DiabloCanyonNPEm Resource

From: Ferrer, Nathaniel
Sent: Friday, June 18, 2010 9:23 AM
To: Grebel, Terence; Soenen, Philippe R
Cc: Green, Kimberly; DiabloHearingFile Resource
Subject: Draft RAI Set 12 - AMR and AMP RAIs
Attachments: Draft RAI Set 12 AMR and AMP RAIs.doc

Terry and Philippe,

Attached is Draft RAI Set 12 containing draft RAIs, specifically on portions of the Aging Management Review and Aging Management Programs. 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: 1960

Mail Envelope Properties (26E42474DB238C408C94990815A02F090A73BDDDB4)

Subject: Draft RAI Set 12 - AMR and AMP RAIs
Sent Date: 6/18/2010 9:23:16 AM
Received Date: 6/18/2010 9:23:17 AM
From: Ferrer, Nathaniel

Created By: Nathaniel.Ferrer@nrc.gov

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Tracking Status: None
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Post Office: HQCLSTR01.nrc.gov

Files	**Size**	**Date & Time**
MESSAGE	594	6/18/2010 9:23:17 AM
Draft RAI Set 12 AMR and AMP RAIs.doc	43002	

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 12
Aging Management Review/Aging Management Programs

D-RAI 2.3.2.4-1

LRA Table 3.2.2-04 identifies an AMR line item for a stainless steel separator with an internal ventilation atmosphere. During the material/environment verification audit walkdown, the applicant stated that this piece of equipment was not installed. In LRA Tables 2.3.2-4 and 3.2.2-4, separator is listed as a component type subject to an AMR. However, on license renewal boundary drawing LR-DCPP- 23A-106723-04, Note 1 indicates that there are provisions for moisture separators but they are not installed. Additionally, there are no moisture separators shown on the drawing as subject to an AMR, i.e., highlighted. Clarify if there are moisture separators installed in the Unit 1 containment fan coolers, and whether they are subject to an AMR.

D-RAI 2.3.3.18-1

LRA Table 3.3.2-18 identifies an AMR line item for isothermal bath heat exchanger (ITB Chiller) with the material and internal environment listed as copper alloy and dried gas, respectively. During the material/environment verification audit walkdown, the applicant stated that this piece of equipment was abandoned in place for both units. The staff noted that the ITB chillers were cut, capped and drained. However, in LRA Tables 2.3.3-18 and 3.3.2-18, and on license renewal boundary drawing LR-DCPP-15-106715-02, the ITB chiller is listed or shown as a component type that is subject to an AMR. Based on the above, clarify if the ITB chiller is subject to an AMR.

D-RAI 2.1.6-1

LRA Section B.2.1.32 describes the Structures Monitoring Program (SMP) 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 SMP 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.

1. Please justify why NUREG-1801 XI.S8 does not apply to Diablo Canyon.

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.

D-RAI B2.1.13-3

GALL AMP XI.M27, "Fire Water Program," recommends periodic flow testing of the fire water system or wall thickness evaluations (e.g., volumetric or visual inspections) be performed to ensure that the system maintains its intended function. GALL AMP XI.M27 states that if an applicant chooses to perform visual inspections, these inspections must be capable of evaluating (1) wall thickness to ensure against catastrophic failure, and (2) the inner diameter of the piping as it applies to the design flow of the fire protection system.

During the AMP Audit, the staff noted that the applicant's underground firewater piping does not have cathodic protection and is currently not periodically inspected. During its review of AMR results for the fire protection system in LRA Table 3.3.2-12, the staff noted that there are AMR results for buried steel (carbon steel, cast iron, and ductile iron) closure bolting, hydrants and valves, but that there are no results for buried steel piping. In addition, LRA Section B2.1.13 does not include any information regarding the inspection of buried components.

It is not clear to the staff why there are no AMR results in LRA Table 3.3.2-12 for buried steel piping or the method and frequency of the inspections for the internal and external surfaces of the buried components.

1. Explain why there are no AMR results in LRA Table 3.3.2-12 that address aging management of steel piping exposed to soil.
2. Provide additional details regarding the method and frequency of the internal and external inspections of underground components.

D-RAI B2.1.13-4

GALL AMP XI.M27, "Fire Water System Program" recommends that fire protection system piping be subjected to flow testing or non-intrusive wall thickness evaluations performed prior to the period of extended operation and at plant-specific intervals thereafter such that loss of intended function will not occur. GALL AMP XI.M27 states that visual inspections may be performed on the internal surfaces of a representative number of piping locations during system maintenance in lieu of performing non-intrusive wall thickness evaluations, as long as it can be demonstrated that the inspections are performed on a representative number of locations on a reasonable basis and are based on past maintenance history.

The applicant's Fire Water System Program states an enhancement to the "detection of aging effects" program element to perform either periodic non-intrusive examinations or visual inspections of the fire water system piping. However, LRA Section B2.1.13 does not provide any details regarding the methodology that will be used for selecting the representative sample

of components and locations to be visually inspected or the components subject to periodic non-intrusive examination.

LRA Table 3.3.1, item 3.3.1-68 addresses carbon steel piping, piping components, and piping elements exposed to raw water (either internal or external) being managed for loss of material due to general, pitting, crevice, and microbiologically influenced corrosion, and fouling by the Fire Water System Program. The corresponding AMR line item in LRA Table 3.3.2-12 for the fire water tank cites generic note D, indicating that the component is different, but consistent with the GALL Report item for material, environment and aging effect, In LRA Appendix B, Section B2.1.13 for the Fire Water System Program under the description of inspections section, PG&E states that the program performs periodic visual inspections of main fire system piping, yard loop fire hydrants, hose reel headers, hose stations, portable diesel driven fire pump hoses, fire hoses, gaskets, water spray headers, sprinkler system headers, water spray nozzles, and sprinkler heads to verify they are free of significant corrosion, foreign materials, biofouling, and physical damage. However, the Fire Water System Program description and description of inspections do not include any information regarding whether or how the fire water tank is inspected, e.g., visual or non-intrusive.

3. Explain the methodology used to determine the representative sample of locations for the visual inspections, and the components subject to periodic non-intrusive examination.
4. Clarify how the fire water tank described in LRA Table 3.3.2-12 will be managed for aging by the Fire Water System Program. Include what inspection techniques are used to manage the effects of aging for the tank.