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March 4, 2009

Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Subject: Duke Energy Carolinas, LLC.  
William States Lee III Nuclear Station - Docket Nos. 52-018 and 52-019  
AP1000 Combined License Application for the  
William States Lee III Nuclear Station Units 1 and 2  
Supplemental Response to Request for Additional Information  
(RAI No. 1141)  
Ltr# WLG2009.03-01

References: Letter from Brian Hughes (NRC) to Peter Hastings (Duke Energy),  
*Request For Additional Information Letter No. 027 Related To SRP  
Section 02.05.02 for the William States Lee III Units 1 and 2 Combined  
License Application*, dated October 3, 2008

Letter from Bryan Dolan (Duke Energy) to NRC Document Control Desk,  
WLG2008.11-21, *Response to Request for Additional Information  
(RAI No. 1141)*, dated November 20, 2008.

This letter provides supplemental information to the Duke Energy responses to the Nuclear Regulatory Commission's request for additional information (RAI) included in the referenced letters.

If you have any questions or need any additional information, please contact Peter S. Hastings, Nuclear Plant Development Licensing Manager, at 980-373-7820.

Bryan J. Dolan  
Vice President  
Nuclear Plant Development

DO93  
NRC

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Enclosures:


- 1) Duke Energy Supplemental Response to Request for Additional Information  
Letter 027, RAI 02.05.02-001

AFFIDAVIT OF BRYAN J. DOLAN

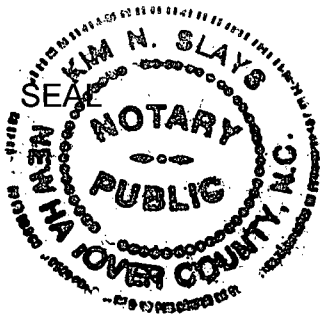
Bryan J. Dolan, being duly sworn, states that he is Vice President, Nuclear Plant Development, Duke Energy Carolinas, LLC, that he is authorized on the part of said Company to sign and file with the U. S. Nuclear Regulatory Commission this supplement to the combined license application for the William States Lee III Nuclear Station and that all the matter and facts set forth herein are true and correct to the best of his knowledge.

  
Bryan J. Dolan

Subscribed and sworn to me on March 4, 2009

  
Notary Public

My commission expires: April 19, 2010



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March 4, 2009  
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xc (w/o enclosure):

Loren Plisco, Deputy Regional Administrator, Region II  
Mark Tavocci, Acting Branch Chief, DNRL

xc (w/ enclosure):

Brian Hughes, Senior Project Manager, DNRL

**Lee Nuclear Station Response to Request for Additional Information (RAI)**

**RAI Letter No. 027**

**NRC Technical Review Branch: Geosciences and Geotechnical Engineering Branch 2 (RGS2)**

**Reference NRC RAI Number(s): 02.05.02-001**

**NRC RAI:**

In Section 2.5.2.2.1.2 and Table 2.5.2-203 of the Lee FSAR, the Dames and Moore source characterization parameters derived for the EPRI/SOG assessment are presented for Zones 41 (the Southern Cratonic Margin) and 53 (the Southern Appalachian Mobile Belt). Relatively low probabilities of activity were assigned to these two zones by the Dames and Moore team.

Please justify the source characterization parameters used by the Dames and Moore team for Zones 41 and 53 to assess the seismic hazard of the region surrounding the Lee site. Considering the low probability values selected by the Dames and Moore team, please also justify the conclusion that the source characterization for Zones 41 and 53 still falls within the range of scientific peer community views for Central and Eastern U.S. (CEUS) seismic hazard interpretations.

**Duke Energy Supplemental Response:**

In Reference 1, Duke Energy described a supplemental sensitivity study that was performed to compare the Lee GMRS to the GMRS calculated by simply removing the Dames & Moore team's contribution and averaging over the results, as computed for and presented in the FSAR, from the remaining five ESTs. The results of this analysis indicate that deleting the Dames & Moore team would increase the GMRS amplitudes by about 9% at high frequencies (100 and 25 Hz), and by lower amounts at lower frequencies. At 0.5 Hz there would be no change in the GMRS from deleting the Dames & Moore source.

Table 1 presents the results of this analysis for seven frequencies of interest, and compares the results of the hazard calculations including and not including the Dames & Moore Team.

As indicated in Reference 1, this sensitivity study leads to the conclusion that the change in hazard at the GMRS amplitudes is not significant, and therefore the Lee seismic hazard presented in the FSAR is considered acceptable. Further, the hypothetical nature of these changes do not constitute a basis for departure from the approved regulatory position that the use of the EPRI/SOG ESTs and the associated diversity and range of interpretations of the scientific community are a valid basis for calculating seismic hazard in the central and eastern US.

**Table 1 - Effect on UHRS and GMRS of Deleting Dames & Moore Team**

Original Hazard Calculation						
Frequency	Original $10^{-4}$	Original $10^{-5}$	AR	DF	Original GMRS	
100	0.104	0.471	4.52	2.01	0.212	
25	0.249	1.292	5.19	2.24	0.581	
10	0.197	0.820	4.15	1.87	0.370	
5	0.152	0.527	3.47	1.62	0.247	
2.5	0.095	0.307	3.25	1.54	0.146	
1	0.042	0.160	3.79	1.74	0.0736	
0.5	0.022	0.123	5.63	2.39	0.0553	

Hazard Calculation Without Dames & Moore						
Frequency	Modified $10^{-4}$	Modified $10^{-5}$	AR	DF	Modified GMRS	% Difference
100	0.110	0.515	4.69	2.06	0.232	9.2%
25	0.268	1.406	5.24	2.26	0.633	8.8%
10	0.208	0.884	4.24	1.91	0.398	7.6%
5	0.159	0.558	3.52	1.64	0.260	5.4%
2.5	0.098	0.316	3.21	1.52	0.150	3.2%
1	0.043	0.162	3.73	1.72	0.0745	1.3%
0.5	0.022	0.123	5.53	2.36	0.0553	0.0%

Attachment 1 is an electronic file containing digital data of mean hazard at 1 Hz and 10 Hz for each of the six EPRI Earth Science Teams. Please note that the contribution from the updated Charleston and New Madrid models is included in each of these team totals. Duke Energy has provided this data electronically in a format consistent with the request from the NRC staff. The attachment is not an electronic submittal and Duke Energy did not preflight the contents of the disk.

**Reference:**

- 1) Letter from Bryan Dolan (Duke Energy) to NRC Document Control Desk, WLG2008.11-21, *Response to Request for Additional Information (RAI No. 1141)*, dated November 20, 2008.

**Associated Revision to the Lee Nuclear Station Final Safety Analysis Report:**

None

**Attachments:**

- 1) Lee Nuclear Station Mean Hazard Data (1 Hz and 10 Hz)

**Lee Nuclear Station Response to Request for Additional Information (RAI)**

**Attachment 1 to Supplemental Response to RAI 02.05.02-001**

**Mean Hazard Data (1 Hz and 10 Hz)**

File Name: Lee\_Mean\_Hazard\_Data\_(1\_Hz\_and\_10\_Hz).txt

**On Enclosed CD**

(Hazard due to the updated Charleston and New Madrid models  
is included in team totals)