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SERIAL: BSEP 94-0143

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

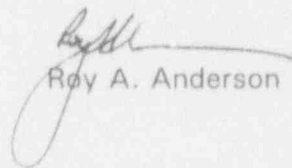
BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2  
DOCKET NOS. 50-325 & 50-324/LICENSE NOS. DPR-71 & DPR-62  
RESPONSE TO NRC BULLETIN 93-02, SUPPLEMENT 1: DEBRIS PLUGGING OF  
EMERGENCY CORE COOLING SUCTION STRAINERS

Gentlemen:

The purpose of this submittal is to provide response to NRC Bulletin 93-02, Supplement 1, Debris Plugging of Emergency Core Cooling Suction Strainers, for Carolina Power & Light Company's (CP&L) Brunswick Nuclear Plant (BNP), Units 1 and 2.

Enclosure 1 of this document provides CP&L's response to the bulletin. Enclosure 2 provides a summary of commitments made in this submittal. Please refer any questions regarding this submittal to Mr. R. P. Lopriore at (910) 457-2212.

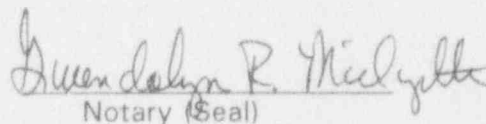
Very truly yours,

  
Roy A. Anderson

KAH/

Enclosures

R. A. Anderson, 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: 8/12/1996

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cc: Mr. S. D. Ebnetter, Regional Administrator, Region #1  
Mr. P. D. Milano, NRR Senior Project Manager - Brunswick Units 1 and 2  
Mr. R. L. Prevatte, Brunswick NRC Senior Resident Inspector

ENCLOSURE 1

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1 AND 2  
NRC DOCKETS 50-325 & 50-324  
OPERATING LICENSES DPR-71 & DPR-62

RESPONSE TO NRC BULLETIN 93-02, SUPPLEMENT 1

Background

The NRC staff issued NRC Bulletin 93-02, Debris Plugging of Emergency Core Cooling Suction Strainers, on May 11, 1993. NRC Bulletin 93-02 requested all licensees:

to identify fibrous air filters or other temporary sources of fibrous material, not designed to withstand a loss-of-coolant accident (LOCA), which are installed or stored in your primary containment. Take any immediate compensatory measures which may be required to assure the functional capability of the emergency core cooling system (ECCS). Take prompt action to remove any such material. Because of the low probability of a LOCA event, the staff considers removal of this material at the next shutdown, or within 120 days, whichever comes first, to be sufficiently prompt. If the facility is currently in a shutdown, you are requested to remove such material prior to restart.

Carolina Power & Light Company (CP&L) responded to this bulletin on June 10, 1993 (reference NLS-93-148). CP&L noted in the June 10, 1993 response with respect to the Brunswick Plant, that fibrous air filters or other temporary fibrous materials not designed to withstand the effects of a LOCA are not installed or stored inside containment in a manner that would be impacted by a LOCA during power operations. The actions requested by NRC Bulletin 93-02 were therefore considered complete for the Brunswick Plant.

On February 18, 1994, the NRC staff issued Supplement 1 to NRC Bulletin 93-02:

- (1) to inform Action and Information addressees about the vulnerability of emergency core cooling system (ECCS) suction strainers in boiling-water reactors (BWRs) and containment sumps in pressurized-water reactors (PWRs) to clogging during the recirculation phase of a loss-of-coolant accident (LOCA).
- (2) to request that Action addressees take the appropriate actions to ensure the reliability of the ECCS in view of the information discussed in the bulletin supplement regarding the vulnerability of the ECCS strainers to clogging.
- (3) to require that Action addressees report to the NRC whether and to what extent the requested actions will be taken and to notify the NRC when the actions associated with this bulletin supplement are complete.

Specifically, the bulletin requires Action addressees to submit, within 60 days of the date of the bulletin supplement, a report indicating whether or not the addressee intends to

comply with the actions requested above, description of planned actions, and the schedule for completing them. The bulletin specifies that if an addressee chooses not to take the requested actions, the report shall contain a description of a proposed alternative course of action, the schedule for completing this alternative course of action, and a justification for any deviations from the requested actions. This enclosure provides CP&L's 60-day response to NRC Bulletin 93-02, Supplement 1.

### Requested Actions

The NRC requests that, pending final resolution of this issue, Action addressees take the following three (3) interim actions to enhance the capability to prevent or mitigate loss of the ECCS following a LOCA due to strainer clogging:

1. Provide training and briefings to apprise operators and other appropriate emergency response personnel of the information contained herein and in the referenced information notices regarding the potential for suppression pool strainer clogging.
2. Assure that the emergency operating procedures make the operator aware of possible indications of ECCS strainer clogging and provide guidance on mitigation.
3. Institute procedures and other measures to provide compensatory actions to prevent, delay, or mitigate a loss of available NPSH margin under LOCA conditions. Such measures should be consistent with providing the design basis emergency system functions for core and containment cooling. Actions to ensure sufficient core and containment cooling may include:
  - Reduction of flow (consistent with delivering the required ECCS flow) through the strainers to reduce head loss and extend the time for debris deposition
  - Operator realignment of existing systems to allow backflushing of clogged strainers
  - Operator realignment of existing systems to allow injection to the core from water sources other than the suppression pool.
  - Intermittent operation of the containment sprays, when possible, to reduce the transport of debris to the strainers
  - Other plant-specific measures which assure availability of sufficient core and containment cooling to meet the design basis of the plant

Action addressees should complete these requested interim actions within 90 days of the date of this bulletin supplement.

## CP&L Response

The BWR Owners' Group (BWROG) issued a safety assessment on this issue on March 24, 1994. CP&L has reviewed this assessment and considers it applicable to the Brunswick Plant.

Included in Attachment 2 of the BWROG Safety Assessment was operator guidance for potential blockage of ECCS pump suction strainers. The guidance alerts plant operators to the potential of a common mode failure of ECCS and containment cooling systems which take suction from the suppression pool. The guidance identifies when suction strainer blockage might occur, provides indications of ECCS suction strainer blockage, provides a discussion of current Emergency Procedure Guidelines (EPG)/Emergency Operating Procedures (EOP) actions for controlling water level, and provides a discussion of mitigative actions in response to suction strainer blockage. Recommendations in the BWROG Operator guidance document include ensuring operators are familiar with the expected performance of ECCS systems and Alternate Injection Subsystems and requirements for placing them in service, ensuring supporting operating procedures provide sufficient flexibility so that possible mitigation actions can be effectively performed, and ensuring operators are cognizant of the latitude provided in EOP decisions and actions related to the operation of Reactor Pressure Vessel (RPV) injection systems, subsystems, and Alternate Injection Subsystems.

Consistent with the BWROG Safety Assessment and NRC Bulletin 93-02, CP&L is providing training to apprise operators and other appropriate emergency response personnel of the information contained in NRC Bulletin 93-02, Supplement 1, and in the referenced information notices regarding the potential for suppression pool strainer clogging. Specifically, within 90 days of the date of the bulletin, CP&L will complete on-shift training to licensed operators and Shift Technical Advisors. In addition, this issue will be included in Licensed Operator Retraining (LOR) Phase III as required reading. LOR Phase III is scheduled to be completed on May 20, 1994.

Training to other emergency response personnel will be completed as a required reading package, consistent with that provided to Operations personnel. Individuals filling the following roles will receive the training package:

Technical Support Center Site Emergency Coordinator  
Technical Assessment Director  
Accident Assessment Team Leaders

This training will be completed within the 90 day period requested in NRC Bulletin 93-02, Supplement 1.

CP&L continues to evaluate future training initiatives on this issue as new information becomes available. CP&L believes that the training identified above satisfies requested Action 1 and part of requested Action 2 (training on mitigation guidance) of NRC Bulletin 93-02, Supplement 1.

With respect to remainder of requested Action 2, CP&L has reviewed its EOPs and consistent with the BWROG Safety Assessment, believes that current EOPs are adequate and no EOP revisions are necessary at this time.

With respect to requested Action 3, CP&L continues to assess potential compensatory actions to prevent, delay, or mitigate a loss of available NPSH margin under LOCA conditions. Consistent with the BWROG recommendation in the Safety Assessment, CP&L has reviewed supporting operating procedures to ensure possible mitigative actions can be effectively performed. As a result, CP&L is revising the Core Spray System Operating Procedure for both units to include an infrequent section that allows shifting the core spray pump suction from the suppression pool to the condensate storage tank if the suppression pool is not available as a source of water. This revision will be completed within 90 days of the date of the bulletin supplement. In addition, CP&L is reviewing the current model used to analyze the impact of insulation on the suction strainers versus the proposed BWROG model. CP&L will note other compensatory actions, if any, identified during our continued review of this issue as a part of the 30-day completion response.

CP&L continues to follow BWROG initiatives on this issue to ensure long-term solutions to this issue are adequately addressed.

#### Summary

CP&L believes the actions discussed above meet the intent of the guidance in NRC Bulletin 93-02, Supplement 1. Consistent with NRC Bulletin 93-02, Supplement 1, CP&L will notify the NRC staff within 30 days of completion of the above items (procedure change and training). CP&L will continue to follow BWROG initiatives in this area to ensure long-term solutions to this issue are adequately addressed.

ENCLOSURE 2  
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
1. Within 90 days of the date of the bulletin, CP&L will complete on-shift training to licensed operators and Shift Technical Advisors.	5/19/94
2. The ECCS Suction Strainer issue will be included in Licensed Operator Retraining (LOR) Phase III as required reading.	5/20/94
3. Training to other emergency response personnel will be completed as a required reading package, consistent with that provided to Operations personnel. Individuals filling the following roles will receive the training package:  Technical Support Center Site Emergency Coordinator Technical Assessment Director Accident Assessment Team Leaders	5/19/94
4. CP&L is revising the Core Spray System Operating Procedure for both units to include an infrequent section that allows shifting the core spray pump suction from the suppression pool to the condensate storage tank if the suppression pool is not available as a source of water.	5/19/94
5. CP&L will notify the NRC staff within 30 days of completion of the above items (procedure change and training).	6/20/94
6. Note other compensatory actions, if any, identified during CP&L's continued review of this issue as a part of the 30-day completion response to NRC Bulletin 93-02, Supplement 1.	6/20/94