



March 15, 1996  
LIC-96-0034

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Mail Station P1-137  
Washington, D.C. 20555

- References:
1. Docket No. 50-285
  2. WCAP-13027-P, "Westinghouse ECCS Evaluation Model for Analysis of CE-NSSS," dated July 1991
  3. WCAP-13451, "Westinghouse Methodology for Implementation of 10 CFR 50.46 Reporting," dated October 1992
  4. WCAP-10054-P, Addendum 2, "Addendum to the Westinghouse Small Break ECCS Evaluation Model Using the NOTRUMP Code: Safety Injection into the Broken Loop and COSI Condensation Model," dated August, 1994

**SUBJECT: Annual Report for 1995 Loss of Coolant Accident (LOCA)/Emergency Core Cooling System (ECCS) Models**

In accordance with 10 CFR 50.46(a)(3)(ii), the Omaha Public Power District (OPPD) is submitting the annual 10 CFR 50.46 summary report for 1995. This summary report updates all identified changes or errors in the LOCA/ECCS codes and methods used by Westinghouse Electric Corporation (W) to model Fort Calhoun Station (FCS) Unit No. 1. Reference 2 describes the methodology utilized by W to model Combustion Engineering plants, such as FCS.

Attachment 1 contains the one error and change identified using the NOTRUMP code for the small break LOCA (SBLOCA) analysis.

Attachment 2 summarizes the small break LOCA/ECCS peak clad temperature (PCT) margin utilization and the large break LOCA/ECCS PCT margin utilization.

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In conclusion, the cumulative errors/changes identified or implemented through 1995 result in a net increase of 20°F PCT for the SBLOCA analysis and no change in PCT for the large break LOCA (LBLOCA) analysis. The resultant SBLOCA PCT still remains less than the 10 CFR 50.46(b)(1) acceptance criteria of 2200°F.

If you should have any questions, please contact me.

Sincerely,



T. L. Patterson  
Division Manager  
Nuclear Operations

TLP/d11

Attachments

c: Winston & Strawn  
L. J. Callan, NRC Regional Administrator, Region IV  
L. R. Wharton, NRC Project Manager  
W. C. Walker, NRC Senior Resident Inspector

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Attachment 1

**FORT CALHOUN STATION  
SMALL BREAK LOCA ANALYSIS  
NOTRUMP SPECIFIC ENTHALPY ERROR**

## NOTRUMP Specific Enthalpy Error

### Affected Evaluation Model

1985 Westinghouse Small Break Loss-of-Coolant-Accident (LOCA) Evaluation Model  
Using NOTRUMP

### Background

A typographical error was found in a line of coding in the NOTRUMP code. This line of coding was intended to model the calculation found in Equation L-127 of WCAP-0079-P-A. Although the equation in the topical report is correct, the coding represented the last term as a partial derivative with respect to the fluid node mixture region total energy instead of the mixture region total mass. This correction is a Non-Discretionary Change in accordance with Section 4.1.2 of WCAP-13451.

### Estimated Effect

Representative plant calculations have led to an estimated effect of +20°F for this error correction.

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Attachment 2

**FORT CALHOUN STATION  
LOCA PEAK CLAD TEMPERATURE (PCT)  
MARGIN UTILIZATION SHEETS**

1995 SMALL BREAK PEAK CLAD TEMPERATURE MARGIN UTILIZATION  
FORT CALHOUN STATION UNIT NO. 1

	<u>CLAD TEMPERATURE</u>
A. Analysis of Record (8/91)	PCT = 1444°F
B. Prior Permanent ECCS Model Assessments	$\Delta$ PCT = -34°F
C. 10 CFR 50.59 Safety Evaluations	$\Delta$ PCT = 0°F
D. 10 CFR 50.46 Model Assessments this Update (Permanent Assessment of PCT Margin) NOTRUMP Specific	$\Delta$ PCT = 20°F
E. Enthalpy Error Temporary ECCS Model Issues - None	$\Delta$ PCT = 0°F
F. Other Margin Allocations - None	$\Delta$ PCT = 0°F
LICENSING BASIS PCT + MARGIN ALLOCATIONS	PCT = 1430°F

1995 LARGE BREAK PEAK CLAD TEMPERATURE MARGIN UTILIZATION  
FORT CALHOUN STATION UNIT NO. 1

	<u>CLAD TEMPERATURE</u>
A. Analysis of Record (8/91)	PCT = 2066°F
B. Prior Permanent ECCS Model Assessments	$\Delta$ PCT = -25°F
C. 10 CFR 50.59 Safety Evaluations	$\Delta$ PCT = 0°F
D. 1995 10 CFR 50.46 Model Assessments (Permanent Assessment of PCT Margin) - None	$\Delta$ PCT = 0°F
E. Temporary ECCS Model Issues - None	$\Delta$ PCT = 0°F
F. Other Margin Allocations - None	$\Delta$ PCT = 0°F
LICENSING BASIS PCT + MARGIN ALLOCATIONS	PCT = 2041°F