



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

July 22, 2010

LICENSEE: Pacific Gas and Electric Company

FACILITY: Diablo Canyon Nuclear Power Plant, Units 1 and 2


SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON JULY 8, 2010, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND PACIFIC GAS AND ELECTRIC COMPANY CONCERNING DRAFT REQUEST FOR ADDITIONAL INFORMATION RELATED TO THE DIABLO CANYON NUCLEAR POWER PLANT, UNITS 1 AND 2, LICENSE RENEWAL APPLICATION SCOPING AND SCREENING AND AGING MANAGEMENT REVIEW

The U.S. Nuclear Regulatory Commission (NRC or the staff) and representatives of Pacific Gas and Electric Company (PG&E) held a telephone conference call on July 8, 2010, to obtain clarification on the staff's draft request for additional information (D-RAI) regarding the Diablo Canyon Nuclear Power Plant license renewal application (LRA).

By e-mails dated June 17, June 18, and June 21, 2010, the staff sent D-RAIs to PG&E regarding aging management programs. PG&E reviewed the information contained therein, and requested a telephone conference call. The telephone conference call was useful in clarifying the intent of the staff's D-RAIs. Enclosure 2 provides discussions on D-RAIs for which the applicant requested clarification. No changes to other D-RAIs were necessary as a result of this telephone conference call. Formal RAIs will be issued by a separate letter.

Enclosure 1 provides a listing of the participants.

The applicant had an opportunity to comment on this summary.



Nathaniel Ferrer, Safety Project Manager
Projects Branch 2
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket Nos. 50-275 and 50-323

Enclosures:
As stated

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**TELEPHONE CONFERENCE CALL
DIABLO CANYON NUCLEAR POWER PLANT, UNITS 1 AND 2
LICENSE RENEWAL APPLICATION**

**LIST OF PARTICIPANTS
JULY 8, 2010**

PARTICIPANTS

AFFILIATIONS

Nate Ferrer	U.S. Nuclear Regulatory Commission (NRC)
Kim Green	NRC
Jeff Poehler	NRC
Stan Gardocki	NRC
Garry Armstrong	NRC
Terry Grebel	Pacific Gas and Electric Company (PG&E)
Kyle Duke	PG&E
Kevin Braico	PG&E
Chalmer Myer	Strategic Teaming And Resource Sharing (STARS)
Dave Kunsemiller	STARS
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Diablo Canyon Nuclear Power Plant, Units 1 and 2
License Renewal Application
Draft Request for Additional Information
Scoping and Screening/Aging Management Review

D-RAI 2.1.6-1

License renewal application (LRA) Section B2.1.32 describes the Structures Monitoring Program as managing cracking, loss of material, and change in material properties by monitoring the condition of structures and structural supports that are in the scope of license renewal. The applicant states that though coatings may have been applied to the external surfaces of structural members, no credit was taken for these coatings in the determination of aging effects for the underlying materials. The applicant further states that the Structures Monitoring Program evaluates the condition of the coatings as an indication of the condition of the underlying materials.

NUREG-1801, "Generic Aging Lessons Learned (GALL) Report," states that "Proper maintenance of protective coatings inside containment is essential to ensure operability of post-accident safety systems that rely on water recycled through the containment sump/drain system." On page B-13 of the LRA, line item XI.S8 states that the NUREG-1801 Protective Coating Monitoring and Maintenance Program is not applicable to Diablo Canyon Nuclear Power Plant (DCPP).

1. Please justify why GALL AMP XI.S8 does not apply to DCPP.
2. Since degradation of Service Level 1 protective coatings in containment can potentially become a debris source that challenges the safety function of the Emergency Core Cooling System, please provide a justification for not including Service Level 1 protective coatings in scope by rule in 10 CFR 54.4(a)(2).
3. Provide the details of how Service Level 1 protective coatings in containment will be properly maintained and not become a debris source that might challenge the safety function of the Emergency Core Cooling System, during the period of extended operation.

Discussion: Based on discussion with the applicant, it was determined that the draft request for additional information (D-RAI) was related to Section B2 of the LRA. The staff will revise the question number to RAI B2-1. The revised question will be sent as a formal RAI.

D-RAI 3.1.2.2.7-2

In LRA Section 3.1.2.2.7.1, the applicant indicated that for managing aging due to stress corrosion cracking (SCC) of stainless steel high pressure conduits (flux thimble guide-tubes-to seal table) exposed to reactor coolant, the applicant's Water Chemistry (B2.1.2) aging management program (AMP) will be augmented by their American Society of Mechanical Engineers (ASME) Section XI Inservice Inspection, Subsections IWB, IWC, and IWD (B2.1.1)

AMP. For stainless steel flux thimble tubes exposed to reactor coolant, cracking due to SCC is managed by the DCPD Water Chemistry (B2.1.2) AMP. The staff notes that in LRA Table 3.1.2, the flux thimble tubes are included as a subcomponent of the Reactor Vessel (RV) Bottom Mounted Instrument Guide Tube, which aligns to GALL Report item IV.A2-1(RP-13) for the aging effect cracking.

The staff reviewed LRA Section 3.1.2.2.7.1 against the criteria in NUREG-1800, "Standard Review Plan for Review of License Renewal Applications (SRP-LR)," Section 3.1.2.2.7.1, which states that cracking due to SCC could occur in the PWR stainless steel reactor vessel flange leak detection lines and bottom-mounted instrument guide tubes. The GALL Report recommends further evaluation to ensure that these aging effects are adequately managed. SRP-LR further states that the GALL Report recommends that a plant-specific AMP be evaluated because existing programs may not be capable of mitigating or detecting cracking due to SCC. Acceptance criteria are described in Branch Technical Position RLSB-1 (Appendix A.1 of the SPR-LR).

Branch Technical Position RLSB-1 states that a plant-specific AMP should include a "detection of aging effects" program element. The DCPD Water Chemistry Program provides mitigation of cracking through control of impurities, but does not provide for detection of aging effects. The ASME Section XI Inservice Inspection Program, Subsections IWB, IWC, and IWD AMP, provides for inspections of components. The standard examination requirements for flux thimble tubes under the ASME Section XI Inservice Inspection Program, Subsections IWB, IWC, and IWD AMP, is a VT-2 visual inspection per ASME Code Section XI, Table IWB-2500-1, Examination Category B-P, which would not generally be capable of detecting cracking unless a leak is already present, producing visible water and/or boric acid. The program description in LRA Section B.2.1.1 does not describe any augmented inspections for the flux thimble tubes which would be capable of early detection of cracking.

1. Identify any specific examinations included in the ASME Section XI Inservice Inspection Program, Subsections IWB, IWC, and IWD AMP, which would be capable of detecting cracking in the flux thimble tubes before a throughwall crack and leakage occurs.
2. If the ASME Section XI Inservice Inspection Program, Subsections IWB, IWC, and IWD AMP does not provide for detection of cracking prior to a leak, provide a plant-specific AMP or combination of existing AMPs that include a "detection of aging effect" program element for managing the aging effect of cracking due to SCC in the flux thimble tubes; and
3. Describe what examination techniques will be used to detect (or confirm the absence of) the aging effect of cracking in the flux thimble tubes, either as part of the ASME Section XI Inservice Inspection Program, Subsections IWB, IWC, and IWD, or an additional plant-specific program.

Discussion: Based on discussion with the applicant, it was determined that components of concern were the RV Bottom Mounted Instrument Guide Tube (High Pressure Conduits, Seal Fittings), and not the flux thimble tubes. The staff will revise the question as follows. The revised question will be sent as a formal RAI.

RAI 3.1.2.2.7-2

In LRA Section 3.1.2.2.7.1, the applicant indicated that for managing aging due to SCC of stainless steel high pressure conduits (flux thimble guide-tubes-to seal table) exposed to reactor coolant, the applicant's Water Chemistry (B2.1.2) AMP will be augmented by their ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD (B2.1.1) AMP. For stainless steel flux thimble tubes exposed to reactor coolant, cracking due to SCC is managed by the DCPW Water Chemistry (B2.1.2) AMP. The staff notes that in LRA Table 3.1.2, the flux thimble tubes are included as a subcomponent of the RV Bottom Mounted Instrument Guide Tube, which aligns to GALL Report item IV.A2-1 (RP-13) for the aging effect cracking.

The staff reviewed LRA Section 3.1.2.2.7.1 against the criteria in NUREG-1800, 'Standard Review Plan for Review of License Renewal Applications (SRP-LR),' Section 3.1.2.2.7.1, which states cracking due to SCC could occur in the PWR stainless steel reactor vessel flange leak detection lines and bottom-mounted instrument guide tubes. The GALL Report recommends further evaluation to ensure that these aging effects are adequately managed. SRP-LR further states that the GALL Report recommends that a plant-specific AMP be evaluated because existing programs may not be capable of mitigating or detecting cracking due to SCC. Acceptance criteria are described in Branch Technical Position RLSB-1 (Appendix A.1 of the SPR-LR).

Branch Technical Position RLSB-1 states that a plant-specific AMP should include a 'detection of aging effects' program element. The DCPW Water Chemistry Program provides mitigation of cracking through control of impurities, but does not provide for detection of aging effects. The ASME Section XI Inservice Inspection Program, Subsections IWB, IWC, and IWD AMP, provides for inspections of components. The standard examination requirements for flux thimble tubes under the ASME Section XI Inservice Inspection Program, Subsections IWB, IWC, and IWD AMP, is a VT-2 visual inspection per ASME Code Section XI, Table IWB-2500-1, Examination Category B-P, which would not generally be capable of detecting cracking unless a leak is already present, producing visible water and/or boric acid. The program description in LRA Section B.2.1.1 does not describe any augmented inspections for the flux thimble tubes which would be capable of early detection of cracking.

1. Identify any specific examinations included in the ASME Section XI Inservice Inspection Program, Subsections IWB, IWC, and IWD AMP, which would be capable of detecting cracking in the RV Bottom Mounted Instrument Guide Tubes (High Pressure Conduits, Seal Fittings) before a throughwall crack and leakage occurs.
2. If the ASME Section XI Inservice Inspection Program, Subsections IWB, IWC, and IWD AMP does not provide for detection of cracking prior to a leak, provide a plant-specific AMP or combination of existing AMPs that include a "detection of aging effect" program element for managing the aging effect of cracking due to SCC in the RV Bottom Mounted Instrument Guide Tubes (High Pressure Conduits, Seal Fittings); and

3. Describe what examination techniques will be used to detect (or confirm the absence of) the aging effect of cracking in the RV Bottom Mounted Instrument Guide Tubes (High Pressure Conduits, Seal Fittings), either as part of the ASME Section XI Inservice Inspection Program, Subsections IWB, IWC, and IWD, or an additional plant-specific program.

D-RAI 2.3-08

10 CFR 54.4(a) provides criteria for determining whether systems or components are in scope for license renewal. The staff confirms inclusion of all components subject to aging management review (AMR) by reviewing the components within the license renewal boundary.

During the scoping and screening review process, the continuation from one drawing to another could not be established. Drawing numbers and/or locations could not be located where identified, the continuation drawing was not provided, or piping expected to be in scope based on one drawing led to a different conclusion on a connecting drawing. Consequently, the staff is unable to complete its scoping and screening review for the particular systems. Specific examples are identified in the table below:

License Renewal Application Section / Drawing Number	Continuation Location / Issue
2.3.3.5 - Makeup Water System	
LR-DCPP-16-106716-16 LR-DCPP-16-106716-06	The applicant indicates the line going into the firewater tank at location 166-D is in scope of license renewal under 10 CFR 54.4(a)(2) for attached piping. However, on the continuation drawing (location 68-E), the line going into the firewater tank is not highlighted.
LR-DCPP-16-106716-18	The applicant depicts nonsafety-related piping components to the auto resin sample system (at location 189-D) as in scope for license renewal under 10 CFR 54.4(a)(2) for spatial interaction. No spatial interaction termination was identified prior to the continuation flag and the continuation drawing was not provided.
LR-DCPP-16-106716-19	At location 198-A on the interface to the charging pump 2-3 seal cooling tank, the continuation drawing identified (LR-DCPP-08-107708-05) did not show the continuation.

License Renewal Application Section / Drawing Number	Continuation Location / Issue
LR-DCPP-16-106716-21	At location 219-D, there are several continuations shown as arrows to/from other areas, e.g., control room, main domestic/drinking water, hot recirculation and hot water. There are no spatial interaction terminations identified prior to the continuation arrows, and the continuation drawing was not identified.
LR-DCPP-16-106716-21	At location 217-C, a continuation of domestic water into "battery rooms" is shown that was terminated with a spatial interaction flag. There was no continuation drawing identified. The staff is concerned with possible interaction resulting from a failure of this water piping in the "battery rooms."
2.3.3.14 - Diesel Generator System	
LR-DCPP-21-106721-06	The applicant depicts the diesel engine lube oil reservoir 1-1 as not being in scope for license renewal. However, the diesel engine lube oil reservoir for the subsequent LRA drawings for the diesel generator system is shown highlighted in scope for license renewal under 10 CFR 54.4(a)(1).
2.3.3.16 - Gaseous Radwaste System	
LR-DCPP-24-106724-02 LR-DCPP-24-106724-03	The applicant depicts piping in scope for license renewal under 10 CFR 54.4(a)(2) going to the nitrogen system (at location 29-A). However, the continuation drawing was not provided.
2.3.3.17 - Liquid Radwaste System	
LR-DCPP-19-106719-12	The drawing depicts several lines in scope of license renewal running from Laundry Distillate Tanks 0-1 and 0-2 to the auxiliary building sump. However, on the continuation drawing (LR-DCPP-19-106719-06), the color of these lines changes from red [(a)(2)] to green

License Renewal Application Section / Drawing Number	Continuation Location / Issue
	[(a)(1) or (a)(3)]. The basis for this transition is not clear.
2.3.4.1 - Turbine Steam Supply System	
LR-DCPP-04-106704-16 LR-DCPP-04-107704-16	At locations 161-A, 161-B, 162-A, 162-B, 163-A, and 163-B), connections are shown to the service air system with only component identification numbers and no connecting lines.

The staff requests that the applicant provide sufficient information for the continuation issues identified above to permit the staff to review all portions of the systems within the license renewal boundary.

Discussion: Based on discussion with the applicant, it was determined that components of concern within the listed drawing LR-DCPP-16-106716-06, are actually within license renewal boundary drawing LR-DCPP-16-106718-06. The staff will revise this portion of the question as follows. The revised question will be sent as a formal RAI.

License Renewal Application Section / Drawing Number	Continuation Location / Issue
2.3.3.5 - Makeup Water System	
LR-DCPP-16-106716-16 LR-DCPP-16-106718-06	The applicant indicates the line going into the firewater tank at location 166-D is in scope of license renewal under 10 CFR 54.4(a)(2) for attached piping. However, on the continuation drawing (location 68-E), the line going into the firewater tank is not highlighted.

D-RAI 2.3.3.2-01

10 CFR 54.4(a) provides criteria for determining whether systems or components are in scope for license renewal. In DCP LRA Section 2.3.3.2, under System Intended Functions, the applicant identifies the cask pit storage cask restraint fixtures as in scope of license renewal under 10 CFR 54.4(a)(2). The DCP LRA Section 2.1.2.1, "Title 10 CFR 54.4(a)(1) – Safety Related," notes that components that are classified as Design Class I are considered

safety-related. Item 3 of Final Safety Analysis Report (FSAR) Chapter 3, Section 3.2.2.3, 'Design Class I, Quality/Code Class III Fluid Systems and Fluid System Components,' indicates that "those portions of systems other than radioactive waste management systems that contain or may contain radioactive material, and whose postulated failure could result in conservatively calculated potential offsite exposures in excess of 0.5 rem whole body (or its equivalent to parts of the body) at the site boundary or beyond" are considered to be Design Class I (Code Class III).

Based on this definition, the cask pit storage cask restraint fixtures should be considered as Design Class I components. Therefore, the cask pit storage cask restraint fixtures meet the definition of 10 CFR 54.4(a)(1). The staff is concerned that if the cask pit storage cask restraint fixtures are scoped incorrectly, then an appropriate review for spatial interactions with nearby nonsafety-related systems may not have been adequate. The staff requests that the applicant justify the designation of the cask pit storage cask restraint fixtures as 10 CFR 54.4(a)(2).

Discussion: Based on discussion with the applicant, it was determined that the cask pit storage cask restraint fixtures were added to the scope of license renewal within LRA Errata submitted by Pacific Gas and Electric Company, in a letter dated June 18, 2010. Therefore, this question is withdrawn and will not be sent as a formal RAI.

D-RAI 2.3.3.3-01

10 CFR 54.4(a) provides criteria for determining whether systems or components are in scope for license renewal. On license renewal boundary drawings LR-DCCP-17-106717-07 and LR-DCCP-17-106717-7A for the ASW system, the applicant shows components in piping, denoting the component is not in scope of license renewal. Among the intake structure components that the applicant depicts as not in scope are the bar racks and traveling screens. In FSAR Chapter 10, Section 10.4.5.2, the bar racks are noted to have a function to intercept large submerged debris. The traveling screens are described as being able to intercept all material larger than the screen mesh opening. Given that the ASW system is in scope of license renewal under 10 CFR 54.4(a)(1), this would imply that the bar racks and traveling screens have support functions for the ASW system, which require them to be in the scope of license renewal under 10 CFR 54.4(a)(2). The staff requests that the applicant justify the exclusion of the bar racks and traveling screens from scope of license renewal per 10 CFR 54.4(a)(2).

Discussion: Based on discussion with the applicant, it was determined that the travelling screens are within the scope of license renewal listed in LRA Table 2.4-10. The bar racks are also within the scope of license renewal as structural steel within LRA Table 2.4-10. Therefore this question is withdrawn and will not be sent as a formal RAI.

Memorandum to Pacific Gas and Electric Company from Nathaniel Ferrer dated July XX, 2010

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July 22, 2010

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FACILITY: Diablo Canyon Nuclear Power Plant, Units 1 and 2

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/RA/

Nathaniel Ferrer, Safety Project Manager
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Division of License Renewal
Office of Nuclear Reactor Regulation

Docket Nos. 50-275 and 50-323

Enclosures:

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Memorandum to Pacific Gas and Electric Company from Nathaniel Ferrer dated July 22, 2010

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