



Carolina Power & Light Company
PO Box 10429
Southport NC 28461-0429

William F. Campbell
Vice President
Brunswick Nuclear Plant

SERIAL: BSEP 96-0364
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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 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62
RESPONSE TO NRC BULLETIN 96-03, "POTENTIAL PLUGGING OF EMERGENCY CORE
COOLING SUCTION STRAINERS BY DEBRIS IN BOILING-WATER REACTORS"

Gentlemen:

On May 6, 1996, the NRC issued Bulletin 96-03, "Potential Plugging of Emergency Core Cooling Suction Strainers by Debris in Boiling-Water Reactors." The NRC requested a response within 180 days of the date of the bulletin indicating CP&L's intended actions. Enclosure 1 provides CP&L's 180 day response to NRC Bulletin 96-03.

Please refer any questions regarding this letter to Mr. Mark Turkal at (910) 457-3066.

Sincerely,

William R. Campbell

GMT/gmt

Enclosures:

1. Response to NRC Bulletin 96-03
2. List of Regulatory Commitments

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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: August 12, 2001

cc: Mr. S. D. Ebnetter, NRC Regional Administrator, Region II
Mr. C. A. Patterson, NRC Senior Resident Inspector - Brunswick Plant
Mr. D. C. Trimble, Jr., NRR Project Manager - Brunswick Plant
The Honorable H. Wells, Chairman - North Carolina Utilities Commission

ENCLOSURE 1

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2 NRC DOCKET NOS. 50-325 & 50-324 OPERATING LICENSE NOS. DPR-71 & DPR-62

RESPONSE TO NRC BULLETIN 96-03, "POTENTIAL PLUGGING OF EMERGENCY CORE COOLING SUCTION STRAINERS BY DEBRIS IN BOILING-WATER REACTORS"

CP&L's Brunswick Steam Electric Plant (BSEP), Unit Nos. 1 and 2 intends to implement the following requested action as outlined below:

Requested Action

All BWR licensees are requested to implement appropriate measures to ensure the capability of the ECCS to perform its safety function following a LOCA. The staff has identified three potential resolution options; however, licensees may propose others which provide an equivalent level of assurance that the ECCS will be able to perform its safety function following a LOCA. The three options identified by the staff are as follows:

Option 1: Installation of a large capacity passive strainer design.

Option 2: Installation of a self-cleaning strainer.

Option 3: Installation of a backflush system.

NRC 180-day Required Response

- (1) Within 180 days of the date of this bulletin, a report indicating whether the addressee intends to comply with these requested actions, including a description of planned actions and mitigative strategies to be used, the schedule for implementation, and proposed TS, if appropriate; or, if the licensee does not intend to comply with these actions, a detailed description of the safety basis for the decision. The report must contain a detailed description of any proposed alternate course of action, the schedule for completing this alternative course of action, the safety basis for determining the acceptability of the planned alternative course of action, and proposed TS, if appropriate, that support the proposed alternative course of action and are consistent with 10CFR50.36.*

CP&L Response

To ensure the capability of the ECCS to perform its safety function following a LOCA, two different passive strainer options are being considered for the Brunswick plants:

• Option 1 - Installation of larger capacity passive strainers on each loop of Residual Heat Removal (RHR) and Core Spray (CS) pump suctions in the suppression pool.

or

Option 1A - Installation of passive strainers in the vent header down comers (96 per Unit) above the suppression pool water line, to prevent significant drywell debris from reaching the suppression pool.

For option 1, the BWROG recommended strainer design methodology, documented in the "Utility Resolution Guidance (URG) for ECCS Suction Strainer Blockage", will be utilized along with analyses of the hydrodynamic loads and strainer piping penetration loads.

For option 1A, The URG will be used as well as results of CP&L testing on a full-scale mockup of the vent header with one downcomer, along with load analyses of the proposed modification to the actual vent headers. Preliminary blow down and wash down testing on the vent header mockup, with the proposed strainer installed and collecting the debris, indicate that the peak drywell pressure remains below the analyzed post-LOCA pressure.

As reported in our November 15, 1995 (BSEP 95-0569) and February 13, 1996 (BSEP 95-0688) responses to NRC Bulletin 95-02, CP&L has already taken actions to eliminate suppression pool debris sources. Foreign material exclusion (FME) and system cleanliness procedures that control materials in the drywell, suppression pool, and systems that interface with the suppression pool, are being used. Preventive maintenance models have been established such that during refueling outages the suppression pools are monitored for sludge accumulation such that appropriate cleaning can be scheduled. In addition, these models provide for inspection, and initiate cleaning as required, for the existing ECCS pump suction strainers. CP&L's sampling program includes sampling the suppression pool water and sludge for fibrous debris. The condition of Primary Containment coatings is monitored during appropriate refueling outages per the Primary Containment Inspection surveillance program. CP&L continues to gather and trend pump suction pressure data taken during RHR and CS Technical Specification surveillance testing.

For either option, CP&L will perform appropriate inspections during refueling outages for suppression pool cleanliness, ensure that the strainers are not restricted, that no strainer supporting structures show evidence of structural distress or abnormal corrosion, and that there is no evidence of abnormalities which affect the functioning of the strainers. The inclusion of these surveillances in Technical Specifications will be considered after review by the BWROG Technical Specification Issues Coordination Committee.

One of the above passive strainer options will be implemented by the end of the first refueling outage starting after January 1, 1997, which is currently scheduled for the fourth quarter of 1997 for Unit 2 (B213R1) and the second quarter of 1998 for Unit 1 (B112R1).

ENCLOSURE 2

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2 NRC DOCKET NOS. 50-325 & 50-324 OPERATING LICENSE NOS. DPR-71 & DPR-62

RESPONSE TO NRC BULLETIN 96-03, "POTENTIAL PLUGGING OF EMERGENCY CORE COOLING SUCTION STRAINERS BY DEBRIS IN BOILING-WATER REACTORS"

LIST OF REGULATORY COMMITMENTS

The following table identifies those actions committed to by Carolina Power & Light Company in this document. Any other actions discussed in the submittal represent intended or planned actions by Carolina Power & Light Company. They are described to the NRC for the NRC's information and are not regulatory commitments. Please notify the Manager-Regulatory Affairs at the Brunswick Nuclear Plant of any questions regarding this document or any associated regulatory commitments.

Commitment	Committed date or outage
One of the above passive strainer options will be implemented by the end of the first refueling outage starting after January 1, 1997, which is currently scheduled for the fourth quarter of 1997 for Unit 2 (B213R1) and the 2nd quarter of 1998 for Unit 1 (B112R1).	B112R1 B213R1
For either option, CP&L will perform appropriate inspections during refueling outages for suppression pool cleanliness, ensure that the strainers are not restricted, that no strainer supporting structures show evidence of structural distress or abnormal corrosion, and that there is no evidence of abnormalities which affect the functioning of the strainers. The inclusion of these surveillances in Technical Specifications will be considered after review by the BWROG Technical Specification Issues Coordination Committee.	B112R1 B213R1