark-Up) - Unit 1

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	C.2 Initiate action to suspend OPDRVs.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.4.1.1 Verify all secondary containment equipment hatches are closed and sealed.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.2 Verify one secondary containment access door is closed in each access opening, <b>except when the access opening is being used for entry and exit.</b>	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.3 Verify each SGT subsystem can maintain $\geq 0.25$ inch of vacuum water gauge in the secondary containment for 1 hour at a flow rate $\leq 3000$ cfm.	In accordance with the Surveillance Frequency Control Program

## Proposed Technical Specification Change (Mark-Up) - Unit 2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	C.2 Initiate action to suspend OPDRVs.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.4.1.1 Verify all secondary containment equipment hatches are closed and sealed.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.2 Verify one secondary containment access door is closed in each access opening, <b>except when the access opening is being used for entry and exit.</b>	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.3 Verify each SGT subsystem can maintain $\geq 0.25$ inch of vacuum water gauge in the secondary containment for 1 hour at a flow rate $\leq 3000$ cfm.	In accordance with the Surveillance Frequency Control Program

Revised Technical Specification Page - Unit 1

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	C.2 Initiate action to suspend OPDRVs.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.4.1.1 Verify all secondary containment equipment hatches are closed and sealed.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.2 Verify one secondary containment access door is closed in each access opening, except when the access opening is being used for entry and exit.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.3 Verify each SGT subsystem can maintain $\geq 0.25$ inch of vacuum water gauge in the secondary containment for 1 hour at a flow rate $\leq 3000$ cfm.	In accordance with the Surveillance Frequency Control Program

Revised Technical Specification Page - Unit 2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	C.2 Initiate action to suspend OPDRVs.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.4.1.1 Verify all secondary containment equipment hatches are closed and sealed.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.2 Verify one secondary containment access door is closed in each access opening, except when the access opening is being used for entry and exit.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.3 Verify each SGT subsystem can maintain $\geq 0.25$ inch of vacuum water gauge in the secondary containment for 1 hour at a flow rate $\leq 3000$ cfm.	In accordance with the Surveillance Frequency Control Program

Proposed Technical Specification Bases Changes (Mark-Up) - Unit 1  
(For Information Only)

BASES

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ACTIONS

A.1 (continued)

and 3. This time period also ensures that the probability of an accident (requiring secondary containment OPERABILITY) occurring during periods where secondary containment is inoperable is minimal.

B.1 and B.2

If secondary containment cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

C.1 and C.2

Movement of recently irradiated fuel assemblies in the secondary containment and OPDRVs can be postulated to cause significant fission product release to the secondary containment. In such cases, the secondary containment is the only barrier to release of fission products to the environment. Therefore, movement of recently irradiated fuel assemblies must be immediately suspended if the secondary containment is inoperable. Suspension of this activity shall not preclude completing an action that involves moving a component to a safe position. Also, action must be immediately initiated to suspend OPDRVs to minimize the probability of a vessel draindown and subsequent potential for fission product release. Actions must continue until OPDRVs are suspended.

LCO 3.0.3 is not applicable while in MODE 4 or 5. However, since recently irradiated fuel assembly movement can occur in MODE 1, 2, or 3, Required Action C.1 has been modified by a Note stating that LCO 3.0.3 is not applicable. If moving recently irradiated fuel assemblies while in MODE 4 or 5, LCO 3.0.3 would not specify any action. If moving recently irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, in either case, inability to suspend movement of recently irradiated fuel assemblies would not be a sufficient reason to require a reactor shutdown.

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SURVEILLANCE  
REQUIREMENTS

SR 3.6.4.1.1 ~~and SR 3.6.4.1.2~~

Verifying that secondary containment equipment hatches ~~and one secondary containment access door in each access opening~~ are closed ensures that the infiltration of outside air of such magnitude as to prevent maintaining the desired negative pressure does not occur ~~and~~. ~~Verifying that all such openings are closed~~ provides adequate assurance that exfiltration from the secondary containment will not occur. In this

(continued)

BASES

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SURVEILLANCE  
REQUIREMENTS

SR 3.6.4.1.1 (continued)

application, the term "sealed" has no connotation of leak tightness. Maintaining secondary containment OPERABILITY requires verifying one door in each access opening is closed. The Surveillance ~~are~~ Frequencies ~~are~~ Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.6.4.1.2

Verifying that one secondary containment access door in each access opening is closed provides adequate assurance that exfiltration from the secondary containment will not occur. An access opening contains at least one inner and one outer door. The intent is to not breach the secondary containment, which is achieved by maintaining the inner or outer portion of the barrier closed except when the access opening is being used for entry and exit. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.6.4.1.3

The SGT System exhausts the secondary containment atmosphere to the environment through appropriate treatment equipment. To ensure that fission products are treated, SR 3.6.4.1.3 verifies that the SGT System will establish and maintain a negative pressure in the secondary containment. This is confirmed by demonstrating that one SGT subsystem can maintain  $\geq 0.25$  inches of vacuum water gauge for 1 hour at a flow rate  $\leq 3000$  cfm. The 1 hour test period allows secondary containment to be in thermal equilibrium at steady state conditions. Therefore, this test is used to ensure secondary containment boundary integrity. Since this SR is a secondary containment test, it need not be performed with each SGT subsystem. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

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REFERENCES

1. NEDC-32466P, Power Uprate Safety Analysis Report for Brunswick Steam Electric Plant Units 1 and 2, September 1995.
  2. UFSAR, Section 15.6.4.
  3. Not used.
  4. 10 CFR 50.36(c)(2)(ii).
  5. 10 CFR 50.36(c) (2) (ii).
  6. Regulatory Guide 1.52, Revision 1.
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