Nuclear Operating Company

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

May 2, 2017
NOC-AE-17003475
10 CFR 54
File No. G25
STI: 34488258

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

South Texas Project
Units 1 and 2
Docket Nos. STN 50-498, STN 50-499
Supplement to the South Texas Project License Renewal Application
(CAC Nos. ME4936 and ME4937)

Reference: Letter; G. T. Powell to the NRC Document Control Desk; "License Renewal Application", NOC-AE-10002607; dated October 25, 2010. (ML103010257)

By the referenced letter, STP Nuclear Operating Company (STPNOC) submitted a License Renewal Application (LRA). Enclosure 1 provides an explanation of the proposed changes in this correspondence. Enclosure 2 provides clarification to the License Renewal Application Appendix B2.1.7. Enclosure 3 contains a change to Regulatory Commitment item 44 in Table A4-1.

There are no new regulatory commitments in this letter.

If there are any questions regarding this submittal, please contact Arden Aldridge, STP License Renewal Project Lead, at (361) 972-8243 or Rafael Gonzales, STP License Renewal Project regulatory point-of-contact, at (361) 972-4779.

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

Executed on May 2, 2017
Date

James Connolly
Site Vice President

rjg

Enclosures:
1) Clarification Details
2) STPNOC License Renewal Application Appendix B line in/out
3) STPNOC Regulatory Commitment Item #44 - line in/out

cc:
(paper copy)

Regional Administrator, Region IV
U.S. Nuclear Regulatory Commission
1600 East Lamar Boulevard
Arlington, TX 76011-4511

Lisa M. Regner
Senior Project Manager
U.S. Nuclear Regulatory Commission
One White Flint North (MS 8 G9A)
11555 Rockville Pike
Rockville, MD 20852

NRC Resident Inspector
U. S. Nuclear Regulatory Commission
P. O. Box 289, Mail Code: MN116
Wadsworth, TX 77483

Lois James
License Renewal Project Manager (Safety)
One White Flint North (MS O11-F1)
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Tam Tran
License Renewal Project Manager
(Environmental)
One White Flint North (MS O11F01)
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

(electronic copy)

Morgan, Lewis & Bockius LLP
Steve Frantz, Esquire
Paul Bessette

U.S. Nuclear Regulatory Commission
Lisa M. Regner
Lois James
Tam Tran

NRG South Texas LP
Mark Walker
Jim von Suskil
Skip Zahn

CPS Energy
Kevin Pollo
Cris Eugster
L. D. Blaylock

City of Austin
Elaina Ball
John Wester

Texas Dept. of State Health Services
Helen Watkins
Robert Free

Clarification Details

License Renewal Application (LRA) Appendix B2.1.7 Program Description describes the scope of the Bolting Integrity aging management program. Bolts where the internal environment consists of diesel exhaust is described in the Program Description of Appendix B2.1.20. Appendix B2.1.7 Program Description is updated to delete diesel exhaust.

Table A4-1 item #44, bullet 11, is changed to state the following:

- Verify, the management of loss of material due to selective leaching ~~or~~ and microstructure phase distribution of the above ground weld population with and without backing rings by performing a one-time destructive examination on 20 percent with a maximum of 25 welds with backing rings and 20 percent with a maximum of 25 welds without backing rings prior to the period of extended operation.

STPNOC License Renewal Application Appendix B Line in/out

Affected LRA Section
*B2.1.7

***** Only the Lined in/out “Program Description” section is provided.

B2.1.7 Bolting Integrity

Program Description

The Bolting Integrity program manages cracking, loss of material, and loss of preload for pressure retaining bolting and ASME component support bolting. The program includes preload control, selection of bolting material, use of lubricants/sealants consistent with EPRI NP-5067, *Good Bolting Practices*, and performance of periodic inspections for indication of aging effects. The program also includes inservice inspection requirements established in accordance with ASME Section XI, Subsections IWB, IWC, IWD, and IWF for ASME Class bolting. ASME pressure boundary bolted connections where the internal environment consists of dry gas or compressed air~~, or diesel exhaust~~ will be leak checked using a method that detects leakage. Bolted connections where the internal environment consists of air at atmospheric pressure, connections will be checked for tightness prior to the period of extended operation and once every six years thereafter.

STPNOC Regulatory Commitment Item #44 - line in/out

Table A4-1 License Renewal Commitments

Item #	Commitment	LRA Section	Implementation Schedule
44	The Selective Leaching of Aluminum Bronze program will: • Replace all aluminum bronze castings susceptible to selective leaching, including attachment welds related to the castings with material that is not susceptible to selective leaching. • Replace aluminum bronze root valve adapter socket welds with material that is not susceptible to selective leaching. • Replace extruded piping tees with aluminum bronze weld repairs where the repair size is such that failure of the repair would affect the structural integrity of the component. Enhance the Selective Leaching of Aluminum Bronze procedure to: • Specify loss of material due to selective leaching is monitored through system walkdowns and destructive examinations. • Specify cracking associated with selective leaching is monitored through volumetric examination and destructive examination. • Specify phase distribution to verify the potential for continuous selective leaching is monitored through destructive examination. • Verify the management of cracking of the above ground weld population with no backing rings by performing a one-time volumetric examination on 20 percent with a maximum of 25 welds prior to the period of extended operation. • Specify, if a weld indication that does not meet the acceptance criteria is found during the one-time inspection of welds with no backing rings, periodic volumetric examinations of 20 percent with a maximum of 25 welds will be performed every 10 years thereafter. • Verify, the management of cracking of the above ground weld population with backing rings by performing periodic volumetric examinations on 20 percent with a maximum of 25 welds prior to the period of extended operation and every 10 years thereafter.	B2.1.37	Replacements and inspections to be complete no later than six months prior to the PEO or the end of the last refueling outage prior to the PEO, whichever occurs later. Procedure changes no later than the date the renewed operating licenses are issued. CR 12-22150

Table A4-1 License Renewal Commitments

Item #	Commitment	LRA Section	Implementation Schedule
	• Specify, the samples for volumetric examination be selected from the total population of above ground welds, considering construction and size distributions. • Verify, the management of loss of material due to selective leaching ~~or~~ and microstructure phase distribution of the above ground weld population with and without backing rings by performing a one-time destructive examination on 20 percent with a maximum of 25 welds with backing rings and 20 percent with a maximum of 25 welds without backing rings prior to the period of extended operation. • Require the sample population for destructive examinations be selected from the total population of welds with and without backing rings, construction and size distributions. • Require a weld which does not meet the acceptance criteria or has through wall leakage, be removed and destructively examined to determine extent of cracking, extent of selective leaching and the microstructure phase distribution. • Require a weld which does not meet the acceptance criteria or has through wall leakage, be documented in the corrective action program, and a structural integrity analysis be performed to confirm that the load carrying capacity of the installed welds remain adequate to support the intended function of the ECW system through the period of extended operation. • Require an external surface examination capable of detecting selective leaching will be performed on the buried ECW piping welds in the vicinity of degraded coatings to detect loss of material due to selective leaching. • Require that the history of the volumetric, TOFD UT, and destructive examinations results be maintained and a review be performed to identify potential adverse trends or other indications requiring action.		

Table A4-1 License Renewal Commitments

Item #	Commitment	LRA Section	Implementation Schedule
	• Specify, the acceptance criterion for volumetric examination of aluminum bronze welds is no detected planar indication that is surface connected (exposed to the ECW environment) unless the depth of the indication is contained within the 80% of the weld root pass region. An indication not connected to the surface (not exposed to the ECW environment) is acceptable. • Specify, the acceptance criterion for visual inspection of the aluminum bronze welds and adjacent copper alloy piping during the walkdowns is no through wall leakage. • Specify, the acceptance criterion for destructive examinations is; o No loss of material due to selective leaching penetrating 80% of the root-pass region. o Found selective leaching is non-propagating (surrounded by resistant phase distribution). o The microstructure of the weld root region shall exhibits a resistant phase distribution consistent with the metallurgical technical basis report. • Specify, the acceptance criterion for TOFD UT examination is no loss of material due to selective leaching resulting in not meeting ASME Section XI Code required margins imposed by ASME Section XI structural factors for normal/upset and emergency/faulted conditions. • Specify, discovery of a weld indication that does not meet the acceptance criteria requires expansion of the volumetric examination sample population. Each weld found with a weld indication not meeting the acceptance criteria requires five additional volumetric examinations to be performed until no additional weld indication not meeting the acceptance criteria is found.		

Table A4-1 License Renewal Commitments

Item #	Commitment	LRA Section	Implementation Schedule
	• Specify, discovery of selective leaching or continuous microstructure phase distribution that do not meet the acceptance criteria but the welds meets structural integrity requires performing the following: ○ Five TOFD UT examinations within 60 days for each weld not meeting acceptance criteria until no additional weld not meeting the acceptance criteria is found to. Welds for examination will be selected from the total population of above ground welds associated with the weld type (with or without backing ring) consider variability of construction, size distributions, structural integrity margins, and consequence of failure. ○ Periodic TOFD UT monitoring every 5 years of any welds not removed and previously found to not meet acceptance criterion but met structural integrity capability. These welds shall be monitored until 3 consecutive examinations identify no additional propagation of the selective leaching. ○ Periodic TOFD examinations of an additional 10% sample of the remaining above ground weld types every 5 years. The sample will be selected from the total population of above ground welds associated with the weld type (with or without backing ring) not meeting acceptance criteria, considering construction, size distributions, structural integrity margins, and consequence of failure. ○ A structural integrity evaluation on a weld not meeting acceptance criteria to confirm that the load carrying capacity of the installed welds remain adequate to support the intended function of the ECW system through the period of extended operation. ○ An AMP effectiveness evaluation to determine program changes required to manage the aging.		

Table A4-1 License Renewal Commitments

Item #	Commitment	LRA Section	Implementation Schedule
	• Specify, discovery of loss of material due to selective leaching resulting in a weld not meeting ASME Section XI Code required margins with the weld declared operable per station Operability, Functionality, and Reportability procedure requires: o An extent of condition evaluation to identify other locations requiring examination. These additional examinations will focus on stress margin locations less than or equal to that of the structurally unacceptable weld. o Monthly walkdowns of above ground aluminum bronze welds. o Monthly yard walkdowns to verify no through-wall leakage is occurring. o Performing TOFD UT examinations on the remaining above ground weld population using a sample with a 95/95 confidence until no additional weld indication not meeting the TOFD UT examination acceptance criteria and within structural integrity is found. The weld population used to determine the 95/95 confidence sample will be based on the above ground weld types (with or without backing rings) and locations that would not meet code allowable margins when evaluated against the failed components degraded load carrying capability. The TOFD UT examinations will be prioritized by examining the weld locations with the least structural integrity margin and with the highest consequence of failure first. Planning and preparations for performing TOFD UT extent of condition examinations will commence upon discovery of the condition. The examinations will commence at the next ECW train outage and will sequence through all the ECW trains during each ECW train outage with at least 20% of the examinations being completed within 30 days and all examinations completed within 180		

Table A4-1 License Renewal Commitments

Item #	Commitment	LRA Section	Implementation Schedule
	days. This allows for timely planning and execution of sequenced train by train examinations during first available train work windows. ○ If a second weld is found that does not meet TOFD UT examination acceptance criteria; • Develop examination plan, schedule and bases for the examination of the remaining above ground welds. • Perform TOFD UT examinations on 100 percent of the remaining above ground welds to determine extent of condition with at least 20% of the examinations being completed within 30 days and all examinations completed within 180 days of finding the second weld. • Perform an evaluation of the below ground weld margins to identify locations requiring inspection. The evaluation will focus on below ground locations where structural integrity could be challenged based on the relative stress margins and the inspection results obtained on the above ground structurally unacceptable weld(s). ○ Performing periodic 95/95 confidence sample TOFD UT examinations every 5 years on the remaining welds which have not been TOFD UT examined. The population used to determine the 95/95 confidence sample will be based on the above ground weld types (with or without backing rings). The sample will be selected from the total population of above ground welds associated with the weld type (with or without backing ring), considering variability of construction, size distributions, structural integrity margins, and consequence of failure. ○ Repair or replacement of the susceptible welds within the STP Technical Specification requirements based on the cause of the		

Table A4-1 License Renewal Commitments

Item #	Commitment	LRA Section	Implementation Schedule
	structural integrity evaluation failure, results of the additional volumetric examinations and the extent of condition. • Specify, discovery of a weld not meeting ASME Section XI Code required margins with the weld declared inoperable per station Operability, Functionality, and Reportability procedure requires: o If the weld has been removed from service for examination, then the examination results will be used to determine past operability and reportability. o An extent of condition evaluation to determine the cause of the structural integrity evaluation failure and identify weld population requiring examination. o Performing TOFD UT examinations on 100% of the remaining above ground weld population. The TOFD UT examinations will be prioritized by examining the weld locations with the least structural integrity margin and with the highest consequence of failure first. Planning and preparations for performing TOFD UT extent of condition examinations will commence upon discovery of the condition. The examinations will commence at the next ECW train outage and will sequence through all the ECW trains during each ECW train outage with at least 20% of the examinations being completed within 30 days and all examinations completed within 180 days. This allows for timely planning and execution of sequenced train by train examinations during first available train work windows. o An evaluation of the below ground weld margins to identify locations requiring inspection. The evaluation will focus on below ground locations where structural integrity could be challenged based on the relative stress margins and the inspection results obtained on the above ground structurally unacceptable weld(s). All below ground welds		

Table A4-1 License Renewal Commitments

Item #	Commitment	LRA Section	Implementation Schedule
	where the evaluation shows that the structural integrity could challenge operability will be examined using TOFD UT during the next scheduled refueling outage. o Twice a month above ground walkdowns of the aluminum bronze welds. o Twice a month yard walkdowns to verify no through-wall leakage is occurring. o Repair or replacement of the susceptible weld(s) based on the cause of the structural integrity evaluation failure, results of the additional TOFD UT examinations and the extent of condition. • Specify, the acceptance criterion for extent of loss of material on the external surface of buried aluminum bronze piping with coating degradation is that upon removal of the selective leaching the minimum wall thickness is maintained. • Specify, corrective action for selective leaching found under depredated ECW buried piping coatings such as surface conditioning is performed until no selective leaching is detected. If unacceptable wall thickness following surface conditioning is found, the buried ECW piping is repaired or replaced.		