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PG&E Letter DCL-01-078

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Docket No. 50-275, OL-DPR-80
Docket No. 50-323, OL-DPR-82
Diablo Canyon Units 1 and 2
10 CFR 50.46 Annual Report of Emergency Core Cooling System Evaluation Model Changes

Dear Commissioners and Staff:

Pursuant to 10 CFR 50.46, this letter provides an annual report of changes in the Westinghouse emergency core cooling system evaluation models that affect peak cladding temperature (PCT) calculations for Diablo Canyon Power Plant, Units 1 and 2. There have been some changes or errors identified in the PCT calculations associated with the Best Estimate large break loss-of-coolant accident (LOCA) evaluation models since the last annual report submitted via PG&E Letter DCL-00-107, dated July 26, 2000. These model changes, along with the current PCT margin utilization, are provided in the enclosure. The PCT values are as follows:

	Small-Break LOCA	**Best Estimate Large-Break LOCA**	
		Reflood 1	Reflood 2
Unit 1:	1317 °F (no change)	2013 °F	1980 °F
Unit 2:	1306 °F (no change)	2013 °F	1980 °F

The PCT values remain within the 2200°F limit specified in 10 CFR 50.46. As indicated in PG&E Letter DCL-00-134, dated October 19, 2000, PG&E will complete the reanalysis by July 26, 2003.

Sincerely,

David H. Oatley

cc: Ellis W. Merschoff
David L. Proulx
Girija S. Shukla
Diablo Distribution

Enclosure

A001

ANNUAL REPORT OF EMERGENCY CORE COOLING SYSTEM EVALUATION MODEL CHANGES THAT AFFECT PEAK CLADDING TEMPERATURE

Pursuant to 10 CFR 50.46, this enclosure provides an annual report of changes in the Westinghouse emergency core cooling system (ECCS) evaluation models that affect peak cladding temperature (PCT) calculations for Diablo Canyon Power Plant (DCPP), Units 1 and 2. This report is based on changes described in the following Westinghouse 10 CFR 50.46 notification letter:

- Westinghouse Letter PGE-01-502, dated March 6, 2001, "Diablo Canyon Units 1 and 2, 10 CFR 50.46 Annual Notification and Reporting for 2000."

Attachment A to this enclosure provides DCPP Unit 1 small-break (SB) loss-of-coolant-accident (LOCA) and best estimate (BE) large-break (LB) LOCA peak cladding temperature (PCT) Margin Utilization Sheets. Attachment B to this enclosure provides DCPP Unit 2 SB LOCA and BE LBLOCA PCT Margin Utilization Sheets. These ECCS evaluation model changes for both Units 1 and 2 BE LBLOCA represent changes from the last report in PG&E Letter DCL-00-107, dated July 26, 2000. The results of these PCT margin allocations are provided in Attachments A and B. The ECCS evaluation model changes that have resulted in new PCT margin allocations are provided in Attachment C.

As indicated in PG&E Letter DCL-00-134, dated October 19, 2000, PG&E committed to complete the reanalysis for LB LOCA by July 26, 2003.

The PCT values that are calculated in Attachments A and B are listed below.

	Small-Break LOCA	Best Estimate Large-Break LOCA	
		Reflood 1	Reflood 2
Unit 1:	1317 °F (no change)	2013 °F	1980 °F
Unit 2:	1306 °F (no change)	2013 °F	1980 °F

DCPP UNIT 1 PEAK CLADDING TEMPERATURE MARGIN UTILIZATION

SMALL-BREAK LOCA			PG&E Letter[1]
A. ANALYSIS OF RECORD	PCT =	1304°F	DCL-99-096
B. PERMANENT 10 CFR 50.46 ECCS MODEL ASSESSMENTS[2]			
1. NOTRUMP Mixture Level Tracking/Region Depletion Errors	ΔPCT =	13°F	DCL-00-107
C. 10 CFR 50.59 AND 10 CFR 50.92 SAFETY EVALUATIONS			
1. None	ΔPCT =	0°F	
D. OTHER MARGIN ALLOCATIONS			
1. None	ΔPCT =	0°F	

LICENSING BASIS PCT + MARGIN ALLOCATION PCT = 1317°F

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[1] For those issues that have been previously reported under 10 CFR 50.46, a PG&E letter number is listed.

[2] Only permanent assessments of PCT margin are included. Temporary PCT allocations that address current LOCA model issues are not considered with respect to 10 CFR 50.46 reporting requirements.

DCPP UNIT 1 PEAK CLADDING TEMPERATURE MARGIN UTILIZATION

BEST ESTIMATE LARGE-BREAK LOCA	Reflood 1	Reflood 2	PG&E Letter[1]
A. ANALYSIS OF RECORD	1976°F	1964°F	DCL-00-107
	ΔPCT =	ΔPCT =	
B. PERMANENT 10 CFR 50.46 ECCS MODEL ASSESSMENTS[2]			
1. Intercell Force Gap Numbering Error	33°F	67°F	
2. Vessel Channel DX Error (1998)	0°F	-67°F	DCL-00-107
C. 10 CFR 50.59 AND 10 CFR 50.92 SAFETY EVALUATIONS			
1. MONTECF Decay Heat Uncertainty Error	4°F	16°F	Attachment C
D. OTHER MARGIN ALLOCATIONS			
1. None	0°F	0°F	
LICENSING BASIS PCT + MARGIN ALLOCATION PCT	2013°F	1980°F	

DCPP UNIT 2 PEAK CLADDING TEMPERATURE MARGIN UTILIZATION

SMALL-BREAK LOCA			PG&E Letter[1]
A. ANALYSIS OF RECORD	PCT =	1293°F	DCL-99-096
B. PERMANENT 10 CFR 50.46 ECCS MODEL ASSESSMENTS[2]			
1. NOTRUMP Mixture Level Tracking/Region Depletion Errors	ΔPCT =	13 °F	DCL-00-107
C. 10 CFR 50.59 AND 10 CFR 50.92 SAFETY EVALUATIONS			
1. None	ΔPCT =	0 °F	
D. OTHER MARGIN ALLOCATIONS			
1. None	ΔPCT =	0 °F	

LICENSING BASIS PCT + MARGIN ALLOCATION PCT = 1306°F

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[1] For those issues that have been previously reported under 10 CFR 50.46, a PG&E letter number is listed. New issues are reported in Attachment C.

[2] Only permanent assessments of PCT margin are included. Temporary PCT allocations that address current LOCA model issues are not considered with respect to 10 CFR 50.46 reporting requirements.

DCPP UNIT 2 PEAK CLADDING TEMPERATURE MARGIN UTILIZATION

BEST ESTIMATE LARGE-BREAK LOCA	Reflood 1	Reflood 2	PG&E Letter[1]
A. ANALYSIS OF RECORD	1976°F	1964°F	DCL-00-107
	ΔPCT =	ΔPCT =	
B. PERMANENT 10 CFR 50.46 ECCS MODEL ASSESSMENTS[2]			
1. Intercell Force Gap Numbering Error	33°F	67°F	
2. Vessel Channel DX Error (1998)	0°F	-67°F	DCL-00-107
C. 10 CFR 50.59 AND 10 CFR 50.92 SAFETY EVALUATIONS			
1. MONTECF Decay Heat Uncertainty Error	4°F	16°F	Attachment C
D. OTHER MARGIN ALLOCATIONS			
1. None	0°F	0°F	
LICENSING BASIS PCT + MARGIN ALLOCATION PCT	2013°F	1980°F	

CURRENT BEST ESTIMATE LARGE-BREAK ECCS MODEL CHANGES AND ERRORS

MONTECF – Decay Heat Uncertainty Error

Westinghouse determined that an error existed in the calculation of decay heat uncertainty in the Monte Carlo code used for calculation of the 95th percentile peak cladding temperature (PCT) for Best Estimate Large Break loss-of-coolant accident (LOCA). Westinghouse also determined that this change is a Non-Discretionary change in accordance with Section 4.1.2 of WCAP-13451.

Affected Evaluation Model

1996 Westinghouse Best Estimate Large Break LOCA Evaluation Model.
1999 Westinghouse Best Estimate Large Break LOCA Evaluation Model, Application to pressurized water reactors with Upper Plenum Injection.

Estimated Effect

Plant specific PCT calculations were performed to assess the impact of this error for all analyses using the affected evaluation models. The current code version contains the correction.