

DiabloCanyonNPEm Resource

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Sent: Monday, June 21, 2010 12:39 PM
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Cc: Green, Kimberly; DiabloHearingFile Resource
Subject: Draft RAI Set 13 - Scoping and Screening RAIs
Attachments: Draft RAI Set 13 Scoping and Screening.doc

Terry and Philippe,

Attached is Draft RAI Set 13 containing draft RAIs, specifically on portions of the scoping and screening review. Please review the attached draft RAIs and let me know if and when you would like to have a teleconference call. The purpose of the call will be to obtain clarification on the staff's request.

Please let me know if you have any questions.

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Hearing Identifier: DiabloCanyon_LicenseRenewal_NonPublic
Email Number: 1183

Mail Envelope Properties (Nathaniel.Ferrer@nrc.gov20100621123900)

Subject: Draft RAI Set 13 - Scoping and Screening RAIs
Sent Date: 6/21/2010 12:39:15 PM
Received Date: 6/21/2010 12:39:00 PM
From: Ferrer, Nathaniel

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Tracking Status: None

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Post Office:

Files	Size	Date & Time
MESSAGE	569	6/21/2010 12:39:00 PM
Draft RAI Set 13 Scoping and Screening.doc		95226

Options

Priority: Standard

Return Notification: No

Reply Requested: No

Sensitivity: Normal

Expiration Date:

Recipients Received:

Diablo Canyon Nuclear Power Plant, Units 1 and 2 (DCPP)
License Renewal Application (LRA)
Draft Request for Additional Information Set 13
Scoping and Screening

D-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 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 (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.
LR-DCPP-17-106717-07 LR-DCPP-17-106717-7A	At locations 79-B 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.
LR-DCPP-17-106717-08 LR-DCPP-17-106717-09	On the ASW piping in the yard at locations 81-B 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.
2.3.3.6 - Nuclear Steam Supply Sampling System	
LR-DCPP-11-106711-05	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.
LR-DCPP-11-106711-02	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.

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.

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 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-16-106716-06	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.
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 [(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.

D-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 Systems 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 joint” 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-21-106721-07 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	
LR-DCPD-20-106720-12 LR-DCPD-20-107720-12	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 DCPD LRA.

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.

Section 2.3.3.2 Spent Fuel Pool Cooling System

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 DCPD 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 DCPD 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 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).

Section 2.3.3.3 Saltwater and Chlorination System

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-DCPD-17-106717-07 and LR-DCPD-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).

D-RAI 2.3.3.3-02

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-DCPD-17-106717-08 and location 99-E on LR-DCPD-17-106717-

09). 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.

Section 2.3.3.5 Makeup Water System

D-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 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).

D-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 (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 21-E, 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 (a)(2) lines directly attached to the tank.

D-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 (0-1B and 0-1A) at location 112-C. During the DCPD 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 (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).

D-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-DCPP-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-DCPP-16-106716-16, the applicant shows attached nonsafety-related 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-DCPP-16-106716-16, the applicant shows attached nonsafety-related 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-DCPP-16-106716-17, the applicant shows attached nonsafety-related 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 (a)(2) piping was scoped properly to an appropriate anchor.

D-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.

Section 2.3.3.6 Nuclear Steam Supply Sampling System

D-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 (a)(1) components up to the an 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.

Section 2.3.3.7 Compressed Air System

D-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.

Section 2.3.3.18 Miscellaneous Systems in Scope – Radiation Monitoring (Mechanical) System

D-RAI 2.3.3.18-02

On license renewal boundary drawings LR-DCPP-23A-106723-03 and LR-DCPP-23A-107723-03, 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-D and 37-C. Continuing onto license renewal boundary drawings LR-11-106711-06 (at locations 60-B and 66-B) and LR-11-107711-05 (at locations 50-B and 56-B), the piping directly attached to the (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 abovementioned 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.