

January 4, 2012

MEMORANDUM TO: Ronaldo Jenkins, Chief  
Licensing Branch 3  
Division of New Reactor Licensing  
Office of New Reactors

FROM: Rocky D. Foster, Project Manager */RA/*  
Licensing Branch 3  
Division of New Reactor Licensing  
Office of New Reactors

SUBJECT: AUDIT PLAN FOR NUCLEAR INNOVATION NORTH AMERICA, LLC,  
COMBINED LICENSE APPLICATION CHAPTER 9.1.2, REGULATORY  
AUDIT OF SPENT AND NEW FUEL STORAGE

By letter dated November 14, 2011, Nuclear Innovation North America, LLC, submitted Revision 2 of the Technical Report WCAP-17331, Revision 2, "Structural Analysis Report for STP Units 3 and 4 Spent Fuel Storage Rack Baseline Design," for the South Texas Project Units 3 and 4 Combined License Application. The staff has identified a need to audit the calculations and any supporting documents and request for additional information responses developed to support the technical report. The audit will take place at the Westinghouse office in Rockville, Maryland, on January 17 - 20, 2012. A copy of the audit plan is enclosed.

Docket Nos.: 52-012  
52-013

Enclosure:  
As stated

cc w/encls: See next page

CONTACT: Rocky D. Foster, NRO/DNRL  
301-415-5787

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Enclosures:  
As stated

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NRO-002

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<b>DATE</b>	01/04/2012	01/03/2012	01/04/2012	01/04/2012	01/04/2012

**OFFICIAL RECORD COPY**

**STP Spent Fuel Racks  
WCAP-17331-P, Revision 2,  
“Structural Analysis Report for STP Units 3 and 4  
Spent Fuel Storage Rack Baseline Design” Audit Plan**

APPLICANT: Nuclear Innovation North America, LLC

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

DATE/TIME: January 17, 2012 – 1:00 PM to January 20, 2012 – 12:00 PM

LOCATION: Westinghouse Office  
12300 Twin Brook Parkway  
Rockville, Maryland 20852  
Suite 150

REVIEWERS: Samir Chakrabarti (NRO/DE/SEB2)  
Richard Morante, BNL  
Xing Wei, BNL

PROJECT MANAGER: Rocky D. Foster (NRO/DNRL/LB3)

AUDIT OBJECTIVE

The objective of the planned audit is to review detailed reports and supporting calculations that will aid in resolving the remaining technical issues concerning the New and Spent Fuel Storage. NOTE: To maximize the value of the audit, it is imperative that all technical material supporting the draft responses to the sixteen (16) recently issued requests for additional information (RAIs) be readily available or retrievable at the audit.

REQUESTED MATERIAL FOR AUDIT (Based on WCAP-17331-P, Technical Report, Rev. 2)

1. Revision 2 of WCAP-17331-P presents high level information pertaining to the methods used and the results of the seismic analysis of the spent fuel racks (SFRs) and fuel assemblies, and the fuel assembly accidental drop analyses. This report lists sixteen (16) references. References (3), (4), (6), (7), (13), and (16) are requested to be available at the audit, since they are not available to the staff. Access to the remaining ten references is requested.

Enclosure

2. Reference (3), Westinghouse Calculation CN-MRCDA-11-23, Revision 0, November 3, 2011, appears to be the primary reference for the seismic analysis of the SFRs. All back-up calculations to Reference (3) should be available for retrieval and download during the audit, in case the staff wants to review them in conjunction with Reference (3).
3. Reference (4), Westinghouse Calculation CN-RVHP-10-33, Revision 2, October 20, 2011, apparently is the primary reference for the drop analyses. All back-up calculations to Reference (4) should be available for retrieval and download during the audit, in case the staff wants to review them in conjunction with Reference (4).
4. Reference (16) appears to be critical to the seismic evaluation of the fuel assemblies. From the information provided in the response to RAI 09.01.02-10 and in the Technical Report, Revision 2, there are other sources for information used in this evaluation. However, no other references are cited. The staff has followed up with a new RAI on this subject. It is imperative that all relevant information used for this approximate evaluation be available at the audit. The staff also requests a brief presentation by the applicant discussing the dimensions and other details of the design control document fuel assembly that are used in this evaluation including sources for the information, and how the capacity of the fuel assembly was determined and compared with the corresponding demand in the SFR.
5. Reference (6) will be audited as part of the resolution of RAI 09.01.02-9. The review will be more comprehensive than originally intended, because STP has chosen not to include any detail in the Technical Report, as originally committed.
6. An unexpected result documented in Section 8.1.1 of the Technical Report, Revision 2, is the magnitude of the sliding displacements (12" to 20"), which appear to be too large, and the trend of increasing displacement with increasing coefficient of friction. This result is not consistent with the AP1000 and ESBWR results. At this time, the staff does not understand the reason for this inconsistency, and is concerned this may be indicative of a significant error in the analyses conducted. STP will need to review the ANSYS input and output with the staff, and be prepared to re-run the ANSYS analyses during the audit, should a significant error be uncovered.
7. Discussion of draft responses to the sixteen (16) recently issued supplemental RAIs on Chapter 09.01.02, New and Spent Fuel Storage.

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(Revised 11/02/2011)

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