LeeRAIsPEm Resource

From: Hughes, Brian
Sent: Thursday, April 05, 2012 6:47 AM
To: LeeRAIsPEm Resource
Subject: LEE-RAI-LTR-104 Related to SRP Section 2.03.03 Onsite Met Measurement for the W.S. Lee COLA Units 1 & 2
Attachments: LEE-RAI-LTR-104.docx

Hearing Identifier: Lee_COL_RAI
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Subject: LEE-RAI-LTR-104 Related to SRP Section 2.03.03 Onsite Met Measurement for the W.S. Lee COLA Units 1 & 2
Sent Date: 4/5/2012 6:46:48 AM
Received Date: 4/5/2012 6:46:51 AM
From: Hughes, Brian

Created By: Brian.Hughes@nrc.gov

Recipients:
"LeeRAIsPEm Resource" <LeeRAIsPEm.Resource@nrc.gov>
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April 4, 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. 104 RELATED TO SRP SECTION: 02.03.03 - ONSITE METEOROLOGICAL MEASUREMENTS PROGRAMS 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.

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. 6357

Enclosure:
Request for Additional Information

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OFFICE	RPAC	RPAC/BC	LB4/L-PM
NAME	MMazaika*	JCaverly*	BHughes*
DATE	03/08/12	03/09/12	04/04/12

*Approval captured electronically in the electronic RAI system.

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Request for Additional Information No. 6357

4/4/2012

William States Lee III, Units 1 and 2
Duke Energy Carolinas, LLC
Docket No. 52-018 and 52-019
SRP Section: 02.03.03 - Onsite Meteorological Measurements Programs
Application Section: 2.3.3

QUESTIONS for Hyrological & Meteorlogy Branch (RHMB)

02.03.03-4
The Staff notes the Applicant's response to RAI Question No. 02.03.03-2 for the William States Lee III Nuclear Station (WLS), Units 1&2 Combined License (COL) Final Safety Analysis Report (FSAR) ("RAI Response"), submitted on December 17, 2008 (ML083590244). RAI Question No. 02.03.03-2 requested the Applicant to address the following aspects of the operational phase of the onsite meteorological measurement program:

- the siting of Tower 3, including tower elevation, and the representativeness of the location and resultant data;
- a comparison of the meteorological data between Tower 2 and Tower 3 for data consistency;
- proposed or existing nearby obstructions, including distance from the tower, such as the containment building, cooling towers, trees, nearby terrain, etc. and the potential impact on the accuracy and representativeness of the measurements;
- the instrument maintenance and servicing schedules and the planned data reduction and compilation procedures for the operational meteorological program (including data acquisition, processing, and validation); and
- how the data from the operational program will be used to support emergency preparedness procedures and compiled and archived for later use.

In its RAI Response, the Applicant stated that the data collected from Tower 2 will continue to serve as the licensing basis for the COL application, and that Tower 3 was not erected with the intent of providing data in support of the COL application, that it is not yet fully operational, and that it will not have collected a full year of data until the end of 2009. The Applicant also indicated its expectation to transition from Tower 2 to Tower 3 as the recognized source of site meteorological data following receipt of a combined license and prior to receipt of fuel. However, in the intervening 3-plus years, the Staff notes that COL FSAR Figure 1.1-202 has evolved from generically designating an area to the northwest of the power block as a "meteorological area" to an area now referred to as the "meteorological tower area" (as early as Revision 3 of the COLA), presumably corresponding to the site for Tower 3.

The Applicant took issue with the first three items of RAI Question No. 02.03.03-2 stating that Tower 3 will comply with the guidance in Revision 1 of Regulatory Guide (RG) 1.23 and that it will use the same procedures and maintenance / servicing schedules as Tower 2 that are already described in COL FSAR Subsection 2.3.3.3. The Applicant also stated that the compilation and archiving of meteorological data are addressed in FSAR Subsection 2.3.3.2, and the use of meteorological data in emergency planning is described in Section II.H.8 and Appendix 2 of the Lee Nuclear Station Emergency Plan. This essentially responds to the fourth and fifth bulleted items above. The Staff considers the descriptions in COL FSAR Subsections 2.3.3.2 and 2.3.3.3 to be acceptable.

SRP Section 2.3.3 calls for the Staff to make two findings through its evaluation of the onsite meteorological monitoring program – first, as it relates to determining the acceptability of the site (based on the data measured at the tower site and as input to required atmospheric dispersion modeling analyses), and second, with respect to the monitoring program's adequacy to support facility operations. Regarding the latter, Subsection IV (Evaluation Findings) of SRP Section 2.3.3 states that the Staff should verify that the Applicant has provided sufficient information for it to conclude that "the equipment provided for measurement of meteorological parameters during the course of accidents is sufficient to provide reasonable prediction of atmospheric dispersion of airborne radioactive materials in accordance with Appendix E to 10 CFR Part 50".

Therefore, in order to complete the Staff's evaluation of the adequacy and acceptability of the onsite meteorological monitoring program for the operational phase pursuant to 10 CFR 50.47(b)(8) and (b)(9) via 10 CFR 52.79(a)(21) with respect to emergency planning, Section C.IV.4.2 of RG 1.206 with respect to the treatment of operational programs in COL applications, and 10 CFR 52.79(a)(41) with respect to the Staff's evaluation against relevant SRP acceptance criteria, the Applicant should update COL FSAR Section 2.3.3, as appropriate, including any associated current or new table(s) or figure(s) by either completing the description of the meteorological monitoring program for the operational phase by addressing the issues in Items (a), (b), and (c) below, or by providing a justification as to why this information is not needed.

(a) Consistent with NUREG-0800, SRP Section 2.3.3, Subsection II (Acceptance Criteria), SRP Acceptance Criteria (1)(a) and (1)(b), provide:

- a site map (drawn to scale) that shows True North and the location of Tower 3 with respect to existing man-made structures (if any are to remain in place when the meteorological tower becomes operational) and planned structures for the proposed facility, topographic features, and other features that may influence site meteorological measurements, and

- a corresponding list of distances from Tower 3 to nearby obstructions to air flow by downwind direction sector.

(b) Consistent with NUREG-0800, SRP Section 2.3.3, Subsection II (Acceptance Criteria), SRP Acceptance Criterion (1)(g), either update COL FSAR Table 2.3-281 or provide a separate table listing the performance specifications for the meteorological instrumentation to be installed on Tower 3 and used during the operational phase of the monitoring program.

(c) Consistent with RG 1.23, Regulatory Position C.3, specify:

- the elevation at the base of Tower 3 relative to the finished grade elevations at existing (if applicable) and planned plant structures (e.g., cooling towers, buildings from which accident- or routine radioactive releases to the atmosphere may occur), trees or other vegetation, topographic features, etc.;

- if known, the orientation (relative to True North) and length of the various instrument booms at all tower measurement levels, the type of tower (e.g., lattice, tapered) construction, and longest horizontal dimension (side) of the tower; and

- the characteristics of the surface underlying the meteorological tower.

02.03.03-5
The Staff reviewed the discussion of meteorological data recovery in Subsection 2.3.3.1 (last paragraph) of the William States Lee III Nuclear Station (WLS), Units 1&2 Combined License (COL) Final Safety Analysis Report (FSAR) and the accident- and routine release-related dispersion modeling analyses presented in COL FSAR Sections 2.3.4 and 2.3.5, respectively, and COL FSAR Appendix 2CC.
A composite annual data recovery is presented for wind direction, wind speed, and delta-temperature covering only the one year period of record (POR) (i.e., from December 2005 through November 2006) that was included with the initial application submittal, even though a two-year meteorological data set has subsequently been evaluated in COL FSAR Appendix 2CC and incorporated in Section 2.3.4. Further, the Staff notes that the joint frequency distributions of wind speed and wind direction by atmospheric stability class are normalized to 8,760 hours per year for both the one-year and two-year data sets.
Consistent with NUREG-0800, SRP Section 2.3.3, Subsection III (Review Procedures), Item (1)(d) and Regulatory Guide 1.23, Regulatory Position 5, the Applicant should update COL FSAR Subsection 2.3.3.1 by providing information to demonstrate that 90 percent data recovery was achieved on an annual basis (for each annual cycle of the two-year POR and, because a normalized two-year data set was input to the dispersion modeling, for the composite two-year period):

- for the joint recovery of all variables used to model atmospheric dispersion (i.e., the joint frequency of wind speed, wind direction, and atmospheric stability class); and
- individually for all measured parameters.