Dominion Nuclear Connecticut, Inc.
Millstone Power Station
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Dominion

April 8, 2004

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

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DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 3
2003 ANNUAL REPORTING OF CHANGES TO AND ERRORS IN EMERGENCY CORE COOLING SYSTEM MODELS OR APPLICATIONS

In accordance with 10 CFR 50.46(a)(3)(ii), Dominion Nuclear Connecticut, Inc. (DNC) hereby submits the annual summary of changes to and errors identified in the Emergency Core Cooling System (ECCS) evaluation models or applications of those models for Millstone Power Station Unit 3.

Attachment 1 transmits the annual report for the period January 2003 through December 2003. The following is a synopsis of the information provided in Attachment 1.

1. In a notification dated October 31, 2003, Westinghouse identified corrections in the NOTRUMP small break loss of coolant accident (SBLOCA) ECCS Evaluation model to resolve some inconsistencies in several drift flux models as well as the nodal bubble rise / droplet fall models. Plant specific calculations using the NOTRUMP code demonstrated that implementation of the corrections resulted in a conservative peak cladding temperature (PCT) impact of 0°F for Millstone Unit 3. Westinghouse identified this item as a non-discretionary change with a PCT impact. Although the PCT impact is 0°F for Millstone Unit 3, Westinghouse recommended that this item be shown on the SBLOCA Margin Utilization Sheet provided in Attachment 1.

2. Westinghouse identified the following errors or changes in the ECCS Evaluation models applicable to Millstone Unit 3. Each was evaluated to have a PCT impact of 0°F:

   a. BART Quench Model Calculations
   b. BASHER Calculation of BASH Metal Heat Inputs
   c. Inconsistencies in Vessel Geometric Input Data
   d. LOCBART Fuel Rod Plenum Modeling
   e. LOCBART Grid Mass Balance
   f. NOTRUMP Drift Flux Model Inconsistencies
   g. NOTRUMP Inverted T-Node Sign Convention
   h. NOTRUMP Vapor Region Formation Logic

i. SBLOCTA Burst Logic
j. SBLOCTA ZIRLO™ Cladding Creep Constants
k. SATIMP/SPADES Updates
l. SBLOCTA Oxide-to-Metal Ratio
m. SBLOCTA Gap Conductance Model
n. General Code Maintenance (Appendix K)

Westinghouse identified these items as non-discretionary changes with no PCT impact and recommended that these items not be shown on the Margin Utilization Sheets provided in Attachment 1.

Considering the changes summarized in Attachment 1, the corrected PCTs for the limiting SBLOCA (2106°F) and large break loss of coolant accident (LBLOCA) (2004°F) remain below the 2200°F limit as defined by 10 CFR 50.46(b)(1).

This information satisfies the 2003 annual reporting requirements of 10CFR50.46(a)(3)(ii). In addition, no reanalysis or other actions are necessary to demonstrate compliance with 10 CFR 50.46 requirements.

If you have any additional questions concerning this submittal, please contact Mr. Paul R. Willoughby at (804) 273-3572.

Very truly yours,

Leslie N. Hartz
Vice President – Nuclear Engineering

Attachment (1)

Commitments made in this letter: None

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ATTACHMENT 1

MILLSTONE POWER STATION UNIT 3
2003 ANNUAL REPORTING OF 10 CFR 50.46 MARGIN UTILIZATION

10 CFR 50.46 Margin Utilization
Small Break LOCA

Plant Name:	Millstone Power Station, Unit 3		
Utility Name:	Dominion Nuclear Connecticut, Inc.		
Analysis Information			
EM:	NOTRUMP	**Limiting Break Size:**	3 Inches
Analysis Date:	06/90		
FQ:	2.6	**FΔH:**	1.7
Fuel:	Vantage 5H	**SGTP (%):**	10
Notes:	None		

		Clad Temp (°F)	Notes
LICENSING BASIS			
	Analysis of Record PCT	1891	
MARGIN ALLOCATIONS (Delta PCT)			
A.	**Prior Permanent ECCS Model Assessments**		
1.	ECCS Evaluation Model Changes	27	
2.	Effect of SI in Broken Loop	150	
3.	Effect of Improved COSI (Condensation Model)	-150	
4.	Drift Flux Flow Regime Errors	-13	
5.	Average Rod Burst Strain Limit	14	
6.	Fuel Rod Burst Strain Limit	-14	
7.	LUCIFER Error Corrections	-16	
8.	Boiling Heat Transfer Correlation Error	-6	
9.	Steam Line Isolation Logic Error	18	
10.	Axial Nodalization, RIP Model Revision, and SBLOCTA Error Corrections Analysis	26	
11.	NOTRUMP Specific Enthalpy Error	20	
12.	SBLOCTA Fuel Rod Initialization Error	10	
13.	MSSV 3% Setpoint Uncertainty Analysis	67	
14.	AFW Purge Volume Error	17	
15.	NOTRUMP Mixture Level Tracking/Region Depletion Errors	13	
B.	**Planned Plant Change Evaluations**		
1.	Increased Pressurizer Pressure Uncertainty	14	
2.	ZIRLO™ Cladding Evaluation	24	
3.	Fuel Rod Crud	2	
4.	Reduced Thermal Design Flow	12	
5.	Fuel Reconstitution	1	
6.	Revised T-hot Average Scaling	2	
C.	**2003 Permanent ECCS Model Assessments**		
1.	NOTRUMP Bubble Rise / Drift Flux Model Inconsistency Corrections	0	
D.	**Temporary ECCS Model Issues**		
1.	None	0	

10 CFR 50.46 Margin Utilization
Small Break LOCA (Continued)

			Clad Temp (°F)	Notes
E.	**Other Margin Allocations**			
	1.	Burst and Blockage/Time in Life	183	(1), (3)
	2.	Axial Offset Decrease to +20%	-135	
	3.	Margin Recovery Benefit	-51	(2)
LICENSING BASIS PCT + MARGIN ALLOCATIONS			**PCT =**	**2106**

Notes:

(1) This assessment is a function of Base PCT plus permanent margin allocation and as such will increase/decrease with margin allocation changes.

(2) Margin Recovery Benefit based in part on plant-specific PCT calculations that identify margin in Model Assessments and Planned Plant Change Evaluations reported in Sections "A" and "B".

(3) Value includes previous Burst and Blockage/Time in Life penalty, SPIKE Correlation Revision penalty (1999 Annual Report), and consideration of new penalty due to Item A.15 (NOTRUMP Mixture Level Tracking/Region Depletion Errors).

10 CFR 50.46 Margin Utilization
Large Break LOCA

Plant Name:	Millstone Power Station, Unit 3		
Utility Name:	Dominion Nuclear Connecticut, Inc.		
Analysis Information			
EM:	BASH	**Limiting Break Size:**	Cd=0.6
Analysis Date:	08/90		
FQ:	2.6	**FΔH:**	1.7
Fuel:	Vantage 5H	**SGTP (%):**	10
Notes:	VH5/RFA		

		Clad Temp (°F)	Notes
LICENSING BASIS			
	Analysis of Record PCT	1974	
MARGIN ALLOCATIONS (Delta PCT)			
A.	**Prior Permanent ECCS Model Assessments**		
1.	None	0	
B.	**Planned Plant Change Evaluations**		
1.	None	0	
C.	**2003 Permanent ECCS Model Assessments**		
1.	None	0	
D.	**Temporary ECCS Model Issues**		
1.	None	0	
E.	**Other Margin Allocations**		
1.	Rebaseline of AOR	30	
LICENSING BASIS PCT + MARGIN ALLOCATIONS		**PCT =** **2004**	