



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

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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
Request for Additional Information Regarding the License Amendment Request
For Extension of Containment Leakage Rate Testing Program
South Texas Project Units 1 and 2 TAC NOS MF6176 and MF6177

- References:
1. Letter from G. T. Powell, STP, to NRC Document Control Desk, "Units 1 and 2 License Amendment Request for Extending the 10 year ILRT to 15 years", dated April 29, 2015 (NOC-AE-15003227) (ML15128A352)
 2. Letter from G. T. Powell, STP, to NRC Document Control Desk, "Units 1 and 2 License Amendment Request for Extending the 10 year ILRT to 15 years PRA Supplement", dated June 29, 2015 (NOC-AE-15003266) (ML15198A147)
 3. Email from Lisa Regner, NRC, to Lance Sterling, STPNOC, "STP ILRT RAI (MF6176 and MF6177)", dated September 3, 2015 (AE-NOC-15002702) (ML15251A216)
 4. Email from Lisa Regner, NRC, to Lance Sterling, STPNOC, "Draft NRC RAI: Integrated Leak Rate Testing LAR STP ILRT RAI (MF6176 and MF6177)", dated September 10, 2015 (AE-NOC-15002701)

By Reference 1, STP Nuclear Operating Company (STPNOC) submitted a License Amendment Request (LAR) for extending the 10 year Integrated Leak Rate Test (ILRT) to 15 years. Reference 2 is a supplement to the original submittal that added additional information regarding Probabilistic Risk Assessment topics. By Reference 3 and Reference 4, the NRC staff requested additional information (RAI) for their review of the STPNOC LAR. STPNOC's response to the RAIs is provided in Enclosure to this letter.

There are no commitments in this letter.

ADIT
NRR

STI: 34201345

If there are any questions regarding the RAI responses, please contact Rafael Gonzales at (361) 972-4779 or me at (361)-972-7566.

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

Executed on October 8, 2015
Date


G.T. Powell
Site Vice President

rjg

Enclosure: STPNOC Responses to the Request for Additional Information Regarding Units 1 and 2 License Amendment Request for Extending the 10 year ILRT to 15 years

cc:

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Enclosure

**STPNOC Responses to the Request for Additional Information Regarding Units 1
and 2 License Amendment Request for Extending the 10 year ILRT to 15 years**

STP ILRT RAI (MF6176 and MF6177), dated September 3, 2015

By application dated April 29, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession Number ML15128A352), STP Operating Company (STPNOC, the licensee) requested changes to the Technical Specifications (TSs) for South Texas Project (STP) Unit 1 and Unit 2. The proposed change would permit the existing Containment Integrated Leak Rate Testing (ILRT) frequency to be extended from 10 years to 15 years on a permanent basis.

The NRC staff has reviewed the License Amendment Request (LAR) and requests the following additional information to complete its review:

SCVB RAI-1

LAR Attachment 1, Section 4.5 "Nuclear Safety Advisory Letters (NSAL)," discusses the adverse impact of NSAL 11-05, "Westinghouse LOCA [loss of coolant accident] Mass and Energy Release Calculation Issues" and NSAL 14-02, "Westinghouse Loss-Of-Coolant Accident Mass and Energy Release Calculation Issue for Steam Generator Tube Material Properties." The combined effect of the two NSALs on peak containment pressure and temperature was discussed under LAR Attachment 1, Section 4.5.1, which states the following:

An operability review was performed and documented in CREE 11-12472-1. The results of the evaluation show the condition does not result in any equipment being inoperable. However, the change in LOCA mass and energy results in a change to the peak containment pressure and temperature as presented in the UFSAR and TS 6.8.3.j. As a compensatory action (CR 11-12472-3), 0PSP11-ZA-0005, "Local Leakage Rate test Calculations, Guidelines, and Program" has been revised to require a P_a of 43.2 psig to ensure sufficient margin until the UFSAR is updated to reflect the corrected value. Therefore, the determination of the condition is OPERABLE BUT NON-CONFORMING.

The peak calculated containment internal pressure for the design basis loss of coolant accident (LOCA), P_a , as currently stated in TS 6.8.3.j "Containment Leakage Rate Testing Program" of the UFSAR is 41.2 psig. The LAR did not address any immediate or future actions that the licensee plans to undertake due to the increase in P_a as a result of the NSALs. What would have been the extrapolated ILRT and combined LLRT (local leak rate test) results of the previous tests if the tests had been performed at 43.2 psig? Will they still result in significant margins for the performance criteria as indicated by the previous tests?

Please provide additional information as to when a final calculated peak containment pressure as a result of the NSALs will be determined, plans for revising the UFSAR and the TSs, and the reasons why the increased pressure would not impact operability for the remaining period before the next ILRT based on both the current frequency and extended frequency requested by the LAR.

STPNOC Response:

When the License Amendment Request (LAR) was submitted, the peak calculated containment internal pressure for the design basis loss of coolant accident (LOCA), P_a , as stated in Technical Specification 6.8.3.j "Containment Leakage Rate Testing Program" was 41.2 psig. However, the P_a was increased to 43.2 psig for the purposes of Local Leak Rate Testing (LLRT) for containment penetrations as a compensatory action in response to NSALs 11-05 and 14-02. Subsequent analyses of the conditions identified in NSALs 11-05 and 14-02 were performed. The results of the analyses demonstrate that the P_a of 41.2 psig in TS 6.8.3.j remains bounding, and that further evaluation of the extrapolated value if the tests had been performed at 43.2 psig is unnecessary. A UFSAR change for Section 6.2.1 and the associated tables reflecting the revised analyses was processed on September 15, 2015. Therefore, there is no impact on operability.

SCVB RAI-2

LAR Attachment 1 Tables 4.4.1-3 (Unit 1) and Table 4.4.1-4 (Unit 2) identify the components that have not demonstrated acceptable performance for Type C testing during the previous two outages.

Table 4.4.1-3 (Unit 1) identifies issues related to supplementary containment purge valves problems (Penetration M-43) and states that fixes were made to achieve satisfactory results.

Table 4.4.1-4 (Unit 2) identifies two penetrations (M-44 and M-48) that exceeded the administrative leakage limit, all of which were accepted for continued service with leakage still left above the administrative limit but below the maintenance criteria. In fact, Penetration M-44 appears to have exceeded administrative leakage limit in two consecutive Type C tests.

The licensee stated that, as a result, the extended interval for the next Type C test is not allowed for these penetrations. However, continued operation is allowed even when the penetrations continue to fail the administrative leakage limit. Provide additional information on actions to be taken to assure that these penetrations will be maintained in a condition where they are able to perform their leak tightness to within the administrative limits.

STPNOC Response:

With regards to LLRT M-44 (Supplementary Containment Purge Exhaust) in Unit 2 and actions taken to assure leak tightness, additional maintenance was performed on related components during the spring 2015 Outage, 2RE17. Prior to the maintenance in 2RE17, an as-found LLRT was performed which resulted in an expected high leak rate. The high leak rate was expected due to past performance and the as-left LLRT following maintenance in 2RE16. Following successful maintenance during 2RE17, an as-left LLRT was performed on M-44 which resulted in a satisfactory leak rate that is below the administrative leakage limit. The station plans to perform the M-44 LLRT on an 18-month frequency beginning with 2RE18 in the fall of 2016.

With respect to LLRT M-48 (CVCS Charging) in Unit 2, on April 6, 2015, it tested below administrative limits during its as-found LLRT in 2RE17. Per program requirements, M-48 must remain on its nominal 18-month frequency (every outage) until satisfactory completion of two as-found tests below administrative limits. Elapsed time between consecutive satisfactory as-found tests used for extending test frequency shall be 24 months, or the nominal test frequency (e.g. refueling cycle). M-48 will be tested again during 2RE18. If a leak rate above administrative limits is reached during as-found testing, then valve repair/replacement will be required. A contingency package for valve repair/replacement during 2RE18 has been prepared.

**Draft NRC RAI: Integrated Leak Rate Testing LAR STP ILRT RAI (MF6176 and MF6177),
dated September 10, 2015**

By letter dated April 29, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15128A352), as supplemented by letter dated June 29, 2015 (ADAMS Accession No. ML15198A147), STP Nuclear Operating Company (STPNOC) requested amendments to Operating Licenses NPF-76 and NPF-80 in the form of changes to the Technical Specifications (TS) for South Texas Project Units 1 and 2, respectively.

The license amendment request (LAR) proposes a change to TS 6.8.3.j, "Containment Leakage Rate Testing Program," to allow a permanent extension of the Type A primary containment integrated leak rate test (ILRT) frequency to once every 15 years. The NRC staff has reviewed the risk-related information in the license amendment request and identified areas where additional information is needed to complete its review.

NRC RAI

1. In the letter dated June 29, 2015 (ADAMS Accession Number ML15198A147) the licensee states that STP's internal events probabilistic risk assessment (PRA) does not meet Regulatory Guide (RG) 1.200, Revision 2, requirements for the technical elements related to uncertainty analysis in internal flooding (IFSO-B3, IFSN-B3, IFEV-B3, and IFQU-B3). It further states that "the internal flood event scenarios performed under the Individual Plant Examination (IPE) all screened out with no significant internal flooding initiating event considered for quantification." The staff's understanding of this statement is that no quantification was performed for internal flood sequences under IPE. Please clarify whether quantification of internal flood sequences is performed by the current PRA model. What is the contribution to total core damage frequency (CDF) from internal flooding?

STPNOC Response:

There is no quantification of internal flooding sequences in the current PRA model; therefore, internal flooding initiating events do not contribute to the plant's total CDF.

The screening process for internal flooding is based on a blend of quantitative and qualitative approaches. A spatial interaction database was developed to support the hazards analysis during the IPE.

Internal hazard groupings were established based on the challenge to plant safety. For each scenario, the frequency, impact, and associated group were determined. Rules were established for each group or combinations of groups to allow screening by group definition or by group definition and scenario frequency. Some scenarios required further analysis. However, when quantified, each scenario was sufficiently low in frequency (approximately two orders of magnitude lower than the plant's total CDF) such that they were not retained for quantification in the model.

A WOG peer review performed in April 2002 confirmed that the STP hazard analysis, including internal flooding, was comprehensive. Extensive plant walkdowns were completed by STP personnel to support the review conclusions (ML061280591, page 107 of Attachment 1). The STP PRA configuration control program incorporates a feedback process to update the PRA model. The program requires that plant design and procedure changes that affect the PRA models or input parameters be incorporated into the model on a period not to exceed 36 months. With respect to internal flooding, the STP plant design remains essentially the same as it was at the time of the IPE and the hazards analysis remains valid.

The STP PRA internal events model, including internal hazards, satisfies the guidance of RG 1.200, Revision 1, capability category II guidance of the ASME RA-Sb-2005 PRA standard. The quality of the internal events model has been confirmed by independent review (ML082830172, page 9 of the Safety Evaluation (SE); ML071780186, page 15-21 of SE).

NRC RAI

2. In the letter dated June 29, 2015, the licensee states that the scope of STP's PRA is Level I and Level II, including external and internal hazards, such as internal floods, seismic events, internal fires, high winds, and external flooding. The license amendment request (LAR) states that STP's PRA complies with RG 1.200, Revision 2 with the exception of the fire PRA and the seismic PRA. The LAR does not specifically discuss the quality of other external events models, such as high winds and external flooding. Briefly describe the quality of STP's high winds and external flooding PRA.

STPNOC Response:

STP's PRA includes the external hazards technical elements described in RG 1.200, Revision 1 for fire, seismic, high winds, and external flooding. The STP external hazard models incorporate appropriate screening, hazard, fragility, and plant response analyses and quantification. The STP PRA external hazards models have been determined by STP, and confirmed by independent reviewers, to appropriately incorporate the fire risk and other external event risk contributions to average annual CDF and LERF, and be of sufficient quality to support risk-informed applications. (ML061280591, pages 20-25 of Attachment 1; ML071780186, pages 15-21 of SE; and ML012040370, page 12-13 of SE).

The modeling of high winds and external flooding have not been reviewed against the guidance in RG 1.200, Revision 2.