



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

September 1, 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 LICENSE RENEWAL APPLICATION (TAC NOS.  
ME4938 AND ME5122)

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 (10 CFR Part 54) to renew operating licenses NPF-76 and NPF-80 for South Texas Project for review by the U.S. Nuclear Regulatory Commission (NRC or the staff). 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 Mr. Arden Aldridge and it was agreed that a plan of action and schedule for providing the requested additional information will be provided within 30 days from the date of this letter. If you have any questions, please contact me at 301-415-3617 or e-mail at [Tam.Tran@nrc.gov](mailto:Tam.Tran@nrc.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Tam Tran", is positioned above the typed name.

Tam Tran, Project Manager  
Projects Branch 2  
Division of License Renewal  
Office of Nuclear Reactor Regulation

Docket Nos. 50-498 and 50-499

Enclosure:  
Requests for Additional Information

cc w/encl: Listserv

SOUTH TEXAS PROJECT LICENSE RENEWAL APPLICATION  
REQUESTS FOR ADDITIONAL INFORMATION  
REGARDING THE ANALYSIS OF SEVERE  
ACCIDENT MITIGATION ALTERNATIVES

The requests for information (RAIs) listed below were derived from the discussion during the conference call of July 28, 2011 (ML11216A263). The purpose for the call was to seek additional clarification for the RAI responses of July 5, 2011 (ML11193A016).

- (1) RAI 3.b: Fire-analysis individual plant examination (IPE) – use of technical report NUREG/CR-6850

Background: The response to this RAI simply indicates that a review of the NUREG/CR-6850 will be performed in the future. However, the recent research and guidance reported in NUREG/CR-6850, specifically in the areas of hot short probabilities, fire ignition frequencies, and non-suppression probabilities, indicate that the fire analysis methodologies utilized for the IPE may underestimate fire risk.

Requested information: Provide assurance that consideration of this new information is not expected to impact the selection of cost beneficial severe accident mitigation alternatives (SAMAs) for South Texas Project (STP).

- (2) RAI 3.c: Seismic-analysis IPE of external events (IPEEE) - use of Lawrence Livermore National Laboratory (LLNL) or United States Geological Survey (USGS) hazard curves

Background: The response to this RAI did not provide the requested updated seismic core damage frequency (CDF) results. Instead, the applicant cited Notice IN 2010-18. While this Information Notice concluded that the US plants had adequate safety margin, it did indicate that the seismic CDF for STP could be as high as 3E-06 per year (for spectral accelerations of 5 hz and 10 hz). This is 40 times the total seismic CDF given in the environmental report (ER). Also, note that the STP IPE gives a seismic CDF using the LLNL hazard curve of 1.7E-05 per year which is over 200 times the value used in the probabilistic risk assessment (PRA). Since the seismic CDF was determined using point estimates, the seismic CDF for the analysis STP\_REV6, based on the LLNL hazard curve, can be obtained from the LLNL seismic frequencies from Table 3.4.4-9 of the IPE or IPEEE or both and the conditional core damage probabilities (CCDPs) from Table F.2-1 of the ER. The result is a seismic core damage frequency (SCDF) of 8.7E-06 per year.

Comparing the USGS hazard curves for the STP site with the Electric Power Research Institute (EPRI) hazard curves indicates that the frequency for the USGS curves is 60 to 150 times those for the EPRI curves over the range of 0.4 to 0.6 g which is the range for the largest contributors to STP seismic CDF. Furthermore, the USGS hazard curve is higher than the LLNL hazard curve by a factor of 1.5 to 2 over the same range.

Using the above method for determining the CDF for SEIS3 and SEIS4 initiators for the seismic event scenarios gives seismic CDFs of 4E-06 and 5E-06 per year, respectively.

ENCLOSURE

This indicates that applying the LLNL hazard curves or the 2008 USGS hazard curves to the SEIS3 and SEIS4 initiators could lead to CDF contributions of about 60 to 150% of the STP\_REV6 total CDF.

Requested information: Provide an assessment of the seismic CDF contribution due to the updated USGS hazard curves and the potential for cost beneficial SAMAs.

September 1, 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 LICENSE RENEWAL APPLICATION (TAC NOS.  
ME4938 AND ME5122)

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 (10 CFR Part 54) to renew operating licenses NPF-76 and NPF-80 for South Texas Project for review by the U.S. Nuclear Regulatory Commission (NRC or the staff). 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 Mr. Arden Aldridge and it was agreed that a plan of action and schedule for providing the requested additional information will be provided within 30 days from the date of this letter. If you have any questions, please contact me at 301-415-3617 or e-mail at [Tam.Tran@nrc.gov](mailto:Tam.Tran@nrc.gov).

Sincerely,

/RA/

Tam Tran, Project Manager  
Projects Branch 2  
Division of License Renewal  
Office of Nuclear Reactor Regulation

Docket Nos. 50-498 and 50-499

Enclosure:  
Requests for Additional Information

cc w/encl: Listserv

DISTRIBUTION:  
See next page

**ADAMS Accession No.:** ML112360114

\*concurred via email

OFFICE	LA:DLR*	PM:RPB2:DLR	BC:AADB:DRA	BC:RPB2:DLR
NAME	IKing	TTran	TTate	DWrona
DATE	8/29/11	8/31/11	8/30/11	9/1/11

OFFICIAL RECORD COPY

Letter to G. T. Powell from Tam Tran dated September 01, 2011

SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE  
SOUTH TEXAS PROJECT LICENSE RENEWAL APPLICATION (TAC NOS.  
ME4938 AND ME5122)

DISTRIBUTION:

**E-MAIL:**

PUBLIC

RidsNrrDlr Resource

RidsNrrDlrRpb1 Resource

RidsNrrDlrRpb2 Resource

RidsNrrDlrRerb Resource

RidsNrrDlrRpob Resource

RidsNrrDraApla Resource

RidsOgcMailCenter

-----  
JDaily

TTran

ICouret, OPA

BSingal, DORL

WWalker, RIV

JDixon, RIV

BTharakan, RIV

WMaier, RIV

VDricks, RIV

NO'Keefe, RIV

AVegel, RIV

SGraves, RIV