UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

January 10, 2018

Mr. James M. Welsch
Vice President, Nuclear Generation
and Chief Nuclear Officer
Pacific Gas and Electric Company
P.O. Box 56
Mail Code 104/6
Avila Beach, CA 93424

SUBJECT: DIABLO CANYON POWER PLANT UNIT NOS. 1 AND 2 – CORRECTION TO STAFF ASSESSMENT OF RESPONSE TO 10 CFR 50.54(f) INFORMATION REQUEST – FLOOD-CAUSING MECHANISM REEVALUATION (CAC NOS. MF6039 AND MF6040: EPID L-2015-JLD-005)

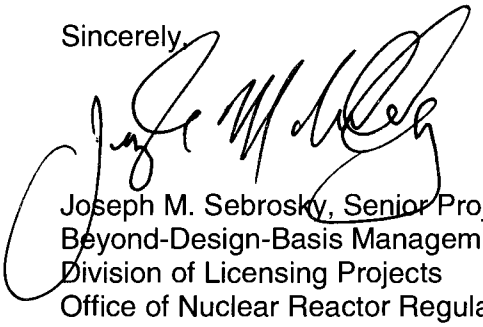
Dear Mr. Welsch:

By letter dated December 18, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17024A207), the U.S. Nuclear Regulatory Commission (NRC) issued a staff assessment of the reevaluated flood hazards for Diablo Canyon Power Plant Unit Nos. 1 and 2 (Diablo Canyon). The enclosed page 18 of the staff assessment was inadvertently omitted from the electronic version of the document and not included in the final version that was transmitted to you on December 18, 2017. The purpose of this letter is to inform you and other interested stakeholders of the steps the NRC staff has taken to correct the problem.

The staff has updated the electronic file that is found in ADAMS at ML17024A207 to include page 18. Therefore, the document found at ML17024A207 correctly reflects the information that was intended to be electronically transmitted to you on December 18, 2017, via NRC's listserve process. This letter is also sent to those individuals that are on the Diablo Canyon listserve distribution list such that they are also aware of the oversight and the steps the NRC staff has taken to correct the issue.

If you have any questions, please contact me at (301) 415-1132 or by electronic mail at Joseph.Sebrosky@nrc.gov.

Sincerely,



Joseph M. Sebrosky, Senior Project Manager
Beyond-Design-Basis Management Branch
Division of Licensing Projects
Office of Nuclear Reactor Regulation

Docket Nos. 50-275 and 50-323

Enclosure:
Page 18 of Staff Assessment of Diablo
Canyon Flood Hazard Reevaluation Report

In order to address storm surge (associated with low atmospheric pressures) the licensee used historically-measured average and minimum pressures at NDBC Buoy 46028; those data were used to define a surge antecedent water level of 9.9 ft NAVD88 (PG&E, 2016b). Based on its modeling results, the licensee stated that the crested wave height inside the breakwater was less than the CDB probable maximum tsunami wave height of 34.9 ft NAVD88. Consequently, the licensee concluded that the reevaluated PMSS is bounded by the Diablo Canyon CDB flooding hazard.

As part of the independent review of the licensee's PMSS estimate, the NRC staff familiarized itself with the local climatology, bathymetry, and the geography of the Diablo Canyon site and environs. Through that process, the NRC staff observed that the meteorology, bathymetry, and ocean wave spectral characteristics of the greater Pacific Coast region are distinctly different from those of their counterparts for the Atlantic and Gulf of Mexico seaboards where many nuclear power plants currently operate. Moreover, while the dominant source of coastal flooding on the Atlantic seaboard locations is associated with large storm surge (up to and in excess of 20 ft) caused by high-wind stresses that evolve over broad and shallow continental shelves, the narrow continental shelves of the Pacific Coast preclude surge heights greater than a few feet. The differences in wave types are due to the formation of longer-period waves originating from distal storm-generation locations in the Pacific Ocean. Moreover, the dominant storm waves on the California coast are typically associated with winter storms that formed to the south of the Aleutian Archipelago. From that location, the fetch is often more than 600 mi such that wave height and wave period are controlled by wind speed and duration (Federal Emergency Management Agency (FEMA), 2005; FEMA 2014).

For storm surge, the physical-bounding limitation of surge at the Diablo Canyon site can be approximated by considering the following equation (Dean and Dalrymple, 1984):

$$\frac{\partial \eta}{\partial x} = \frac{n\tau_{zx}(\eta)}{\rho g(h+\eta)}$$

where:

η = surge height;
τ = wave period;
x = horizontal position relative to shore;
z = wave elevation above still water line;
ρg = water pressure due to gravity; and
h = water height (seafloor to MSL).

Thus, storm surge is directly proportional to the width of the continental shelf and inversely proportional to average water depth. Since the width of the continental shelf on the Pacific Coast is approximately one-third to one-half of that of either the Atlantic or Gulf Coasts, storm surge on the Pacific Coast is expected to be on the order of 6 to 10 ft, based on the equation cited above. Similarly, when water depth is taken into account, surge height is expected to be further reduced to a WSE on the order of 5 ft, or less.

For wind-generated waves, it is generally accepted that ocean waves break when the wave height is approximately 78% of the water depth as a result of shoaling phenomena. Water depth outside the Diablo Canyon breakwater is approximately 36 to 43 ft on the ocean side, and 34 ft inside South Cove (Bechtel, 2012; Ehler et al., 2002). Thus, consistent with prevailing shallow water wave theory, ocean waves would break at heights approximately 34 ft outside of

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ADAMS Accession No.: ML18005A422

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