NRR-PMDAPEm Resource

From: Wong, Albert
Sent: Thursday, November 16, 2017 3:22 PM
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Cc: RidsNrrDmlr Resource; RidsNrrDmlrMrpb Resource; RidsNrrPMRiverBend Resource; RidsOgcMailCenter Resource; Wilson, George; Donoghue, Joseph; Sayoc, Emmanuel; Wong, Albert; Billoch, Araceli; Holston, William; Rogers, Bill; Oesterle, Eric; Alley, David; Martinez Navedo, Tania; Bailey, Stewart; Wittick, Brian; Ruffin, Steve; Bloom, Steven; Regner, Lisa; Turk, Sherwin; Sowa, Jeffrey; Parks, Brian; Pick, Greg; Kozal, Jason; Young, Cale; Young, Matt; Werner, Greg; McIntyre, David; Dricks, Victor; Moreno, Angel; Burnell, Scott; 'Broussard, Thomas Ray'; Lach, David J; SCHENK, TIMOTHY A; 'Coates, Alyson'
Subject: FINAL REQUESTS FOR ADDITIONAL INFORMATION FOR THE SAFETY REVIEW OF THE RIVER BEND STATION LICENSE RENEWAL APPLICATION (CAC NO. MF9757)
Attachments: 012&013 RBS Coating Integrity & PSPM RAIs Holston_combined reworded_clean_ 111617.pdf

By letter dated May 25, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17153A282), Entergy Operations, Inc. (the applicant) submitted an application pursuant to Title 10 of the *Code of Federal Regulations* Part 54, "Requirements for Renewal of Operating Licenses for Nuclear Power Plants," to renew the operating license NPF-47 for River Bend Station.

On November 7, 2017, the U.S Nuclear Regulatory Commission (NRC) staff sent Entergy Operations, Inc. the draft Requests for Additional Information (RAIs). Entergy Operations, Inc. subsequently informed the NRC staff that a clarification call was needed to discuss the information requested. The clarification call was held on November 8, 2017 between NRC staff and Entergy Operations, Inc. representatives, during which the subject information requests were discussed. The draft RAIs were modified based on the discussion. The final RAIs are enclosed.

During the clarification call, the NRC staff and Entergy staff discussed the initial wording of the draft RAIs, and how it could be rephrased to remove ambiguity. As such the wording of several RAIs were modified to improve clarity.

Jim Morgan of your staff agreed to provide a response to the final RAIs within 30 days of the date of this email. The NRC staff will be placing a copy of this email in the NRC's Agencywide Documents Access and Management System.

Sincerely,

Emmanuel Sayoc, Project Manager (*Albert Wong for*)
License Renewal Projects Branch (MRPB)
Division of Materials and License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-458

Enclosure:
As stated

OFFICE	PM:RPGB:DMLR	BC:RPGB:DMLR	PM:RPGB:DMLR
NAME	ESayoc	EOesterle	ESayoc
DATE	11/14/2017	11/16/2017	11/16/2017

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Hearing Identifier: NRR_PMDA
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Subject: FINAL REQUESTS FOR ADDITIONAL INFORMATION FOR THE SAFETY REVIEW OF THE RIVER BEND STATION LICENSE RENEWAL APPLICATION (CAC NO. MF9757)
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Files	**Size**	**Date & Time**
MESSAGE	1833	11/16/2017 3:22:00 PM
012&013 RBS Coating Integrity & PSPM RAIs Holston_combined reworded_clean_111617.pdf	198852	

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Return Notification:	No
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RBS TRP 12 Coatings & TRP 13 PSPM RAIs - HOLSTON

REGULATORY BASIS FOR THE REQUESTS FOR ADDITIONAL INFORMATION

Section 54.21(a)(3) of 10 CFR requires an applicant to demonstrate that the effects of aging for structures and components will be adequately managed so that the intended function(s) will be maintained consistent with the current licensing basis for the period of extended operation. As described in SRP-LR, an applicant may demonstrate compliance with 10 CFR 54.21(a)(3) by referencing the GALL Report and when evaluation of the matter in the GALL Report applies to the plant.

TRP 12 COATINGS INTEGRITY –

RAI B.1.11-1

Background

LRA Table 3.3.2-3, "Service Water System," states that loss of coating integrity and loss of material will be managed by the Coating Integrity program for carbon steel with internal lining strainer housings exposed to raw water.

LRA Section B.1.11 states that the environments associated with the Coating Integrity program are treated water, waste water, or lubricating oil.

Issue

The LRA is not internally consistent. The inconsistency could lead to not managing loss of coating integrity for the strainer housings.

Request

Reconcile the discrepancy in the LRA by revising either LRA Table 3.3.2-3 or LRA Section B.1.11.

RAI 3.3.2.1.1-1 (Coating Integrity)

Background

LRA Table 3.3.1, item 3.3.1-140 states, "[t]his item was not used. There are no gray cast iron components with internal coating or linings in the auxiliary systems in the scope of license renewal."

Table 3.3.2-7 cites a gray cast iron valve body with internal coating exposed to raw water being managed for loss of coating integrity and loss of material by the Fire Water System program.

SRP-LR Table 3.3.1, item 3.3.1-140 recommends managing loss of material due to selective leaching for gray cast iron piping components with internal coatings/linings exposed to closed-cycle cooling water, raw water, or treated water with AMP XI.M42, "Internal Coatings/Linings for In-scope Piping, Piping Components, Heat Exchangers, and Tanks."

Issue

The LRA is not internally consistent. The inconsistency could lead to not managing loss of coating integrity for the valve body. If there are internally coated gray cast iron valves in the fire water system, a line entry should be added to LRA Table 3.3.2-7 citing LRA Table 3.3.1, item 3.3.1-140. In addition, the Fire Water System program does not have activities to manage loss of material due to selective leaching.

Request

Reconcile the discrepancy in the LRA by revising one or more of the following: (a) LRA Table 3.3.2-7; (b) LRA Table 3.3-1, item 3.3.1-140; (c) the Fire Water System program, or (d) the Coating Integrity program.

RAI B.1.11-2

Background

During the audit, the staff reviewed a report, which documented the basis for excluding six in-scope components from the scope of the coating integrity program based on loss of coating integrity not being an aging effect requiring management. The staff found the basis for excluding three of these components acceptable.

Issue

For the other three components, the staff lacks sufficient information to complete its review as follows:

- For lined piping located in the F tunnel: the piping is isolated on one end by a blind flange and on the other end there is a normally closed air operated valve (AOV) upstream of the condensate storage tank (CST). As stated in the report, the line is pressurized to 200 psig. As a result, if the AOV were to open, potential coating debris could be admitted to the CST through a flow restriction orifice. Although the orifice would potentially block large coating debris, it is not clear whether smaller coating debris could impact the intended function of components downstream of the CST. In addition, the report states that there is, "no safety-related equipment of piping near [the] line." The term "near" lacks sufficient specificity. A leak from the pipe as a result of through-wall corrosion subsequent to loss of coating integrity could impact safety-related components as a result of spray effects or flooding.
- For the recovery sample tank system discharge to CST header drain valve: the report states that there is no safety-related equipment or piping located near the valve. As described above, the term "near" lacks sufficient specificity.
- For the precoat tank level transmitter root valve: the report states that there is no safety-related equipment or piping located near the valve. As described above, the term "near" lacks sufficient specificity.

Request

Respond to the following:

a. For the lined piping located in the F tunnel, state the basis for why coating debris would not impact the intended function of components downstream of the CST, or include the piping in the scope of the Coating Integrity program.

b. For the above three components, state why no safety-related components will be impacted due to spray effects or flooding from a leak of a component as a result of through-wall corrosion subsequent to loss of coating integrity, or include the piping in the scope of the Coating Integrity program.

RAI B.1.11-3

Background

The staff noted that as documented in a condition report, during an inspection of the control building chiller condenser service water side, several loose pieces of what appears to be epoxy coating were detected. The condition report states: (a) the pieces of epoxy are small and will not prevent cooling water flow through the heat exchanger; (b) operation of the chiller before the inspection was within the expected bands for the monitored parameters; and (c) an apparent cause was not required for the condition adverse to quality.

Issue

Based on the staff's review of the corrective action entries for this condition report, it is not clear that the source of the epoxy debris was identified. As a result, it is not clear to the staff whether the debris is associated with a coating material or some other foreign material. Although the debris did not result in degraded chiller condenser performance at the time of discovery, future degradation could result in a larger load of debris or larger debris particles that could affect performance. If the debris is associated with a coating material, the staff lacks sufficient information to determine: (a) the potential extent of debris during the period of extended operation; and (b) whether the Coating Integrity program can adequately manage loss of coating integrity for this coating.

Request

Respond to the following:

a. State the source of the epoxy debris identified in this condition report.

b. If the debris was coating material, or if the debris has not been identified and there is upstream coating material that could have been the source, state the basis for why the Coating Integrity program will be effective at managing loss of coating integrity for this debris source.

RBS TRP 12 Coatings & TRP 13 PSPM RAIs - HOLSTON

TRP 13 PERIODIC SURVEILLANCE AND PREVENTIVE MAINTENANCE (PSPM)

RAI B.1.34-1

Background

The "scope of program" program element of the Periodic Surveillance and Preventive Maintenance (PSPM) program states that:

a) Loss of material for flexible hoses in the process radiation monitoring system will be managed by the PSPM program; however, LRA Table 3.3.2-18-17 does not cite any AMR items for flexible hoses.

b) Loss of material for stainless steel piping, pump casings, sight glasses, tubing, heat exchanger and valve bodies exposed to waste water located in the process radiation monitoring system will be managed by the PSPM program. Cracking is not managed for these components; however, cracking is managed for other stainless steel components (i.e., pump casing, piping) exposed to waste water in the plant drains system by the PSPM program (LRA Table 3.3.2-16).

Issue

The LRA is not internally consistent. The inconsistency could lead to not managing all applicable aging effects for these components.

Request

a) Reconcile the discrepancy in the LRA by revising either LRA Table 3.3.2-18-17 or LRA Section B.1.34.

b) State the basis for not managing cracking for stainless steel components exposed to waste water located in the process radiation monitoring system. Alternatively, revise LRA Section B.1-34 and LRA Table 3.3.2-18-17 to include cracking as an aging effect requiring management.

RAI B.1.34-2

Background

The "detection of aging effects" program element of the PSPM program:

a) States that the inspection of elastomeric materials is conducted to detect change in material properties; however, LRA Table 3.5.2-3 cites loss of sealing for the inflatable seals for the spent fuel storage and upper containment pool gates and change in material properties is not cited. Item 3.5.1-26 states that, loss of sealing is a consequence of the aging effects cracking and change in material properties. Therefore, the AMP and Table 2 entries are not consistent.

b) Does not state the percent of the elastomeric surface that will be physically manipulated.

c) States that the sample size is dependent on the component's material and environment and takes into consideration industry and plant-specific operating experience.

Issue

a) The LRA is not internally consistent. The inconsistency could lead to not managing all applicable aging effects for these components.

b) GALL Report AMP XI.M38, “Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components,” recommends that, “[t]he sample size for manipulation [of elastomeric components] is at least 10 percent of accessible surface area, including visually identified suspect areas.” Although the PSPM program is a plant-specific program, there is no basis for the AMP not being consistent with the recommendations in other GALL Report sampling-based programs.

c) Although the program evaluation report for the PSPM program, reviewed by the staff during the audit, states the minimum sample size for each activity that refers to a representative sample, LRA Section B.1.34 does not. GALL Report AMP XI.M38, as modified by LR-ISG-2012-02, "Aging Management of Internal Surfaces, Fire Water Systems, Atmospheric Storage Tanks, and Corrosion Under Insulation,” recommends that: (a) a representative sample of 20 percent of the population (defined as components having the same material, environment, and aging effect combination) or a maximum of 25 components per population is inspected; and (b) where practical, the inspection includes a representative sample of the system population and focuses on the bounding or lead components most susceptible to aging because of time in service and severity of operating conditions.

Request

a) Reconcile the discrepancy in the LRA by revising either LRA Table 3.5.2-3 or LRA Section B.1.34, or both.

b) State the percentage and if not consistent with GALL Report AMP XI.M38, the basis for the percentage of surface area of elastomeric components that will be physically manipulated during inspection.

c) Where program activities are sampling-based, state the minimum sample size for each material, environment, and aging effect combination of components within the scope of the PSPM program. State the criteria for selecting inspection locations. Where different than that recommended in GALL Report AMP XI.M38, as modified by LR-ISG-2012-02, state and justify the exception.

RAI B.1.34-3

Background

LR-ISG-2012-02, Table 3.0-1, “FSAR Supplement for Aging Management of Applicable Systems,” for AMP XI.M38, “Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components,” recommends that the USAR supplement include: (a) the periodicity, sample size, and criteria for selecting inspection locations; and (b) that physical manipulation of elastomers be conducted in addition to visual inspections. LRA Section A.1.34 does not include the recommended text.

Issue

Although the PSPM program is a plant-specific program, there is no basis for the USAR not being consistent with the recommendations for the USAR supplement in other GALL Report sampling-based programs.

Request

Revise LRA Section A.1.34 to incorporate the above cited recommendations or state the basis for why the current licensing basis for the PSPM program will be adequate during the period of extended operation without this information.

RAI 3.3.2.3.16-1

Background

LRA Table 2.0-1, "Component Intended Functions: Abbreviations and Definitions," states that the filtration function is, "[p]rovide removal of unwanted material." LRA Table 2.0-1 states that the mechanical pressure boundary function is, "[p]rovide pressure boundary integrity such that adequate flow and pressure can be delivered…"

LRA Section 2.3.3.16 states:

> The auxiliary building crescent area sumps have the ability to pump to the suppression pool via the HPCS minimum flow line using the associated sump pumps, referred to as suppression pool pumpback. After a LOCA with subsequent passive failure of an ECCS pump or valve seal, water inventory collected by sumps can be directed back to the suppression pool. A normally closed isolation valve aligns the discharge of these sump pumps to the suppression pool, thus helping to maintain suppression pool inventory for use following a LOCA.

This function is cited in USAR Section 9.3.7. In addition, USAR Section 9.2.6.3 credits the function of the sump pumps to remove water accumulating as a result of a crack in the RCIC suction line, "[t]he crack in the RCIC suction piping does not result in flooding since the sump pump capacities are greater than the calculated leakage flow rate of 82 gpm."

LR-ISG-2012-02, "Aging Management of Internal Surfaces, Fire Water Systems, Atmospheric Storage Tanks, and Corrosion Under Insulation," added a new term, "flow blockage," defined as:

> Flow blockage is the reduction of flow or pressure, or both, in a component due to fouling, which can occur from an accumulation of debris such as particulate fouling (e.g., eroded coatings, corrosion products), biofouling, or macro fouling. Flow blockage can result in a reduction of heat transfer or the inability of a system to meet its intended safety function, or both. This definition is consistent with the definition of the term "pressure boundary" as found in SRP-LR Table 2.1-4(b), "Typical 'Passive' Component-Intended Functions.

In addition, the term "fouling" was revised in LR-ISG-2012-02 to state in part, "[f]ouling can result in a reduction of heat transfer, flow or pressure, or a loss of material."

SRP-LR, Section A.1.2.1, *Applicable Aging Effects* states, in part, that the effects of aging on the intended functions of components should be considered. In the case of components with an intended function of "filtration," flow blockage due to fouling would appear to be an applicable aging effect to be considered.

Issue

LRA Table 3.3.2-16, “Plant Drains,” cites a strainer with a filtration function. There is no entry citing flow blockage due to fouling as an aging effect requiring management (AERM).

As evidenced in USAR Sections 9.3.7 and 9.2.6.3, the current licensing basis for the above sump pumps, the pressure boundary function of the pumps and piping downstream of the suction strainers could be challenged due to accumulated debris on the strainer. The staff lacks sufficient information to conclude that the pressure boundary function of downstream components would be met if flow blockage due to fouling is not managed.

Request

For strainers associated with the sump pumps located in the crescent areas and RCIC pump room, state the basis for why flow blockage due to fouling will not be managed as an AERM. Alternatively, revise LRA Table 3.3.2-16 to cite the AMP(s) that will be used to manage this AERM, and revise the applicable AMP(s) to address this AERM.