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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

**ANNUAL 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 the Code of Federal Regulations, Title 10, Part 50.46, (10 CFR 50.46) Carolina Power and Light (CP&L) Company is submitting the attached report of non-significant changes to and errors discovered in an acceptable loss-of-coolant accident (LOCA) evaluation model (EM) for the emergency core cooling system (ECCS) at the H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2. The affected LOCA EMs are referenced in the HBRSEP, Unit No. 2, Core Operating Limits Report (COLR). Non-significant changes to or errors discovered in EMs and EM applications were previously reported to the Nuclear Regulatory Commission (NRC) by letter dated November 17, 2000. This submittal satisfies the 10 CFR 50.46 requirement for annual reporting of LOCA EM changes for HBRSEP, Unit No. 2.

By letter dated January 11, 2001, CP&L reported the estimates of the effect of the retraction of a previously reported error in the Siemens Power Corporation (SPC) EXEM Pressurized Water Reactor (PWR) Large Break LOCA (LBLOCA) EM. By letter dated April 23, 2001, CP&L reported the effects of a significant change in the evaluation of the transfer of the Emergency Core Cooling System (ECCS) from the injection mode to recirculation mode during a LBLOCA. Effects on the Peak Clad Temperature (PCT) estimates for the LBLOCA, Small Break LOCA (SBLOCA) and transfer of the ECCS from the injection mode to the recirculation mode for both accidents were reported. By letter dated May 4, 2001, CP&L reported a significant change in the approved methodology for the LBLOCA EM. The EM was changed to SPC's approved SEM/PWR-98 LBLOCA EM, replacing SPC's EXEM PWR LBLOCA EM. Since CP&L's last annual report of November 17, 2000, there have been no significant errors or changes in

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application of the LBLOCA and SBLOCA EMs other than those reported by CP&L letters dated January 11, 2001, April 23, 2001, and May 4, 2001.

The non-significant changes and error corrections in the SPC SEM/PWR-98 LBLOCA EM and the SPC EXEM PWR SBLOCA EM since our last annual report are provided in Attachment I. The effects of these non-significant changes and error corrections on HBRSEP, Unit No. 2, PCT are also summarized in Attachment I.

The latest PCT estimates for the LBLOCA, SBLOCA, and transfer of the ECCS from the injection mode to the recirculation mode are included in Attachment II.

If you have any questions concerning this matter, please contact Mr. H. K. Chernoff.

Sincerely,



B. L. Fletcher III  
Manager - Regulatory Affairs

CWS/cws

Attachments:

- I. Report of Changes to or Errors Discovered in Acceptable Loss-of-Coolant Accident Evaluation Model for the Emergency Core Cooling System
- II. Peak Clad Temperature Estimates

c: Mr. B. S. Mallett, NRC, Region II  
Mr. A. G. Hansen, NRC, NRR  
NRC Resident Inspector, HBRSEP

**H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2**  
**REPORT OF CHANGES TO OR DISCOVERY OF**  
**ERRORS IN AN ACCEPTABLE LOSS-OF-COOLANT ACCIDENT**  
**EVALUATION MODEL FOR THE EMERGENCY CORE COOLING SYSTEM**

This report provides an estimate of the effect of non-significant changes and error corrections in the acceptable 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 17, 2000, through November 29, 2001.

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

CHANGED CONDITION	PCT IMPACT (°F)
Potential variability in end-of-bypass prediction by TEOBY	0
Inappropriate use of calculated radiation heat transfer in TOODEE2	0
RDX2LSE fast flux input error	+ 4
<b>Cumulative Impact</b>	<b>+ 4</b>

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

CHANGED CONDITION	PCT IMPACT (°F)
Unacceptable variability in calculated loop seal clearing response	0
RODEX2 dish volume correction	0
<b>Cumulative Impact</b>	<b>0</b>

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2  
PEAK CLAD TEMPERATURE ESTIMATES

The current peak clad temperatures (PCT) associated with loss-of-coolant accidents (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 November 29, 2001.

<u>Event</u>	<u>PCT (°F)</u>
Large Break LOCA, ECCS Injection Mode	1981
Small Break LOCA, ECCS Injection Mode	2010