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SCE&G®
A SCANA COMPANY

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Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Sir / Madam:

Subject: VIRGIL C. SUMMER NUCLEAR STATION
DOCKET NO. 50/395
OPERATING LICENSE NO. NPF-12
ECCS EVALUATION MODEL REVISIONS REPORT

References:

1. Westinghouse Letter, LTR-NRC-06-662, "Transmittal of V. C. Summer SBLOCA PCT Rackup Sheets for HHSI Throttle Valve Replacement," (Non-Proprietary), dated November 10, 2006.
2. Westinghouse Letter, LTR-NRC-06-44, Transmittal of LTR-NRC-06-44 NP-Attachment, "Response to NRC Request for Additional Information on the Analyzed Break Spectrum for the Small Break Loss of Coolant accident (SBLOCA) NOTRUMP Evaluation Model (NOTRUMP EM), Revision 1" , (Non-Proprietary), dated July 14, 2006.

Attached is an updated Emergency Core Cooling System (ECCS) Evaluation Model Revisions Report for the Virgil C. Summer Nuclear Station (VCSNS). This report is being submitted pursuant to 10 CFR 50.46, which requires licensees to notify the NRC within 30 days of corrections to or changes in the ECCS Evaluation Models (EM) of greater than 50°F, and is applicable only to Small Break LOCA (SBLOCA).

This report addresses the effect of replacing twelve existing high head safety injection valves (HHSI) (Reference 1). Attachment 1 described this change to the SBLOCA EM.

If you have any questions, please call Mr. Arnie Cribb at (803) 345-4346.

Very truly yours,

Jeffrey B. Archie

A001

MWD/JBA/mb
Attachments

c: K. B. Marsh
S. A. Byrne
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NRC Resident Inspector
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RTS (CER 06-4090)
File (818.02-17, RR 8375)
DMS (RC-06-0205)

10 CFR 50.46 Reporting Text

For

Appendix K Small Break - NOTRUMP Related Items

HHSI Throttle Valve Replacement SBLOCA Analysis

Background:

South Carolina Electric & Gas (SCE&G) has replaced twelve existing high head safety injection (HHSI) valves with FlowServe V3-B pressure-combo valves in the Virgil C. Summer Nuclear Station (VCSNS) during the RF16 outage. In addition, SCE&G has installed new orifice plates in the twelve (12) branch lines, upstream of the throttle valves, and both header orifices (IFE00940 and IFE00943). The effect of these plant changes is an increase in the HHSI flows assumed in the SBLOCA analysis.

In support of these plant changes, Westinghouse performed plant specific analyses to determine the increase in peak clad temperature (PCT) margin for SBLOCA. The most recent analysis, which accounts for a more refined break spectrum (Reference 2), served as the starting point for this work.

Affected Evaluation Model(s):

1985 Westinghouse Appendix K Small Break LOCA Evaluation Model

Calculated Effect:

The increase in HHSI flow produced a shift in the limiting break size (i.e., from 2.75-inch to 3.0 inch) and a decrease in PCT (i.e., from 1952°F @ 12,000 MWD/MTU to 1774.8°F @ 15,000 MWD/MTU). The maximum transient oxidation decreased from 14.34% @ 14,000 MWD/MTU to 6.92% @ 17,500 MWD/MTU for the 2.75 inch break. Attachment 2 provides the revised SBLOCA PCT rack-up sheet that reflects the new SBLOCA result.

SBLOCA PCT Rackup Sheet

Westinghouse LOCA Peak Clad Temperature Summary for Appendix K Small Break

Plant Name: V. C. Summer
Utility Name: South Carolina Electric & Gas
Revision Date: 11/2 /06

Analysis Information

EM:	NOTRUMP	**Analysis Date:**	9/12/06	**Limiting Break Size:**	3 Inch
FQ:	2.4	**FdH:**	1.62		
Fuel:	Vantage +	**SGTP (%):**	10		

Notes:

	Clad Temp (°F)	Ref.	Notes
LICENSING BASIS			
Analysis-Of-Record PCT	**1775**	**9**	**(a)**
PCT ASSESSMENTS (Delta PCT)			
A. PRIOR ECCS MODEL ASSESSMENTS			
1 . None	0		
B. PLANNED PLANT MODIFICATION EVALUATIONS			
1 . None	0		
C. 2006 ECCS MODEL ASSESSMENTS			
1 . None	0		
D. OTHER*			
1 . None	0		
LICENSING BASIS PCT + PCT ASSESSMENTS	**PCT =** 1775		

* It is recommended that the licensee determine if these PCT allocations be considered with respect to 10 CFR 50.46 reporting requirements.

References:

1 . CGE-94-205, "South Carolina Electric and Gas Company, Virgil C. Summer Station, 10 CFR 50.46 Notification and Reporting Information," February 8, 1994.

2 . CGE-94-228, "South Carolina Electric and Gas Company, Virgil C. Summer Station, SBLOCTA Axial Nodalization," October 27, 1994.

3 . CGE-95-201, "South Carolina Electric and Gas Company, Virgil C. Summer Station, 10 CFR 50.46 Notification and Reporting Information," February 3, 1995.

4 . CGE-96-202, "South Carolina Electric and Gas Company, Virgil C. Summer Station, 10 CFR 50.46 Annual Notification and Reporting," February 9, 1996.

5 . CGE-96-213, "South Carolina Electric and Gas Company, Virgil C. Summer Station, 10 CFR 50.46 Small Break LOCA Notification and Reporting," July 8, 1996.

6 . CGE-00-044, "South Carolina Electric and Gas Company, Virgil C. Summer Nuclear Station, 10 CFR 50.46 Appendix K (BART / BASH / NOTRUMP) Evaluation Model, Mid-Year Notification and Reporting for 2000," June 30, 2000.

7 . CGE-03-80, "10 CFR 50.46 Mid-Year Notification and Reporting for 2003," January 2004.

8 . LTR-LIS-06-344, "Transmittal of Updated V. C. Summer SBLOCA PCT Rackup Sheets," November 2006.

9 . LTR-LIS-06-662, Transmittal of V. C. Summuer SBLOCTA PCT Rackup Sheets for HHSI Throttle Valve Replacement," November 2006.

Notes:

(a) The Rebaseline Analysis includes the impacts of the following model assessments:
1-LUCIFER Error Corrections (Ref. 1)
2-Effect of SI in Broken Loop (Ref. 1)
3-Effect of Improved Condensation Model (Ref. 1)
4-Axial Nodalization, RIP Model Revision and SBLOCTA Error Corrections Analysis (Ref. 2)
5-Boiling Heat Transfer Error (Ref. 3)

6-Steam Line Isolation Logic Error (Ref. 3)
7-NOTRUMP Specific Enthalpy Error (Ref. 4)
8-SALIBRARY Double Precision Error (Ref. 4)
9-SBLOCTA Fuel Rod Initialization Error (Ref. 5)
10-NOTRUMP Mixture Level Tracking / Region Depletion Errors (Ref. 6)
11-NOTRUMP Bubble Rise / Drift Flux Model Inconsistency Corrections (Ref. 7)
12-Refined Break Spectrum (Ref. 8)
13-High head safety injection (HHSI) flow increase (Ref. 9)