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JUL 02 2003

SERIAL: BSEP 03-0106
TSC-2002-09

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
Response to Request for Additional Information
Core Flow Operating Range Expansion
(NRC TAC No. MB6692 and MB6693)

Reference: Letter from Mr. John S. Keenan to the U. S. Nuclear Regulatory
Commission (Serial: BSEP 02-0169), "Request for License Amendments -
Core Flow Operating Range Expansion," dated November 12, 2002

Ladies and Gentlemen:

On November 12, 2002, Progress Energy Carolinas, Inc. requested a revision to the Technical Specifications (TSs) for the Brunswick Steam Electric Plant (BSEP), Units 1 and 2. The proposed license amendments revise TSs, as necessary, to support an expansion of the core flow operating range (i.e., Maximum Extended Load Line Limit Analysis Plus (MELLLA+)).

On June 3, 2003, the NRC provided a verbal request for additional information (RAI) concerning the single recirculation loop operation setpoint for the Average Power Range Monitor Simulated Thermal Power - High scram function. The response to this RAI is enclosed.

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

Sincerely,

A handwritten signature in cursive script that reads 'John S. Keenan'.
John S. Keenan

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MAT/mat

Enclosure:

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John S. Keenan, 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. Mason
Notary (Seal)

My commission expires: August 29, 2004

cc:

U. S. Nuclear Regulatory Commission, Region II
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Background

On November 12, 2002, Progress Energy Carolinas, Inc. requested a revision to the Technical Specifications (TSs) for the Brunswick Steam Electric Plant (BSEP), Units 1 and 2. The proposed license amendments revise TSs, as necessary, to support an expansion of the core flow operating range (i.e., Maximum Extended Load Line Limit Analysis Plus (MELLLA+)).

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NRC Question 3-1

In support of the licensee's MELLLA+ upgrade, the licensee referenced GE Nuclear Energy Report NEDC-33063P, "Safety Analysis Report for Brunswick Steam Electric Plant Units 1 and 2 Maximum Extended Load Line Limit Analysis Plus," dated November 2002 (M+SAR). Section 5.3.1, "APRM Flow-biased Scram," stated, "MELLLA+ does not apply to single loop operation (SLO). Therefore, no SLO flow-biased expressions are provided." The licensee's proposed allowable value (AV) for TS Table 3.3.1.1-1, Function 2.b, Average Power Range Monitor Simulated Thermal Power - High (STP-Hi), is given by the equation

$$\leq 0.61W + 65.2\% \text{ RTP and } \leq 117.1\% \text{ RTP}$$

Note (b) states,

$$\leq [0.61 (W - \Delta W) + 65.2\% \text{ RTP}] \text{ when reset for single loop operation per LCO 3.4.1, "Recirculation Loops Operating." The Value of } \Delta W \text{ is defined in plant procedures.}$$

Provide the basis for incorporating a MELLLA+ SLO flow-biased function in the TS that is not supported by the MELLLA+ licensing topical report (M+LTR) referenced in the licensee's submittal.

Response to NRC Question 3-1

As stated in Sections 1.2.4 and 5.3.1, Single Loop Operation (SLO) is prohibited when operating in the MELLLA+ region. This is reflected in the proposed change to Limiting Condition for Operation 3.4.1, "Recirculation Loops Operating," which states, in part:

One recirculation loop may be in operation provided the plant is not operating in the MELLLA+ region defined in the COLR...

The proposed change to the Allowable Value (AV) for Function 2.b of Table 3.3.1.1-1 does not alter the proposed change to LCO 3.4.1, rather it is a result of the existing design associated with the BSEP flow-biased scram function. Specifically, the BSEP flow-biased scram function has a fixed flow-biased slope. The proposed change to MELLLA flow-biased scram for SLO allows use of the same flow-biased slope as for the two loop operation scram for MELLLA+. The affect of the proposed change is to apply a more conservative setpoint for SLO than the previous MELLLA setpoint.