

NRR-PMDAPEm Resource

From: Lingam, Siva
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To: Schrader, Kenneth (KJSe@pge.com)
Cc: Markley, Michael; Tam, Peter; Rosenberg, Stacey; Gennardo, David; Evans, Jonathan; Dinsmore, Stephen; mjrm@pge.com; Soenen, Philippe R (PNS3@pge.com)
Subject: Diablo Canyon 1 and 2 - RAIs for LAR Associated with TSTF-505, Rev. 1 (TAC Nos. MF3240 and MF3241)

By letter dated November 25, 2013 (Agencywide Documents and Access Management System (ADAMS) Accession No. ML13330A557), as supplemented by letters dated February 5 and May 28, 2015 (ADAMS Accession Nos. ML15036A592 and ML15148A480, respectively), Pacific Gas and Electric Company (PG&E, the licensee) submitted a license amendment request (LAR) associated with Technical Specification Task Force (TSTF) traveler, TSTF-505, Revision 1, "Provide Risk-Informed Extended Completion Times – RITSTF [Risk-Informed TSTF] Initiative 4b." The proposed LAR would, in part, modify selected Required Actions to permit extending the Completion Times in accordance with a new TS-required risk-informed completion time program. The U.S. Nuclear Regulatory Commission (NRC) staff has determined that additional information is needed for the staff to complete its review. During clarifying discussions with PG&E representatives on June 23, 2015, Mr. Kenneth Schrader agreed to provide responses within 60 days from the date of this e-mail.

RAI 1

NRC approved Topical Report (TR) NEI 06-09, "Risk-Informed Technical Specifications Initiative 4b: Risk-Managed Technical Specification (RMTS) Guidelines," Revision 0-A (ADAMS Accession No. ML12286A322), includes the NRC Safety Evaluation (SE) for NEI 06-09 (ADAMS Accession No. ML071200238), which approved and provided limitations and conditions for use of the TR. Section 4.0, Item 6, of the NRC SE requires that the licensee provide the plant-specific total Core Damage Frequency (CDF) and Large Early Release Frequency (LERF) to confirm that these are less than $1\text{E-}4/\text{year}$ and $1\text{E-}5/\text{year}$, respectively. This is consistent with the risk acceptance guidelines in Regulatory Guide (RG) 1.174 (ADAMS Accession No. ML100910006).

In Attachment 9 of the application, the licensee states that the Diablo Canyon Unit 1 CDF and LERF are $9.47\text{E-}05/\text{year}$ and $7.99\text{E-}06/\text{year}$, respectively, and that the Unit 2 CDF and LERF are $9.06\text{E-}05/\text{year}$ and $8.83\text{E-}06/\text{year}$, respectively. The licensee also notes that "these values reflect the anticipated configuration of the plant upon full implementation of [National Fire Protection Association] NFPA 805 and related plant modifications to resolve fire protection issues. At the time of implementation of the [Risk-Informed Completion Time] RICT Program, the [Probabilistic Risk Assessment] PRA model used will reflect the existing configuration of the plant."

Similarly, in Attachment 12 of the application, the licensee states: "In addition, the fire and internal events PRA models include credit for a committed plant modification (described in Reference 6) to install a passive shutdown seal for each of the reactor coolant pumps (RCPs). For RICT Program calculations, the PRA models will reflect the actual configuration of the RCP seals." The NRC staff understands that the RICT program will reflect the actual configuration of the plant; however, this does not address the total baseline risk before implementation of the RICT program.

The NRC staff notes that the reported CDF and LERF for Diablo Canyon are near the limits of the risk acceptance guidelines identified in NEI 06-09, Revision 0-A. The NRC staff also notes that RCP seal credit can significantly reduce both internal events and fire risk at Pressurized Water Reactors. Please provide the plant risk without credit for RCP seals, or any other credited NFPA 805 related modifications that are not completed at this time, and assess these values against the applicable risk acceptance guidelines. If the acceptance guidelines are not met, please identify what plant modifications would be necessary to meet RG 1.174 and propose a license condition to perform these modifications if RCP seal credit cannot be achieved. Also,

please describe how RICT will be fully implemented after NFPA 805 (i.e., after completing the modifications, resolving concerns with RCP credit, and self-approval is allowed), such that the risk acceptance guidelines are met.

RAI 2

The NRC staff has determined that the proposed regulatory commitments in Attachment 4 of the application are necessary for implementation of the Diablo Canyon RICT program. Identify if any of the proposed regulatory commitments have already been addressed due to recent PRA model updates. Please propose a license condition with associated implementation items to address the remaining items listed in Attachment 4.

RAI 3

In Table A13-1 of the application, for the assumption regarding designation of certain “systems/components as guaranteed failures in the fire PRA model,” the disposition for the RICT program states: “Those systems that are within the RICT Program and guaranteed failed in the fire model are assumed 100% successful in the baseline PRA model used to calculate the RICT.” The staff interprets this statement to mean that the equipment is always considered available (i.e., “100% successful”) in the model used to calculate the RICT. This could misrepresent risk insights as it may not account for the non-fire-induced (random) failure probabilities of these components. For example:

Attachment 12, Attributes of the Configuration Risk Management Program (CRMP) Model, Table A12-3 lists SSC functions not in TS that impact RICT calculations, including:

- Feed and bleed using emergency core cooling system (ECCS) pumps and power operated relief valves (PORVs)
- Instrument air system
- Main feedwater and condensate systems pumps and valves

The response to NFPA Standard NFPA 805 PRA RAI 1(a) (ADAMS Accession No. ML14330A635) discussed the systems (i.e., 500kV back-feed, 12kV non-essential power, Anticipated Transient Without Scram Mitigating System Actuation Circuitry (AMSAC), Instrument Air, Feedwater and condensate systems, containment fan coolers, containment spray, and make up to refueling water storage tank from the fuel pool) that are assumed to be unavailable in the Fire PRA. The response also states: “The dependency of RCS-PCV-474 on the [Instrument Air System] IAS significantly impacts the reliability of the [Feed and Bleed] F&B function, especially in fire events.”

Assuming that Instrument Air is always available may not accurately represent the plant configuration when entering a RICT and could lead to overestimating the RICT by allowing too much credit for the feed and bleed function.

It is unclear how these systems are being modeled in the internal events portion of the “baseline PRA model used to calculate the RICT.” Assuming the equipment is always available in the model (i.e., “100% successful”) used to calculate the RICT may not reflect the plant configuration at the time the RICT is entered and could misrepresent risk insights. Please elaborate on this disposition to more clearly explain how this will affect RICT calculations. Will any additional risk-model analyses be required for the associated systems/components based on this assumption?

Siva P. Lingam
U.S. Nuclear Regulatory Commission
Project Manager (NRR/DORL/LPL4-1)
Cooper Nuclear Station
Diablo Canyon Nuclear Power Plant

Location: O8-D5; Mail Stop: O8-B3

Telephone: 301-415-1564; Fax: 301-415-1222

E-mail address: siva.lingam@nrc.gov

Hearing Identifier: NRR_PMDA
Email Number: 2186

Mail Envelope Properties (Siva.Lingam@nrc.gov20150629133100)

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From: Lingam, Siva

Created By: Siva.Lingam@nrc.gov

Recipients:

"Markley, Michael" <Michael.Markley@nrc.gov>
Tracking Status: None
"Tam, Peter" <Peter.Tam@nrc.gov>
Tracking Status: None
"Rosenberg, Stacey" <Stacey.Rosenberg@nrc.gov>
Tracking Status: None
"Gennardo, David" <David.Gennardo@nrc.gov>
Tracking Status: None
"Evans, Jonathan" <Jonathan.Evans@nrc.gov>
Tracking Status: None
"Dinsmore, Stephen" <Stephen.Dinsmore@nrc.gov>
Tracking Status: None
"mjrm@pge.com" <mjrm@pge.com>
Tracking Status: None
"Soenen, Philippe R (PNS3@pge.com)" <PNS3@pge.com>
Tracking Status: None
"Schrader, Kenneth (KJSe@pge.com)" <KJSe@pge.com>
Tracking Status: None

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