

July 20, 2012

MEMORANDUM TO: Ronaldo Jenkins, Chief  
LB3 Projects Branch  
Division of New Reactor Licensing  
Office of New Reactors

FROM: Tom Tai, Senior Project Manager /RA/  
LB3 Projects Branch  
Division of New Reactor Licensing  
Office of New Reactors

SUBJECT: JULY 23, 2012, AUDIT OF NUCLEAR INNOVATION NORTH  
AMERICA, LLC, COMBINED LICENSE APPLICATION HURRICANE  
WIND 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 (NINA) became the primary applicant for the license for these two units.

The staff has identified a need to audit the hurricane wind analyses that support STP Units 3 and 4 COLA to address the compliance to Regulatory Guide 1.221. The audit will take place at the Sargent and Lundy office in Chicago, Illinois from July 23 to July 24, 2012. A copy of the audit plan is enclosed.

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

Docket Nos.: 52-012  
52-013

Enclosure: As stated

cc w/encl: See next page

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DATE	07/18/2012	07/18/2012	07/19/2012	07/19/2012	07/20/2012

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**AUDIT PLAN TO REVIEW HURRICANE WIND 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: July 23-24, 2012  
8:00 a.m. - 5:00 p.m.

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

REVIEWERS: Tom Tai (NRO/DNRL/LB3)  
Samir Chakrabarti (NRO/DE/SEB2)  
Bhagwat Jain (NRO/DE/SEB2)

**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 (FSAR) 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 (DCD) 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 (NINA) 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. As a result of the new regulatory guide, 1.221, on hurricane wind, NINA conducted an evaluation of this new parameter on existing design. The Structural Engineering Branch 2 (SEB2) conducted an audit of these analyses in February 27, 2012 with open actions. This is a follow-up of the February, 2012 audit. 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.

## **PURPOSE AND APPROACH**

The purpose of this audit is to review analyses performed and other supporting document developed to address hurricane wind analysis and the responses to RAI 02.03.01-24. This effort is to support the seismic design and analyses for the STP Units 3 and 4 COL application. 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 on July 23-24, 2012. 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 July 24, 2012 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](mailto: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**  
**Hurricane Wind Analyses Audit**  
**July 23-24, 2012**

8:00 a.m.	Entrance / Introduction	NRC/NINA
9:00 a.m.	Supporting documents from the May 22, 2012 response to RAI 02.03.01-24: <ul style="list-style-type: none"><li>• Methodologies for hurricane auto missile impact evaluation for RB, CB, and RSW Piping Tunnel including local and global damage assessment.</li><li>• How the capacity of RB panel is calculated. Staff needs additional information (than that provided under item 'D' on page 7 of the 'attachment') for that confirms the assumptions made for the panel assessment of RB and CB for hurricane auto missile. Provide the basis for concluding that RB and CB panel size are 'bounded' by the DGFOSV and DGFOT panel sizes or exceed them. Supporting calculations will be reviewed to confirm the assumptions and conclusions.</li><li>• Identify instances where 1024K load is not used for auto missile impact evaluation. Provide the detail of the extent 1024K load is used for auto missile impact evaluation. Staff will review the supporting calculations in which such a commitment is made.</li><li>• Provide the calculations that supports the evaluation summary data in Tables 3H.11-1 through 3H.11-3, 'Hurricane Missile Impact Evaluation'</li></ul>	
12:00 p.m.	Lunch	
1:00 p.m.	Issues from other Chapters 3.7/3.8 RAI responses: <ul style="list-style-type: none"><li>• RWB design: For the SAP2000 3D model, demonstrate the boundary condition for the base and the foundation designed.</li><li>• Provide documentation for the RWB anchor bolt material (ANSI/AISC 690.)</li><li>• For all structures: explain attachment load assumed for walls.</li><li>• The FSAR does not describe how the two horizontal earthquakes are considered for stability evaluation. The figures included in the FSAR considers only one horizontal direction earthquake.</li><li>• Construction sequence for tunnels.</li><li>• Figure 3H.6-137: P at rest and Es refers to figures applicable for UHS/PH only, whereas the figure applies to all category I structures.</li><li>• FE mesh refinement sensitivity in response to RAI 03.07.01-25 – clarify DM or SM method for CB SSI model.</li></ul>	
4:30 p.m.	Summary for the Day and Actions	NRC/NINA

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(Revised 06/14/2012)

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