



**CP&L**

A Progress Energy Company

John S. Keenan  
Vice President  
Brunswick Nuclear Plant

**SEP 16 2002**

SERIAL: BSEP 02-0146  
TSC-2002-07

10 CFR 50.90

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

SUBJECT: Brunswick Steam Electric Plant, Unit No. 2  
Docket No. 50-324/License No. DPR-62  
Request For License Amendment  
Revision to License Condition - Alternative Source Term

REFERENCES: Letter from the U. S. Nuclear Regulatory Commission to Mr. John S. Keenan, "Issuance Of Amendment Re: Alternative Source Term," dated May 30, 2002 (ML021480483).

Ladies and Gentlemen:

In accordance with the Code of Federal Regulations, Title 10, Parts 50.90 and 2.101, Carolina Power & Light (CP&L) Company is requesting a revision to the Technical Specifications (TSs) for the Brunswick Steam Electric Plant (BSEP), Unit No. 2. The proposed license amendment revises a license condition, added to Appendix B of the BSEP Unit 2 TSs in Amendment 246, which approved the implementation of Alternative Source Term. The affected license condition currently requires two check valves (i.e., MVD-V5008 and MVD-V5009) to be added to the facility check valve program. As a result of further modification development, it has been determined that only one check valve will be installed (i.e., MVD-V5009) by the Unit 2 alternate leakage treatment piping modification. The proposed license amendment revises the affected license condition to require MVD-V5009 be added to the facility check valve program.

CP&L has evaluated the proposed change in accordance with 10 CFR 50.91(a)(1), using the criteria in 10 CFR 50.92(c), and determined that this change involves no significant hazards considerations.

The planned Unit 2 alternate leakage treatment piping modification will be installed during the Unit 2 Cycle 16 Refueling Outage (i.e., B216R1, currently scheduled to begin in March 2003). To support this schedule, CP&L requests that this amendment be issued by February 28, 2003. Once approved, the amendment shall be implemented within 90 days.

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

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Please refer any questions regarding this submittal to Mr. Edward T. O'Neil,  
Manager - Regulatory Affairs, at (910) 457-3512.

Sincerely,

*C. J. Gannon for JSK*

John S. Keenan

MAT/mat

Enclosures:

1. Evaluation of Proposed License Amendment Request
2. Marked-up License Condition - Unit 2
3. List of Regulatory Commitments

C. J. Gannon, 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.

*Dean S. Man*  
Notary (Seal)

My commission expires: 8/29/04



cc (with enclosures):

U. S. Nuclear Regulatory Commission, Region II  
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## Evaluation of Proposed License Amendment Request

Subject: Unit 2, Appendix B, "Additional Conditions"  
Alternative Source Term License Condition

### 1.0 Description

This letter is a request to amend Operating License DPR-62 for the Brunswick Steam Electric Plant (BSEP), Unit No. 2.

The proposed change revises a license condition, added to Appendix B, "Additional Conditions," of the Unit 2 Technical Specifications (TSs) in Amendment 246 (i.e., Reference 1), which approved the implementation of Alternative Source Term.

### 2.0 Proposed Change

Currently, the following license condition is contained in Appendix B of the Unit 2 TSs.

<u>Amendment Number</u>	<u>Additional Conditions</u>	<u>Implementation Date</u>
246	The licensee shall, consistent with the licensee's letter dated September 27, 2001 (i.e., Serial: BSEP 01-0112), include ALT path check valves MVD-V5008 and MDV-V5009 in the facility check valve program.	Prior to startup following the Unit 2 Cycle 16 Refueling Outage

As a result of further modification development, it has been determined that only one check valve will be installed (i.e., MVD-V5009) by the Unit 2 alternate leakage treatment piping modification. The proposed license amendment revises the affected license condition, as follows, to require MVD-V5009 be added to the facility check valve program.

<u>Amendment Number</u>	<u>Additional Conditions</u>	<u>Implementation Date</u>
<i>Amendment Number</i>	The licensee shall include ALT path check valve MVD-V5009 in the facility check valve program.	Prior to startup following the Unit 2 Cycle 16 Refueling Outage

In summary, the proposed change revises a license condition, contained in Appendix B of the Unit 2 TSs, to reflect modification being made to support implementation of Alternative Source Term (AST) on Unit 2. The modification is being made, in accordance with the provisions of 10 CFR 50.59, to ensure seismic ruggedness of the alternate leakage treatment (ALT) piping and appendages. As a result of further modification development, it has been determined that only one check valve will be installed (i.e., MVD-V5009) by the Unit 2 ALT piping modification. The proposed license amendment revises the affected license condition to require MVD-V5009 be added to the facility check valve program.

There are no changes to any TS Bases required as a result of this amendment.

### **3.0 Background**

On August 1, 2001, Carolina Power & Light (CP&L) Company submitted a license amendment application to allow a full-scope implementation of an AST for Units 1 and 2 (i.e., Reference 2). On September 27, 2001, CP&L supplemented the amendment request with additional information regarding the seismic ruggedness of the proposed ALT path (i.e., Reference 3). Specifically, the September 27, 2001, submittal provided a detailed description of the ALT drain path and the basis for its functional reliability. Based, in part, on discussions provided in the September 27, 2001, submittal and a subsequent request for license conditions dated May 28, 2002 (i.e., Reference 4), the NRC issued Amendment 246 which approved the full-scope implementation of AST for Unit 2 and included a license condition to include ALT path check valves MVD-V5008 and MVD-V5009 in the facility check valve program.

For Unit 1, two check valves (i.e., 1-MVD-V5008 and 1-MVD-V5009) were installed, during the March 2002, Unit 1 Refueling Outage 13, on lines connecting to the main steam drains header which leads to the condenser. Figure 1 provides a diagram of the Unit 1 piping layout. Installation of these valves limited the extent of piping which was within the post-LOCA ALT pathway pressure boundary. Check valves 1-MVD-V5008 and 1-MVD-V5009 have been added to the plant check valve program to ensure their reliability.

After completion of the Unit 1 modification, a more detailed engineering evaluation of the planned March 2003, Unit 2 Cycle 16 Refueling Outage ALT path modification began. As a result of this work, it has been determined that differences between the Unit 1 and Unit 2 main steam line isolation valve drain piping, which will be within the ALT pathway pressure boundary post-LOCA, obviate the need to install check valve MVD-V5008. This is because the Unit 2 steam bypass system was designed for full bypass capability and thus has two steam bypass chests; whereas Unit 1 has only one steam bypass chest. The Unit 2 design includes a drain line from the steam bypass chest, which ties into the same line that on Unit 1 was isolated post-LOCA by use of the 1-MVD-V5008 valve. Figure 2 provides a diagram of the Unit 2 piping layout. Since the entire line is required to be seismically verified, up to and including the steam bypass chest, there was no benefit in installing the new check valve MVD-V5008 on Unit 2.

The proposed revision to the affected Unit 2 license condition eliminates reference to CP&L's September 27, 2001, submittal and the requirement to include MVD-V5008 in the facility check valve program.

#### **4.0 Technical Analysis**

As discussed in CP&L's September 27, 2001, submittal, Appendix A of Regulatory Guide 1.183, "Alternative Radiological Source Terms For Evaluating Design Basis Accidents At Nuclear Power Reactors," dated July 2000 (Reference 5), provides assumptions, acceptable to the NRC, for evaluation of the radiological consequences of loss-of-coolant accidents (LOCAs) using ASTs. For Boiling Water Reactor (BWR) main steam line isolation valve (MSIV) leakage, Regulatory Guide 1.183 allows credit for a reduction in MSIV releases due to holdup and deposition in main steam piping downstream of the MSIVs and in the main condenser, including the treatment of air ejector effluent by offgas systems, if the components and piping systems used in the release path are capable of performing their safety function during and following a safe shutdown earthquake (SSE). Appendix A also states that an acceptable model for evaluating reduction of MSIV releases is provided in General Electric Nuclear Energy Topical Report NEDC-31858P-A, Revision 2, "BWROG Report for Increasing MSIV Leakage Rate Limits and Elimination of Leakage Control Systems," (Reference 6). Modifications being made to the Unit 2 ALT path will ensure the seismic ruggedness of the ALT and backup ALT paths and will ensure the ALT paths will remain functional in the event of a design basis earthquake at BSEP.

CP&L has performed an evaluation of the Unit 2 ALT path modification, in accordance with the provisions of 10 CFR 50.59, and determined that the modification can be implemented without prior NRC approval. As such, the requested amendment merely aligns the wording of the current license condition with the design of the Unit 2 ALT path modification. The original intent of the license condition was to ensure that check valves being installed as a result of the modification would be included in the facility check valve program. This intent is maintained by the proposed license condition.

#### **5.0 Regulatory Safety Analysis**

##### **5.1 No Significant Hazards Consideration**

CP&L has evaluated whether or not a significant hazards consideration is involved with the proposed amendments by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

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

Response: No

The proposed change revises a license condition, added to Appendix B, "Additional Conditions," of the Unit 2 Technical Specifications (TSs) in Amendment 246, which

approved the implementation of Alternative Source Term. This license condition currently requires that alternate leakage treatment (ALT) path check valves MVD-V5008 and MDV-V5009 be included in the facility check valve program. Differences between the Unit 1 and Unit 2 main steam line isolation valve drain piping, which will be within the ALT pathway pressure boundary after a loss-of-coolant-accident (LOCA), obviate the need to install check valve MVD-V5008. This is because the Unit 2 steam bypass system was designed for full bypass capability and thus has two steam bypass chests; whereas Unit 1 has only one steam bypass chest. The Unit 2 design includes a drain line from the steam bypass chest, which ties into the same line that on Unit 1 was isolated post-LOCA by use of the 1-MVD-V5008 valve. Since, for Unit 2, the entire line is required to be seismically verified, up to and including the steam bypass chest, there was no benefit in installing the new check valve MVD-V5008 on Unit 2.

CP&L has performed an evaluation of the Unit 2 ALT path modification, in accordance with the provisions of 10 CFR 50.59, and determined that the modification can be implemented without prior NRC approval. As such, the requested amendment merely aligns the wording of the current license condition with the design of the Unit 2 ALT path modification. The original intent of the license condition was to ensure that check valves being installed as a result of the modification would be included in the facility check valve program. This intent is maintained by the proposed license condition. 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

As stated above, CP&L has performed an evaluation of the Unit 2 ALT path modification, in accordance with the provisions of 10 CFR 50.59, and determined that the modification can be implemented without prior NRC approval. The requested amendment merely aligns the wording of the current license condition with the design of the Unit 2 ALT path modification. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

Response: No

The proposed change revises a license condition, added to Appendix B, Unit 2 TSs in Amendment 246. Therefore, the proposed change does not involve a significant reduction in a margin of safety. This license condition currently requires that ALT path check valves MVD-V5008 and MDV-V5009 be include in the facility check valve program. The proposed revision to the affected Unit 2 license condition eliminates reference to a CP&L September 27, 2001, submittal and the requirement to include MVD-V5008 in the facility

check valve program. The requested amendment merely aligns the wording of the current license condition with the design of the Unit 2 ALT path modification which has been evaluated, in accordance with the provisions of 10 CFR 50.59, and it has been determined that the modification can be implemented without prior NRC approval. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, CP&L concludes that the proposed amendment 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.

## 5.2 Applicable Regulatory Requirements/Criteria

The proposed change has been evaluated to determine whether applicable regulations and requirements continue to be met. The modifications being made to the Unit 2 ALT path will ensure the seismic ruggedness of the ALT and backup ALT paths and will ensure the ALT paths will remain functional in the event of a design basis earthquake at BSEP. The Unit 2 path modification has been evaluated, in accordance with the provisions of 10 CFR 50.59, and it has been determined that the modification can be implemented without prior NRC approval. The requested amendment merely aligns the wording of the current license condition with the design of the Unit 2 ALT path modification. Therefore, CP&L has determined that the proposed change does not require any exemptions or relief from regulatory requirements, other than the license condition change.

## 6.0 Environmental Considerations

A review has determined that 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 effluent 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.

## 7.0 References

1. Letter from the U. S. Nuclear Regulatory Commission to Mr. John S. Keenan, "Issuance Of Amendment Re: Alternative Source Term," dated May 30, 2002 (ML021480483).
2. Letter from Mr. John S. Keenan to the U. S. Nuclear Regulatory Commission, "Request for License Amendments - Alternative Source Term," Serial: BSEP 01-0063, dated August 1, 2001 (ML012180234).



3. Letter from Mr. John S. Keenan to the U. S. Nuclear Regulatory Commission, "Additional Information in Support of Request for License Amendments to Adopt Alternative Radiological Source Term," Serial: BSEP 01-0112, dated September 27, 2001 (ML012750335).
4. Letter from Mr. John S. Keenan to the U. S. Nuclear Regulatory Commission, "License Conditions Supporting Request for License Amendments to Adopt Alternative Radiological Source Term," Serial: BSEP 02-0109, dated May 28, 2002 (ML021680443).
5. Regulatory Guide 1.183, "Alternative Radiological Source Terms For Evaluating Design Basis Accidents At Nuclear Power Reactors," dated July 2000.
6. General Electric Nuclear Energy Topical Report NEDC-31858P-A, Revision 2, "BWROG Report for Increasing MSIV Leakage Rate Limits and Elimination of Leakage Control Systems."

Figure 1  
Unit 1 MSIV Seismic Verification Boundary

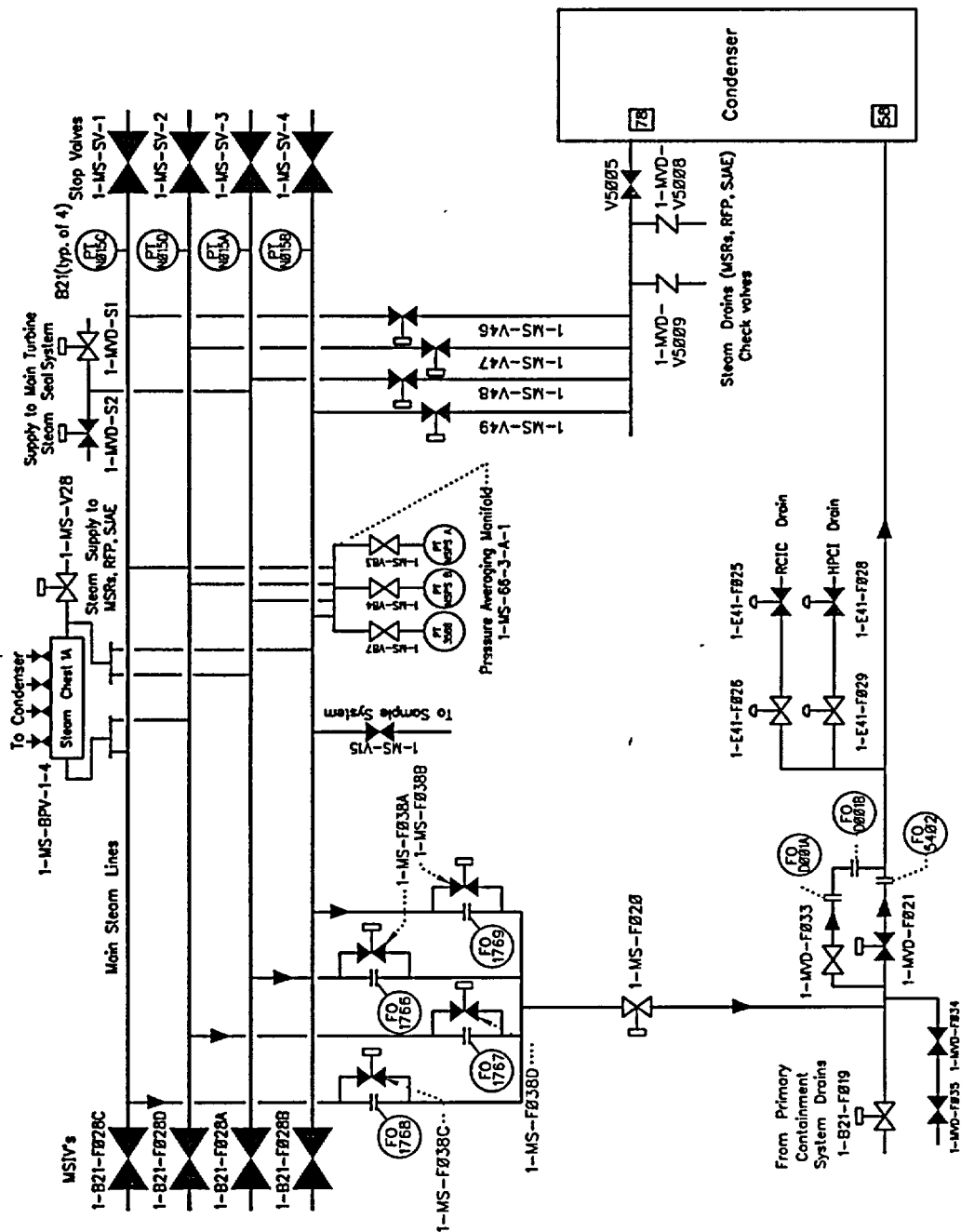
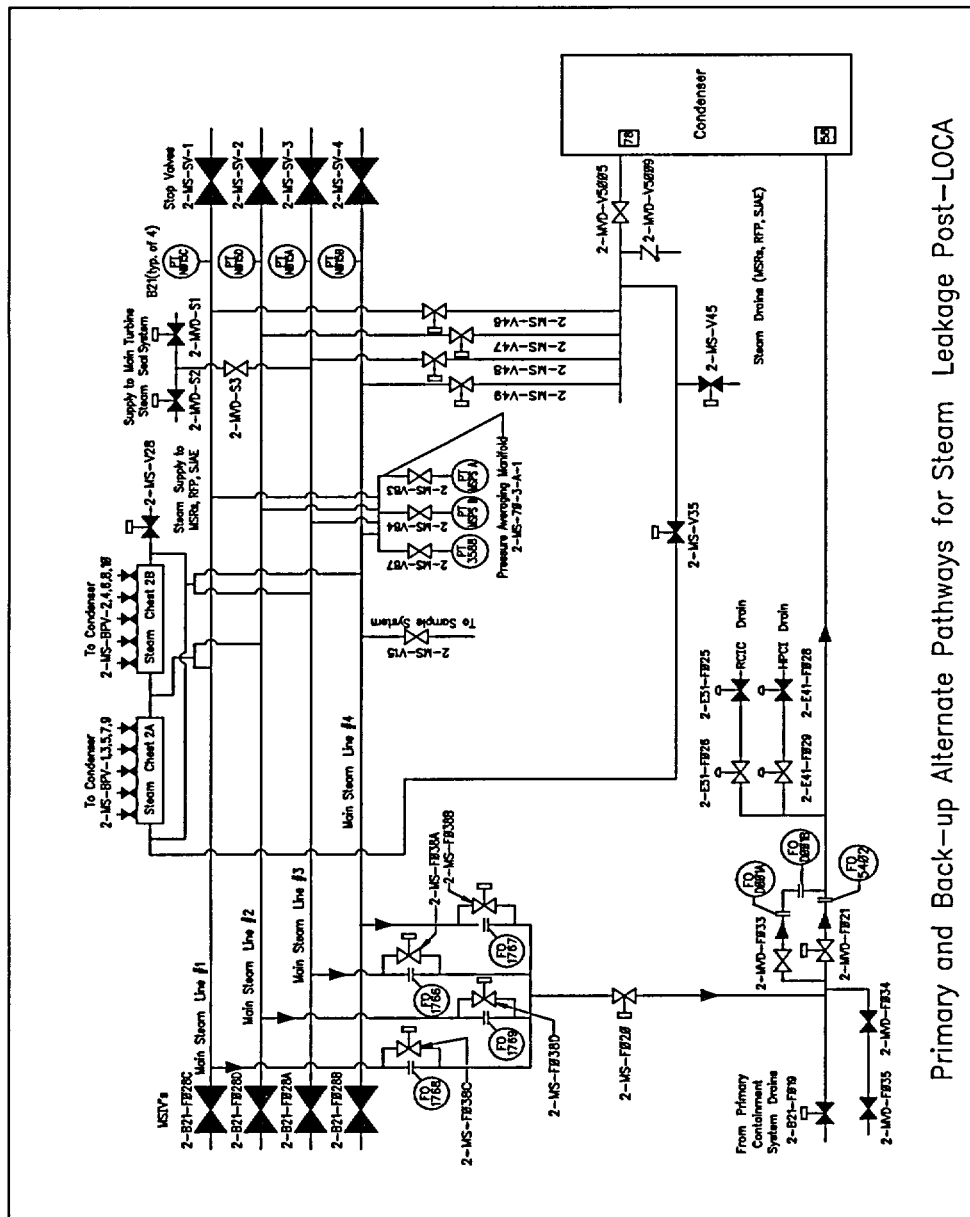


Figure 2  
 Unit 2 MSIV Seismic Verification Boundary



Primary and Back-up Alternate Pathways for Steam Leakage Post-LOCA

BSEP 02-0146  
Enclosure 2

**Marked-up License Condition - Unit 2**

## APPENDIX B

### Additional Conditions

<u>Amendment Number</u>	<u>Additional Conditions</u>	<u>Implementation Date</u>
233	The licensee is authorized to relocate certain requirements included in Appendix A and the former Appendix B to licensee-controlled documents. Implementation of this amendment shall include the relocation of these requirements to the appropriate documents, as described in the licensee's letters dated November 1, 1996, October 13, 1997, February 26, 1998, April 24, 1998, and May 22, 1998, evaluated in the NRC staff's Safety Evaluation enclosed with this amendment.	This amendment is effective immediately and shall be implemented within 90 days of the date of this amendment.
233	The End-Of-Cycle Recirculation Pump Trip system instrumentation shall be maintained inoperable (i.e. manually bypassed) during Mode 1, when thermal power is greater than or equal to 30% rated thermal power. Implementation of this amendment shall include this condition, as described in the licensee's letter dated March 13, 1998, evaluated in the NRC staff's Safety Evaluation enclosed with this amendment.	This amendment is effective immediately and shall be implemented within 90 days of the date of this amendment.
246	The licensee shall, consistent with the applicable provisions of the BWR Owners' Group Report NEDC-31858P, Revision 2, as approved in the NRC staff's Safety Evaluation dated March 3, 1999, complete the seismic verification walkdowns and modifications necessary to ensure seismic ruggedness of the alternate leakage treatment (ALT) piping and appendages.	Prior to startup following the Unit 2 Cycle 16 Refueling Outage.
246	The licensee shall, consistent with the licensee's letter dated September 27, 2001 (i.e., Serial: BSEP 01-0112), include ALT path motor-operated valves MS-F038A, MS-F038B, MS-F038C, MS-F038D, and MVD-F021 in an augmented inservice testing program.	Prior to startup following the Unit 2 Cycle 16 Refueling Outage.
246	<del>The licensee shall, consistent with the licensee's letter dated September 27, 2001 (i.e., Serial: BSEP 01-0112), include ALT path check valves MVD-V5008 and MVD-V5009 in the facility check valve program.</del>	Prior to startup following the Unit 2 Cycle 16 Refueling Outage.

### List of Regulatory Commitments

The following table identifies those actions committed to by Carolina Power & Light (CP&L) Company in this document. Any other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments. Please direct questions regarding these commitments to the Manager - Regulatory Affairs at the Brunswick Steam Electric Plant.

Commitment	Schedule
1. None	N/A