



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

December 1, 2016

Mr. Edward D. Halpin  
Senior Vice President, Generation  
and Chief Nuclear Officer  
Pacific Gas and Electric Company  
P.O. Box 56  
Mail Code 104/6  
Avila Beach, CA 93424

**SUBJECT: NUCLEAR REGULATORY COMMISSION REPORT FOR THE AUDIT OF  
PACIFIC GAS AND ELECTRIC COMPANY'S FLOOD HAZARD  
REEVALUATION REPORT SUBMITTAL RELATING TO THE NEAR-TERM  
TASK FORCE RECOMMENDATION 2.1-FLOODING FOR DIABLO CANYON  
POWER PLANT, UNIT NOS. 1 AND 2 (CAC NOS. MF6039 AND MF6040)**

Dear Mr. Halpin:

By letter dated June 10, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15148A207), the U.S. Nuclear Regulatory Commission (NRC) informed you of the staff's plan to conduct a regulatory audit of Pacific Gas and Electric Company's (the licensee's) Flood Hazard Reevaluation Report (FHRR) submittal related to the Near-Term Task Force Recommendation 2.1-Flooding for Diablo Canyon Power Plant, Unit Nos.1 and 2. The audit was intended to support the NRC staff review of the licensee's FHRR and the subsequent issuance of a staff assessment.

The audit was conducted on March 17, 2016, and was performed consistent with NRC Office of Nuclear Reactor Regulation, Office Instruction LIC-111, "Regulatory Audits," dated December 29, 2008 (ADAMS Accession No. ML082900195). The purpose of this letter is to provide you with the final audit report which summarizes and documents the NRC's regulatory audit of the licensee's FHRR submittal.

E. Haplin

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If you have any questions, please contact me at (301) 415-2621 or by e-mail at Robert.Bernardo@nrc.gov.

Sincerely,

*/RA/*

Robert Bernardo, Project Manager  
Office of Nuclear Reactor Regulation  
Japan Lessons-Learned Division  
Hazards Management Branch

Docket Nos. 50-275 and 50-323

Enclosure:  
Audit Report

cc w/encl: Distribution via Listserv

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**ADAMS Accession No.: ML16176A058**

**\*via email**

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<b>NAME</b>	CCook*	GBowman	RBernardo	
<b>DATE</b>	11/28/2016	6/27/2016	12/1/2016	

**OFFICIAL RECORD COPY**

NUCLEAR REGULATORY COMMISSION AUDIT REPORT  
PACIFIC GAS AND ELECTRIC COMPANY'S  
FLOOD HAZARD REEVALUATION REPORT SUBMITTALS  
RELATING TO THE NEAR-TERM TASK FORCE RECOMMENDATION 2.1-FLOODING FOR  
DIABLO CANYON POWER PLANT, UNIT NOS. 1 AND 2

BACKGROUND AND AUDIT BASIS

By letter dated March 12, 2012, the U.S. Nuclear Regulatory Commission (NRC) issued a request for information to all power reactor licensees and holders of construction permits in active or deferred status, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), Section 0.54(f) "Conditions of license" (hereafter referred to as the "50.54(f) letter"). The request was issued in connection with implementing lessons-learned from the 2011 accident at the Fukushima Dai-ichi nuclear power plant, as documented in the Near-Term Task Force's review of insights from the Fukushima Dai-ichi accident. Recommendation 2.1 in that document recommended that the NRC staff issue orders to all licensees to reevaluate seismic and flooding for their sites against current NRC requirements and guidance. Subsequent staff requirements memoranda associated with SECY-11-0124 and SECY-11-0137, instructed the NRC staff to issue requests for information to licensees pursuant to 10 CFR 50.54(f).

By letter dated March 11, 2015, Pacific Gas and Electric Company's (PG&E, the licensee) submitted its Flood Hazard Reevaluation Report (FHRR) Diablo Canyon Power Plant, Unit Nos. 1 and 2 (Diablo Canyon) (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15071A045). The NRC is in the process of reviewing the aforementioned submittal and has completed a regulatory audit of the licensee to better understand the development of the submittal, identify any similarities/differences with past work completed and ultimately aid in its review of the licensee's FHRR. This audit summary is being completed in accordance with the guidance set forth in NRC Office of Nuclear Reactor Regulation, Office Instruction LIC-111, "Regulatory Audits," dated December 29, 2008 (ADAMS Accession No. ML082900195).

AUDIT LOCATION AND DATES

The audit was completed by document review via a webinar session in conjunction with the use of the licensee's established electronic reading room and teleconference on March 17, 2016.

Enclosure

AUDIT TEAM

The NRC audit team, and audit participants were as follows:

<b>NRC AUDIT TEAM</b>	<b>Organization</b>
Victor Hall, Team Leader	NRR
Kevin Quinlan, Technical Lead	NRO
Chris Cook	NRO
Hosung Ahn	NRO
Mike Lee	NRO
Aida Rivera-Varona	NRO
Michael Willingham	NRO
John Quinn, et. al.	Argonne National Laboratories

<b>AUDIT PARTICIPANTS</b>	<b>Organization</b>
Helene Finger	PG&E
Terence Grebel	PG&E
Hossein Hamzehee	PG&E
Mike McCoy	PG&E
Michelle Olsofsky	PG&E
Philippe Soenen	PG&E

DOCUMENTS AUDITED

The documents reviewed by the NRC staff were located in an electronic reading room during the NRC staff's review. Documents used by the NRC staff to support the technical analysis will be referenced in the staff assessment.

AUDIT ACTIVITIES

In response to the 50.54(f) request, the licensee submitted its FHRR for the Diablo Canyon site on March 11, 2015. Through the course of the staff's FHRR review, the staff identified a series of questions (information need requests) for the licensee. The staff's information need requests were discussed during the audit and are briefly summarized below.

**LIP-Related Questions:** In connection with the local intense precipitation (LIP) flood hazard analysis, the licensee notified the staff that it had identified one or more inconsistencies in the original 50.54(f) FHRR related to LIP and indicated its plans to resubmit the LIP analysis to the NRC staff. By letter dated February 8, 2016 (ADAMS Accession Nos. ML16039A366 and ML16039A367), the revised LIP analysis was provided to the staff, and included the submission of the applicable FLO-2D-related input/output files. The licensee's re-submittal addressed the staff's LIP-related questions. A more detailed discussion of the staff's review and conclusion of the revised LIP analysis will be included in the staff assessment.

**Current Design-Basis vs. Current Licensing Basis (CLB):** In response to this particular information need request, the staff were advised by the licensee that the intent was to describe water surface elevations as CDB.

In light of this information, the NRC staff determined that no further action in this area was necessary.

***Flood Event Duration Parameters:*** The licensee's 50.54(f) response was expected to include flood event duration parameters (FEDs) needed to perform the additional assessment of plant response for flood hazards not bounded by the CDB. The licensee confirmed that they did not provide complete FED parameter values for LIP. The licensee is expected to develop FED parameter values and applicable flood-related associated effects, if needed, in order to conduct future additional assessments of plant response per Appendix G of Nuclear Energy Institute (NEI) guidance document NEI 12-06, Revision 2, "Diverse and Flexible Coping Strategies (Flex) Implementation Guide" (ADAMS Accession No. ML16005A625), as discussed in COMSECY-15-0019, "Closure Plan for the Reevaluation of Flooding Hazards for Operating Nuclear Power Plants" (ADAMS Accession No. ML15153A104).

In light of these facts, the staff determined that no further action on this matter was necessary.

#### EXIT MEETING/BRIEFING

By letter dated March 30, 2016, the NRC staff issued a summary of the reevaluated flood-causing mechanisms (ADAMS Accession No. ML16083A551). That letter concluded that the licensee's reevaluated flooding hazard information is a suitable input for assessments associated with Near-Term Task Force Recommendation 2.1 "Flooding," thus closing out the discussion of the technical topics described above.