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September 24, 2009

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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
Response to Request for Additional Information
(RAI No. 3208)
Ltr# WLG2009.09-09

Reference: Letter from Sujata Goetz (NRC) to Peter Hastings (Duke Energy), Request
for Additional Information Letter No. 075 Related to SRP Section 01-
Introduction and Interfaces for the William States Lee III Units 1 and 2
Combined License Application, dated August 5, 2009

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

The response to the NRC information request described in the referenced letter is
addressed in a separate enclosure, which also identifies associated changes, when
appropriate, that will be made in a future revision of the Final Safety Analysis Report for
the Lee Nuclear Station.

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

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Enclosure:

- 1) Duke Energy Response to Request for Additional Information Letter 075, RAI 01-008


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 September 24, 2009



Notary Public

My commission expires: April 19, 2010



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xc (w/o enclosure):

Loren Plisco, Deputy Regional Administrator, Region II
Stephanie Coffin, Branch Chief, DNRL

xc (w/ enclosure):

Brian Hughes, Senior Project Manager, DNRL
Sujata Goetz, Project Manager, DNRL

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

RAI Letter No. 075

NRC Technical Review Branch: AP1000 Projects Branch 1 (NWE1)

Reference NRC RAI Number(s): 01-008

NRC RAI:

The applicant incorporated by reference Section 1.8 of the DCD. This section of the DCD identifies certain interfaces with the standard design that have to be addressed in accordance with 10 CFR 52.47(a)(1)(vii)(Note: following the update to Part 52, this provision has changed to 52.47(a)(25)). As required by 52.79(d)(2), the COL applicant must demonstrate how these interface items have been met. Duke Energy must explicitly identify how these interface items have been met.

Duke Energy Response:

Explicit identification of the FSAR location of information addressing the interface items identified in Section 1.8 of the DCD is provided in new FSAR Table 1.8-203, as shown in Attachment 2. Some clarifying remarks are provided below for a few items that have been addressed by the DCD since the interface item listing was created. During the COLA review to develop the new FSAR table, it was also determined that additional information is necessary for a few items.

Item 1.1 and Items 18.1-18.5 – During review for this request, Westinghouse determined that these items have been previously completed within the DCD. Thus, Westinghouse is expected to remove these items in a future revision to the DCD. As such, Note b indicates that these items are not further addressed in the FSAR.

Item 3.3 - This information is not currently in Revision 1 of the FSAR, but will be included as shown in Attachment 7.

Item 8.2 – This information is not currently in Revision 1 of the FSAR, but will be included as shown in Attachment 3.

Item 9.4 – This information is not currently in Revision 1 of the FSAR, but will be included as shown in Attachment 4.

Item 11.1 - This information is not currently in Revision 1 of the FSAR, but will be included as shown in Attachment 5. Note that there are no liquid waste systems outside the AP1000 design scope and thus, there are no site specific parameters. There is one site specific interface: liquid releases are discharged into the Broad River at the Ninety-Nine Islands Dam.

Item 11.2 - This information is not currently in Revision 1 of the FSAR, but will be included as shown in Attachment 6. Note that there are no gaseous waste systems outside the AP1000 design scope and thus, there are no site specific parameters or interfaces.

The information in Attachments 1 through 7 will be incorporated into a future revision of the Final Safety Analysis Report.

Associated Revisions to the Lee Nuclear Station Final Safety Analysis Report:

FSAR Section 1.8

New FSAR Table 1.8-203

FSAR Section 8.2.2

FSAR Subsection 9.2.11.2.1

FSAR Subsection 11.2.3.3

FSAR Subsection 11.3.3

FSAR Subsection 3.7.4.2.1

Attachments:

- 1) Revision to FSAR Section 1.8
- 2) New FSAR Table 1.8-203
- 3) Revision to FSAR Section 8.2.2
- 4) Revision to FSAR Subsection 9.2.11.2.1
- 5) Revision to FSAR Subsection 11.2.3.3
- 6) Revision to FSAR Subsection 11.3.3
- 7) Revision to FSAR Subsection 3.7.4.2.1

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

Attachment 1 to RAI 01-008

Revision to FSAR Subsection 1.8

COLA Part 2, FSAR Chapter 1, Subsection 1.8, will be revised by adding the following paragraph at the end of the section:

WLS SUP 1.8-3 DCD Table 1.8-1 presents interface items for the AP1000. FSAR section(s) addressing these interface items are tabulated in Table 1.8-203.

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

Attachment 2 to RAI 01-008

New FSAR Table 1.8-203

COLA Part 2, FSAR Chapter 1, Subsection 1.8, will be revised by adding the following table:

WLS SUP 1.8-3

TABLE 1.8-203

SUMMARY OF FSAR DISCUSSIONS OF AP1000 PLANT INTERFACES

<u>Item No.</u>	<u>Interface</u>	<u>Interface Type</u>	<u>Matching Interface Item</u>	<u>Section or Subsection^(a)</u>
<u>1.1</u>	<u>Post accident Radio-Iodine sampling capability per NUREG 0737</u>	<u>Requirement of AP1000</u>	<u>Combined License applicant program</u>	(b)
<u>2.1</u>	<u>Envelope of AP1000 plant site related parameters</u>	<u>Site Interface</u>	<u>Site specific parameters</u>	<u>Table 2.0-201</u> <u>Table 2.0-202</u>
<u>2.2</u>	<u>External missiles from man-made hazards and accidents</u>	<u>Site Interface</u>	<u>Site specific parameters</u>	<u>Table 2.0-201</u> <u>2.2.3.1.1</u> <u>3.5</u>
<u>2.3</u>	<u>Maximum loads from man-made hazards and accidents</u>	<u>Site Interface</u>	<u>Site specific parameters</u>	<u>2.2.3</u>
<u>2.4</u>	<u>Limiting meteorological parameters (γ/Q) for design basis accidents and for routine releases and other extreme meteorological conditions for the design of systems and components exposed to the environment</u>	<u>Site Interface</u>	<u>Site specific parameters</u>	<u>Table 2.0-201</u> <u>Table 2.0-202</u>
<u>2.5</u>	<u>Tornado and operating basis wind loadings</u>	<u>Site Interface</u>	<u>Site specific parameters</u>	<u>Table 2.0-201</u>
<u>2.6</u>	<u>External missiles generated by natural phenomena</u>	<u>Site Interface</u>	<u>Site specific parameters</u>	<u>Table 2.0-201</u>
<u>2.7</u>	<u>Snow, ice and rain loads</u>	<u>Site Interface</u>	<u>Site specific parameters</u>	<u>Table 2.0-201</u>
<u>2.8</u>	<u>Ambient air temperatures</u>	<u>Site Interface</u>	<u>Site specific parameters</u>	<u>Table 2.0-201</u>

<u>2.9</u>	<u>Onsite meteorological measurement program</u>	<u>Requirement of AP1000</u>	<u>Combined License applicant program</u>	<u>2.3.3</u>
<u>2.10</u>	<u>Flood and ground water elevations</u>	<u>Site Interface</u>	<u>Site specific parameters</u>	<u>Table 2.0-201</u>
<u>2.11</u>	<u>Hydrostatic loads on systems, components and structures</u>	<u>Site Interface</u>	<u>Site specific parameters</u>	<u>Table 2.0-201</u> <u>2.4.12.5</u>
<u>2.12</u>	<u>Seismic parameters</u> - <u>peak ground acceleration</u> - <u>response spectra</u> - <u>shear wave velocity</u>	<u>Site Interface</u>	<u>Site specific parameters</u>	<u>Table 2.0-201</u>
<u>2.13</u>	<u>Required bearing capacity of foundation materials</u>	<u>Site Interface</u>	<u>Site specific parameters</u>	<u>Table 2.0-201</u>
<u>3.1</u>	<u>Deleted</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
<u>3.2</u>	<u>Operating procedures to minimize water hammer</u>	<u>Requirement of AP1000</u>	<u>Combined License applicant procedure</u>	<u>10.3.2.2.1</u> <u>10.4.7.2.1</u>
<u>3.3</u>	<u>Site seismic sensor location and "trigger" value</u>	<u>Requirement of AP1000</u>	<u>Onsite implementation</u>	<u>3.7.4.2.1</u> <u>DCD 3.7.4.2</u>
<u>3.4</u>	<u>Depth of overburden</u>	<u>Requirement of AP1000</u>	<u>Onsite implementation</u>	<u>3.8.5.1</u> <u>2.5.4</u>
<u>3.5</u>	<u>Depth of embedment</u>	<u>Requirement of AP1000</u>	<u>Onsite implementation</u>	<u>3.8.5.1</u> <u>2.5.4</u>
<u>3.6</u>	<u>Specific depth of waterproofing</u>	<u>Requirement of AP1000</u>	<u>Onsite implementation</u>	<u>2.5.4.6</u> <u>2.5.4.10</u> <u>DCD</u> <u>3.4.1.1.1.1</u>
<u>3.7</u>	<u>Foundation Settlement Monitoring</u>	<u>Requirement of AP1000</u>	<u>Combined License applicant coordination</u>	<u>2.5.4.10</u> <u>2.5.6.16</u>
<u>3.8</u>	<u>Lateral earth pressure loads</u>	<u>Not an Interface</u>	<u>N/A</u>	<u>N/A</u>
<u>3.9</u>	<u>Preoperational piping vibration test parameters</u>	<u>Not an Interface</u>	<u>N/A</u>	<u>N/A</u>

<u>3.10</u>	<u>Inservice Inspection requirements and locations</u>	<u>Requirement of AP1000</u>	<u>Combined License applicant program</u>	<u>3.9.6</u> <u>5.2.4</u> <u>6.6</u>
<u>3.11</u>	<u>Maintenance of preservice and reference test data for inservice testing of pumps and valves</u>	<u>Requirement of AP1000</u>	<u>Combined License applicant program</u>	<u>3.9.6</u>
<u>3.12</u>	<u>Earthquake response procedures</u>	<u>Requirement of AP1000</u>	<u>Combined License applicant program</u>	<u>3.7.4.4</u>
<u>5.1</u>	<u>Steam Generator Tube Surveillance Requirements</u>	<u>Requirement of AP1000</u>	<u>Combined License applicant program</u>	<u>5.4.2.5</u>
<u>6.1</u>	<u>Inservice Inspection requirements for the containment</u>	<u>Requirement of AP1000</u>	<u>Combined License applicant program</u>	<u>6.2</u>
<u>6.2</u>	<u>Offsite environmental conditions assumed for Main Control Room and control support area habitability design</u>	<u>AP1000 Interface</u>	<u>Site specific parameter</u>	<u>2.2.3</u> <u>6.4</u>
<u>7.1</u>	<u>Listing of all design criteria applied to the design of the I&C systems</u>	<u>Not an Interface</u>	<u>N/A</u>	<u>N/A</u>
<u>7.2</u>	<u>Power required for site service water instrumentation</u>	<u>NNS and Not an Interface</u>	<u>N/A</u>	<u>N/A</u>
<u>7.3</u>	<u>Other provisions for site service water instrumentation</u>	<u>NNS and Not an Interface</u>	<u>N/A</u>	<u>N/A</u>
<u>8.1</u>	<u>Listing of design criteria applied to the design of the offsite power system</u>	<u>NNS</u>	<u>Combined License applicant coordination</u>	<u>8.1.4.3</u> <u>Table 8.1-201</u>

8.2	<u>Offsite ac requirements:</u> - <u>Steady-state load</u> - <u>Inrush kVA for motors</u> - <u>Nominal voltage</u> - <u>Allowable voltage regulation</u> - <u>Nominal frequency</u> - <u>Allowable frequency fluctuation</u> - <u>Maximum frequency decay rate</u> - <u>Limiting under frequency value for RCP</u>	NNS	<u>Combined License applicant coordination</u>	8.2.2
8.3	<u>Offsite transmission system analysis:</u> - <u>Loss of AP1000 or largest unit</u> - <u>Voltage operating range</u> - <u>Transient stability must be maintained and the RCP bus voltage must remain above the voltage required to maintain the flow assumed in Chapter 15 analyses for a minimum of three (3) seconds following a turbine trip</u> - <u>The protective devices controlling the switchyard breakers are set with consideration given to preserving the plant grid connection following a turbine trip</u>	NNS	<u>Combined License applicant analysis</u>	8.2.2
8.4	<u>Listing of design criteria applied to the design of onsite ac power systems</u>	NNS and Not an Interface	N/A	N/A
8.5	<u>Onsite ac requirements</u>	NNS and Not an Interface	N/A	N/A
8.6	<u>Diesel generator room coordination</u>	NNS and Not an Interface	N/A	N/A
8.7	<u>Listing of design criteria applied to the design of onsite dc power systems</u>	Not an Interface	N/A	N/A
8.8	<u>Provisions of dc power systems to accommodate the site service water system</u>	NNS and Not an Interface	N/A	N/A

<u>9.1</u>	<u>Listing of design criteria applied to the design of portions of the site service water within AP1000</u>	<u>NNS and Not an Interface</u>	<u>N/A</u>	<u>N/A</u>
<u>9.2</u>	<u>Integrated heat load to site service water system</u>	<u>NNS and Not an Interface</u>	<u>N/A</u>	<u>N/A</u>
<u>9.3</u>	<u>Plant cooling water systems parameters</u>	<u>NNS and Not an Interface</u>	<u>N/A</u>	<u>N/A</u>
<u>9.4</u>	<u>Plant makeup water quality limits</u>	<u>NNS</u>	<u>Site specific parameter</u>	<u>9.2.11</u>
<u>9.5</u>	<u>Requirements for location and arrangement of raw and sanitary water systems</u>	<u>NNS</u>	<u>Site implementation</u>	<u>9.2.6.2.1</u> <u>9.2.11</u>
<u>9.6</u>	<u>Ventilation requirements for diesel-generator room</u>	<u>NNS and Not an Interface</u>	<u>N/A</u>	<u>N/A</u>
<u>9.7</u>	<u>Requirements to satisfy fire protection program</u>	<u>AP1000 Interface</u>	<u>Combined License applicant program</u>	<u>9.5.1.8</u>
<u>11.1</u>	<u>Expected release rates of radioactive material from the Liquid Waste System including:</u> <ul style="list-style-type: none"> - <u>Location of release points</u> - <u>Effluent temperature</u> - <u>Effluent flow rate</u> - <u>Size and shape of flow orifices</u> 	<u>Site Interface</u>	<u>Site specific parameters</u>	<u>11.2</u>
<u>11.2</u>	<u>Expected release rates of radioactive materials from the Gaseous Waste System including:</u> <ul style="list-style-type: none"> - <u>Location of release points</u> - <u>Height above grade</u> - <u>Height relative to adjacent buildings</u> - <u>Effluent temperature</u> - <u>Effluent flow rate</u> - <u>Effluent velocity</u> - <u>Size and shape of flow orifices</u> 	<u>Site Interface</u>	<u>Site specific parameters</u>	<u>11.3</u>

11.3	<u>Expected release rates of radioactive material from the Solid Waste System including:</u> - <u>Location of release points</u> - <u>Material types</u> - <u>Material qualities</u> - <u>Size and shape of material containers</u>	<u>Site Interface</u>	<u>Site specific parameters</u>	<u>11.4.6</u>
11.4	<u>Requirements for offsite sampling and monitoring of effluent concentrations</u>	<u>AP1000 Interface</u>	<u>Combined License applicant program</u>	<u>11.5.3</u> <u>11.5.4</u> <u>11.5.7</u>
12.1	<u>Identification of miscellaneous radioactive sources</u>	<u>AP1000 Interface</u>	<u>Combined License applicant program</u>	<u>12.2.1.1.10</u>
13.1	<u>Features that may affect plans for coping with emergencies as specified in 10 CFR 50, Appendix O</u>	<u>AP1000 Interface</u>	<u>Combined License applicant program</u>	<u>13.3</u>
13.2	<u>Physical Security Plan consistent with AP1000 plant</u>	<u>AP1000 Interface</u>	<u>Combined License applicant program</u>	<u>13.6</u>
14.1	<u>Identification of special features to be considered in development of the initial test program</u>	<u>Requirement of AP1000</u>	<u>Combined License applicant program</u>	<u>14</u>
14.2	<u>Maintenance of preoperational test data and inservice inspection baseline data</u>	<u>AP1000 Interface</u>	<u>Combined License applicant program</u>	<u>14</u>
16.1	<u>Administrative requirements associated with reliability information maintenance</u>	<u>AP1000 Interface</u>	<u>Combined License applicant program</u>	<u>16</u>
16.2	<u>Administrative requirements associated with the Technical Specifications</u>	<u>Requirement of AP1000</u>	<u>Combined License applicant implementation</u>	<u>16</u>

<u>16.3</u>	<u>Site and operator related information associated with the Reliability Assurance Program (D-RAP)</u>	<u>Requirement of AP1000</u>	<u>Combined License applicant program</u>	<u>16.2</u>
<u>18.1</u>	<u>Operating staff consistent with Human Factors evaluations</u>	<u>AP1000 Interface</u>	<u>Combined License applicant program</u>	(b)
<u>18.2</u>	<u>Operator training consistent with Human Factors evaluations</u>	<u>AP1000 Interface</u>	<u>Combined License applicant program</u>	(b)
<u>18.3</u>	<u>Operating Procedures consistent with Human factors evaluations</u>	<u>AP1000 Interface</u>	<u>Combined License applicant program</u>	(b)
<u>18.4</u>	<u>Final coordination and integration of human system interface areas within a specific AP1000 consistent with Human Factors evaluations</u>	<u>AP1000 Interface</u>	<u>Combined License applicant program</u>	(b)
<u>18.5</u>	<u>Final coordination and integration of Combined License applicant facilities with those of a specific AP1000 consistent with Human Factors evaluations</u>	<u>AP1000 Interface</u>	<u>Combined License applicant program</u>	(b)

- a) This table supplements DCD Table 1.8-1 by providing additional information in the Section or Subsection column. Section / Subsection designations are FSAR unless otherwise noted.
- b) Westinghouse has determined that this item has been fully addressed by the DCD. Thus, this item is not addressed further by the FSAR.

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

Attachment 3 to RAI 01-008

Revision to FSAR Subsection 8.2.2

COLA Part 2, FSAR Chapter 8, Subsection 8.2.2, will be revised by adding the following paragraph after the third paragraph:

The Lee Nuclear Station grid stability analysis and criteria are summarized below:

- The steady-state load is 78,234 kW and 41,888 kVAR;
- The inrush kVA for motors is 56,712 kVA*;
- The nominal voltage is 1.00 pu for both the 525 kV and 230 kV switchyards;
- The allowable voltage regulation is 0.95 – 1.05 pu (steady state);
- The nominal frequency is 60 Hz;
- The allowable frequency fluctuation is $\pm \frac{1}{2}$ Hz (steady state);
- The maximum frequency decay rate is 5 Hz/sec; and
- The limiting under frequency value for RCP is greater than 57.7 Hz.

* Based on the inrush of a single 10,000 HP feedwater pump, assuming efficiency = 0.95, pf = 0.9, and inrush = 6.5 X FLA, locked rotor power factor=0.15.

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

Attachment 4 to RAI 01-008

Revision to FSAR Subsection 9.2.11.2.1

COLA Part 2, FSAR Chapter 9, Subsection 9.2.11.2.1, will be revised by adding a new third paragraph:

The RWS is designed based on an average total suspended solids (TSS) of 75 mg /l and a maximum TSS of 300 mg/l.

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

Attachment 5 to RAI 01-008

Revision to FSAR Subsection 11.2.3.3

COLA Part 2, FSAR Chapter 11, Subsection 11.2.3.3, will be revised by adding a new paragraph at the end of the subsection:

WLS SUP 11.2-2

The only liquid effluent site interface parameter outside the Westinghouse scope is the release point to the Broad River at the Ninety-Nine Islands Dam.

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

Attachment 6 to RAI 01-008

Revision to FSAR Subsection 11.3.3

COLA Part 2, FSAR Chapter 11, Subsection 11.3, will be revised to add the following subsection:

11.3.3 Radioactive Releases

STD SUP 11.3-2

There are no gaseous effluent site interface parameters outside of the Westinghouse scope.

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

Attachment 7 to RAI 01-008

Revision to FSAR Subsection 3.7.4.2.1

COLA Part 2, FSAR Chapter 3, Subsection 3.7.4.2.1, will be revised to add the following sentence at the end of the existing FSAR text:

The trigger value is initially set at 0.01g.