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PG&E Letter DCL-10-104

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20852

Docket No. 50-275, OL-DPR-80
Docket No. 50-323, OL-DPR-82
Diablo Canyon Units 1 and 2
Response to NRC Letter dated July 20, 2010, Request for Additional Information
(Set 13) for the Diablo Canyon License Renewal Application

Dear Commissioners and Staff:

By letter dated November 23, 2009, Pacific Gas and Electric Company (PG&E) submitted an application to the U.S. Nuclear Regulatory Commission (NRC) for the renewal of Facility Operating Licenses DPR-80 and DPR-82, for Diablo Canyon Power Plant (DCPP) Units 1 and 2, respectively. The application included the license renewal application (LRA), and Applicant's Environmental Report – Operating License Renewal Stage.

By letter dated July 20, 2010, the NRC staff requested additional information needed to continue their review of the DCPP LRA.

PG&E's response to the request for additional information is included in Enclosure 1. LRA Amendment 11, resulting from the responses, is included in Enclosure 2 showing the changed pages with line-in/line-out annotations.

PG&E makes no regulatory commitments (as defined in NEI 99-04) in this letter.

If you have any questions regarding this response, please contact Mr. Terence L. Grebel, License Renewal Project Manager, at (805) 545-4160.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on August 17, 2010.

Sincerely,

James R. Becker

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NRK



pns/50330133

Enclosure

cc: Diablo Distribution

cc/enc: Elmo E. Collins, NRC Region IV Regional Administrator

Nathanial Ferrer, NRC Project Manager, License Renewal

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Michael S. Peck, NRC Senior Resident Inspector

Alan B. Wang, NRC Project Manager, Office of Nuclear Reactor Regulation

**PG&E Response to NRC Letter dated July 20, 2010,
Request for Additional Information (Set 13) for the
Diablo Canyon License Renewal Application**

RAI 2.3-07

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 an aging management review (AMR) by reviewing the components within the license renewal boundary. In Section 2.1.2.2 of the Diablo Canyon Power Plant (DCPP) license renewal application (LRA), the applicant indicates that nonsafety-related systems and components that contain fluid or steam and are located inside structures that contain safety-related systems, structures and components (SSCs) are included in scope for potential spatial interaction under criterion 10 CFR 54.4(a)(2).

During the scoping and screening review process, several nonsafety-related piping components were found on the DCPP license renewal boundary drawings in areas containing safety-related components but were not included within the scope of license renewal. Excluding these components contradicts the applicant's approach stated in LRA Section 2.1.2.2. In addition, based on the guidance in NEI 95-10, these components should be within the scope of license renewal because of spatial interaction of the fluid that could prevent the performance of a safety function by a safety-related SSC.

The applicant stated during the scoping audit presentations that for (a)(2) spatial interaction, they used a building approach except as identified in procedure TR-6DC; hence, all fluid filled components in the auxiliary building should be in scope under 10 CFR 54.4(a)(2). However, the applicant has additional areas in the auxiliary building where they did not include fluid-filled components. Specific examples are identified in the table below:

License Renewal Application (LRA) Section / Drawing Number	Piping Component / Issue
2.3.3.3 - Saltwater and Chlorination System	
LR-DCPP-17-106717-07 LR-DCPP-17-106717-7A	The applicant shows strainers and piping components in piping (at locations 77-A and -C and 77a-C and-D), which denotes that the components are not in scope of license renewal, connected to the auxiliary saltwater

	<i>(ASW) pump vaults. These fluid-filled lines are located inside the intake structure and may have the potential for spatial interaction with the nearby safety-related ASW piping.</i>
LR-DCPP-17-106717-07 LR-DCPP-17-106717-7A	<i>At locations 79-8 and 79a-D. there are portions of the ASW system piping highlighted in scope for license renewal under 10 CFR 54.4(a)(1) at the intake structure when the ASW piping transits outside of the ASW pump vault rooms prior to entering the "yard." However, there are surrounding fluid-filled piping at the intake structure not highlighted in scope for license renewal that could interact with the safety-related ASW piping.</i>
LR-DCPP-17-106717-08 LR-DCPP-17-106717-09	<i>On the ASW piping in the yard at locations 81-8 and 92-E. there is (a)(1) piping and components on the vacuum relief portion. The LRA drawings show fluid-filled piping, in the vicinity of the (a)(1) piping, not within scope of license renewal.</i>
2.3.3.6 - Nuclear Steam Supply Sampling System	
LR-DCPP-11-106711-05	<i>The applicant depicts a makeup water system line tied into the high radiation sample panel at location 50-D and is in scope for license renewal under 10 CFR 54.4(a)(2) for spatial interaction. There is a branch line off this makeup water system line that is not in scope for license renewal with no spatial interaction termination identified.</i>

LR-DCPP-11-106711-02	<i>At locations 25-C and 27 -C. there are sections of piping highlighted in scope of license renewal under 10 CFR 54.4(a)(1) inside the sampling room. However, there are multiple fluid-filled piping and components in the surrounding area that are not highlighted for possible spatial interaction with these safety-related portions of the system.</i>
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The staff requests the applicant to address the following:

- 1. Identify exclusion areas and justify the methodology for excluding piping and components with the potential to adversely impact the required functions of safety-related SSCs due to spatial interaction.*
- 2. Justify the exclusion of the components identified above from the scope of license renewal per 10 CFR 54.4.*

PG&E Response to RAI 2.3-07

2.3.3.3 – Saltwater and Chlorination System

The nonsafety-related lines in the intake structure that could impact safety-related lines were previously identified and were added to the scope of license renewal in Amendment 1 to the license renewal application (LRA) submitted by letter dated June 18, 2010. The lines identified in the request for additional information (RAI) for Boundary Drawings LR-DCPP-17-106717-07 and LR-DCPP-17-106717-7A were addressed in the amendment.

The lines identified on Boundary Drawings LR-DCPP-17-106717-08 and LR-DCPP-17-106717-09 in the RAI are separated by a concrete wall. Final Safety Analysis Report, Figure 9.2-3, shows the lines are separated by the wall and therefore there is no spatial interaction by nonsafety-related systems, structures, and components (SSCs) on safety-related SSCs.

2.3.3.6 – Nuclear Steam Supply Sampling System

The end point for spatial interaction was not shown on Boundary Drawing LR-DCPP-11-106711-05. The drawing has been revised to show the spatial

interaction end point. Similar changes have been made to Boundary Drawings LR-DCPP-11-106711-06, LR-DCPP-11-107711-05, and LR-DCPP-11-107711-06.

Nonsafety-related SSCs shown on Boundary Drawing LR-DCPP-11-106711-02 that have the potential to impact safety-related components have been added to the scope of license renewal. The boundary drawing has been revised to include these components.

In addressing these questions, revisions and other clarifications have been made to the nuclear steam supply sampling system boundary drawings. DCPD revised its aging evaluation to address these changes and LRA Tables 2.3.3-6 and 3.3.2-6 have been revised to reflect the changes to the scope of license renewal. See Enclosure 2 for revised LRA Tables 2.3.3-6 and 3.3.2-6.

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 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 (LRA)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.
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.
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

	<i>was not identified.</i>
LR-DCPP-16-106716-21	<i>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."</i>
2.3.3.14 - Diesel Generator System	
LR-DCPP-21-106721-06	<i>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).</i>
2.3.3.16 - Gaseous Radwaste System	
LR-DCPP-24-106724-02 LR-DCPP-24-106724-03	<i>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.</i>
2.3.3.17 - Liquid Radwaste System	
LR-DCPP-19-106719-12	<i>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 [(a)(1) or (a)(3)]. The basis for this transition is not clear.</i>

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 LR-DCPP-04-107704-16 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.

PG&E Response to RAI 2.3-08

2.3.3.5 – Makeup Water System

The continuation from Boundary Drawing LR-DCPP-16-106716-16 to Boundary Drawing LR-DCPP-18-106718-06 should have been highlighted. Boundary Drawing LR-DCPP-18-106718-06 has been revised to include the highlighted piping at coordinate 68-E as in-scope for spatial interaction.

The piping on Boundary Drawing LR-DCPP-16-106716-18 coordinate 189-D continues to Boundary Drawing LR-DCPP-78-106719-15 coordinate 158-D. The continuation is shown on the drawing and as within the scope of license renewal. No changes to the boundary drawings are required.

LR-DCPP-16-106716-19

The configuration shown on Boundary Drawing LR-DCPP-16-106716-19 has been modified to cut and cap the piping in question. Boundary Drawing LR-DCPP-16-106716-19 has been revised to show the piping to the right of Valve 2-790 cut and capped. The valve, cap, and piping remain within the scope of license renewal. No license renewal application (LRA) changes are required.

LR-DCPP-16-106716-21

Boundary Drawing LR-DCPP-16-106716-21 was revised as part of the LRA, Amendment 1, submitted by letter dated June 18, 2010. The drawing currently shows the additional spatial interaction details at Coordinates 217-C and 219-D.

2.3.3.14 – Diesel Generator System

The diesel generator lube oil reservoir shown on LR-DCPP-21-106721-06 is the diesel engine crankcase and is an integral part of the diesel engine complex assembly, which is an active component per NEI 95-10. Therefore, the component labeled "Diesel Engine Lube Oil Reservoir 1-1" is shown correctly on the drawings as not highlighted. The lube oil reservoirs for the five other diesel engines have been revised to remove the green highlighting on the following Boundary Drawings:

LR-DCPP-21-106721-11
LR-DCPP-21-106721-16
LR-DCPP-21-107721-06
LR-DCPP-21-107721-11
LR-DCPP-21-107721-16

There were no changes made to the LRA.

2.3.3.16 – Gaseous Radwaste System

The nitrogen system is not within the scope of license renewal and was highlighted incorrectly on Boundary Drawings LR-DCPP-24-106724-02 and LR-DCPP-24-106724-03. These boundary drawings have been revised to remove the highlighting of the line segment depicted on these drawings. There were no changes made to the LRA.

2.3.3.17 – Liquid Radwaste System

The lines in question are correctly shown in green on LR-DCPP-19-106719-12, because they have a fire protection function. The drain lines from the laundry distillate tanks that go to the auxiliary building sump are depicted separately on Boundary Drawing LR-DCPP-19-106719-02. These lines only have a leakage barrier function and are highlighted red.

The drain lines from the laundry distillate tanks that go to the auxiliary building sump are not depicted separately from other drain piping on Boundary Drawing LR-DCPP-19-106719-06. These lines are shown grouped, by name only, with a number of other drain lines that feed/join together to become a single drain line going to the auxiliary building sump. These floor drains in the auxiliary building were assigned an a(3) fire protection function. Thus when the tank drain lines combine with the floor drain lines to become a single drain line, that single drain line takes on the a(3) fire protection function and is highlighted green.

2.3.4.1 – Turbine Steam Supply System

Portions of the connecting lines to the service air system on Boundary Drawings LR-DCPP-04-106704-16 and LR-DCPP-04-107704-16 did not show due to a coding error in the drawing master which caused the software to print the lines as white instead of black. The error has been corrected. The portions of service air piping that were not visible are not within the scope of license renewal.

RAI 2.3-09

10 CFR 54.4(a) provides criteria for determining whether systems or components are in scope for license renewal.

During the scoping and screening review process, several components were found highlighted on DCPD license renewal boundary drawings as being in scope for license renewal, but were not found on the associated tables for mechanical systems in the "Scoping and Screening Results-Mechanical System" section of the DCPD LRA. Specific examples are identified in the table below:

License Renewal Application (LRA) Section / Drawing Number	Table Location / Issue
2.3.3.5 - Makeup Water System	
LR-DCPD-16-106716-16	The makeup water transfer pump expansion joints were found highlighted (at location 165-B) as being in scope for license renewal, but the component type "expansion join" was not found on the associated table for the makeup water system. Similar pump and heat exchanger expansion joints are specifically identified on the associated table for the ASW system in the DCPD LRA.
2.3.3.14 - Diesel Generator System	
LR-DCPD-21-106721-07 LR-DCPD-21-106721-06 LR-DCPD-21-106721-11 LR-DCPD-21-106721-16 LR-DCPD-21-107721-06 LR-DCPD-21-107721-11 LR-DCPD-21-107721-16	The applicant depicts the after cooler and turbocharger as within scope of license renewal under 10 CFR 54.4(a)(1) for purposes of maintaining the system pressure boundary intended function on license renewal boundary drawing LR-DCPD-21106721-07 for emergency diesel generator (EDG) 1-1 (and identical drawings for the remaining 5 EDGs). The turbochargers and after coolers are not listed on the associated AMR table for the diesel generator system.

2.3.3.15 - Lube Oil System	
<p style="text-align: center;">LR-DCPP-20-106720-12 LR-DCPP-20-107720-12</p>	<p>The lube oil system CCW pump motor lubricators (oilers) were found highlighted as being in scope for license renewal under 10 CFR 54.4(a)(1) for purposes of maintaining the system pressure boundary intended function. However, the lubricators were not found on the associated table for the lube oil. Similar lubricators are specifically identified on the associated table for the diesel generator system in the DCPP LRA.</p>

The staff requests that the applicant explain its methodology for establishing what components are specifically identified on the system specific AMR Table. The staff also requests for the applicant to justify the exclusion of the listed components with a specific intended function from AMR.

PG&E Response to RAI 2.3-09

2.3.3.5 - Makeup Water System

The expansion joints are short-lived because they are inspected annually and are replaced on a 10-year frequency. Therefore they are not within the scope of license renewal.

2.3.3.14 – Diesel Generator System

The turbochargers are assigned the component type of “turbine,” and the aftercoolers have been assigned the component type of “heat exchanger (DG Intercooler).” The components account for all applicable internal and external environments. These component types appear correctly in License Renewal Application (LRA) Tables 2.3.3-14 and 3.3.2-14.

2.3.3.15 - Lube Oil System

The lube oil system component cooling water pump motor lubricators (oilers) found on Boundary Drawings LR-DCPP-20-106720-12 and LR-DCPP-20-107720-12 do not have specific component identification numbers in the Diablo Canyon Power Plant equipment database. While performing screening for this system, a generic piping component was created to account for these specific oiler components, with a glass material of construction. Other steel piping components were also created to account for the steel portion of these oilers. Therefore, these piping components accounting for the oilers are listed in LRA Tables 2.3.3-15 and 3.3.2-15. There were no changes made to the LRA.

RAI 2.3.3.3-01

The applicant shows piping components, which are not highlighted as in scope for license renewal, connected directly to safety-related piping where the ASW system discharges into the ocean (at location 89-B on LR-DCPP-17-106717-08 and location 99-E on LR-DCPP-17-10671709). The staff is concerned that degraded piping along the discharge path could impact the discharge function of the ASW. The staff requests that the applicant justify why the portion of the discharge path between the safety-related portions of the ASW at the above drawing locations is excluded from scope of license renewal.

PG&E Response to RAI 2.3.3.3-01

The black line connecting the auxiliary saltwater system (ASW) to the ocean represents the discharge structure, which is in-scope. The ASW piping is buried from the turbine building to the point where it discharges directly into the top of the discharge structure. The discharge structure provides a release path for the auxiliary discharge lines, steam generator blowdown tanks, and the turbine building sump. The structure is divided into two chambers (one for each unit) that are open to the ocean under all conditions. The nonsafety-related piping at locations 89-B and 99-E do not directly connect to the ASW system; this nonsafety-related piping also discharges into the discharge structure. There is no potential to impact the discharge function of the ASW.

The discharge structure provides structural support, shelter, and protection for nonsafety-related systems, structures, and components whose failure could prevent performance of a safety-related function. The discharge structure is within the scope of license renewal based on the criteria of the 10 CFR 54.4(a)(2).

RAI 2.3.3.5-01

The applicant depicts the firewater tank inside the safety-related primary water transfer storage tank, on license renewal boundary drawing LR-DCPP-16-106716-16. On license renewal boundary drawing LR-DCPP-18-106718-06 for the fire protection system, the applicant indicates in the LR note that the firewater tank is used for fire protection and included in scope for license renewal under 10 CFR 54.4(a)(3). In DCPD Final Safety Analysis Report (FSAR) Chapter 3, Section 3.8, "Design of Design Class I Structures," the applicant indicates that the firewater tank is a Class I structure. DCPD LRA Section 2.1.2.1, 'Title 10 CFR 54.4(a)(1)-Safety Related:' states that components that are classified as Design Class I are considered safety-related and treated as (a)(1) for the purpose of license renewal. The staff finds that the firewater tank should be included in scope as an (a)(1) component, and the attached piping, which is not highlighted, should be included in scope for license renewal under 10 CFR 54.4 (a)(2).

The staff requests the following from the applicant:

- Justify the exclusion of the firewater tank under 10 CFR 54.4(a)(1) and its attached piping under 10 CFR 54.4(a)(2).*
- Review other Design Class I components to ensure they were properly included in scope of license renewal under 10 CFR 54.4(a)(1) and their associated piping under 10 CFR 54.4(a)(2).*

PG&E Response to RAI 2.3.3.5-01

The inner firewater tank is in-scope for (a)(3) as shown on License Renewal Boundary Drawing LR-DCPP-18-106718-06, Revision 0. The outer primary water transfer tank is in-scope for (a)(1) as shown on license renewal Boundary Drawing LR-DCPP-16-106716-16, Revision 1. The lines and valves that are attached to the primary water transfer tank are nonsafety-related but have been included within the scope to an end-point or to a connection to other safety-related or nonsafety-related pipe that is also in scope. The lines and valves are highlighted green on License Renewal Boundary Drawings LR-DCPP-18-106718-06, Revision 0, and LR-DCPP-16-106716-16, Revision 1, for (a)(3) to protect the tank water source for fire protection.

License renewal Boundary Drawing LR-DCPP-18-106718-06 has been revised to indicate that the lines and valves that are attached to the inner firewater tank are nonsafety-related but have been included within the scope to an end-point or to a connection to other safety-related or non-safety related pipe that is also in scope.

License Renewal Boundary Drawing LR-DCPP-16-106716, sheets 16 and 17, have been revised to remove the license renewal note, "The pipe sizes are much smaller than the tank, and consequently impose no structural impact. The tank penetrations are not associated with venting."

RAI 2.3.3.5-02

On license renewal boundary drawings LR-DCPP-16-106716-16 and LR-DCPP-16-106716-17, the applicant shows the condensate storage tanks (CST), depicted as 1-1 and 2-1, having attached lines highlighted in scope for 10 CFR 54.4(a)(2). These lines are connected to the safety-related tank without a closed isolation valve. The staff is concerned that the following failures involving these lines have the potential to result in an inadvertent drain-down of the CST if the lines connect to the CST below the reserved safety-related capacity level:

- A failure of surrounding nonsafety-related components could cause a failure of 10 CFR 54.4 (a)(2) lines, leading to a drain down of CST.
- A failure of the downstream connections that are not in scope could cause a drain down of the CST.

The staff requests that the applicant provides the following details:

- Verify that the connected lines are above the reserve capacity level so that a failure involving these lines will not affect the safety-related inventory.
- Verify that a satisfactory scoping evaluation of the attached piping and any surrounding components up to a closed isolation valve was performed around the CST.
- Clarify that an approved station emergency procedure exists to isolate these lines to prevent loss of the safety-related inventory.

The staff also requests that the applicant justify the exclusion of the downstream piping not in scope of license renewal (e.g., components at location 168-C downstream on line to the demineralizers, connection to main condenser at LR-DCPP-02-106702-02 location 21E, and connection to package boiler at LR-DCPP-06-106706-03 location 30-C).

Similarly, since the applicant scoped the safety-related primary storage transfer tank under 10 CFR 54.4(a)(1), the staff requests that the applicant perform a similar evaluation of 10 CFR 54.4 (a)(2) lines directly attached to the tank.

PG&E Response to RAI 2.3.3.5-02

The condensate storage tank (CST) is a safety-related Design Class I tank designed to store sufficient demineralized water to satisfy the requirements of both the secondary-cycle makeup and the auxiliary feed water system (AFWS) requirements. The usable reserved inventory in the CST is 224,860 gallons. Technical Specification (TS) 3.7.6 requires that a useable volume of 200,000 gallons for Unit 1 and 166,000 gallons for Unit 2 be maintained in the CST for use by the AFWS.

To meet the TS minimum water inventory, design changes were completed during the Unit 2 fourteenth refueling outage (2R14) and the Unit 1 fifteenth refueling outage (1R15) for both units to maintain the minimum TS volume in the tank. To achieve this, internal plenums around any nonseismically qualified tank connections in the usable volume region were installed. These internal plenums are installed on CST Nozzles N2, N11, and N14 (reference Line Valves 676, 704, and 675 respectively) up to an elevation of approximately 141 ft. 11 in. A tank subcomponent has been added to LRA Tables 2.3.3-5 and 3.3.2-5 for the stainless steel plenums. See revised LRA Tables 2.3.3-5 and 3.3.2-5 in Enclosure 2.

Valves 1/2-681 in the piping connected to Nozzle N3 at elevation 135 ft. 8 in. are normally closed as they are connected to abandoned portion of the system. In Unit 1, the line is cut and capped immediately downstream of the closed valve and the section connected to the CST has been evaluated per the seismic induced system interaction (SISI) criteria to withstand a seismic event without failure. The Unit 2 line is still connected to the abandoned section with Valve 2-681 closed. The piping configuration is similar to Unit 1 and has been evaluated to meet the SISI criteria similar to Unit 1. This line up to Valves 1/2-681 is in scope of license renewal application boundary.

Based on the above, an emergency operating procedure is not required to isolate these lines to prevent inadvertent loss of safety-related inventory from the CST.

RAI 2.3.3.5-03

License renewal boundary drawing LR-DCPP-16-106716-11 shows two pipe sections exiting the east and west reservoirs (0-18 and 0-1A) at location 112-C. During the DCPP scoping and screening methodology audit, the applicant clarified that the reservoirs were in scope of license renewal under 10 CFR 54.4(a)(3) for fire protection. However, the applicant also stated that piping from 10 CFR 54.4 (a)(3) components was conservatively scoped to the nearest isolation valve. The piping in question was not highlighted as in scope for license renewal. The staff requests that the applicant justify the exclusion of these piping from being in scope of license renewal under 10 CFR 54.4(a)(3).

PG&E Response to RAI 2.3.3.5-03

By letter dated June 18, 2010, PG&E submitted License Renewal Application Amendment 1, in response to RAI 2.3-5, which revised the scoping boundary for the sections of pipe in question and Boundary Drawing LR-DCPP-16-106716-11, Revision 1, now shows this piping highlighted. The east and west reservoirs are not highlighted since these are considered structural components and not mechanical components. The boundary drawing accurately depicts isolation capabilities of the fire protection branch piping for the piping that supports the fire system yard loop at Coordinate 113-A. All branches are isolated except the branch that goes through Valve 0-882 (114-C). This entire branch is in-scope to supply fire water to the areas indicated on the drawing.

RAI 2.3.3.5-04

The applicant states in the DCPD LRA that the NEI 95-10 guidance was used to perform the scoping boundaries for the systems in scope for license renewal according to 10 CFR 54. NEI 95-10 states that for nonsafety-related SSCs directly connected to safety-related SSCs, the non-safety piping and supports up to and including the first appropriate anchor beyond the safety and non-safety interfaces are within the scope of license renewal. However, the staff identified the following instances in the makeup water system boundary drawings in which the appropriate anchors were not identified:

- On LRA drawing LR-DCPD-16-106716-03, the applicant depicts (at location 30-B) piping not highlighted in scope for license renewal directly attached to nonsafety-related piping that leads into the CST, transfer tank, and raw water open reservoir. No seismic anchor is identified along the piping in scope for license renewal to the piping not highlighted in scope.
- On LRA drawing LR-DCPD-16-106716-16, the applicant shows attached nonsafetyrelated piping components from the demineralizer outlet (at location 168-B) to the CST and the transfer tank in scope of license renewal under 10 CFR 54.4(a)(2). No seismic anchor is identified at the interface with the demineralizer outlet or on the continuation drawing.
- On LRA drawing LR-DCPD-16-106716-16, the applicant shows attached nonsafetyrelated piping components from the firewater tank exiting the auxiliary building (at location 184-A). The piping located outside the building is not highlighted in scope for license renewal, nor does it have a seismic anchor identified along the piping.
- On LRA drawing LR-DCPD-16-106716-17, the applicant shows attached nonsafetyrelated piping components from the unit 2 evaporator distiller (at location 178-C) to the safety-related unit 2 condensate storage tank 2-1 in scope of license renewal under 10 CFR 54.4(a)(2). No seismic support is identified at the interface with the unit 2 evaporator distiller or on the continuation drawing. Similar omissions exist at the interface to the main condenser and the package boiler feed pump suction from the safety-related unit 2 condensate storage tank 2-1.

The staff requests that the applicant justify its methodology for establishing seismic boundaries on directly attached nonsafety-related piping to safety-related piping for the makeup water system, and justify the exclusion of the abovementioned piping up to an appropriate anchor. The staff also requests that the applicant review the makeup water system piping to ensure all 10 CFR 54.4 (a)(2) piping was scoped properly to an appropriate anchor.

PG&E Response to RAI 2.3.3.5-04

The lines and valves in question that are attached to safety-related vessels are nonsafety-related but have been included within the scope to an end-point or to a connection to other safety-related or nonsafety-related pipe that is also in scope. Where the nonsafety-related piping is in scope, it is in scope for 10 CFR 54.4(a)(2) for spatial interaction.

RAI 2.3.3.5-05

On license renewal boundary drawing LR-DCPP-16-106716-18, the applicant depicts piping for the makeup water system to the spent fuel pool and CCW surge tank as within scope of license renewal under 10 CFR 54.4(a)(1) for purposes of maintaining the system pressure boundary intended function. The piping transition to nonsafety-related piping, at drawing locations 187-E and 184-A, is depicted as within scope of license renewal under 10 CFR 54.4(a)(2). The piping, shown at location 184-A on the LRA drawing, leads to the condenser polish demineralizers and flush water, and this piping is not highlighted as in scope for license renewal. Since this flow path is indicated as normally open, the staff is concerned that failure of this piping could impact the pressure boundary of the makeup water system.

The staff requests that the applicant justify its exclusion of this piping to the condenser polish demineralizers from scope of license renewal, including any procedural mitigation methods.

PG&E Response to RAI 2.3.3.5-05

Makeup to the component cooling water (CCW) surge tank is normally provided by the nonseismic Category I demineralized water makeup system. A seismic Category I source of makeup water is available from the condensate storage tank via seismic Category I piping and the makeup water transfer pumps. After a safe shutdown earthquake, the operator would take local manual action to close Valve MU-1-1567 and transfer makeup supply to the CCW surge tank from the normal nonseismic Category I demineralized water makeup system to the seismic Category I condensate storage and transfer system. The procedure for the manual action to align the condensate storage tank for makeup is OP F-2:VII, "Alternate Makeup Water Sources to the CCW System." The procedure aligns the code-break valves in the closed position and establishes a flowpath using seismic class piping. This procedure would be used in the response to a low level alarm in the head tank, low CCW header pressure and high radiation alarms in the CCW system. Final Safety Analysis Report, Section 9.2.2.3.3 and Table 9.2-7, and Supplement to Supplier Evaluation Report 16 discusses that normal makeup to the CCW system is nonseismic and that manual action is required to provide a Class I source of water to the CCW surge tank.

RAI 2.3.3.6-01

On license renewal boundary drawings LR-DCPP-11-106711-04 and LR-DCPP-11-107711-03, the applicant includes the sample cooler rack heat exchangers supplied by the CCW system as within scope of license renewal under 10 CFR 54.4(a)(1) for purposes of maintaining the system pressure boundary intended function. However, there are piping components directly attached to the heat exchangers that are not highlighted, indicating that they are not included in the scope for license renewal. In accordance with guidelines specified in NEI 95-10, the applicant should include attached piping to 10 CFR 54.4 (a)(1) components up to the appropriate endpoint after the safety and nonsafety-related interface.

The staff requests that the applicant justify its exclusion of the non-highlighted piping components that are directly attached to the heat exchangers from license renewal and verify no spatial interaction exist from the lines to the abandoned equipment.

PG&E Response to RAI 2.3.3.6-01

Boundary Drawings LR-DCPP-106711-04 and LR-DCPP-11-107711-03 have been revised to show the heat exchangers as being within the scope of license renewal for the 10 CFR 54.4(a)(2) function of structural integrity.

RAI 2.3.3.7-01

On license renewal boundary drawing LR-DCPP-25-106725-26 (at locations 260-A and 261-D), two solenoid valves (SVs) (SV-526A and SV-526B; SV-516A and SV-516B) and their associated tubing are not highlighted, indicating that the valves and tubing are not included in the scope for the license renewal. Backup air supply tanks are attached to those portions of the system to provide pressurized air in the event normal air is lost. The staff is concerned that if the pressure boundary of these components fail, then the pressure boundary intended function of the safety-related piping could be compromised. Therefore, the pressure boundary of these SVs and associated tubing should have been properly considered in the scoping process.

The staff requests that the applicant justify its exclusion of the solenoid valves and the tubing between both sets of solenoid valves from scope of license renewal. The staff requests that the applicant review the compressed air system to assure a proper endpoint was established to protect the safety-related pressure boundary.

PG&E Response to RAI 2.3.3.7-01

Three-way Solenoid Valve SV-526E provides the pressure boundary between the safety-related backup air supply tanks and the normal instrument air system. The two positions of Solenoid Valve SV-526E direct flow to Valve 1-PCV-20 from either the normal instrument air system (including Solenoid Valves SV-526A and SV-526B) or from the backup air tanks. When Solenoid Valve SV-526E is positioned to one of the air sources, the other air source is isolated. Therefore, when Solenoid Valve SV-526E is positioned to direct flow from the backup air tanks, it acts as a pressure boundary so that a loss of air pressure in the normal instrument air system will not affect operation of Valve 1-PCV-19. The backup air systems are seismically designed and qualified with seismic anchors as indicated on the License Renewal Boundary Drawing LR-DCPP-25-106725-26.

The designs for Solenoid Valves SV-516A, SV-516B, SV-516E, and Valve 1-PCV-19 are the same as described above.

RAI 2.3.3.18-02


On license renewal boundary drawings LR-DCPP-23A-106723-03 and LR-DCPP-23A-10772303, the applicant depicts piping in scope for license renewal under 10 CFR 54.4(a)(2) going to and from the containment air sample supply and return, respectively at locations 37-0 and 37-C. Continuing onto license renewal boundary drawings LR-11-106711-06 (at locations 60-B and 66-B) and LR-11-1 07711-05 (at locations 50-B and 56-B), the piping directly attached to the 10 CFR 54.4(a)(2) piping is not highlighted as in scope for license renewal beyond the spatial interaction flags. Additionally, the applicant did not identify an appropriate anchor on the attached nonsafety-related piping.

The staff requests that the applicant justify its exclusion of the above mentioned piping to an appropriate anchor. The staff requests the applicant review the attached piping to containment isolation valves to assure a proper endpoint was established, to include seismic concerns in accordance with guidelines provided in NEI 95-10.

PG&E Response to RAI 2.3.3.18-02

The containment air sample panel serves as a terminal component for the lines from Boundary Drawings LR-DCPP-23A-106723-03 and LR-DCPP-23A-107723-03 that continue onto Boundary Drawings LR-DCPP-11-106711-06 and LR-DCPP-11-107711-05 respectively. Boundary Drawings LR-DCPP-11-106711-06 and LR-DCPP-11-107711-05 have been revised to show the panel as a terminal component.

There were no changes made to the license renewal application.



LRA Amendment 11

LRA Section	RAI
Section 3.3.2.1.5	2.3.3.5-02
Table 2.3.3-5	2.3.3.5-02
Table 2.3.3-6	2.3-07
Table 3.3.2-5	2.3.3.5-02
Table 3.3.2-6	2.3-07

3.3.2.1.5 Makeup Water System

Materials

The materials of construction for the makeup water system component types are:

- Elastomer

Aging Effects Requiring Management

The following makeup water system aging effects require management:

- Hardening and loss of strength

Table 2.3.3-5 Makeup Water System

Component Type	Intended Function
Seal	Pressure Boundary
Tank (Internal Plenum)	Pressure Boundary

Table 2.3.3-6 Nuclear Steam Supply Sampling System

Component Type	Intended Function
Heat Exchanger (Post LOCA Sample)	Leakage Boundary (spatial) Structural Integrity (attached)
Regulators	Leakage Boundary (spatial)

Table 3.3.2-5 Auxiliary Systems – Summary of Aging Management Evaluation – Makeup Water System

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Closure Bolting	PB	Stainless Steel	Demineralized Water (Ext)	Loss of preload	Bolting Integrity (B2.1.7)	None	None	H, 1
Closure Bolting	PB	Stainless Steel	Demineralized Water (Ext)	Loss of material	Water Chemistry (B2.1.2) and One-Time Inspection (B2.1.16)	VIII.E-29	3.4.1.16	C
Seal	PB	Elastomer	Demineralized Water (Ext)	Hardening and loss of strength	Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components (B2.1.22)	None	None	G
Tank (Internal Plenum)	PB	Stainless Steel	Demineralized Water (Ext)	Loss of material	Water Chemistry (B2.1.2) and One-Time Inspection (B2.1.16)	VIII.E-29	3.4.1.16	C
Tank (Internal Plenum)	PB	Stainless Steel	Demineralized Water (Int)	Loss of material	Water Chemistry (B2.1.2) and One-Time Inspection (B2.1.16)	VIII.E-29	3.4.1.16	C

Table 3.3.2-6 Auxiliary Systems – Summary of Aging Management Evaluation – Nuclear Steam Supply Sampling System

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Heat Exchanger (Post LOCA Sample)	LBS, SIA	Stainless Steel	Closed Cycle Cooling Water (Ext)	Loss of material	Closed-Cycle Cooling Water System (B2.1.10)	VII.C2-10	3.3.1.50	D
Heat Exchanger (Post LOCA Sample)	LBS, SIA	Stainless Steel	Closed Cycle Cooling Water (Int)	Loss of material	Closed-Cycle Cooling Water System (B2.1.10)	VII.C2-10	3.3.1.50	D
Heat Exchanger (Post LOCA Sample)	LBS, SIA	Stainless Steel	Plant Indoor Air (Ext)	None	None	VII.J-15	3.3.1.94	A
Heat Exchanger (Post LOCA Sample)	LBS, SIA	Stainless Steel	Treated Borated Water (Int)	Loss of material	Water Chemistry (B2.1.2) and One-Time Inspection (B2.1.16)	VII.E1-17	3.3.1.91	E, 3
Regulators	LBS	Stainless Steel	Borated Water Leakage (Ext)	None	None	VII.J-16	3.3.1.99	A
Regulators	LBS	Stainless Steel	Treated Borated Water (Int)	Loss of material	Water Chemistry (B2.1.2) and One-Time Inspection (B2.1.16)	VII.E1-17	3.3.1.91	E, 3
Valve	PBLBS	Carbon Steel	Closed Cycle Cooling Water (Int)	Loss of material	Closed-Cycle Cooling Water System (B2.1.10)	VII.C2-14	3.3.1.47	B
Valve	PBLBS	Carbon Steel	Plant Indoor Air (Ext)	Loss of material	External Surfaces Monitoring Program (B2.1.20)	VII.I-8	3.3.1.58	B
Valve	PBLBS	Stainless Steel	Closed Cycle Cooling Water (Int)	Loss of material	Closed-Cycle Cooling Water System (B2.1.10)	VII.C2-10	3.3.1.50	B