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

July 12, 2016

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

SUBJECT: DIABLO CANYON POWER PLANT, UNITS 1 AND 2 – REGULATORY AUDIT PLAN FOR AUGUST 3-4, 2016, AUDIT AT WESTINGHOUSE FACILITY IN ROCKVILLE, MARYLAND, IN SUPPORT OF ALTERNATIVE SOURCE TERM LICENSE AMENDMENT REQUEST (CAC NOS. MF6399 AND MF6400)

Dear Mr. Halpin:

By letter dated June 17, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15176A539), as supplemented by letters dated August 31, October 22, November 2, November 6, and December 17, 2015; and February 1, February 10, April 21, and June 9, 2016 (ADAMS Accession Nos. ML15243A363, ML15295A470, ML15321A235, ML15310A522, ML16004A363, ML16032A603, ML16041A533, ML16120A026, and ML16169A264, respectively), Pacific Gas and Electric (PG&E, the licensee), submitted a license amendment request to revise the licensing bases to adopt the alternative source term as allowed by Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Section 50.67, "Accident source term," for Diablo Canyon Power Plant, Units 1 and 2.

To support its safety evaluation, the NRC staff will conduct an audit at the Westinghouse facility in Rockville, Maryland, on August 3 and 4, 2016. The Enclosure to this letter provides an audit plan in support of this audit.

If you have any questions, please contact me at 301-415-3016 or via e-mail at Balwant.Singal@nrc.gov.

Sincerely,

Siva P. Lingam for

Balwant K. Singal, Senior Project Manager
Plant Licensing Branch IV-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-275 and 50-323

Enclosure:
Regulatory Audit Plan

cc w/encl: Distribution via Listserv

REGULATORY AUDIT PLAN FOR AUGUST 3 AND 4, 2016, AUDIT AT WESTINGHOUSE FACILITY IN ROCKVILLE, MARYLAND, TO SUPPORT REVIEW OF ALTERNATIVE SOURCE TERM LICENSE AMENDMENT REQUEST PACIFIC GAS AND ELECTRIC COMPANY DIABLO CANYON POWER PLANT, UNITS 1 AND 2 DOCKET NOS. 50-275 AND 50-323

1.0 BACKGROUND

The U.S. Nuclear Regulatory Commission (NRC) staff is currently engaged in a review of a license amendment request (LAR) for the Diablo Canyon Power Plant (DCPP), Units 1 and 2. By letter dated June 17, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15176A539), as supplemented by letters dated August 31, October 22, November 2, November 6, and December 17, 2015; and February 1, February 10, April 21, and June 9, 2016 (ADAMS Accession Nos. ML15243A363, ML15295A470, ML15321A235, ML15310A522, ML16004A363, ML16032A603, ML16041A533, ML16120A026, and ML16169A264, respectively), Pacific Gas and Electric Company (PG&E, the licensee), submitted an LAR to revise the licensing bases to adopt the alternative source term (AST) as allowed by Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Section 50.67, "Accident source term," for DCPP, Units 1 and 2.

An initial set of requests for additional information (RAIs) was developed based on the NRC staff's acceptance review for the initial submittal of LAR, dated June 17, 2015. Those RAIs primarily focused on acquiring meteorological (Met) data and its characteristics, input and output files for the ARCON96 dispersion modeling runs, including Met data formatted for input to the model, input files for the proprietary EN-113 dispersion model and a description of the file structure, and plant drawings used to determine certain model input parameters. The RAIs were provided to the licensee on October 1, 2015, and the licensee provided responses on November 2, 2015 (ADAMS Accession No. ML15321A235).

The NRC staff reviewed those RAI responses and identified an issue between the sequential hourly Met data formatted per NRC Regulatory Guide (RG) 1.23, "Meteorological Monitoring Programs for Nuclear Power Plants," Revision 1, March 2007 (ADAMS Accession No. ML070350028), and the Met data formatted for input to the ARCON96 (and presumably EN-113) dispersion model(s), along with other characteristics based on that data. In effect, the NRC staff was unable to determine whether the appropriate Met data was input to the modeling runs or if the data was representative of long-term conditions at the DCPP site. Therefore, this issue was given priority over initiating review of the ARCON96 modeling analysis because of the issues potential to affect previously submitted relative concentration (X/Q) values and downstream dose calculations. The second set of RAIs was provided to the licensee on February 17, 2016 (ADAMS Accession No. ML16048A232), to address these issues. The licensee evaluated the issues, confirmed the NRC staff-identified discrepancy between the Met

data formatted per RG 1.23 and as input to the dispersion models, and after correction determined its effects on the downstream dose calculations. The licensee provided its responses to the RAIs by letter dated April 21, 2016 (ADAMS Accession No. ML16120A026).

The NRC staff's review of the ARCON96 and EN-113 dispersion modeling analyses continued in the period between the issuance of the second set of RAIs and the licensee's response to them based on the documentation accompanying the original LAR submittal dated June 17, 2015, proposed mark-ups to the Updated Final Safety Analysis Report (UFSAR), and revisions to the technical assessment (report), along with information provided in previous RAI responses. A third set of RAIs (in draft form), based on this review, was provided to the licensee on June 2, 2016. Following a clarification call on June 20, 2016, it was decided to conduct an audit for review of the supporting documentation.

2.0 REGULATORY AUDIT BASIS

The basis of this audit is PG&E's AST LAR, and the following regulations and regulatory guidance.

- 10 CFR 50.67, "Accident source term," paragraph (b)(2).

- 10 CFR Part 50, Appendix A, General Design Criterion 19, "Control room."

- NUREG-0800, "Standard Review Plan for the Review of Nuclear Power Plants: LWR Edition" (SRP) Section 2.3.4, "Short-Term Atmospheric Dispersion Estimates for Accident Releases," Section II, "Acceptance Criteria," Revision 3, March 2007 (ADAMS Accession No. ML070730398).

  Among other things, SRP Section 2.3.4 essentially calls for atmospheric dispersion models used to calculate X/Q values at offsite and onsite locations, due to accident releases, to be documented in detail and substantiated so that the NRC staff can evaluate the appropriateness of their use with regards to release characteristics, plant configuration, plume density, meteorological conditions, and site topography.

- RG 1.145, "Atmospheric Dispersion Models for Potential Accident Consequence Assessments at Nuclear Power Plants," Revision 1, Reissued February 1983 (ADAMS Accession No. ML003740205).

- NUREG/CR-2858 (PNL-4413), "PAVAN: An Atmospheric-Dispersion Program for Evaluating Design-Basis Accidental Releases of Radioactive Materials from Nuclear Power Stations," November 1982 (ADAMS Accession No. ML12045A149).

- NUREG/CR-2260 (NUS-3854), "Technical Basis for Regulatory Guide 1.145, 'Atmospheric Dispersion Models for Potential Accident Consequence Assessments at Nuclear Power Plants,'" October 1981 (ADAMS Accession No. ML12045A197).

- RG 1.194, "Atmospheric Relative Concentrations for Control Room Radiological Habitability Assessments at Nuclear Power Plants," June 2003 (ADAMS Accession No. ML031530505).

- NUREG/CR-6331 (PNNL-10521), "Atmospheric Relative Concentrations in Building Wakes," Revision 1, May 1997.

- RG 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors," July 2000 (ADAMS Accession No. ML003716792).

- NUREG-0737, "Clarification of TMI [Three Mile island] Action Plan Requirements: Requirements for Emergency Response Capability," Supplement No. 1, Reprinted February 1989 (ADAMS Accession No. ML102560009).

- NUREG-0696, "Functional Criteria for Emergency Response Facilities," Final Report, February 1981 (ADAMS Accession No. ML051390358).

- RG 1.23, "Meteorological Monitoring Programs for Nuclear Power Plants," Revision 1, March 2007 (ADAMS Accession No. ML070350028).

3.0 REGULATORY AUDIT SCOPE

The scope of the audit is to examine and evaluate technical, procedural, and process (e.g., input) information related to the proprietary EN-113 dispersion model used to estimate offsite X/Q values at the Exclusion Area Boundary and the outer Low Population Zone boundary and to the NRC-accepted ARCON96 dispersion model used to estimate onsite X/Q values at the various air intakes and ingress / egress locations to the Control Room and Technical Support Center.

- Purpose - The intent of obtaining and understanding this information is to: (1) evaluate those accident-related atmospheric dispersion analyses for conformance to applicable regulatory guidance and requirements; and (2) to determine the reasonability of the dispersion modeling results presented in the documentation that supports the AST LAR. With respect to the proprietary EN-113 dispersion model, the intent here is not to endorse the model itself but rather its use in support of the original LAR dated June 17, 2015.

- Goals and Objectives - Document issues addressed in an NRC-generated audit report that is expected to be referenced, as appropriate, from the safety evaluation (SE) prepared for the subject LAR submittal - this is especially important for the EN-113 modeling analysis which uses a proprietary computer code.

  Issues not resolved at the audit will be submitted to the licensee as formal RAIs. Similarly, information not available at the time of the audit will also be issued as RAIs. However, the NRC audit team will expect the licensee to provide an indication of the status of resolution for any such issues not resolved at the audit

and an indication of when any information (e.g., revised modeling runs, updates to tables, figures, the UFSAR, and supporting documentation) not available at the time of the audit will be provided to the NRC staff. These items will also be identified as part of the NRC-generated audit report.

The resolution of any issues that require revisions to any previously submitted EN-113 or ARCON96 dispersion modeling runs or downstream dose calculations will be issued as RAIs. The responses to any such RAIs will be expected to include revised dispersion model input and output files (in the case of ARCON96 model runs), revised dispersion model input files and summaries of all applicable output results (in the case of EN-113 model runs), and, if necessary, revised Met data formatted for input to the respective models. The revision or correction of any related figures or drawings, and summary tables of dispersion or dose calculation results will be expected as part of the RAI response(s) or an indication of when that information will be available.

4.0 INFORMATION NECESSARY FOR THE REGULATORY AUDIT

The licensee is requested to have information available on site for the audit team that will support licensee's explanations of the assumptions made and input developed for the EN-113 and ARCON96 dispersion modeling analyses. For the proprietary EN-113 dispersion model, this should also include information pertaining to the input file structure, the options available, and those selected. The documentation could be provided in electronic or hard copy form.

Additional information needs will be communicated to the designated point of contact for the licensee.

The NRC staff also requests the licensee to make personnel who are familiar with the LAR (including site staff and contractors who are familiar with the dispersion modeling analyses and inputs to those analyses) accessible upon request (either in person, by video conference, or by phone). The personnel should be able to respond to NRC staff questions.

5.0 TEAM ASSIGNMENTS / RESOURCE ESTIMATES

Area of Review	**Assigned Auditor**
Audit Lead	Michael Mazaika (NRC)
Technical Reviewer	Jason White (NRC)
Team Leader	Brad Harvey (NRC)
Project Manager	Balwant Singal (NRC)

6.0 LOGISTICS

The audit will be conducted at the Westinghouse facility in Rockville, Maryland, from August 3-4, 2016. Entrance and exit briefings will be held at the beginning and end of this audit, respectively. The licensee is requested to provide a room for use by the audit team.

The audit will start at 8:30 a.m. on Wednesday, August 3, 2016, and conclude on Thursday, August 4, 2016, at the Westinghouse facility in Rockville, Maryland.

The tentative schedule for the audit is as follows:

August 3, 2016

8:30 a.m.	Check-in at Westinghouse Office – Meet Licensee Contacts, Set Up for Entrance Meeting
9:00 a.m.	Entrance Briefing – Introductions, Audit Activities, Goals, Logistics
9:30 a.m.	Begin Review of Issues Related to EN-113 Modeling Analysis
12:00 p.m.	Lunch
1:00 p.m.	Continue Review of Issues Related to EN-113 Modeling Analysis
3:00 p.m.	Afternoon Break
3:15 p.m.	Complete Review of Issues Related to EN-113 or Begin Review of Issues Related to ARCON96
4:15 p.m.	NRC Audit Team Caucus
4:45 p.m.	NRC / Licensee Interim Meeting - Summary of Day and Plan for Tomorrow

August 4, 2016

8:30 a.m.	Check-in at Westinghouse Office – Meet Licensee Contact(s)
9:15 a.m.	NRC / Licensee Meeting - Plan for Today
9:30 a.m.	Begin or Continue Review of Issues Related to ARCON96
12:00 p.m.	Lunch
1:00 p.m.	Continue Review of Issues Related to ARCON96 Modeling Analysis
3:00 p.m.	Afternoon Break
3:15 p.m.	Complete Review of Issues Related to ARCON96 and/or Address Additional Issues and Questions
4:15 p.m.	NRC Audit Team Caucus
4:45 p.m.	NRC / Licensee Exit Briefing – Summary of Audit Results, Formal RAIs to be Issued

7.0 DELIVERABLES

At the conclusion of the audit, the NRC staff will conduct an exit briefing to provide a summary of the audit results related to the EN-113 and ARCON96 dispersion modeling analyses and any other issues identified during the course of the audit. The exit briefing will also indicate any formal RAIs expected to be issued by the NRC staff consistent with the goals and objectives of the audit scope stated earlier in the audit plan. An audit report / summary will be issued to the licensee within approximately 30 to 45 days from the end of the audit.

If you have any questions, please contact me at 301-415-3016 or via e-mail at Balwant.Singal@nrc.gov.

Sincerely,

/RA SLingam for/

Balwant K. Singal, Senior Project Manager
Plant Licensing Branch IV-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-275 and 50-323

Enclosure:
Regulatory Audit Plan

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ADAMS Accession No.: ML16193A332

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NAME	CCook	RPascarelli	BSingal (SLingam for)
DATE	7/11/16	7/11/16	7/12/16

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