



10 CFR 50.46(a)(3)(ii)

SEP 21 2009

SERIAL: BSEP 09-0099

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 ;
Annual Report of Emergency Core Cooling System Evaluation Model
Changes and Errors

Ladies and Gentlemen:

In accordance with 10 CFR 50.46, "Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors," paragraph (a)(3)(ii), Carolina Power & Light Company (CP&L), now doing business as Progress Energy Carolinas, Inc., is submitting the annual report of the emergency core cooling system (ECCS) evaluation model changes and errors for the Brunswick Steam Electric Plant (BSEP), Unit Nos. 1 and 2.

BSEP, Units 1 and 2 employ a mixed core design containing co-resident AREVA and GNF fuel. Because the GNF fuel is now a non-limiting fuel type, model changes and errors are not being reported for the GNF fuel.

The enclosed report covers the period from August 16, 2008, through August 16, 2009. The reported estimated licensing basis peak cladding temperature (PCT) remains within the acceptance criteria set forth in 10 CFR 50.46 (i.e., $\leq 2200^{\circ}\text{F}$).

No regulatory commitments are contained in this letter. Please refer any questions regarding this submittal to Ms. Annette Pope, Supervisor - Licensing/Regulatory Programs, at (910) 457-2184.

Sincerely,

A handwritten signature in black ink that reads 'Phyllis N. Mentel'.

Phyllis N. Mentel
Manager - Support Services
Brunswick Steam Electric Plant

Document Control Desk
BSEP 09-0099 / Page 2

WRM/wrm

Enclosure: Brunswick Units 1 and 2 10 CFR 50.46 Report

cc (with enclosure):

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Chair - North Carolina Utilities Commission
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Brunswick Units 1 and 2 10 CFR 50.46 Report

Plant: Brunswick Steam Electric Plant, Units 1 and 2
 Report Revision Date: August 16, 2009
 Current Operating Cycles: Unit 1 – Cycle 17, Unit 2 – Cycle 19
 Evaluation Model: EMF-2361(P)(A), Revision 0, EXEM BWR-2000 ECCS
 Evaluation Model, May 2001.
 Fuel: ATRIUM™-10

	Net PCT Effect	Absolute PCT Effect
A. Cumulative 10 CFR 50.46 Changes and Error Corrections – Previously Reported	0°F	0°F
B. 10 CFR 50.46 Changes and Error Corrections – This Reporting Period		
1. Incorrect part length rod plenum parameters used in the heatup analysis	-7°F	7°F
C. Absolute Sum of 10 CFR 50.46 Changes and Error Corrections		7°F
D. Evaluated Effective Licensing Basis PCT including Changes and Error Corrections (i.e., reported in Updated Final Safety Analysis Report)	1900°F	

The sum of the PCT from the most recent analysis, using an acceptable evaluation model, and the estimates of PCT impact for changes and errors identified since this analysis is less than 2200°F.