

PilgrimRenewal NPEmails

From: Regner, Lisa
Sent: Tuesday, December 28, 2010 4:14 PM
To: Mogolesko, Fred; Joe Lynch
Cc: Regner, Lisa; PilgrimRenewal NPEmails
Subject: Additional DRAFT RAIs for License Renewal
Attachments: Additional DRAFT RAIs for supplement.docx

Fred, Joe,

Please find attached draft RAIs on additional concerns the staff has identified since issuance of the Pilgrim SER for license renewal. Let me know if you'd like to arrange a conference call to clarify any questions that you may have.

I will be out of the office on Friday (12/31), but will be in for the remainder of this week.

Have a pleasant new year's holiday.

Lisa

Hearing Identifier: PilgrimRenewalNonPublic_EX
Email Number: 413

Mail Envelope Properties (28C67094311E124FBAF1AA3E42B881912016548528)

Subject: Additional DRAFT RAIs for License Renewal
Sent Date: 12/28/2010 4:13:35 PM
Received Date: 12/28/2010 4:13:38 PM
From: Regner, Lisa

Created By: Lisa.Regner@nrc.gov

Recipients:

"Regner, Lisa" <Lisa.Regner@nrc.gov>
Tracking Status: None
"PilgrimRenewal NPEmails" <PilgrimRenewal.NPEmails@nrc.gov>
Tracking Status: None
"Mogolesko, Fred" <fmogole@entergy.com>
Tracking Status: None
"Joe Lynch" <jlynch4@entergy.com>
Tracking Status: None

Post Office: HQCLSTR02.nrc.gov

Files	Size	Date & Time
MESSAGE	403	12/28/2010 4:13:38 PM
Additional DRAFT RAIs for supplement.docx		23352

Options

Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

Pilgrim License Renewal

TAC NO. MC9669

DRAFT RAI 4.3.3-1 – Metal Fatigue NUREG/CR-6260

Background:

In LRA Section 4.3.3 and Commitment No. 31, the applicant discussed the methodology used to determine the locations that required environmentally assisted fatigue analyses, consistent with NUREG/CR-6260 “Application of NUREG/CR-5999 Interim Fatigue Curves to Selected Nuclear power Plant Components.” The staff recognized that, in LRA Table 4.3-3, there are nine plant-specific components listed, based on the six generic locations identified in NUREG/CR-6260. The first part of Commitment No. 31 indicated:

At least 2 years prior to entering the period of extended operation, for the location identified in NUREG/CR-6260 for BWRs of the PNPS vintage, PNPS will refine our current analyses to include the effects of reactor water environment and verify that the cumulative usage factors (CUFs) are less than 1. This includes applying the appropriate Fen factors to valid CUFs determined in accordance with one of the following:

1. For locations, including NUREG/CR6260 locations, with existing fatigue analysis valid for the period of extended operation, use the existing CUF to determine the environmentally adjusted CUF.
2. More limiting PNPS-specific locations with a valid CUF may be added in addition to the NUREG/CR-6260 locations.
3. Representative CUF values from other plants, adjusted to or enveloping the PNPS plant specific loads may be used if demonstrated applicable to PNPS.
4. An analysis using an NRC-approved version of the ASME code or NRC-approved alternative (e.g., NRC-approved code case) may be performed to determine a valid CUF.

The GALL Report AMP X.M1, “Metal Fatigue of Reactor Coolant Pressure Boundary” states the impact of the reactor coolant environment on a sample of critical components should include the locations identified in NUREG/CR-6260, as a minimum, and that additional locations may be needed.

Issue:

The staff identified two concerns regarding the applicant’s environmentally assisted fatigue analysis and Commitment No. 31.

1. Item 2 in Commitment No. 31 indicated that more limiting plant-specific locations *may* be added. However, it is only one of the *options* that may be taken. The applicant has not committed to verify that the PNPS-specific components per NUREG/CR 6260 are bounding for the generic NUREG/CR-6260 locations in Commitment No. 31.

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2. The staff noted that the applicant's plant-specific configuration may contain locations that should be analyzed for the effects of reactor coolant environment, other than those generic locations identified in NUREG/CR-6260. This may include components that are limiting or bounding for a particular plant-specific configuration or that have calculated CUF values that are greater when compared to the locations identified in NUREG/CR-6260. The staff noted that LRA Section 4.3.3 and Commitment No. 31 do not address this issue.

Request:

1. Confirm and justify that the plant-specific components listed in LRA Table 4.3-3 are bounding for the generic NUREG/CR-6260 locations.
2. Confirm and justify that the LRA Table 4.3-3 components selected for environmentally assisted fatigue analyses consists of the most limiting component *for the plant* (beyond the generic locations identified in the NUREG/CR-6260 guidance). If these components are not bounding, clarify the components that require an environmentally assisted fatigue analysis and the actions that will be taken for these additional components. If the limiting component identified consists of nickel alloy, clarify that the methodology used to perform environmentally-assisted fatigue calculation for nickel alloy is consistent with NUREG/CR-6909. If not, justify the method chosen.

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DRAFT RAI B.1.23-1 – One-Time Inspection

Background:

GALL AMP XI.M32, “One-Time Inspection” states in element 4, “detection of aging effects,” that the inspection includes a representative sample of the system population, and, where practical, focuses on the bounding or lead components most susceptible to aging due to time in service, severity of operating conditions, and lowest design margin.

LRA Section B.1.23, One-Time Inspection Program stated that the program includes determination of the sample size based on an assessment of materials of fabrication, environment, plausible aging effects, and operating experience; and identification of the inspection locations in the system or component based on the aging effect.

Issue:

Due to the uncertainty in determining the most susceptible locations and the potential for aging to occur in other locations, the staff noted that large sample sizes (at least 20%) may be required in order to adequately confirm an aging effect is not occurring. The applicant’s One-Time Inspection Program did not include specific information regarding how the population of components to be sampled or the sample size will be determined.

Request:

Provide specific information regarding how the population of components to be sampled will be determined and the size of the sample of components that will be inspected.

DRAFT RAI B.1.27-1 – Selective Leaching of Materials

Background:

GALL AMP XI.M33, “Selective Leaching of Materials” states in element 1, “scope of program” that the program includes a one-time visual inspection and hardness measurement of a selected set of sample components to determine whether loss of material due to selective leaching is not occurring for the period of extended operation.

LRA Section B.1.27, Selective Leaching Program, stated that the program will include a one-time visual inspection and hardness measurement of selected components that may be susceptible to selective leaching to determine whether loss of material due to selective leaching is occurring.

Issue:

Due to the uncertainty in determining the most susceptible locations and the potential for aging to occur in other locations, the staff noted that large sample sizes (at least 20%) may be required in order to adequately confirm an aging effect is not occurring. The applicant’s

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Selective Leaching Program did not include specific information regarding how the selected set of components to be sampled or the sample size will be determined.

Request:

Provide specific information regarding how the selected set of components to be sampled will be determined and the size of the sample of components that will be inspected.

Draft RAI B.1.29.2-2: Structures Monitoring Program Acceptance Criteria

Background:

The GALL Report AMP IX.S6 “Structures Monitoring Program,” states that American Concrete Institute (ACI) Section 349.3R is an acceptable basis for selection of parameters monitored, detection of aging effects (i.e. inspection interval), and acceptance criteria. Recent staff reviews have identified license renewal applications state that the Structures Monitoring Program is comparable to the GALL Report AMP; however the staff found the applicant’s actual acceptance criteria is less conservative than the recommendations in the GALL Report AMP.

Issue:

The LRA did not clearly identify quantitative acceptance criteria for Structures Monitoring Program inspections.

Request:

- a) Confirm that the quantitative acceptance criteria for the Structures Monitoring Program is consistent with the criteria of ACI 349.3R. If the criteria deviate from those discussed in ACI 349.3R, provide technical justification for the differences.
- b) If quantitative acceptance criteria will be added to the program as an enhancement, provide plans and a schedule to conduct a baseline inspection with the quantitative acceptance criteria prior to the period of extended operation.