

From: Dan Hoang
To: James Davis; Pwx
Date: Fri, Apr 7, 2006 2:32 PM
Subject: AMP, AMR, and TLAA questions for PNPS

Jim/Pete,

Attached is my final copy for you to review and submit to the applican.

I hope that they will be ready for me to do my audit review by May 22, 06.

I have another set of AMR questions for them. But, I need to verify some fact (in May +/-).

Promissed, I won't send you any more questions (Not until May after we get there any way)!

Regards,

Dan

CC: Kenneth Chang

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From: Dan Hoang

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AMP, AMR, & TLAA Questions for Pilgrim LRA

Requested by: Dan Hoang

AMP Question Topic # 001: Structures Monitoring Program

Information Request:

Since the program coatings are not relied upon to manage the effects of aging for structures included in the Structures Monitoring Program (AMP B.1.29.2). Please provide the following information related to this enhancement:

(a) What is your criteria and How are you going to qualify and monitor it under AMP B.1.29.2.

AMP Question Topic # 002: Structures Monitoring Program (B.1.29.2)

Information Request:

In the discussion of operating experience, four noteworthy incidences of degradation are noted: cracks, gaps, corrosion, and flaking coating.

For each of the first three incidences of degradation, please provide the plant documentation that describes the degradation, the assessment performed, the acceptance criteria applied, future monitoring recommendations, and any corrective action taken. Also describe the monitoring activities that are or will be conducted under the Structures Monitoring Program for each of the three regions.

AMP Question Topic # 003: Structures Monitoring Program

Information Request:

The Dresden/Quad Cities BWR units have a history of problems with containment penetration bellows, and the licensee has a long-term replacement program that will continue into the LR period. The applicant is requested to address this industry operating experience and submit a specific technical basis why the Pilgrim containment penetration bellows are not subject to the aging effects and aging mechanisms observed at Dresden/Quad Cities.

AMP Question Topic # 004: Water Control Structures Monitoring Program (B.1.29.3)**Information Request:**

More information is needed about the water-flowing and aggressive environments for the main Breakwater, and the operating experience for these structures. Has degradation been observed, monitored, repaired? Are there any special considerations (e.g., more frequent inspections, more detailed inspections) over and above the normal SMP inspection procedures? If not, explain why it is not necessary.

AMP Question Topic # 005: Structures Monitoring Program**Information Request:**

More information is needed about aging management of inaccessible concrete areas. The applicant is requested to submit the dates and complete results (at specific locations/not averages or ranges) of all past groundwater monitoring tests. Discuss why the groundwater is non-aggressive, and/or aggressive, if applicable. Confirm that the Pilgrim SMP credited for LR will inspect all inaccessible areas that may be exposed by excavation for any reason, whether the environment is considered aggressive or not, and also will inspect any inaccessible area where observed conditions in accessible areas, which are exposed to the same environment, show that significant concrete degradation is occurring.

AMP Question Topic # 006: Water Control Structures Monitoring Program**Information Request:**

Describe the "aggressive environment" and "water-flowing" environments for Reinforced Concrete Foundation, Slabs, and Reinforced Concrete Walls. What is the plant-specific program to manage potential degradation?

AMP Question Topic # 007: Masonry Walls (B.1.29.1)**Information Request:**

The applicant is requested to identify the document(s) that includes the evaluation of the Pilgrim program against the program elements of GALL XI.S5, and to make it available in both electronic and hard-copy formats for the on-site AMP audit.

AMP Question Topic # 008: Containment Structural Integrity**Information Request:**

To assist the staff in conducting this review in an efficient manner, the applicant is requested to compile and present the following detailed information:

(A) Past Activities

- (1) Identification of all locations (including the wetwell, if applicable) where wall thickness reduction was originally discovered.
- (2) The nominal design thickness and the initial measured remaining wall thickness / % wall loss for each location.
- (3) The results of the root-cause analysis for each location.
- (4) The remedial action taken to arrest corrosion for each location.
- (5) Inspections performed at that time to ensure that the full extent of wall loss had been identified.
- (6) The technical basis for concluding that the degraded Pilgrim Mark I containment still meets its licensing basis, including any re-calculation of minimum required wall thickness for all regions of the drywell (and wetwell, if applicable).
- (7) For each location, the chronology and quantitative results of all subsequent measurements of remaining wall thickness after remedial action was taken. Include an assessment of observed trends.
- (8) The chronology and quantitative results of inspections performed to ensure that wall loss is not occurring at locations other than those originally identified.

(B) Current Activities (thru end of current license term)

- (9) The inspection and maintenance programs that are currently relied upon to ensure the structural integrity of the Pilgrim containment. Include a description of the specific activities performed (inspection locations, inspection methods, evaluation methods, acceptance criteria) and the inspection/maintenance schedule.

(C) Future Activities (20 year license renewal period)

- (10) The inspection and maintenance programs that will be relied upon during the 20 year license renewal period to ensure the structural integrity of the Pilgrim containment. Include a description of the specific activities performed (inspection locations, inspection methods, evaluation methods, acceptance criteria) and the Inspection / maintenance schedule.
- (11) The correlation between (10) above and specific Aging Management Program (AMPs) that are credited in the Pilgrim License Renewal Application.
- (12) A description of any enhancements to or relaxations of the current inspection and maintenance programs (9) that will be incorporated in the future inspection and maintenance programs (10).

AMP Question Topic # 009: Masonry Walls (B.1.29.1)**Information Request:**

The program description for AMP B.1.29.1 in the Pilgrim LRA indicates that the scope of this program includes all masonry walls that perform an intended function in accordance with 10 CFR 54.4. The applicant is requested to provide the following information related to the scope of this program:

- (1) Identify whether any additional masonry walls have been added to the scope of the current Pilgrim program as a result of the LR scoping and screening process, particularly in light of the requirement to consider regulated events in the LR assessment.
- (2) If additional masonry walls have been added to the scope, explain how the requirements of I. E. Bulletin 80-11 have been applied to these walls, and describe any physical modifications that have/will be implemented to establish the evaluation bases.
- (3) If additional masonry walls have been added to the scope, explain why this is not considered an enhancement to the current Pilgrim program.

AMP Question Topic # 010: Bolting Integrity (XI.M18)**Information Request:**

The applicant is requested to identify the document(s) that includes the evaluation of the Pilgrim program against the program elements of GALL XI.M18, and to make it available in both electronic and hard-copy formats for the on-site AMP audit.

AMP Question Topic # 011: Overhead Heavy and Light Load (XI.M23)**Information Request:**

The applicant is requested to identify the document(s) that includes the evaluation of the Pilgrim program against the program elements of GALL XI.M23, and to make it available in both electronic and hard-copy formats for the on-site AMP audit.

AMP Question Topic # 012: Inspection of Internal Surfaces in Misc. Piping and Ducting Components (XI.M38)**Information Request:**

The applicant is requested to identify the documents that includes the evaluation of Pilgrim against the program elements of GALL XI.M38, and to make it available in both electronic and hard-copy formats for the on-site AMP audit.

AMP Question Topic # 013: RG 1.127, Water-Control Structures (B.1.29.3)**Information Request:**

The applicant is requested to identify the document(s) that includes the evaluation of the Pilgrim program against the program elements of GALL XI.S7, and to make it available in both electronic and hard-copy formats for the on-site AMP audit.

AMP Question Topic # 014: RG 1.127, Water-Control Structures (B.1.29.3)**Information Request:**

Considering the relatively short time period remaining before Pilgrim enters the license renewal period, the staff expects that considerable progress has already been made in developing and formally documenting the implementing procedures required for new AMPs, and for significant enhancements to existing AMPs. In light of this, please address each of the following questions regarding the current status of implementing procedures for this AMP:

- (a) Please provide the status of the implementing procedures for each enhancement to the existing RG 1.127, Inspection of Water-Control Structures program.
- (b) Please provide the schedule for initiating each of the enhancements to the existing RG 1.127, Inspection of Water-Control Structures program.
- (c) Please provide a sample of an implementing procedure for one enhancement to the existing RG 1.127, Inspection of Water-Control Structures program.
- (d) Please provide the results of any enhanced inspections that have already been completed.

AMP Question Topic # 015: RG 1.127, Water-Control Structures (B.1.29.3)**Information Request:**

LRA Appendix B, Section B.0.5 identifies AMP B.1.29.3 as an existing program. The Program Description states that this AMP is part of the Structures Monitoring Program, and further states The program will be used to manage. The scope of the enhancements listed for AMP B.1.29.3 encompass many of the elements that normally would be part of an existing inspection program for water-control structures.

Consequently, the applicant is requested to:

- (a) specifically describe the scope of the currently existing program, including the structures and components in the scope of the existing program; the aging effects that are monitored; the inspection methods employed; and the inspection frequency; and
- (b) specifically describe the scope of AMP B.1.29.3, including the structures and components in the scope of AMP B.1.29.3; the aging effects that are monitored; the inspection methods employed; and the inspection frequency.

AMP Question Topic # 016: RG 1.127, Water-Control Structures (B.1.29.3)

Information Request:

The applicant is requested to identify the document(s) that includes the evaluation of the Pilgrim program against the monitoring of trash racks. Does the Structures Monitoring Program is credited for aging management of trash racks? Please explain this apparent discrepancy?

AMP Question Topic # 017: RG 1.127, Water-Control Structures (B.1.29.3)

Information Request:

The applicant is requested to identify and provide the Inspection frequency against the GALL AMP XI.S7. If greater than 5 years. Please explain why the inspection frequency is NOT identified as an exception to the GALL AMP. Please also provide the technical basis for concluding that Pilgrim frequency is sufficient for submerged portions of structures.

AMP Question Topic # 018: RG 1.127, Water-Control Structures (B.1.29.3)

Information Request:

Per the Operating Experience discussion for B.1.29.3, Pilgrim has experienced (1) degradation of the main breakwater Structure had Rock displacement in 2004. Has the corrective action been completed? If not, why? If yes, please provide the plant documentation that describes the degradation, the assessment performed, the acceptance criteria applied, future monitoring recommendations, and any preventive and/or corrective action taken.

AMP Question Topic # 019: 10CFR 50 appendix J (XI.S4)

Information Request:

The applicant is requested to identify the document(s) that includes the evaluation of Pilgrim AMP B.1.9 against the program elements of GALL XI.S4, and to make it available in both electronic and hard-copy formats for the on-site AMP audit.

AMP Question Topic # 020: ASME Section XI, Containment ISI (B.1.16.1)**Information Request:**

Pilgrim AMP B.1.16.1 identifies that the Containment Inservice Inspection (CII) program is a plant-specific program encompassing the requirements for the inspection of class MC. The applicant is requested to identify the document(s) that includes the evaluation of Pilgrim AMP B.1.16.1 to include additional MC supports. Please provide the following information related to:

- (a) Identify the MC supports that are currently included in the existing this inspection program.
- (b) Identify the MC supports that will be added to the scope of this inspection program for the license renewal period.
- (c) Specify the current inspection program and describe the current inspection details for the MC supports that are identified in (b) above.
- (d) Confirm that, all MC supports will be included in the scope of this inspection program for the license renewal period.
- (e) Please explain if this program has been in compliance with ASME Sect. XI, Sub-Section IWE since the final rulemaking to require IWE inspections was made by the NRC in 1996. Provide a copy of the PNPS notification of commitment to IWE inspections sent to the Director of the Office of NRR.

AMP Question Topic # 021: RG 1.127, Water-Control Structures (B.1.29.3)**Information Request:**

The applicant is requested to confirm that Pilgrim AMP B.1.29.3 identifies an inspection of underwater supports for loss of material due to corrosion and loss of mechanical function. Please provide the following information related to this request:

- (a) Identify the specific underwater supports that will be added to the scope of the inspection program for the license renewal period, including the system name and ASME Code Class.
- (b) Specify the current inspection program and describe the current inspection details for the underwater supports that are identified in (a) above.
- (c) Confirm that, all ASME Code Class underwater supports will be included in the scope of the inspection program for the license renewal period.

AMP Question Topic # 022: Structures Monitoring (B.1.29.2)

Information Request:

For reference purposes, please have copies of NUMARC 93-01Rev.2, ACI 349.3R-96, ACI 318-63, ACI 201.2R-77, and ANSI/ASCE 11-90 available during the on-site audit.

AMP Question Topic # 023: ASME Section XI, Containment ISI (B.1.16.1)

Information Request:

The applicant is requested to identify and provide the Inspection frequency against the AMP B.1.16.1. What is the cause for "Loose" torus anchor bolt found in 1999? Are there any other "loose and/or degrade" situation were identified?

Are there any Preventive Action for the Torus shell wall (thin wall)? Please, provide an examination details, acceptance criteria, qualifications, and documentation.

AMP Question Topic # 024: ASME Section XI, Containment ISI (B.1.16.1)

Information Request:

The Oyster Creek Experienced drywell corrosion due to saltwater intrusion. To ensure the same problem did not exist at PNPS as indicated in the AMP B.1.16.1 tenth element. The applicant is requested to address this operating experience in detail and submit a specific technical basis why the Pilgrim containment not subject to the aging effects and aging mechanisms observed at Oyster Creek.

AMP Question Topic # 025: ASME Section XI, Containment ISI (B.1.16.1)

Information Request:

The applicant is requested to address the results of the CII general walkdown of primary containment during April 2003 (RFO 14) and found some surface corrosion in the CRD penetration areas. What were your corrective and preventive action? Did a Root Cause Analysis was performed? Please provide your acceptance criteria, qualification? And/or any other means to support your conclusion?

AMP Question Topic # 026: Structures Monitoring (B.1.29.2)

Information Request:

The applicant is requested to provide and make it available for the staff to review:

- 1- Detail drawing to show inside and outside of the dry well liner @ El. 9'-2".
- 2- Detail drawing to show the refueling floor which consist of: ring, gasket, seal.
- 3- Pilgrim response to GL 87-05.

AMP Question Topic # 027: Structures Monitoring (B.1.29.2)**Information Request:**

The applicant is requested to address and discussion of operating experience in detail of pipe supports and cable trays found degradation in November 2004. Did your scope expansion was required due to unacceptable found?

Please provide the following information related to this recent operating experience:

- (a) Identify the system(s), ASME Code Class, the initial sample size, and the percentage found to be unacceptable.
- (b) Identify whether loss of material due to corrosion, loss of mechanical function, or both aging effects were observed. Did the as-found unacceptable conditions compromise any intended functions?
- (c) Identify the final sample size, after scope expansion, and the percentage found to be unacceptable.
- (d) Identify the number of supports returned to service based solely on evaluation and the number of supports returned to service after repair.
- (e) Describe the root cause evaluation and the corrective actions taken to prevent recurrence.
- (f) Identify any additional inspections scheduled for the next inspection period.

AMP Question Topic # 028: Structures Monitoring (B.1.29.2)**Information Request:**

Considering the relatively short time period remaining before Pilgrim enters the license renewal period, the staff expects that considerable progress has already been made in developing and formally documenting the implementing procedures required for new AMPs, and for significant enhancements to existing AMPs. In light of this, please address each of the following questions regarding the current status of implementing procedures for this AMP:

- (a) Please provide the status of the implementing procedures for each enhancement to the existing Structures Monitoring Program.
- (b) Please provide the schedule for initiating each of the enhancements to the existing Structures Monitoring Program.
- (c) Please provide a sample of an implementing procedure for one enhancement to the existing Structures Monitoring Program.
- (d) Please provide the results of any enhanced inspections that have already been completed.

AMP Question Topic # 029: Structures Monitoring (B.1.29.2)**Information Request:**

Please discuss PNPS use of Level III coatings and identify whether any Service Level III coatings are credited for corrosion protection for license renewal.

AMP Question Topic # 030: Structures Monitoring (B.1.29.2)**Information Request:**

The scope of the enhancements listed for AMP B.1.29.2 are quite significant, and encompass several elements that would be expected to be part of an existing Structures Monitoring Program. Notable examples are the inclusion of anchors and the addition of loss of material due to corrosion of steel components to the current inspection criteria. Consequently, the applicant is requested to:

- (a) specifically describe the scope of the currently existing program, including the structures and components in the scope of the existing program; the aging effects that are monitored; the inspection methods employed; and the inspection frequency;
- (b) specifically describe the scope of AMP B.1.29.2, including the structures and components in the scope of AMP B.1.29.2; the aging effects that are monitored; the inspection methods employed; and the inspection frequency; and
- (c) for the structures and components that will be added to the Structures Monitoring Program scope for license renewal, describe the aging management activities that are currently being implemented.

AMP Question Topic # 031: Structures Monitoring (B.1.29.2)**Information Request:**

The applicant has not addressed aging management of the portion of the drywell shell embedded in the drywell concrete floor. This area is inaccessible for inspection, but is potentially subject to wetting on both the inside and outside surfaces. The applicant is requested to submit its AMR for this inaccessible portion of the drywell shell.

AMR Question Topic # 032: Bolting Materials Used in Structural Applications**Information Request:**

More information is needed about bolting materials used in structural applications at PNPS including Group B1.1 applications. What are the bolting materials used? What are the nominal yield strengths and upper-bound as-received yield strengths? Describe the OCGS resolution of the bolting integrity generic issue, as it relates to structural bolting. Was any structural bolting identified as potentially susceptible to cracking due to SCC? Was any structural bolting replaced as part of the resolution?

AMR Question Topic # 033: Structural Bolting AMR - Loss of Preload

Information Request:

For structural bolting, describe the AMR. How is "loss of preload" managed?

AMR Question Topic # 034: Steel and Aluminum in "Concrete" Environment

Information Request:

What is the plant-specific operating experience for structural steel (SS, carbon and alloy, galvanized) and aluminum in a "concrete" environment? Have there been any occurrences of degradation? If yes, why is no aging management program credited for LR?

AMR Question Topic # 035: Steel and Aluminum in an "indoor air" Environment

Information Request:

What is the plant-specific operating experience for structural SS, galvanized steel, and aluminum in an "indoor air" environment? Have there been any occurrences of degradation? If yes, why is no aging management program credited for LR?

AMR Question Topic # 036: Steel and Aluminum in "Containment Atmosphere" Environment

Information Request:

What is the plant-specific operating experience for structural SS, galvanized steel, and aluminum in a "containment atmosphere" environment? Have there been any occurrences of degradation? If yes, why is no aging management program credited for LR?

AMR Question Topic # 037: Class MC Pressure Retaining Bolting AMR and Loss of Preload

Information Request:

Describe the scope and AMR for Class MC Pressure Retaining Bolting. How is loss of preload managed?

AMR Question Topic # 038: SS, Galvanized Steel, & Aluminum AMR

Information Request:

For Stainless Steel, Galvanized Steel, and Aluminum ASME Class 1, 2, 3 and MC Supports, describe the AMR. Why is loss of mechanical function not identified as an aging effect for these materials?

AMP Question Topic # 039: Masonry Walls (B.1.29.1)

Information Request:

The program description for AMP B.1.29.1 in the Pilgrim LRA does not indicate that this program includes all of the guidances provided in I.E. Bulletin 80-11, "Masonry Wall Design", and Information Notice 87-67, "Lessons learned from Regional Inspections of Licensee Actions in Response to I.E. 80-11". Also, what is your Visual examined frequency? The applicant is requested to provide and confirm to the above information related to this program.

AMP Question Topic # 040: Containment Inservice Inspection (B.1.16.1)

Information Request:

The applicant is requested to address and discuss the Operating Experience in detail found in 1999, the below-water regions of all 16 torus bays as well as the drywell to torus vent areas. Did your scope expansion require due to unacceptable findings? Do you have any Preventive Actions to prevent it from further damage and/or recur? If yes, why is it not included in this program?

AMP Question Topic # 041: Containment Leak rate (B.1.9)

Information Request:

The applicant is requested to address and discuss the test Option related to this program. What and when was the most significant experience related to this program do you have? What were your corrective and preventive actions did you take? When will be your next "periodic interval"?

AMP Question Topic # 042: Containment Inservice Insp. (B.1.16.1)

Information Request:

"The drywell coolers, including the fans, with their power and control system were tested during the pre-operational tests...". When was the last time this system's functionally tested? A justification for an additional 20 years is needed for the staff to review.

AMP Question Topic # 043: ASME Section XI, Subsection IWF**Information Request:**

The applicant is requested to identify the document(s) that includes the evaluation of Pilgrim AMP B.1.16.2 against the program elements of GALL XI.S3, and to make it available in both electronic and hard-copy formats for the on-site AMP audit.

Considering the relatively short time period remaining before Pilgrim enters the license renewal period, the staff expects that considerable progress has already been made in developing and formally documenting the implementing procedures required for new AMPs, and for significant enhancements to existing AMPs. In light of this, please address each of the following questions regarding the current status of implementing procedures for this AMP:

- (a) Please provide the status of the implementing procedures for each enhancement to the existing ASME Section XI ISI, Subsection IWF program.
- (b) Please provide the schedule for initiating each of the enhancements to the existing ASME Section XI ISI, Subsection IWF program.
- (c) Please provide a sample of an implementing procedure for one enhancement to the existing ASME Section XI ISI, Subsection IWF program.
- (d) Please provide the results of any enhanced inspections that have already been completed.

TLAA Question Topic # 044: Sect 4.6**Information Request:**

The applicant is requested to provide the design codes for the liner plate, torus down comer/vent header and torus-attached piping, and SRV piping for review.

TLAA Question Topic # 045: Sect 4.6**Information Request:**

The applicant is requested to provide a statement indicating that the estimate of the total number of 60-year SRV actuations used in the design fatigue analysis remains valid and conservative, based on the actual SRV actuations counted thru 2005.

TLAA Question Topic # 046: Sect 4.6

Information Request:

The applicant is requested to provide a description or a reference to the "augmented" Class2/3 fatigue methodology that was developed to account for cycle mechanical loads.