

LeeRAIsPEm Resource

From: Brian Hughes
Sent: Friday, September 12, 2008 8:40 AM
To: LeeRAIsPEm Resource
Subject: RAI 447 REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 011 RELATED TO SRP SECTION 2.3.2 FOR THE WILLIAM STATES LEE III UNITS 1 AND 2 COMBINED LICENSE APPLICATION
Attachments: LEE-RAI-LTR-011.doc

Brian Hughes
Project Manager
NRO/DNRL/NWE1
US NRC
301-415-6582

Hearing Identifier: Lee_COL_RAI
Email Number: 13

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Subject: RAI 447 REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 011
RELATED TO SRP SECTION 2.3.2 FOR THE WILLIAM STATES LEE III UNITS 1 AND 2 COMBINED
LICENSE APPLICATION

Sent Date: 9/12/2008 8:39:45 AM

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From: Brian Hughes

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"LeeRAIsPEm Resource" <LeeRAIsPEm.Resource@nrc.gov>
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Expiration Date:
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P.Hastings

September 12, 2008

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

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 011 RELATED TO
SRP SECTION 2.3.2 FOR THE WILLIAM STATES LEE III UNITS 1 AND 2
COMBINED LICENSE APPLICATION

Dear Mr. Hastings:

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 advance 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.

P.Hastings

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

P.Hastings

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. 447

Enclosure:
Request for Additional Information

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NRO-002

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NAME	CCox	JHoch	SBrock*	BHughes*
DATE	6/11/08	06/10/08	06/11/08	9/12/08

*Approval captured electronically in the electronic RAI system.

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Request for Additional Information No. 446

9/11/2008

William States Lee III, Units 1 and 2
Duke Energy Carolinas, LLC
Docket No. 52-018 and 52-019
SRP Section: 02.03.01 - Regional Climatology
Application Section: 2.3.1

QUESTIONS

02.03.01-1

In accordance with NUREG-0800, Section 2.3.1, please identify the National Climatic Data Center's (NCDC) state climatic division for the proposed Lee site in FSAR Section 2.3.1.1, or justify a reasonable alternative.

02.03.01-2

Based on historical hurricane data (1899 - 2005) from NOAA's Coastal Services Center (<http://maps.csc.noaa.gov/hurricanes/>), the staff was unable to reproduce the same number of hurricanes that have affected North and South Carolina presented in FSAR Section 2.3.1.2.1. Attachment 1 shows a comparison between the values presented in the FSAR and those obtained by the staff. Please review the accuracy of the hurricane statistics presented in FSAR Section 2.3.1.2.1.

02.03.01-3

AP1000 DCD, Rev. 16, Tier 1 Table 5.0-1 lists Tornado Maximum Pressure Differential as a Tier 1 Site Parameter. Please include this site parameter and a corresponding site characteristic in FSAR Table 2.0-201 and Subsection 2.3.1.2.2.

02.03.01-4

The staff cautions against the use of the NCDC Storm Events Database because many severe weather reports are often incomplete or missing as the period of record considered increases. The following graph in Attachment 1 shows the annual number of thunderstorm events that have occurred in the region. Note the increase in the number of reported events. It appears that the data becomes more consistent after 1996. Please revise FSAR Section 2.3.1.2.3 to account for this data, or justify another alternative. Also, please include a reference to an annual NCDC LCD summary for any nearby first order observing stations.

02.03.01-5

The staff cautions against the use of the NCDC Storm Events Database because many severe weather reports are often incomplete or missing as the period of record considered increases. The following graph in Attachment 1 shows the annual number of hail events that occurred in the region. Note the increase in the number of reported events. It appears that the data becomes more consistent after 1984. Please revise FSAR Section 2.3.1.2.5 to account for this data, or justify another alternative.

02.03.01-6

FSAR Section 2.3.1.2.7 stated that the equivalent ice thickness due to freezing rain with concurrent 3-second gust speeds for a 100-year mean recurrence interval is approximately 0.75 inches for the north central South Carolina area. Based on the stated reference, "Extreme Ice Thicknesses from Freezing Rain," the staff found 0.75 inches to be the 50-year value. A conversion factor of 1.25 is recommended to convert from a 50-year recurrence interval to a 100-year. Please verify the accuracy of the current estimate.

02.03.01-7

Based on data from the South Carolina State Climate Office, the staff found the following maximum 24-hour winter precipitation amounts at three nearby stations:

Ninety-Nine Islands: 3.37 inches, 12/28/1958

Gaffney 6 E: 3.76 inches, 02/21/1961

Greenville/Spartanburg: 3.80 inches, 03/05/1963

Based on these precipitation amounts, please justify the 48-hour probable maximum winter precipitation value for the proposed Lee site of 3.54 inches. Also, please consider changing the wording of "probable maximum winter precipitation" for the 3.54 inch estimate, or provide an explanation in FSAR Section 2.3.1.2.7.2 why the PMWP for the Ninety-Nine Islands station is 3.54 inches, while the PMWP estimate based on NOAA's HMR-53 report is 30.5 inches.

02.03.01-8

Based on NCDC Snow Climatology database (<http://www.ncdc.noaa.gov/ussc/index.jsp>), the staff found that the highest observed maximum snowfall amount, maximum snow depth, and 100-year estimate of snowfall for Cherokee County, SC occurred at the Gaffney 6E observation station. The 100-year snowfall amount for Gaffney 6 E, based on data from 1894 through 2006, was 16.3 inches, the maximum snow depth was 17.0 inches, and the observed maximum snowfall was 17.0 inches. Please justify why the more conservative estimate of 17.0 inches is not used to estimate the weight of the 100-year return snowpack.

02.03.01-9

Please describe the additional resulting weight from the 48-hour probable maximum precipitation (PMWP) on the roof of the PCS tank if the central hole is blocked by a pre-existing 100-year snowpack. Also, please estimate the additional weight if at least part of the 48-hour PMWP falls as frozen precipitation.

02.03.01-10

10 CFR 52.79(a)(iii) requires a COL applicant to identify the most severe of the natural phenomena that have been historically reported for the site and surrounding area and with sufficient margin for the limited accuracy, quantity, and time in which the historical data have been accumulated. In addition, NUREG-0800, Section 2.3.1, states the applicability of data on severe weather phenomena to represent site conditions during the expected period of reactor operation should be substantiated.