

## LeeRAIsPEm Resource

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**From:** Hughes, Brian  
**Sent:** Wednesday, May 23, 2012 9:28 AM  
**To:** LeeRAIsPEm Resource  
**Subject:** LEE-RAI-LTR-107.docx  
**Attachments:** LEE-RAI-LTR-107.docx

**Hearing Identifier:** Lee\_COL\_RAI  
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**From:** Hughes, Brian

**Created By:** Brian.Hughes@nrc.gov

**Recipients:**  
"LeeRAIsPEm Resource" <LeeRAIsPEm.Resource@nrc.gov>  
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**Expiration Date:**  
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May 23, 2012

Mr. James Thornton, P.E.  
Licensing Manager, Nuclear Plant Development  
Duke Energy  
526 South Church Street  
Charlotte, NC 28201-1006

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 107 RELATED TO  
SRP SECTION: 03.07.02 - SEISMIC SYSTEM ANALYSIS FOR THE WILLIAM STATES LEE III  
UNITS 1 AND 2 COMBINED LICENSE APPLICATION

Dear Mr. Thornton:

By letter dated December 12, 2007, as supplemented by letters dated January 28, 2008, February 6, 2008 and February 8, 2008, Duke Energy submitted its application to the U. S. Nuclear Regulatory Commission (NRC) for a combined license (COL) for two AP1000 advanced passive pressurized water reactors pursuant to 10 CFR Part 52. The 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 30 days of the date of this letter. If changes are needed to the final safety analysis report, the staff requests that the RAI response include the proposed wording changes.

J.Thornton

If you have any questions or comments concerning this matter, you may contact me at 301-415-6582.

Sincerely,

**/RA/**

Brian Hughes, Senior Project Manager  
AP1000 Projects Branch 1  
Division of New Reactor Licensing  
Office of New Reactors

Docket Nos. 52-018  
52-019

Enclosure:  
Request for Additional Information

CC: see next page

J.Thornton

If you have any questions or comments concerning this matter, you may contact me at 301-415-6582.

Sincerely,

**/RA/**

Brian Hughes, Senior Project Manager  
AP1000 Projects Branch 1  
Division of New Reactor Licensing  
Office of New Reactors

Docket Nos. 52-018  
52-019

eRAI Tracking No. 6528

Enclosure:  
Request for Additional Information

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NAME	PPatel*	SMohamed*	BHughes*
DATE	05/21/12	05/22/12	05/23/12

\*Approval captured electronically in the electronic RAI system.

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Request for Additional Information No. 6528  
5/23/2012

William States Lee III, Units 1 and 2  
Duke Energy Carolinas, LLC  
Docket No. 52-018 and 52-019  
SRP Section: 03.07.02 - Seismic System Analysis  
Application Section: 03.07.02

QUESTIONS for Structural Engineering Branch 1 (AP1000/EPR Projects) (SEB1)

03.07.02-2

On April 9-11, 2012, NRC staff conducted an audit on site response and soil-structure interaction (SSI) calculations performed by Westinghouse Electric Corporation (WEC) in support of the COL application of the William Lee Nuclear Station (WLS), Unit 1 and 2 [ML 12137A203]. During the audit, the applicant indicated that a mechanically stabilized earth (MSE) retaining wall will be utilized to support backfill material adjacent to the nuclear island (NI) and may be located below adjacent seismic Category II structures. Staff review of FSAR section 3.7.2, notes that the applicant has incorporated by reference the analysis of adjacent seismic Category II structures from the approved AP1000 DCD, Rev 19, Subsection 3.7.2.8. Staff review finds that the referenced analysis of adjacent structures did not consider the effects of an MSE wall located in the vicinity of either the Annex Building or 1<sup>st</sup> bay of the Turbine Building.

In addition, the applicant discussed the use of a heavy lift derrick (HLD) for performing construction of Units 1 and 2. Staff review of FSAR Section 3.7.2.8 finds that the effects of the HLD foundation(s) on the NI foundation structures are not described.

To address the above issues, staff requests the applicant to:

- a) Describe the impact of the MSE wall design on the dynamic response of the adjacent seismic Category II structures.
- b) Describe the impact of HLD foundation elements (potentially permanent) on the seismic response of the Units 1 and 2 nuclear islands.