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PG&E Letter DCL-24-095

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 <u>10 CFR 50.46 Annual Report of Emergency Core Cooling System Evaluation Model</u> Changes for Peak Cladding Temperature for 2023

References:

- PG&E Letter DCL-20-043, "Thirty-Day Notification Report of Significant Emergency Core Cooling System Evaluation Model Changes That Affect Peak Cladding Temperature and 10 CFR 50.46 Annual Report of Emergency Core Cooling System Evaluation Model Changes for Peak Cladding Temperature for 2019," dated May 20, 2020 [ADAMS Accession No. ML20141L498]
- NRC Letter "Diablo Canyon Nuclear Power Plant, Units 1 and 2 Issuance of Amendment Nos. 234 and 236 to Revise Technical Specification 5.6.5b, 'Core Operating Limits Report (COLR),' for Full Spectrum Loss-of-Coolant Accident Methodology (EPID L-2018-LLA-0730)," dated January 9, 2020
- 3. WCAP-13451, "Westinghouse Methodology for Implementation of 10 CFR 50.46 Reporting," October 1992
- 4. WCAP-16996-P-A, Revision 1, "Realistic LOCA Evaluation Methodology Applied to the Full Spectrum of Break Sizes (FULL SPECTRUM LOCA Methodology)," November 2016

Dear Commissioners and Staff:

Pursuant to 10 CFR 50.46, Pacific Gas and Electric Company (PG&E) hereby submits this annual report of changes in the Westinghouse emergency core cooling system evaluation model that affects peak cladding temperature (PCT) calculations for Diablo Canyon Power Plant (DCPP), Units 1 and 2.

There are no changes from the PCT results provided in Reference 1; therefore, there are no enclosures with PCT tables provided in this letter. The sum of the PCT from the most recent analysis of record, using the Westinghouse FULL SPECTRUM loss-of-coolant accident evaluation model (FSLOCA EM) approved for DCPP in Reference 2, and the estimates of the net PCT effect for changes and analysis errors remains well within the 2200°F limit specified in 10 CFR 50.46.

Additionally, the following Westinghouse FSLOCA EM computer code-related items are discussed in accordance with 10 CFR 50.46(a)(3)(ii):

• There was a minor computer code discrepancy identified in the flow area and volume of the thimble components. It was discovered that the number of assemblies modeled is inconsistent with the number of assemblies represented by one or more of the thimble component types, leading to an incorrect flow area and volume for the affected thimble component(s).

This code discrepancy was evaluated to have a negligible effect on the calculated results, leading to an estimated PCT impact of 0°F.

• There was a minor code discrepancy identified in the pressurizer surge line resistance used in the FSLOCA analyses. The resistance was modeled approximately 20 percent higher than intended.

The code discrepancy was evaluated to have a negligible effect on the calculated results, leading to an estimated PCT impact of 0°F.

• There was a minor code discrepancy identified in the vapor/continuous liquid interfacial drag coefficient for the churn-turbulent flow regime.

The code discrepancy was qualitatively evaluated to have a negligible effect on the calculated results, leading to an estimated PCT impact of 0°F.

 There was an update made to the LUCIFER code kinetics and decay heat model. The kinetics and decay heat models in the WCOBRA/TRAC-TF2 code are described in Section 9 of WCAP-16996-P-A, Revision 1 (Reference 4). Since the approval of the FSLOCA EM, the kinetics and decay heat model in the WCOBRA/TRAC-TF2 code was updated to support the analysis of higher burnup fuel. This change will minimally impact analysis calculations with the FSLOCA EM under the existing fuel burnup limits imposed via Limitation and Condition number 5 on the FSLOCA EM. This change represents a discretionary change that will be implemented on a forward-fit basis in accordance with Section 4.1.1 of Reference 3 and has no impact on existing analyses.

• There was an update to the fuel pellet radial noding consistent with the PAD5 fuel code. The fuel rod radial noding in the WCOBRA/TRAC-TF2 code is described in Sections 8.2 and 8.4 of Reference 4. The fuel rod radial noding was updated to be consistent with the PAD5 fuel code regarding the size and number of the nodes.

This change represents a discretionary change that will be implemented on a forward-fit basis in accordance with Section 4.1.1 of Reference 3 and has no impact on existing analyses.

• There were also general code maintenance related changes to the Reference 4 FSLOCA EM applicable for DCPP. Various changes have been made to enhance the usability of codes and to streamline future analyses. These changes represent discretionary changes that will be implemented on a forward-fit basis in accordance with Section 4.1.1 of Reference 3.

These changes have an estimated PCT impact of 0°F.

PG&E makes no new or revised regulatory commitments (as defined by NEI 99-04) in this letter.

If you have questions regarding this submittal, please contact Mr. James R. Morris, Manager, Regulatory Services, at 805-545-4609.

Sincerely,

11/6/24 Date

Scott M. Maze Manager, Design Engineering

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cc: Diablo Distribution Mahdi O. Hayes, NRC Senior Resident Inspector John D. Monninger, NRC Region IV Administrator