



UNITED STATES
NUCLEAR REGULATORY COMMISSION
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August 15, 2011

Mr. G. T. Powell, Vice President
Technical Support and Oversight
STP Nuclear Operating Company
P.O. Box 289
Wadsworth, TX 77483

SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
SOUTH TEXAS PROJECT, UNITS 1 AND 2 LICENSE RENEWAL
APPLICATION – AGING MANAGEMENT PROGRAMS AUDIT, PLANT
SYSTEMS (TAC NOS. ME4936 AND ME4937)

Dear Mr. Powell:

By letter dated October 25, 2010, STP Nuclear Operating Company, submitted an application pursuant to Title 10 of the *Code of Federal Regulations* Part 54 for review by the U.S. Nuclear Regulatory Commission (NRC or the staff), to renew operating licenses NPF-76 and NPF-80 for South Texas Project, Units 1 and 2. The staff is reviewing the information contained in the license renewal application and has identified, in the enclosure, areas where additional information is needed to complete the review.

These requests for additional information were discussed with Arden Aldridge, and a mutually agreeable date for the response is within 30 days from the date of this letter. If you have any questions, please contact me at 301-415-3873 or by e-mail at john.daily@nrc.gov.

Sincerely,

A handwritten signature in black ink, reading "John W. Daily". The signature is stylized with a large, looped "J" and a cursive "Daily".

John W. Daily, Senior Project Manager
Projects Branch 1
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket Nos. 50-498 and 50-499

Enclosure:
As stated

cc w/encl: Listserv

SOUTH TEXAS PROJECT, UNITS 1 AND 2
LICENSE RENEWAL APPLICATION
REQUESTS FOR ADDITIONAL
INFORMATION – AGING MANAGEMENT PROGRAMS AUDIT,
PLANT SYSTEMS

Note: In all cases unless otherwise noted, references to the generic aging lessons learned (GALL) Report, a GALL aging management program (AMP), or the SRP-LR refer to the current approved revision, Revision 2.

RAI B2.1.7-1

Background:

GALL AMP XI.M18, "Bolting Integrity," "scope of program" program element states that the program relies on recommendations for a comprehensive bolting integrity program as delineated in electric power and research institute (EPRI) TR-104213, EPRI NP-5769 and NUREG-1339.

License renewal application (LRA), Section B2.1.7, "Bolting Integrity," "scope of program" program element states an exception to GALL AMP XI.M18 where the applicant does not explicitly address the guidelines outlined in EPRI TR-104213. Instead, the applicant's Bolting Integrity Program relies on the recommendations contained in EPRI NP-5067, EPRI NP-5769 and NUREG-1339.

Issue:

The use of EPRI NP-5067 as guidance in place of the GALL Report recommended guidance delineated in EPRI TR-104213 requires further clarification to determine how EPRI NP-5067 meets the intent of EPRI TR-104213 as identified in GALL AMP XI.M18, and whether or not its usage will contradict the GALL guidance.

Request:

Provide clarification on the use of EPRI NP-5067 as guidance for this program. Specifically, provide an explanation of any contradictions between EPRI NP-5067 and the GALL recommended guidance delineated in EPRI TR-104213 that it is replacing and its impact on this program.

RAI B2.1.7-2

Background:

GALL AMP XI.M18, "Bolting Integrity," "detection of aging effects" program element recommends that for high strength structural bolting (actual measured yield strength greater than or equal to 150 ksi or 1,034 MPa) in sizes greater than 1 inch nominal diameter, volumetric

ENCLOSURE

examination comparable to that of American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, Table IWB-2500-1, Examination Category BG-1 should be performed to detect cracking in addition to the VT-3 examination.

The Bolting Integrity plant basis document states that, "Based on STP operating experience, volumetric examinations of high strength structural bolts greater than 1-inch nominal diameter is not required." Justification is provided in the basis document which states 3 criteria for initiation of SCC: high stress, corrosive environment, and susceptible material. Though STP has high stresses and susceptible material, they state that the corrosive environment has been eliminated by following proper lubrication and sealant guidelines.

Issue:

It is unclear how a non-corrosive environment is achieved, and how that non-corrosive environment can be guaranteed to be continuously maintained throughout the period of extended operation.

Request:

Provide additional information to demonstrate that all high-strength structural bolts have been completely removed from a corrosive environment, and are not at risk of being exposed to a corrosive environment, or update the basis documents to show that volumetric examinations comparable to that of ASME Code, Section XI, Table IWB-2500-1, Examination Category BG-1 are being performed on high strength structural bolting in sizes greater than 1 inch nominal diameter.

RAI B2.1.9-1

▲ Background:

LRA Section B2.1.9, "Open-Cycle Cooling Water System Program," states that the program manages the aging effects of cracking, loss of material, and reduction of heat transfer. This is also stated in the Final Safety Analysis Report (FSAR) Supplement, LRA Section A1.9. However, the LRA does not include any AMR Table 2 line items for which the Open-Cycle Cooling Water System Program manages the aging effect of cracking.

GALL AMP XI.M20, "Open-Cycle Cooling Water System," does not include cracking as an aging effect requiring management (AERM) by the Open-Cycle Cooling Water System Program.

Discussions with applicant staff during the AMP Audit indicated that the inclusion of cracking as an aging effect managed by the Open-Cycle Cooling Water System Program was an error.

Issue:

The applicant appears to have included cracking as an aging effect managed by the Open-Cycle Cooling Water System Program in error. Had the applicant chosen to include cracking as an aging effect to be managed by this program, the staff would have considered this

to be an exception to GALL AMP XI.M20 and would have expected an appropriate technical justification for the exception to be included in the LRA.

Request:

Revise LRA Sections B.2.1.9, A1.9, and any other applicable LRA section as appropriate, to accurately reflect the aging effects to be managed by the Open-Cycle Cooling Water System Program.

RAI B2.1.10-1

Background:

The "detection of aging effects" program element of GALL AMP XI.M21A, "Closed Treated Water Systems," recommends that inspections be conducted whenever the system boundary is opened (i.e., opportunistically) and a representative sample of piping and components be selected based upon likelihood of corrosion or cracking and inspected at an interval not to exceed once in 10 years.

In the LRA, the Closed-Cycle Cooling Water (CCCW) System Program is used to manage carbon steel, carbon steel (galvanized), cast iron, copper alloy, copper alloy > 15% Zn, titanium, and stainless steel components exposed to closed-cycle cooling water for loss of material, cracking, and reduction of heat transfer. An enhancement to this program states that the interior of piping that is attached to the excess letdown heat exchanger component cooling water (CCW) return check valves will be periodically inspected to detect loss of material and fouling. The staff's review of the program documentation during the AMP audit indicated that this is the only inspection location for this program.

Issue:

1. The CCCW System Program does not include opportunistic inspections when systems are opened during maintenance. It is the staff's position that, because the control of water chemistry may not be fully effective in mitigating aging, such inspections can ensure that material degradation does not result in loss of component intended functions.
2. LRA Section B2.1.10 does not state how often inspections of the piping associated with the CCW return check valve will be conducted. GALL AMP XI.M21A recommends a maximum 10-year inspection interval on a representative sample of components to ensure all material-aging effect combinations are adequately addressed by the opportunistic inspections during system maintenance.
3. It is not clear to the staff whether the proposed inspection location is a representative sample of components most likely to corrode or crack for all the various material-aging effect combinations. For example, the staff noted that cracking was not included in the description of the inspection activities for the piping associated with the CCW check

valves, although several LRA items manage cracking of stainless steel components exposed to closed-cycle cooling water with the CCCW System Program.

Request:

1. Include opportunistic inspections in the CCCW System Program or provide technical justification for how the inspections of the piping associated with the CCW return check valve is adequate to ensure material degradation is not occurring in the closed-cycle cooling water systems.
2. State how often a representative sample of components will be inspected during the period of extended operation and, if the inspection interval exceeds 10 years, provide technical justification for why the frequency is adequate to manage aging.
3. Confirm whether the proposed inspection location is representative of the components most likely to corrode or crack for all the material-aging effect combinations managed by the CCCW System Program (e.g., cracking of stainless steel in closed-cycle cooling water > 60 °C, reduction of heat transfer of copper and stainless steel heat exchanger tubes in closed-cycle cooling water). If the inspection of the piping associated with the CCW check valves is not representative of the components managed by the CCCW System Program, propose an alternative sampling methodology.

RAI B2.1.13-1

Background:

SRP-LR, Table 3.0-1, states that the recommended FSAR supplement description of the program for GALL Report AMP XI.M27, "Fire Water System," includes "...testing or replacement of sprinklers that have been in place for 50 years."

Issue:

Although the applicant has committed to enhance the Fire Water System Program to include testing or replacement of sprinklers (LRA Table A4-1, Item #8 and LRA Section B2.1.13), testing or replacement of sprinklers that have been in place for 50 years is not included in the FSAR Supplement, LRA Section A1.13.

Request:

Revise the FSAR Supplement to indicate that the Fire Water System Program includes testing or replacement of sprinklers that have been in place for 50 years.

RAI B2.1.20-4

Background:

GALL AMP XI.M29, "Aboveground Metallic Tanks," recommends that any tank exposed to weather and constructed on concrete or soil be managed for aging by having sealant or caulking applied at its base, that the sealant or caulking be visually inspected, and that the tank bottom thickness be measured at least once within five years of entering the period of extended operation and whenever the tank is drained.

LRA Table 3.3.2-17 credits the External Surfaces Monitoring program to manage loss of material for the steel fire water storage tank, which is exposed to atmosphere/weather and constructed on a concrete foundation. The External Surfaces Monitoring program does not require sealant or caulking as a preventive action, nor does it conduct bottom thickness measurements of the tank. Furthermore, LRA Table 3.4.2-6 states that there is no aging effect and no AMP for the concrete stainless steel lined auxiliary feedwater storage tank exposed to atmosphere/weather.

Revision 2 of the SRP-LR, Table 3.0-1, states that for the program that manages aboveground metallic tanks constructed on concrete or soil which are exposed to atmosphere/weather, the UFSAR Supplement should state that preventive measures to mitigate corrosion by installing sealant or caulking at the concrete-component interface are utilized, and tank program effectiveness is determined by measuring the thickness of the tank bottoms to ensure that significant degradation is not occurring and that the component's intended function is maintained during the period of extended operation.

Issue:

During the AMP audit, the staff and applicant walked down the fire water storage and auxiliary feedwater storage tanks. The fire water storage tank has caulking applied at its interface with the concrete foundation. Due to walk down limitations, it is not clear to the staff if all penetrations in the concrete of the auxiliary feedwater concrete stainless steel lined storage tank are caulked. Although structural caulking and sealants exposed to atmosphere/weather are managed by the Structures Monitoring Program in LRA Table 3.5.2-3, the periodicity of inspections for the Structures Monitoring Program is not as frequent as those recommended by GALL AMP XI.M29. The External Surfaces Monitoring Program does not conduct tank bottom thickness measurements. Additionally, the FSAR Supplement is not consistent with SRP-LR Revision 2, Table 3.0-1.

Request:

1. State whether all penetrations through the concrete of the auxiliary feedwater concrete stainless steel lined storage tank which could allow water to enter between the tank lining material and the concrete are caulked or sealed. If they are not caulked or sealed, state the basis for a reasonable assurance that the tank will perform its current license basis function throughout the period of extended operation.

2. State the technical basis for not inspecting caulking and sealants utilized at the tank to concrete interface joints on a 2-year interval, or revise the LRA to increase the frequency of these inspections.
3. State the basis for not conducting tank bottom thickness measurements for the fire water storage tank and auxiliary feedwater storage tank at least once within 5 years of entering the period of extended operation and whenever the tank is drained, or revise the LRA to include these inspections.
4. Based upon the responses to requests 1 through 3, revise the UFSAR supplement for the program that manages the above aging for the fire water storage tank and auxiliary feedwater storage tank to be consistent with SRP-LR Revision 2, Table 3.0-1.

RAI B2.1.16-1

Background:

SRP-LR A.1.2.3.10, "Operating Experience," section 3 states "Additionally, an applicant should commit to a review of future plant-specific and industry operating experience for new programs to confirm their effectiveness."

In LRA Table A4-1, "License Renewal Commitment List," the new One-Time Inspection Program does not include a commitment to perform a review of future operating experience to confirm the effectiveness of this program.

Issue:

This program's LRA commitment list is not consistent with the current staff position as stated in the SRP-LR concerning reviews of future operating experience for new Aging Management Programs.

Request:

Revise LRA Table A4-1, "License Renewal Commitments," item No. 11 for the One-Time Inspection Program to include a commitment to perform a future review of operation experience to confirm the effectiveness of this program or justify why such a review is not necessary.

RAI B2.1.16-2

Background:

SRP-LR Table 3.0-1 states a detailed description for XI.M32 that is to be provided within the FSAR supplement detailing selection based on materials, examination techniques, evaluation of follow-up examinations, and the restrictions to when this program may be applied for structures and components.

LRA Section A1.16 states that the program's scope, sample methodologies, and the sample locations are to be based on service period, operating conditions, and design margins, including additional actions that are included within this program.

Issue:

The SRP-LR presents a comprehensive program description for the One-Time Inspection program, whereas LRA Section A1.16 omits sample selection based on materials, examination techniques, evaluation of follow-up examinations, and restrictions to when this program may be applied for structures and components.

Request:

Resubmit the UFSAR supplement to fully describe this program consistent with the SRP-LR FSAR supplement guidance for this program.

RAI B2.1.17-1

Background:

GALL AMP XI.M33 "Selective Leaching of Materials," states "Where practical, the inspection includes a representative sample of the system population and focuses on the bounding or lead components most susceptible to aging due to time in service, severity of operating conditions, and lowest design margin."

Issue:

Based on a review of the applicant's program basis document during the AMP Audit, it is not clear to the staff that the copper alloy (> 15% Zn) solenoid valves in LRA Table 3.3.2-7, Compressed Air System, will be included in the "representative sample" of components to be inspected.

Request:

State the basis for why the copper alloy (> 15% Zn) solenoid valves in LRA Table 3.3.2-7, Compressed Air System were not included the "representative sample" of components to be inspected. Otherwise, include the copper alloy (> 15% Zn) solenoid valves in LRA Table 3.3.2-7 in the potential inspection scope of the Selective Leaching of Materials AMP.

RAI B2.1.17-2

Background:

GALL AMP XI.M33 "Selective Leaching of Materials," states "Where practical, the inspection includes a representative sample of the system population and focuses on the bounding or lead components most susceptible to aging due to time in service, severity of operating conditions,

and lowest design margin.” The “scope of program” program element description of LRA AMP B2.1.17, “Selective Leaching of Materials,” states that the program procedure provides for visual and mechanical inspections for each system/material/environment combination.

Issue:

It is not clear to the staff that the LRA AMP and GALL AMP XI.M33 are consistent because the applicant could select components that are not the most susceptible to selective leaching.

Request:

Explain how the sample of components to be inspected for selective leaching are determined such that the bounding or lead components most susceptible to aging due to time in service, severity of operating conditions, and lowest design margin are included.

RAI B2.1.17-3

Background:

LRA Amendment 2, Section B.2.1.17, “parameters monitored/inspected” and “detection of aging effects” program element descriptions state that flow testing of fire mains is credited for management of selective leaching of buried cast iron valves in the fire protection system in accordance with GALL AMP XI.M41, “Buried and Underground Piping and Tanks.” GALL AMP XI.M41 recommends that GALL AMP XI.M33, “Selective Leaching of Materials,” be used to manage selective leaching in addition to the program requirements of GALL AMP XI.M41. LRA Table 3.3.2-17, “Fire Protection System,” includes buried hydrants and valves that are constructed of gray cast iron that will be managed for loss of material by selective leaching.

Issue:

It is not clear to the staff that utilizing flow testing of fire mains to manage selective leaching of buried gray cast iron components in the fire protection system is consistent with GALL AMP XI.M41.

Request:

Explain how flow testing of fire mains will be effective in managing selective leaching of buried in-scope gray cast iron components of the fire protection system.

RAI B2.1.17-4

Background:

GALL AMP XI.M33, “Selective Leaching of Materials,” “detection of aging” program element recommends that the selective leaching inspections be conducted in the 5-year period prior to the period of extended operation. The “parameters monitored/inspected” program element of

LRA Section B2.1.17, "Selective Leaching of Materials," states that the program will be implemented prior to the period of extended operation.

Issue:

The LRA is not consistent with GALL AMP XI.M33, in that it does not specify that the inspections will be conducted in the five-year period prior to the period of extended operation.

Request:

State the basis for why inspections conducted before the five-year period prior to the period of extended operation will be sufficient to determine whether loss of materials due to selective leaching is occurring.

RAI B2.1.17-5

Background:

The GALL Report, items A-51 and SP-28, recommend that components made of gray cast iron exposed to raw water be managed for selective leaching by GALL AMP XI.M33 "Selective Leaching of Materials." During the audit, the staff conducted a random sample of field components to determine if the correct materials and environments were identified in the LRA. During this audit, the applicant determined that the diesel fire pumps are constructed of gray cast iron instead of cast iron. The applicant initiated an extent of condition review to identify any other affected AMR items. LRA Table 3.3.2-17 states that these pumps are constructed of cast iron and are being managed for loss of material by the Fire Water System. This item references GALL Report item A-33, which does not include selective leaching as an aging effect requiring management. LRA Section B2.1.13, "Fire Water System," does not include inspections for selective leaching.

Issue:

Given that the fire water system program does not include inspections for selective leaching that include hardness testing for detecting this aging effect, the staff believes that managing the raw water internal environment by the fire water system program may not be sufficient.

In addition, pending the completion of the applicant's extent of condition reviews, the staff lacks sufficient information to conclude that no other AMR items are affected.

Request:

1. State the basis for why managing the diesel fire pumps pumps solely with the Fire Water System program will provide reasonable assurance that the components' current licensing basis function will be met, or revise LRA Table 3.3.2-17 to include managing the gray cast iron fire water pumps by the Selective Leaching AMP in addition to the fire water system.

2. State the final results of the extent of condition review as described in the background of this RAI and revise the LRA as necessary to address any other components that did not have the correct material identified.

RAI B2.1.18-1

Background:

The basis document for LRA AMP B2.1.18, "Buried Piping and Tanks Inspection," "scope of program" program element states that the auxiliary feedwater, essential cooling water and essential cooling water screen wash, fire protection, and oily waste systems contain buried in-scope piping. However, LRA Table 3.3.2-27, "Miscellaneous Systems in scope ONLY for Criterion 10 CFR 54.4(a)(2)," also includes buried in-scope piping and valves.

Issue:

It is not clear to the staff that the applicant has included all systems (including those described in Table 3.3.2-27) with buried in-scope piping in its Buried Piping and Tanks Inspection program.

Request:

Clarify if the buried piping and valves as listed in LRA Table 3.3.2-27 are subject to the management of the Buried Piping and Tanks Inspection AMP. If so, state whether the implementing procedures for the program require inspection of these buried piping and valves that are part of the miscellaneous systems in scope only for criterion 10 CFR 54.4(a)(2).

RAI B2.1.18-2

Background:

GALL AMP XI.M41, "preventive actions" program element, Table 2a, footnote 5 states that, "The staff considers backfill that is located within 6 inches of the pipe that meets American Society for Testing and Materials (ASTM) D 448-08 size number 67 to meet the objectives of SP0169-2007." The "preventive actions" program element of the LRA AMP states that backfill for buried piping is consistent with ASTM D 448-08 size number 67; however, the implementing procedure allows non-category 1 backfill material above plant elevation 26. The staff notes that some buried in-scope piping rises through elevation 26 and up to ground elevation, which is approximately 28 feet.

Issue:

Based on discussions with the applicant's staff during the AMP Audit, non-category 1 backfill may not meet the requirements of ASTM D448-08 size number 67. Given that there is buried in-scope piping that rises through elevation 26 and up to ground elevation which is

approximately 28 feet, the applicant's implementing procedures may not be consistent with the "preventive actions" program element for GALL AMP XI.M41, for backfill quality.

Request:

If the plant-specific backfill requirements for backfill installed above plant elevation 26 do not meet the requirements of ASTM D448-08 size number 67, provide an exception and include the basis for why these backfill requirements will not result in damage to buried in-scope piping or its coatings.

RAI B2.1.18-3

Background:

GALL AMP XI.M41, "detection of aging effects" program element states "If adverse indications are detected, inspection sample sizes within the affected piping categories are doubled. If adverse indications are found in the expanded sample, the inspection sample size is again doubled. This doubling of the inspection sample size continues as necessary." LRA Section B.2.1.18, "detection of aging effects" program element states that if extensive adverse conditions are found during inspections, inspections may be halted in an area of concern that is planned for replacement, provided continued operation does not pose a significant hazard.

Issue:

It is not clear to the staff that the LRA AMP statement is consistent with the GALL AMP because the LRA does not state whether the doubling of inspection sample sizes will continue in locations with similar materials and environments.

Request:

Describe what actions will be taken for areas of similar material and environment where adverse conditions are not extensive. If the planned actions are not consistent with GALL AMP XI.M41 "detection of aging effects" program element, 4.f.iv. (i.e., inspections will continue in locations with similar materials and environment other than the portion(s) of the system that will be replaced), provide a justified exception to the program element.

RAI B2.1.18-4

Background:

GALL AMP XI.M41 "detection of aging effects" program element recommends that two percent of underground piping containing materials hazardous to the environment be inspected. The basis document for LRA Section B.2.1.18 "detection of aging effects" program element does not state an inspection size for the underground in-scope oily waste system piping.

Issue:

It is not clear to the staff that these statements are consistent because the applicant did not state an inspection scope for the underground in-scope oily waste system piping.

Request:

State why there are no inspections for the underground in-scope oily waste system piping; otherwise, revise LRA Section B.2.1.18 to be consistent with the inspection recommendations of GALL AMP XI.M41, Table 4b.

RAI B2.1.20-1

Background:

GALL AMP XI.M36, "External Surfaces Monitoring of Mechanical Components," "parameters monitored/inspected" program element recommends that the purpose of manual manipulation of elastomers is to reveal changes in material properties to make the visual examination process more effective in identifying aging effects. LRA Section B2.1.20, "External Surfaces Monitoring Program," "scope of program" program element states that physical manipulation of elastomers may be used to augment visual inspections.

Issue:

It is not clear to the staff that these statements are consistent because the term "may" allows discretion in determining whether or not to physically manipulate elastomers during visual examinations.

Request:

Revise LRA Section B2.1.20 to state that physical manipulation of elastomers "will" be used to augment visual inspections or state the basis for how the hardening and loss of strength aging effects can be consistently detected in elastomers without physically manipulating the material.

RAI B2.1.20-2

Background:

LRA Section B2.1.20, "External Surfaces Monitoring Program," "scope of program" program element states that the program will not be used for managing loss of material for internal surfaces. However, LRA Tables 3.3.2-11 and 3.3.2-12 contain items associated with dampers containing internal surfaces within ducting (or a plenum) exposed to atmospheric weather internal environment which are managed by the External Surfaces Monitoring Program.

GALL AMP XI.M36, "External Surfaces Monitoring of Mechanical Components," "scope of program" program element states that the program may be used to age manage internal surfaces if the program describes how the component's internal and external environments are similar.

Issue:

It is not clear to the staff how these components will either be periodically monitored (i.e., subject to direct visual inspection) using the External Surfaces Monitoring Program or, conversely, how the internal and external environments could be considered sufficiently similar to allow the use of the External Surfaces Monitoring Program alone.

Request:

State how the dampers exposed to an atmospheric weather internal environment in LRA Tables 3.3.2-11 and 3.3.2-12 will be periodically inspected by the External Surfaces Monitoring Program or state how the internal and external environments can be considered sufficiently similar to allow the use of the External Surfaces Monitoring Program alone.

RAI B2.1.20-3

Background:

GALL AMP XI.M36, "External Surfaces Monitoring of Mechanical Components," "detection of aging effects" program element recommends that at least 10 percent of the available surface area of elastomeric or polymeric materials be manipulated during inspections. LRA Section B2.1.20, External Surfaces Monitoring Program, "scope of program" program element states that physical manipulation of elastomers may be used to augment visual inspections.

Issue:

It is not clear to the staff that the applicant's program will require that at least 10 percent of the available surface area of elastomeric or polymeric materials be manipulated during inspections.

Request:

Revise LRA Section B2.1.20 to require that at least 10 percent of the available surface area of elastomeric or polymeric materials be manipulated during inspections, or state the basis for why manipulating less than 10 percent of the available surface will be adequate to detect hardening and loss of strength in elastomeric and polymeric materials.

RAI B2.1.20-4

Background:

GALL AMP XI.M36, "External Surfaces Monitoring of Mechanical Components," program element "detection of aging effects" recommends that surfaces that are not readily visible during plant operations and refueling outages are inspected when they are made accessible and at such intervals that would ensure the components' intended functions are maintained. The LRA AMP states that it is consistent with GALL AMP XI.M36; however, as determined during the AMP audit, the implementing procedure lacks sufficient detail to preclude a component which is inaccessible during normal operation from having its inspection deferred such that it is not inspected at all during the period of extended operation.

Issue:

It is not clear to the staff how the applicant will evaluate or track exceptions to inspections due to the component(s) not being readily accessible during plant operations and refueling outages.

Request:

1. State how component(s) that are not readily accessible during plant operations and refueling outages will be evaluated to ensure that the components' intended functions are maintained between inspections and how the inspection interval will be determined.
2. State how the inspections for component(s) that are not readily accessible during plant operations and refueling outages will be tracked to ensure that the inspections are conducted as planned.

RAI B2.1.22-1

Background:

GALL AMP XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components," program description states that the program applies to water systems other than open-cycle cooling water (XI.M20), closed treated water system (XI.M21A), and fire water system (XI.M27).

The applicant's basis documents for LRA AMP B2.1.22, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components," indicates that the program applies to water systems including closed-cycle cooling water system and fire protection system components.

Additionally, LRA AMP B.2.1.22 also states, in the program description, that hardening and loss of strength for both internal and external surfaces of elastomers is in the scope of this AMP.

Issue:

The program's scope concerning closed cycle cooling water, fire protection and the application of external elastomers is not consistent with the scope of GALL AMP XI.M38.

Request:

The applicant should evaluate the scope currently listed within this program concerning closed cycle cooling water, fire protection and external elastomers. If these elements are retained within the current program please state a justification for this exception to GALL AMP XI.M38.

RAI B2.1.22-2

Background:

GALL AMP XI.M38 program element, "parameters monitored/inspected" provides examples of inspection parameters for polymers such as crazing, scuffing, dimensional change, and exposure of internal reinforcement.

The applicant's basis documents for LRA AMP B2.1.22, Section 4.5.3, do not include the above inspection parameters.

Issue:

The program's basis documents do not comprehensively consider all the inspection parameters associated with polymers.

Request:

The applicant is requested to present a cumulative list of inspection parameters that the program will apply to polymers. If there are parameters consistent with the GALL Report that will not be included, the applicant is requested to present a justification for their absence.

RAI B2.1.22-3

Background:

GALL AMP XI.M38 program element, "detection of aging effects" identifies the sample size for manipulation of flexible polymeric components as "at least 10 percent of available surface area.

The applicant's LRA and basis document do not provide guidance on sample size for flexible polymeric components.

Issue:

There is no sample size associated with physical manipulation of flexible polymeric components in the applicant's documentation.

Request:

Please submit and document the program's intended sample size associated with physical manipulation of flexible polymeric components. If the intended sample size differs from recommendations of the GALL Report, the applicant is asked to provide technical justification for an alternate method.

RAI B2.1.22-4

Background:

GALL AMP XI.M38 program description states that if visual inspections of internal surfaces are not possible, then the applicant needs to provide a plant-specific program.

The applicant's basis document states that in cases where the internal surface is not available for internal examination, [volumetric examination] may be substituted for visual examinations.

Issue:

While utilizing volumetric examinations at non-accessible internal inspection locations is acceptable, neither the applicant's program description in LRA Section B.2.1.22, FSAR Supplement, nor associated commitment section mentions this plant-specific approach to inspecting inaccessible surfaces.

As such, the applicant's program does not identify a program enhancement consistent with the GALL Report concerning the plant specific inspection procedure for inaccessible surfaces.

Request:

The applicant is requested to document an enhancement to STP's new program identifying the intent to utilize volumetric examinations in lieu of visual inspections where internal surfaces are inaccessible. Additionally, the UFSAR Supplement should be revised to reflect this plant-specific approach to inspecting inaccessible surfaces.

RAI B2.1.22-5

Background:

SRP-LR, A.1.2.3.10, "Operating Experience," Section 3, states "...an applicant should commit to a review of future plant-specific and industry operating experience for new programs to confirm their effectiveness."

In LRA Table A4-1, "License Renewal Commitment List," the new Internal Surfaces in Miscellaneous Piping and Ducting Components Program does not include a commitment to perform a review of future operating experience to confirm the effectiveness of this program.

Issue:

This program's LRA commitment list is not consistent with the current staff position as stated within the SRP-LR concerning reviews of future operating experience for new Aging Management Programs.

Request:

Revise LRA Table A4-1, "License Renewal Commitments," Item No. 17 for the Internal Surfaces in Miscellaneous Piping and Ducting Components Program to include a commitment to perform a future review of operating experience to confirm the effectiveness of this program, or justify why such a review is not necessary.

August 15, 2011

Mr. G. T. Powell, Vice President
Technical Support and Oversight
STP Nuclear Operating Company
P.O. Box 289
Wadsworth, TX 77483

SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
SOUTH TEXAS PROJECT, UNITS 1 AND 2 LICENSE RENEWAL
APPLICATION – AGING MANAGEMENT PROGRAMS AUDIT, PLANT
SYSTEMS (TAC NOS. ME4936 AND ME4937)

Dear Mr. Powell:

By letter dated October 25, 2010, STP Nuclear Operating Company, submitted an application pursuant to Title 10 of the *Code of Federal Regulations* Part 54 for review by the U.S. Nuclear Regulatory Commission (NRC or the staff), to renew operating licenses NPF-76 and NPF-80 for South Texas Project, Units 1 and 2. The staff is reviewing the information contained in the license renewal application and has identified, in the enclosure, areas where additional information is needed to complete the review.

These requests for additional information were discussed with Arden Aldridge, and a mutually agreeable date for the response is within 30 days from the date of this letter. If you have any questions, please contact me at 301-415-3873 or by e-mail at john.daily@nrc.gov.

Sincerely,

/RA/

John W. Daily, Senior Project Manager
Projects Branch 1
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket Nos. 50-498 and 50-499

Enclosure:
As stated

cc w/encl: Listserv

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ADAMS Accession No.: ML11214A088

* concurrence via e-mail

OFFICE	LA:DLR/RPB1*	PM:DLR/RPB1	BC:DLR/RPB1	LA:DLR/RPB1	PM: DLR/RPB1
NAME	SFiguroa	JDaily	DMorey	SFiguroa	JDaily
DATE	08/04/2011	08/09/2011	08/11/2011	08/10/2011	08/15/2011

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Letter to G.T. Powell from John W. Daily dated August 15, 2011

SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
SOUTH TEXAS PROJECT, UNITS 1 AND 2 LICENSE RENEWAL
APPLICATION – AGING MANAGEMENT PROGRAMS AUDIT, PLANT
SYSTEMS (TAC NOS. ME4936, ME4937)

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