



Bryan J. Dolan
VP, Nuclear Plant Development

Duke Energy
EC09D/ 526 South Church Street
Charlotte, NC 28201-1006

Mailing Address:
P.O. Box 1006 - EC09D
Charlotte, NC 28201-1006

704-382-0605

bjdolan@duke-energy.com

November 25, 2008

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
Response to Request for Additional Information (RAI No. 1257)
Ltr# WLG2008.11-27

Reference: Letter from Ravindra Joshi (NRC) to Peter Hastings (Duke Energy),
*Request For Additional Information Letter No. 039 Related to SRP Section
15.00.03 for the William States Lee III Units 1 and 2 Combined License
Application, dated October 17, 2008*

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 039,
RAI 15.00.03-001

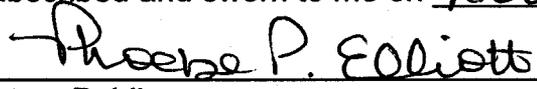
AFFIDAVIT OF BRYAN J. DOLAN

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.



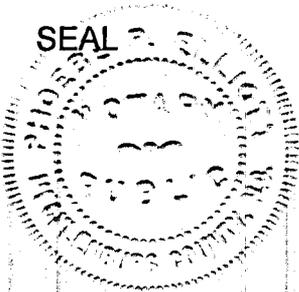
Bryan J. Dolan

Subscribed and sworn to me on November 25, 2008



Notary Public

My commission expires: June 26, 2011



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xc (w/o enclosure):

Michael Johnson, Director, Office of New Reactors
Gary Holahan, Deputy Director, Office of New Reactors
David Matthews, Director, Division of New Reactor Licensing
Scott Flanders, Director, Site and Environmental Reviews
Glenn Tracy, Director, Division of Construction Inspection and Operational Programs
Charles Ader, Director, Division of Safety Systems and Risk Assessment
Michael Mayfield, Director, Division of Engineering
Luis Reyes, Regional Administrator, Region II
Loren Plisco, Deputy Regional Administrator, Region II
Thomas Bergman, Deputy Division Director, DNRL
Stephanie Coffin, Branch Chief, DNRL

xc (w/ enclosure):

Brian Hughes, Senior Project Manager, DNRL
Ravindra Joshi, Project Manager, DNRL

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

RAI Letter No. 039

NRC Technical Review Branch: Siting and Accident Consequence Branch (RSAC)

Reference NRC RAI Number(s): 15.00.03-001

NRC RAI:

By letter dated August 14, 2008, NRC informed the AP1000 vendor that an assumption made in evaluating the LOCA DBA for Revision 16 of the AP1000 DCD was not technically justified. Both FSAR Chapter 15 and Section 6.4 of the subject COL application incorporate by reference the design basis accident analyses in Revision 16 of the AP1000 DCD. Provide an evaluation of the LOCA that does not make use of the rejected assumption. Describe any design or siting changes that are intended to compensate for the rejected assumption.

Duke Energy Response:

Revision 17 of the AP1000 DCD incorporates certain design changes and revised assumptions and no longer credits aerosol impaction in the large break LOCA Design Basis Analysis (DBA). In addition, certain DCD exclusion area boundary (EAB), low population zone (LPZ) and Control Room atmospheric dispersion (χ/Q) values for the LOCA are increased. The Lee Nuclear Station will incorporate these changes to the offsite and onsite dose analysis by reference to the AP1000 DCD in FSAR Chapter 15 and Section 6.4.

A comparison of the Lee Nuclear Station accident EAB and LPZ χ/Q values with the DCD Revision 17 χ/Q values is provided in the following table. The revised DCD values are shown in bold font.

Accident Offsite Atmospheric Dispersion Values (sec/m^3)		
	AP1000 DCD, Revision 17*	WLS FSAR Table 2.3-283
EAB		
0-2 hr	$\leq 5.1 \times 10^{-4}$	3.52×10^{-4}
LPZ		
0 - 8 hr	$\leq 2.2 \times 10^{-4}$	7.16×10^{-5}
8 - 24 hr	$\leq 1.6 \times 10^{-4}$	4.92×10^{-5}
24 - 96 hr	$\leq 1.0 \times 10^{-4}$	2.18×10^{-5}
96 - 720 hr	$\leq 8.0 \times 10^{-5}$	6.80×10^{-6}

*AP1000 DCD Revision 17, Table 15A-5

The only Control Room χ/Q values that changed to accommodate the change in the large break LOCA dose assumption were the Control Room HVAC Intake 2 – 8 hour and 8 – 24 hour χ/Q values for the ground level containment release points. As shown below, the site specific χ/Q values for this release point are bounded by the DCD values.

Control Room HVAC Intake Atmospheric Dispersion Values for Ground Level Containment Release Points		
(sec/m³)		
	AP1000 DCD, Revision 17*	WLS FSAR Table 2.3-285
0 – 2 hours	6.0E-03	2.7E-03
2 – 8 hours	3.6E-03	1.8E-03
8 – 24 hours	1.4E-03	7.0E-04
1 – 4 days	1.8E-03	6.2E-04
4 – 30 days	1.5E-03	4.3E-04

*AP1000 DCD Revision 17, Table 15A-6

Because the Lee Nuclear Station accident EAB, LPZ and Control Room χ/Q values are bounded by the DCD, Revision 17 χ/Q values, the Revision 17 doses given for the large break LOCA DBA are also bounding. No additional design or siting changes are needed to compensate for the rejected analytical credit for aerosol impaction. As indicated below, FSAR Table 2.0-201 and FSAR Table 2.0-202 are revised to incorporate DCD, Revision 17 χ/Q value changes.

The FSAR revisions described above will be incorporated in a future FSAR revision.

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

FSAR Table 2.0-201 (Sheet 5 of 6)

FSAR Table 2.0-202 (Sheet 2 of 3)

Attachments:

- 1) Markup of FSAR Table 2.0-201 (Sheet 5 of 6)
- 2) Markup of FSAR Table 2.0-202 (Sheet 2 of 3)

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

Attachment 1 to RAI 15.00.03-001

Mark-up of FSAR Table 2.0-201

**Comparison of AP1000 DCD Site Parameters and Lee Nuclear Station Units 1
& 2 Site Characteristics**

COLA Part 2, FSAR Chapter 2, Table 2.0-201 is revised as follows:

TABLE 2.0-201 (Sheet 5 of 6)
 COMPARISON OF AP1000 DCD SITE PARAMETERS AND LEE NUCLEAR STATION UNITS 1 & 2
 SITE CHARACTERISTICS

	AP 1000 DCD Site Parameters	WLS Site Characteristic	WLS FSAR Reference	WLS Within Site Parameter
Atmospheric Dispersion Values $\chi/Q^{(g)}$				
Site Boundary (0-2 hr)	$\leq 5.14 \times 10^{-34} \text{ sec/m}^3$	$3.52 \times 10^{-4} \text{ sec/m}^3$	Table 2.3-283 Subsection 2.3.5.2	Yes
Site Boundary (Annual Average)	$\leq 2.0 \times 10^{-5} \text{ sec/m}^3$	$5.7 \times 10^{-6} \text{ sec/m}^3$	Table 2.3-289 (Sheet 1 of 4)	Yes
Low population zone boundary				
0-8 hr	$\leq 2.25 \times 10^{-4} \text{ sec/m}^3$	$7.16 \times 10^{-5} \text{ sec/m}^3$	Table 2.3-283	Yes
8-24 hr	$\leq 1.63 \times 10^{-4} \text{ sec/m}^3$	$4.92 \times 10^{-5} \text{ sec/m}^3$	Table 2.3-283	Yes
24-96 hr	$\leq 1.04 \times 10^{-4} \text{ sec/m}^3$	$2.18 \times 10^{-5} \text{ sec/m}^3$	Table 2.3-283	Yes
96-720 hr	$\leq 8.0 \times 10^{-5} \text{ sec/m}^3$	$6.80 \times 10^{-6} \text{ sec/m}^3$	Table 2.3-283	Yes
Control Room	See Table 2.0-202	See Table 2.0-202	See Table 2.0-202	Yes

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

Attachment 2 to RAI 15.00.03-001

**Mark-up of FSAR Table 2.0-202
Comparison of Control Room Atmospheric Dispersion Factors for Accident
Analysis for AP1000 DCD And Lee Nuclear Station Units 1 & 2**

COLA Part 2, FSAR Chapter 2, Table 2.0-202 is revised as follows:

TABLE 2.0-202 (Sheet 2 of 3)
 COMPARISON OF CONTROL ROOM ATMOSPHERIC
 DISPERSION FACTORS FOR ACCIDENT ANALYSIS FOR
 AP1000 DCD AND LEE NUCLEAR STATION UNITS 1 & 2
 (REFERENCE TABLE 2.3-285)

	χ/Q (s/m ³) at HVAC Intake for the Identified Release Points ^(a)		χ/Q (s/m ³) at Control Room Door for the Identified Release Points ^(b)	
	Ground Level Containment Release Points ^(d)		Ground Level Containment Release Points ^(d)	
	DCD	FSAR	DCD	FSAR
0 - 2 hours	6.0E-03	2.7E-03	1.0E-03	4.9E-04
2 - 8 hours	3.645E-03	1.8E-03	7.5E-04	3.9E-04
8 - 24 hours	1.420E-03	7.0E-04	3.5E-04	1.6E-04
1 - 4 days	1.8E-03	6.2E-04	2.8E-04	1.2E-04
4 - 30 days	1.5E-03	4.3E-04	2.5E-04	8.5E-05

	χ/Q (s/m ³) at HVAC Intake for the Identified Release Points ^(a)		χ/Q (s/m ³) at Control Room Door for the Identified Release Points ^(b)	
	PORV and Safety Valve Releases ^(e)		PORV and Safety Valve Releases ^(e)	
	DCD	FSAR	DCD	FSAR
0 - 2 hours	2.0E-02	1.1E-02	4.0E-03	8.6E-04
2 - 8 hours	1.8E-02	5.3E-03	3.2E-03	6.3E-04
8 - 24 hours	7.0E-03	2.3E-03	1.2E-03	2.9E-04
1 - 4 days	5.0E-03	1.7E-03	1.0E-03	1.9E-04
4 - 30 days	4.5E-03	1.3E-03	8.0E-04	1.1E-04