

August 30, 2011

Mr. Scott Head, Manager
Regulatory Affairs
STP Units 3 & 4
Nuclear Innovation North America, LLC
P. O. Box 289
Wadsworth, TX 77483

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 412 RELATED TO
SRP SECTION 9.01.02 FOR THE NUCLEAR INNOVATION NORTH AMERICA,
LLC COMBINED LICENSE APPLICATION

Dear Mr. Head:

By letter dated September 20, 2007, South Texas Project (STP) submitted for approval a combined license application pursuant to 10 CFR Part 52. The U. S. Nuclear Regulatory Commission (NRC) staff is performing a detailed review of this application to enable the staff to reach a conclusion on the safety of the proposed application.

The NRC staff has identified that additional information is needed to continue portions of the review. The staff's request for additional information (RAI) is contained in the enclosure to this letter.

To support the review schedule, you are requested to respond within 60 days of the date of this letter. If changes are needed to the safety analysis report, the staff requests that the RAI response include the proposed wording changes.

S. Head

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If you have any questions or comments concerning this matter, I can be reached at 301-415-5787 or by e-mail at Rocky.Foster@nrc.gov or you may contact George Wunder at 301-415-1494 or George.Wunder@nrc.gov.

Sincerely,

/RA/

Rocky D. Foster, Project Manager
BWR Projects Branch
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-012, 52-013

eRAI Tracking No. 5987

Enclosure:
Request for Additional Information

cc: William Mookhoek
James Agles
Loree Elton

S. Head

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NRO-002

OFFICE	PM:DE/SEB2	BC:SBCV	BWR/PM	OGC	BWR/L-PM
NAME	SChakrabarti	BThomas	RFoster	MSpencer	GWunder
DATE	8/10/2011	8/10/2011	8/11/2011	8/16/2011	8/30/2011

* **Approval captured electronically in the electronic RAI system.**

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Request for Additional Information No. 5987 Revision 5

8/30/2011

South Texas Project Units 3 and 4
South Texas Project Nuclear Operating Co
Docket No. 52-012 and 52-013
SRP Section: 09.01.02 - New and Spent Fuel Storage
Application Section: FSAR 9.1.2

QUESTIONS for Structural Engineering Branch 2 (ESBWR/ABWR Projects) (SEB2)

09.01.02-10

Spent Fuel Assembly Integrity

As indicated in Section I.3 of SRP 3.8.4, Appendix D, loads generated by the impact of fuel assemblies during a postulated seismic excitation should be considered for local as well as overall effects, and it should be demonstrated that the consequent loads on the fuel assembly do not lead to damage of the fuel. Section I.4 of SRP 3.8.4, Appendix D, specifies that the applicant demonstrate that the functional capability and/or the structural integrity of each component is maintained. Therefore, for a complete review of the structural analysis of the spent fuel storage racks, including the spent fuel assemblies, the staff requests that the applicant describe the technical basis for (1) establishing the functional capability and structural integrity of the spent fuel assemblies, and (2) ensuring no fuel damage, when subjected to impact loads resulting from the postulated seismic excitation of the spent fuel storage racks. Include this information in an appropriate section of the spent fuel racks technical report. The response should specifically address the following:

- a. Describe how the seismic demand on the spent fuel assemblies was determined, including considering maximum impact force due to both in phase and out of phase movement of fuel assemblies during a seismic event.
- b. Describe the methodology used to determine the maximum allowable impact force that spent fuel assemblies are capable of withstanding.
- c. Define the acceptance criteria used for functional capability, structural integrity, and no fuel damage.
- d. Describe how the effects of irradiation embrittlement of the fuel rods, at initial storage and long term, are considered in the evaluation.
- e. Compare the calculated capacity to the calculated demand, to demonstrate that the spent fuel assemblies will maintain their integrity under seismic loading.