



South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

June 14, 2012  
NOC-AE-12002870  
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U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
One White Flint North  
11555 Rockville Pike  
Rockville, MD 20852-2738

South Texas Project  
Units 1 and 2  
Docket Nos. STN 50-498, STN 50-499  
Response to Requests for Additional Information (RAI) 1.4-3 for the  
South Texas Project License Renewal Application (TAC Nos. ME4936 and ME4937)

- References: 1. STPNOC letter dated October 25, 2010, from G. T. Powell to NRC Document Control Desk, "License Renewal Application" (NOC-AE-10002607) (ML103010257)
2. NRC letter dated June 14, 2012, "Requests for Additional Information for the Review of the South Texas Project, Units 1 and 2, License Renewal Application – Aging Management, Set 21 (TAC Nos. ME4936 and ME4937) (ML12157A227)

By Reference 1, STP Nuclear Operating Company (STPNOC) submitted a License Renewal Application (LRA) for South Texas Project (STP) Units 1 and 2. By Reference 2, the NRC staff requests additional information for review of the STP LRA. STPNOC's response to the requests for additional information is provided in Enclosure 1 to this letter. Changes to LRA pages described in Enclosure 1 are depicted as line-in/line-out pages provided in Enclosure 2.

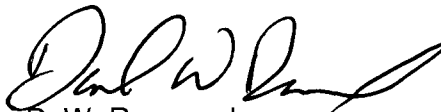
One revised regulatory commitment is made to Table A4-1 of the LRA and is provided in Enclosure 3 to this letter. There are no other regulatory commitments in this letter.

Should you have any questions regarding this letter, please contact either Arden Aldridge, STP License Renewal Project Lead, at (361) 972-8243 or Ken Taplett, STP License Renewal Project regulatory point-of-contact, at (361) 972-8416.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on

6/14/2012  
Date

  
D. W. Rencurrel  
Chief Nuclear Officer

KJT

- Enclosures: 1. STPNOC Response to Requests for Additional Information  
2. STPNOC LRA Changes with Line-in/Line-out Annotations  
3. Revised Regulatory Commitment

A147  
NRR

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**Enclosure 1**

**STPNOC Response to Requests for Additional Information**

SOUTH TEXAS PROJECT, UNITS 1 AND 2,  
REQUEST FOR ADDITIONAL INFORMATION  
AGING MANAGEMENT, SET 21  
(TAC NOS. ME4936 AND ME4937)

**RAI 1.4-3, Future Use of Operating Experience - followup (3.05)**

Background:

In request for additional information (RAI) B1.4-1, issued on May 24, 2011, the staff asked the applicant to describe the programmatic activities that will be used to continually identify aging issues, evaluate them, and as necessary, enhance aging management programs (AMPs) or develop new AMPs for license renewal. After reviewing the applicant's response dated June 23, 2011, the staff issued followup RAI B1.4-2, requesting specific details on the applicant's Operating Experience Program (OEP). In its response dated February 27, 2012, the applicant provided further explanation of its intent to use the Corrective Actions Program (CAP) and OEP to monitor, on an ongoing basis, industry and plant-specific operating experience regarding age-related issues. By letter dated August 18, 2011, the applicant submitted a supplement to its license renewal application (LRA) to include an updated Section A1 to its updated Final Safety Analysis Report (UFSAR) Supplement.

In March 16, 2012, the NRC issued LR-ISG-2011-05, "Ongoing Review of Operating Experience" to clarify the staff's position that license renewal AMPs should be informed, and enhanced when necessary, based on the ongoing review of both plant-specific and industry operating experience.

Issue:

The applicant provided details of its programmatic framework for considering operating experience on an ongoing basis. However, as compared to the staff's guidance in LR-ISG-2011-05, the staff identified the following areas for further clarification:

- (a) It is unclear which specific "event codes" in the CAP capture age-related equipment failures or degradation. The applicant also did not provide further description or definition of each event code to relate them to how aging-issues would be identified.
- (b) It is unclear what implementing action would result from the training "needs analysis" for personnel who implement, screen, assign, evaluate, and submit plant-specific and industry operating experience information. The applicant also did not provide details regarding the periodicity of training and provisions included to accommodate the turnover of plant personnel.

The applicant has also supplemented its UFSAR with a description of how operating experience is applied to manage the effects of aging so that the intended functions of structures and components are met. However, the summary description in the UFSAR is not sufficient in capturing the key areas for consideration, as compared to the guidance in Table 3.0-1 "FSAR Supplement for Aging Management of Applicable Systems" of LR-ISG-2011-05.

Request:

- 1) Provide a response to the following:
  - (a) Clarify which "event codes" in the CAP are used to capture age-related equipment failures or degradation. With each event code, please provide the definition and/or criteria showing how these codes are used to screen or define aging related issues.
  - (b) Clarify how the results of the "needs analysis" will be evaluated and considered for personnel responsible for screening, assigning, evaluation, implementation, and submitting age-related operating experience. Also, provide the periodicity of the training and describe how it will account for personnel turnover. The explanation should provide a clear description of how this training will be implemented (i.e., in accordance with relevant and appropriate programmatic standards).
- 2) In LRA Appendix A, "Final Safety Analysis Report Supplement," provide a more detailed description of how operating experience will be reviewed on an ongoing basis to address operating experience concerning age-related degradation and aging management during the term of the renewed license. At a minimum, provide the level of detail that is commensurate or consistent with the guidance described in Table 3.0-1 "FSAR Supplement for Aging Management of Applicable Systems" of LR-ISG-2011-05.

STPNOC Response

- 1a. The following event codes in the South Texas Project (STP) Corrective Action Program (CAP) currently capture age-related equipment failure or degradation:

<u>Event Code</u>	<u>Event Description</u>
3B1	Blocked/Restricted
3B2	Corroded/Deteriorated
3B4	Deformed/Bent
3B10	Ruptured/Cracked/Fractured
Fluid Leakage Tracking Codes (several)	

In the response dated February 27, 2012 (ML12069A024) (NOC-AE-12002797), STPNOC stated the CAP Event Codes would be reviewed to determine if additional codes are needed to ensure age-related degradation effects are identified (See Commitment Item 41 in Enclosure 3 of the referenced letter). STPNOC is evaluating the event codes being developed for the Institute of Nuclear Power Operations (INPO) Consolidated Event System (ICES). ICES has considerably more codes related to aging mechanisms. Although these codes will aid in identifying aging mechanisms, it is expected that a single code will be developed for use by those individuals responsible for identifying aging issues. Personnel who review plant-specific (i.e. condition reports

from CAP) and industry operating experience should use this code to identify aging-related operating experience for enhancing aging management programs (AMP) or to develop new AMPs. The code will also be used to identify operating experience for reporting to the industry.

- 1b. In the response dated February 27, 2012, STPNOC stated a training “needs analysis” would be performed for those plant personnel who screen, assign, evaluate, implement, and submit plant-specific and industry operating experience information for age-related effects (See Commitment Item 41 in Enclosure 3 of the referenced letter).

Needs analysis for training is a proceduralized process at STP using a systematic approach to training. For new tasks or modified tasks, a task analysis (i.e. “needs analysis”) is performed and documented. Some of the key information contained in the analysis includes training frequency, task elements, knowledge and skills required for task performance and conditions and standards for task performance.

The analysis for training on age-related operating experience will include identifying those individuals who will screen, assign, evaluate, implement, and submit plant-specific and industry operating experience for age-related effects and will include the STP AMP owners. The task analysis will include a requirement that individuals complete the training before performing tasks to account for personnel turnover. The analysis will determine the periodicity of the training. The training will be implemented per the STP Training Program requirements. Training records will be maintained for auditable purposes.

Commitment Item 41 is revised to include (1) AMP owners in the population requiring training, (2) a requirement that individuals complete training before performing tasks, and (3) determination of the periodicity of the training.

The training requirement for those individuals who will screen, assign, evaluate, implement, and submit plant-specific and industry operating experience for age-related effects, including AMP owners, will be documented in the appropriate plant procedure(s) (e.g. the operating experience procedure).

Enclosure 3 provides the line-in/line-out revision for the changes to Item 41 to LRA Table A4-1, “License Renewal Commitments”.

2. Operating experience from plant specific and industry sources is captured and systematically reviewed on an ongoing basis in accordance with the quality assurance program, which meets the requirements of 10 CFR Part 50, Appendix B, and the operating experience program, which meets the requirements of NUREG-0737, "Clarification of TMI Action Plan Requirements," Item I.C.5, "Procedures for Feedback of Operating Experience to Plant Staff." The operating experience program interfaces with and relies on active participation in the Institute of Nuclear Power Operations' operating experience program, as endorsed by the NRC. In accordance with these programs, all incoming operating experience items are screened to determine whether they may involve age-related degradation or aging management impacts. Items so identified are further evaluated and the aging management programs (AMP) are either enhanced or new AMPs are developed, as appropriate, when it is determined through these evaluations that the effects of aging may not be adequately managed. Training on age-related degradation and aging management is provided to those personnel responsible for implementing the AMPs and who may submit, screen, assign, evaluate, or otherwise process plant-specific and industry operating experience. Plant-specific operating experience associated with aging management and age-related degradation is reported to the industry in accordance with guidelines established in the operating experience program.

LRA Appendix A1, "Summary Descriptions of Aging Management Programs", and LRA Appendix B1.4, "Operating Experience", are revised to provide a more detailed description of how operating experience is reviewed on an ongoing basis to address operating experience concerning age-related degradation and aging management during the term of the renewed license.

Enclosure 2 provides the line-in/line-out revision for the changes to LRA Appendices A1 and B1.4.

**Enclosure 2**

**STPNOC LRA Changes with Line-in/Line-out Annotations**



**List of Revised LRA Sections**

<b>RAI</b>	<b>Affected LRA Section</b>
1.4-3	A1
	B1.4

## **A1 SUMMARY DESCRIPTIONS OF AGING MANAGEMENT PROGRAMS**

The integrated plant assessment and evaluation of time-limited aging analyses (TLAA) identified existing and new aging management programs necessary to provide reasonable assurance that components within the scope of license renewal will continue to perform their intended functions consistent with the current licensing basis (CLB) for the period of extended operation. Sections A1 and A2 describe the programs and their implementation activities.

Three elements common to all aging management programs discussed in Sections A1 and A2 are corrective actions, confirmation process, and administrative controls. The STP Quality Assurance Program includes the elements of corrective action, confirmation process, and administrative controls, and is applicable to the safety-related and nonsafety-related systems, structures, and components that are subject to aging management activities.

Operating experience from plant specific and industry sources is captured and systematically reviewed on an ongoing basis in accordance with the quality assurance program, which meets the requirements of 10 CFR Part 50, Appendix B, and the operating experience program, which meets the requirements of NUREG-0737, "Clarification of TMI Action Plan Requirements," Item I.C.5, "Procedures for Feedback of Operating Experience to Plant Staff." The operating experience program interfaces with and relies on active participation in the Institute of Nuclear Power Operations' operating experience program, as endorsed by the NRC. In accordance with these programs, all incoming operating experience items are screened to determine whether they may involve age-related degradation or aging management impacts. Items so identified are further evaluated and the aging management programs (AMP) are either enhanced or new AMPs are developed, as appropriate, when it is determined through these evaluations that the effects of aging may not be adequately managed. Training on age-related degradation and aging management is provided to those personnel responsible for implementing the AMPs and who may submit, screen, assign, evaluate, or otherwise process plant-specific and industry operating experience. Plant-specific operating experience associated with aging management and age-related degradation is reported to the industry in accordance with guidelines established in the operating experience program.

Results of inspections, tests, analyses, etc. conducted through the implementation of aging management programs are considered as operating experience on an ongoing basis. When applicable acceptance criteria are met, results are retained for future use and evaluation to determine whether it is necessary to adjust the frequency for future inspections, establish new inspections, and ensure an adequate depth and breadth of component, material, environment, and aging effect combinations. When applicable acceptance criteria are not met, corrective actions are initiated in accordance with the quality assurance program.

~~Operating experience is applied to all aging management programs discussed in Sections A1 and A2. Plant-specific and industry operating experience is continuously reviewed to confirm the effectiveness of aging management programs and is utilized, as necessary, to enhance each aging management program or to develop new aging management programs in order to adequately manage the effects of aging so that the intended function(s) of structures and components are met.~~

A systematic review of operating experience related to aging management ensures that license renewal aging management programs are effective in managing the aging effects for which they are credited. Processes gather information on license renewal structures and components identified in the integrated plant assessment, and their materials, environments, aging effects, and aging mechanisms. Programs and procedures specify reviews of sources of information related to aging effects. Formal evaluations related to aging effects are completed and prioritized commensurate with the potential significance on the issue. The evaluations are documented and retained in an auditable and retrievable form. Enhancements to programs and procedures to adequately manage the effects of aging are entered into and implemented consistent with the plant corrective action program. Aging management programs are administratively controlled to include a formal review and approval process and periodic audits.

The required training on age-related operating experience for individuals who screen, assign, evaluate, implement, and submit plant-specific and industry operating experience for age-related effects, including AMP owners, are determined by a training "needs analysis" – see the description of program enhancements below. Training records are maintained for auditable purposes. Training requirements on age-related operating experience are maintained in appropriate plant procedures.

The following enhancements will be made to the STP Operating Experience Program (OEP) and Corrective Action Program for managing the effects of aging.

- The OEP procedure will be revised to add License Renewal Interim Staff Guidance and revisions to NUREG-1801, "Generic Aging Lessons Learned (GALL) Report", as source documents applicable for review.
- The OEP procedure will be revised to include "aging effects" to the list of characteristics for determining applicability of an OE document that may require further evaluation. A screened-in evaluation should consider (a) systems, structures, or components, (b) materials, (c) environments, (d) aging effects, (e) aging mechanisms, and (f) aging management programs.
- Corrective Action Program Event Codes will be reviewed to determine if additional codes are needed to ensure age-related degradation effects are identified.
- A training "needs analysis" will be performed for those plant personnel, including aging management program owners, who screen, assign, evaluate, implement, and submit plant-specific and industry operating experience information for age-related effects. The analysis will include:
  - A requirement that individuals complete training before performing tasks, and
  - A determination of the periodicity of the training.
- The OEP procedure will be revised to provide criteria for reporting plant-specific operating experience on age-related degradation.

## **B1.4 Operating Experience**

Operating experience is used at STP to enhance plant programs, prevent repeat events, and prevent events that have occurred at other plants from occurring at STP. External nuclear industry operating experience is screened, evaluated, and acted on to prevent or mitigate the consequences of similar events. External operating experience may include NRC generic communications (e.g., Generic Letters, Bulletins, Information Notices), and other documents (e.g., 10 CFR 21 Reports, Licensee Event Reports, Nonconformance Reports, NUREG-1801, "Generic Aging Lessons Learned (GALL) Report"). Internal operating experience may include such things as event investigations, trending reports, lessons learned from in-house events, self-assessments, and the 10 CFR 50, Appendix B, corrective action process.

Each aging management program summary in this appendix contains a discussion of operating experience relevant to the program. This information was obtained through the review of in-house operating experience in the Corrective Action Program, program self-assessments, and program health reports, and the review of industry operating experience focused primarily on post-2005 information (industry operating experience prior to 2005 is addressed in Revision 1 to NUREG-1801). Plant-specific operating experience and applicable industry operating experience was obtained by a review of the STP corrective action program records for the period August 1998 through April 2010 to ensure that there was no unique, plant-specific operating experience in addition to that provided in NUREG-1801. This review was augmented with information from program engineers.

The applicable operating experience for each aging management program was reviewed and summarized in the Appendix B program summaries. Detailed records on the performance and effectiveness of each program are maintained in the STP records management system (including the corrective action program). The operating experience summary in each aging management program identifies past corrective actions and provides objective evidence that the effects of aging have been, and will continue to be, adequately managed so that the intended functions of the structures and components within the scope of each program will be maintained during the period of extended operation.

### **Operating Experience Program Description**

Operating experience from plant specific and external nuclear industry sources is captured and systematically reviewed on an ongoing basis in accordance with the quality assurance program, which meets the requirements of 10 CFR Part 50, Appendix B, and the operating experience program, which meets the requirements of NUREG-0737, "Clarification of TMI Action Plan Requirements," Item I.C.5, "Procedures for Feedback of Operating Experience to Plant Staff." The operating experience program interfaces with and relies on active participation in the Institute of Nuclear Power Operations' operating experience program, as endorsed by the NRC. In accordance with these programs, all incoming operating experience items are screened to determine whether they may involve age-related degradation or aging management impacts. Items so identified are further evaluated and the aging management programs (AMP) are either enhanced or new AMPs are developed, as appropriate, when it is determined through these evaluations that the effects of aging may not be adequately managed. Training on age-related degradation and aging management is provided to those personnel responsible for implementing the AMPs and who may submit, screen, assign,

evaluate, or otherwise process plant-specific and industry operating experience. Plant-specific operating experience associated with aging management and age-related degradation is reported to the industry in accordance with guidelines established in the operating experience program.

Results of inspections, tests, analyses, etc. conducted through the implementation of aging management programs are considered as operating experience on an ongoing basis. When applicable acceptance criteria are met, results are retained for future use and evaluation to determine whether it is necessary to adjust the frequency for future inspections, establish new inspections, and ensure an adequate depth and breadth of component, material, environment, and aging effect combinations. When applicable acceptance criteria are not met, corrective actions are initiated in accordance with the quality assurance program.

A systematic review of operating experience related to aging management ensures that license renewal aging management programs are effective in managing the aging effects for which they are credited. Processes gather information on license renewal structures and components identified in the integrated plant assessment, and their materials, environments, aging effects, and aging mechanisms. Programs and procedures specify reviews of sources of information related to aging effects. Formal evaluations related to aging effects are completed and prioritized commensurate with the potential significance on the issue. The evaluations are documented and retained in an auditable and retrievable form. Enhancements to programs and procedures to adequately manage the effects of aging are entered into and implemented consistent with the plant corrective action program. Aging management programs are administratively controlled to include a formal review and approval process and periodic audits.

The required training on age-related operating experience for individuals who screen, assign, evaluate, implement, and submit plant-specific and industry operating experience for age-related effects, including AMP owners, are determined by a training "needs analysis" – see the description of program enhancements below. Training records are maintained for auditable purposes. Training requirements on age-related operating experience are maintained in appropriate plant procedures.

The review and evaluation of operating experience, concerning age-related degradation and aging management, will be implemented on an ongoing basis throughout the term of the renewed license.

### **Enhancements**

The following enhancements will be made to the STP Operating Experience Program (OEP) and Corrective Action Program for managing the effects of aging.

- The OEP procedure will be revised to add License Renewal Interim Staff Guidance and revisions to NUREG-1801, "Generic Aging Lessons Learned (GALL) Report", as source documents applicable for review.
- The OEP procedure will be revised to include "aging effects" to the list of characteristics for determining applicability of an OE document that may require further

evaluation. A screened-in evaluation should consider (a) systems, structures, or components, (b) materials, (c) environments, (d) aging effects, (e) aging mechanisms, and (f) aging management programs.

- Corrective Action Program Event Codes will be reviewed to determine if additional codes are needed to ensure age-related degradation effects are identified.
- A training "needs analysis" will be performed for those plant personnel, including aging management program owners, who screen, assign, evaluate, implement, and submit plant-specific and industry operating experience information for age-related effects. The analysis will include:
  - A requirement that individuals complete training before performing tasks, and
  - A determination of the periodicity of the training.
- The OEP procedure will be revised to provide criteria for reporting plant-specific operating experience on age-related degradation.

**Enclosure 3**

**Revised Regulatory Commitment**

## A4 LICENCE RENEWAL COMMITMENTS

Table A4-1 identifies proposed actions committed to by STPNOC for STP Units 1 and 2 in its License Renewal Application. These and other actions are proposed regulatory commitments. This list will be revised, as necessary, in subsequent amendments to reflect changes resulting from NRC questions and STPNOC responses. STPNOC will utilize the STP commitment tracking system to track regulatory commitments. The Condition Report (CR) number in the Implementation Schedule column of the table is for STPNOC tracking purposes and is not part of the amended LRA.

*Table A4-1 License Renewal Commitments*

Item #	Commitment	LRA Section	Implementation Schedule
41	<p>Enhance the STP Operating Experience Program and Corrective Action Program for managing the effects of aging to:</p> <ul style="list-style-type: none"> <li>• Add License Renewal Interim Staff Guidance and revisions to NUREG-1801, "Generic Aging Lessons Learned (GALL) Report", to the Operating Experience Program (OEP) procedure as sources of information within the scope of this program,</li> <li>• Revise the OEP procedure to include "aging effects" to the list of characteristics for determining applicability of an OE document that may require further evaluation. A screened-in evaluation should consider (a) systems, structures, or components, (b) materials, (c) environments, (d) aging effects, (e) aging mechanisms, and (f) aging management programs,</li> <li>• Review the Corrective Action Program Event Codes to determine if additional codes are needed to ensure age-related degradation effects are identified,</li> <li>• Perform a training "needs analysis" for those plant personnel, <u>including aging management program owners</u>, who screen, assign, evaluate, <u>implement</u>, and submit plant-specific and industry operating experience information for age-related effects. <u>Include in the analysis:</u> <ul style="list-style-type: none"> <li>◦ <u>A requirement that individuals complete training before performing tasks, and</u></li> <li>◦ <u>A determination of the periodicity of the training.</u></li> </ul> </li> <li>• Revise the OEP procedure to provide criteria for reporting plant-specific operating experience of age-related degradation.</li> </ul>	A1-4	<p>December 31, 2014</p> <p>CR 12-8990</p>