

September 19, 2011

MEMORANDUM TO: George Wunder, Acting Chief
BWR Projects Branch
Division of New Reactor Licensing
Office of New Reactors

FROM: Tom Tai, Senior Project Manager **/RA/**
BWR Projects Branch
Division of New Reactor Licensing
Office of New Reactors

SUBJECT: SEPTEMBER 27-30, 2011, AUDIT OF NUCLEAR INNOVATION
NORTH AMERICA, LLC, COMBINED LICENSE APPLICATION
SEISMIC ANALYSES

By letter dated September 20, 2007, STP Nuclear Operating Company submitted a combined license application (COLA) for two new units designated South Texas Project (STP) Units 3 and 4. On January 24, 2011, Nuclear Innovation North America, LLC became the primary applicant for the license for these two units. The staff has identified a need to audit the seismic analyses that support STP Units 3 and 4 COLA to address the Department of Energy's discovery of technical problems with the computer code, SASSI. The audit will take place at the Sargent and Lundy office in Chicago, Illinois from September 27-30, 2011. A copy of the audit plan is enclosed.

Docket Nos.: 52-012
52-013

Enclosure:
As stated

CONTACT: Tom Tai, NRO/DNRL
301-415-8484

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DATE	9/19/11	9/19/11	9/19/11	9/19/11	9/19/11

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**AUDIT PLAN TO REVIEW SEISMIC ANALYSES
SOUTH TEXAS PROJECT UNITS 3 AND 4 COMBINED LICENSE APPLICATION**

APPLICANT: Nuclear Innovation North America, LLC

APPLICANT CONTACT: Scott Head
John Price
Bill Mookhoek, et. al.

DATE/TIME: September 27-30, 2011
8:30 a.m. - 5:00 p.m.

LOCATION: 55 E. Monroe St.
Chicago, IL 60603

REVIEWERS: Brian Thomas (NRO/DE/SEB2)
Manas Chakravorty (NRC/DE/SEB2)
Samir Chakrabarti (NRC/DE/SEB2)
Mansour Tabatabaie (NRC Consultant)
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BACKGROUND

On January 20, 2007, STP Nuclear Operating Company submitted to the U.S. Nuclear Regulatory Commission (NRC), a Combined License Application (COLA) Final Safety Analysis Report to construct and operate two additional units, South Texas Project (STP), Units 3 and 4 based on the U.S. Advanced Boiling Water Reactor (ABWR) Certified Design Control Documents at the South Texas Project Nuclear Power Plant site located in the County of Matagorda near Bay City, Texas. On January 24, 2011, Nuclear Innovation North America, LLC became the primary applicant for the license for these two units.

The NRC staff is reviewing the STP Units 3 and 4 combined license (COL) application that incorporates by reference the design certification for the ABWR. Due to the technical issue of SASSI identified by the Department of Energy (DOE), supporting analysis has been prepared by NINA's staff to address this technical issue. The Structural Engineering Branch 2 proposes to conduct an audit of this analysis in support of the review of Chapters 3.7 and 3.8. The NRC staff will perform the audit at the Sargent & Lundy office in Chicago, Illinois. The NRC staff will follow the guidance in Office of New Reactors (NRO) Office Instruction NRO-REG-108, "Regulatory Audits," in performing this audit.

Enclosure 1

PURPOSE AND APPROACH

The purpose of this audit is to review analysis performed to address the technical issue of SASSI that was identified by DOE. This effort is to support the seismic design and analyses for the STP Units 3 and 4 COLA. Any significant findings during the audit will be documented in the audit report and requests for additional information may be issued for scheduled action.

AUDIT ACTIVITIES AND SCHEDULE

The NRC staff will conduct the audit from September 27, 2011 to September 30, 2011. The NRC staff may request an ad-hoc extension of the audit if deemed necessary. Such an extension will be requested before the meeting is adjourned on September 30, 2011 by the NRC staff responsible for the audit.

Following the audit, the NRC staff responsible for the audit will assemble and prepare a final audit report. The final report will be made available to all contributors.

The audit agenda is provided as Enclosure 2. Please contact Tom Tai at 301-415-8484 or at Tom.Tai@NRC.Gov if you have any questions related to the audit.

Proposed Agenda
U. S. Nuclear Regulatory Commission
South Texas Project Combined License Application
Seismic Analyses Audit
September 27-30, 2011

1. Status of responses to RAI 03.07.01-29 (DOE letter)
2. Response to RAI 03.07.2-32 (eRAI 5919) on the acceptance criteria of ITAAC Tables 3.0-21 to 3.0-25 for the turbine building, service building, radwaste building, control building annex, and the stack on the reactor building roof, respectively.
3. Development of scale factors for incorporating the increase in seismic demand obtained using modified subtraction method (MSM) vs. subtraction method (SM) for ultimate heat sink (UHS) and reactor service water (RSW) pump house.
4. Acceptance of section cut forces obtained from SASSI soil structure interaction (SSI) analysis for structural design (RSW piping tunnel, diesel generator fuel oil tunnel, diesel generator fuel oil storage vault, and UHS/RSW pump house).
5. Refinement of SSI models to extract section cut forces for structural evaluation and design.
6. Clarifications and justifications for selecting in-situ lower bound and backfill upper bound soil cases for investigating soil pressure increases due to direct method (DM) and MSM.
7. Review of SASSI model that incorporates soil columns next to exterior walls for SM and MSM modeling.
8. Verification of design calculations for all category I structures and the radwaste building to reconcile with the acceleration and lateral pressure results of new SSI/SSSI analysis.
9. Issues and comments resulting from the July 27, 2011 meeting
10. Status of punch-list items

Enclosure 2

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(Revised 04/11/2011)

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