

LeeRAIsPEm Resource

From: Hughes, Brian
Sent: Tuesday, July 30, 2013 10:49 AM
To: LeeRAIsPEm Resource
Subject: LEE-RAI-LTR-110 RELATED TO SRP SECTION 2.3.05 Dispersion for routine releases for W.S. Lee Units 1 & 2 COLA
Attachments: LEE-RAI-LTR-110.docx

Hearing Identifier: Lee_COL_RAI
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Sent Date: 7/30/2013 10:49:26 AM
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From: Hughes, Brian

Created By: Brian.Hughes@nrc.gov

Recipients:
"LeeRAIsPEm Resource" <LeeRAIsPEm.Resource@nrc.gov>
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July 30, 2013

Mr. Robert Kitchen
Licensing Manager, Nuclear Plant Development
Duke Energy
526 South Church Street
Charlotte, NC 28201-1006

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 110, RELATED TO SRP SECTION 2.3.05 – LONG TERM ATMOSPHERIC DISPERSION ESTIMATES FOR ROUTINE RELEASES FOR THE WILLIAM STATES LEE III UNITS 1 AND 2 COMBINED LICENSE APPLICATION

Dear Mr. Kitchen:

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.

R. Kitchen

If you have any questions or comments concerning this matter, you may contact me at 301-415-3199.

Sincerely,

/RA/

Thomas Galletta, Project Manager
Licensing Branch 4 - AP1000 Projects
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-018
52-019

Enclosure:
Request for Additional Information

CC: see next page

R. Kitchen

If you have any questions or comments concerning this matter, you may contact me at 301-415-3199.

Sincerely,

/RA/

Brian Hughes, Senior Project Manager
Licensing Branch 4 - AP1000 Projects
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-018
52-019

eRAI Tracking No. 7186

Enclosure:
Request for Additional Information

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*Approval captured electronically in the electronic RAI system.

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Request for Additional Information 110

Issue Date: 07/30/2013

Application Title: William States Lee III, Units 1 and 2 - Dockets 52-018 and 52-019

Operating Company: Duke Energy Carolinas, LLC

Docket No. 52-018 and 52-019

Review Section: 02.03.05 - Long-Term Atmospheric Dispersion Estimates for Routine Releases

Application Section: FSAR Section 2.3.5, FSAR Section 2.1, FSAR Chapter 11

RAI - 7186

QUESTIONS

02.03.05-6

The Staff considered the Applicant's submittals on December 20, 2012 regarding supplemental information related to design changes to the Lee Units 1 and 2 physical locations (ML12361A057) and its Enclosures 1 and 2 (i.e., ML12361A058, ML12361A060, and ML12361A061), on March 13, 2013 of supplemental information regarding environmental review (ML13087A299), and on May 9, 2013 providing, among other things, Revision 7 of the combined license (COL) Final Safety Analysis Report (FSAR) (ML13144A150).

In its review of the latest version of the long-term routine release atmospheric dispersion modeling analyses under COL FSAR Section 2.3.5 and related sections, tables, and figures, the Staff notes that:

- the closest offsite receptor distances are associated with the Exclusion Area Boundary (EAB) as opposed to the designated site boundary;
- COL FSAR Figures 2.1-209A and 2.1-209B illustrate that for at least the northwest clockwise through the east-southeast direction sectors (extending, perhaps, to the southeast sector as well) that the EAB and site boundary are not co-located, as is the case for the other direction sectors, with the EAB located beyond the site boundary, farther away from potential routine gaseous release points;
- COL FSAR Section 2.1.2 indicates that the EAB is the boundary on which limits for the release of radioactive effluents are based, that the "site" is clearly posted with no trespassing signs and "information on actions to be taken by security force personnel in the event of unauthorized persons crossing the EAB during emergency operations" (emphasis added);
- COL FSAR Subsection 2.1.2.1 indicates that certain properties within the EAB that lay beyond the site boundary are currently not owned by Duke Energy, that negotiations have been initiated regarding Duke Energy ownership or control of these properties, and that such ownership or control "will be obtained prior to start of construction"; and that
- COL FSAR Subsection 2.1.2.2 states (among other things), with respect to the control of activities unrelated to plant operation, that there are "no unauthorized commercial activities" and that there are "only limited recreational activities" within the Exclusion area, and that these recreational activities are limited to the Broad River.

NUREG-0800, SRP Section 2.3.5, Subsection II (Acceptance Criteria), SRP Acceptance Criterion (6A) calls for "Maximum annual average X/Q values and D/Q values at or beyond the site boundary and at specific locations of potential receptors of interest" to be used for the assessment of the consequences

of routine airborne radiological releases as described in Section 2.3.5.2 of Regulatory Guide (RG) 1.206.

Section II of Appendix I to 10 CFR Part 50 specifies that an applicant shall provide reasonable assurance that, among other things, the calculated annual total quantity of all radioactive material above background to be released from each light-water-cooled nuclear power reactor to the atmosphere will not result in an estimated annual air dose from gaseous effluents “at any location near ground level which could be occupied by individuals in unrestricted areas” in excess of prescribed limits. Technical Rationale Item (1) under Subsection II (Acceptance Criteria) of SRP Section 2.3.5 essentially reiterates this requirement.

Given the preceding regulatory citation and one of several criteria the Staff uses to determine acceptable conformance to the NRC’s regulations relevant to routine operational releases of radioactive material to the atmosphere, and cross-references to information provided in Revision 7 of the COL FSAR, it appears that the Applicant has not provided sufficient information and analyses to demonstrate that the dose objectives in 10 CFR Part 50, Appendix I, Section II will be met. As a result, the Applicant should:

- (a) As might reasonably be inferred from the referenced statement in COL FSAR Subsection 2.1.2.2, confirm whether there are any authorized commercial activities (emphasis added) within the Exclusion Area and, if so, address where such activities are located relative to the planned routine release points for Unit 1 and Unit 2, and other relevant characteristics (e.g., number of people and duration present over the course of a typical year); and
- (b) Determine the appropriate annual average relative concentration (X/Q) and relative deposition (D/Q) values and applicable dose rates at the site boundary for those direction sectors where the site boundary and EAB are not co-located as illustrated in COL FSAR Figures 2.1-209A and 2.1-209B, including, but not limited to:
 - identifying and justifying the appropriate downwind distances by affected sector;
 - reanalyzing any XOQDOQ routine release dispersion modeling and related dose calculation analyses;
 - revising or preparing any associated current or new tables and figures;
 - updating / clarifying / reconciling any associated discussions under COL FSAR Sections 2.3.5, 2.1, or Chapter 11;
 - providing copies of updated model input and output files; and
 - updating and providing any supplemental information or analyses specific to the environmental review.