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

Progress Energy

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United States Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23

REPORT OF CHANGES TO OR ERRORS DISCOVERED
IN AN ACCEPTABLE LOSS-OF-COOLANT ACCIDENT EVALUATION
MODEL APPLICATION FOR THE EMERGENCY CORE COOLING SYSTEM

Ladies and Gentlemen:

In accordance with the provisions of 10 CFR 50.46, Carolina Power and Light Company, also known as Progress Energy Carolinas, Inc. (PEC), is submitting the attached report of changes to and errors discovered in an acceptable Loss-of-Coolant Accident (LOCA) evaluation model (EM) for the Emergency Core Cooling System at the H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2. The applicable LOCA EMs are referenced in the HBRSEP, Unit No. 2, Core Operating Limits Report. Changes to or errors discovered in EMs and EM applications were previously reported to the Nuclear Regulatory Commission by letter dated December 2, 2008.

This submittal satisfies the notification of a significant change [greater than 50°F change in calculated peak cladding temperature (PCT)] for the Small Break LOCA (SBLOCA), as required by 10 CFR 50.46(a)(3)(ii). Although the change in the Large Break LOCA (LBLOCA) is less than 50°F, the impact on the LBLOCA is reported for completeness, as the changed condition is the same as that for the SBLOCA. The change condition and PCT impact are provided in Attachment I. The latest PCT estimates for the LBLOCA and SBLOCA are included in Attachment II.

There is no reanalysis planned because the changes result in a net improvement in margin to PCT limits. The cumulative impact of changes will continue to be tracked.

If you have any questions concerning this matter, please contact me at (843) 857-1626.

Sincerely,

Curt Castell

Curt Castell
Supervisor – Licensing/Regulatory Programs

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Attachments:

I. Report of Changes/Errors in Loss-of-Coolant Accident Evaluation Models for the Emergency Core Cooling System
II. Peak Cladding Temperature Estimates

c: L. A. Reyes, NRC, Region II
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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

REPORT OF CHANGES/ERRORS IN LOSS-OF-COOLANT ACCIDENT EVALUATION MODELS FOR THE EMERGENCY CORE COOLING SYSTEM

This report provides an estimate of the effect on peak cladding temperature (PCT) of changes and error corrections in the Loss-of-Coolant Accident (LOCA) evaluation models (EMs) and EM applications for the Emergency Core Cooling System (ECCS) at the H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, covering the period of November 11, 2008 through March 24, 2009.

Large Break Loss-of-Coolant Accident (LBLOCA) Evaluation Model

CHANGED CONDITION	PCT IMPACT (°F)
An incorrect figure for predicting radiation heat transfer was incorporated into RELAP approximately 30 years ago. This error was incorporated into S-RELAP5 and impacts its radiation to fluid heat transfer model. The S-RELAP5 code is used to analyze a Large Break LOCA.	-32
Cumulative Impact	**-32**

Small Break Loss-of-Coolant Accident (SBLOCA) Evaluation Model

CHANGED CONDITION	PCT IMPACT (°F)
An incorrect figure for predicting radiation heat transfer was incorporated into RELAP approximately 30 years ago. This error was incorporated into ANF-RELAP and impacts its radiation to fluid heat transfer model. The ANF-RELAP code is used to analyze small break LOCA.	-64
Cumulative Impact	**-64**

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

PEAK CLADDING TEMPERATURE ESTIMATES

The current peak cladding temperature (PCT) estimates associated with Loss-of-Coolant Accident (LOCA) Emergency Core Cooling System (ECCS) evaluation models are listed below. These estimates include the cumulative effects of significant and non-significant error corrections and evaluation model changes through March 24, 2009.

Event	PCT (°F)
Large Break LOCA, ECCS Injection Mode	1853
Small Break LOCA, ECCS Injection Mode	1607