

LeeRAIsPEm Resource

From: Hughes, Brian
Sent: Wednesday, July 24, 2013 8:36 AM
To: LeeRAIsPEm Resource
Subject: RAI LETTER NO. 109 RELATED TO SRP SECTION: 11.03 FOR THE WILLIAM STATES
LEE III UNITS 1 AND 2 COL
Attachments: LEE-RAI-LTR-109.doc

Hearing Identifier: Lee_COL_RAI
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Subject: RAI LETTER NO. 109 RELATED TO SRP SECTION: 11.03 FOR THE WILLIAM STATES LEE III UNITS 1 AND 2 COL
Sent Date: 7/24/2013 8:35:42 AM
Received Date: 7/24/2013 8:35:51 AM
From: Hughes, Brian

Created By: Brian.Hughes@nrc.gov

Recipients:
"LeeRAIsPEm Resource" <LeeRAIsPEm.Resource@nrc.gov>
Tracking Status: None

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Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

July 24, 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. 109 RELATED
TO SRP SECTION: 11.03 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 301-415-6582.

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

R.Kitchen

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. 7159

Enclosure:
Request for Additional Information

Distribution:
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NRO-002

OFFICE	RPAC	RPAC/BC	OGC	NWE1/L-PM
NAME	ZGran*	MMcoppin*		BHughes*
DATE	06/18/13	02/15/11	N/A	07/24/13

*Approval captured electronically in the electronic RAI system.

OFFICIAL RECORD COPY

Request for Additional Information 109

Issue Date: 07/24/2013

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: 11.03 - Gaseous Waste Management System

Application Section:

QUESTIONS

11.03-4

10 CFR 50 Appendix I Section II as it relates to dose objectives for the highest organ dose and total body dose calculations.

In FSAR 11.3.3.4.1 the applicant states:

“The maximum dose rate to any organ considering every pathway is calculated to be 8.80 mrem/yr to an infant’s thyroid. The maximum total body dose rate is calculated to be 1.35 mrem /yr to a child. These are below the 10 CFR 50 Appendix I design objectives of 5 mrem/yr to total body and 15 mrem/yr to any organ including skin.”

Staff has found that the 8.8 mrem/yr and 1.35 mrem/yr values stated above are found in FSAR Table 11.3-202, “Individual Doses,” where staff has determined that the applicant is using the totals for ground, plume, inhalation and food pathways to calculate the dose to an infant’s thyroid and the child’s total body.

However, Table 11.3-205, “Calculated Maximum Individual Doses Compared to 10 CFR 50 Appendix I Limits,” shows that the maximum dose to an organ is 8.32 mrem/yr from the ground, inhalation, and food pathways (as it is described in Regulatory Guide 1.109) and Table 11.3-205 also shows that the total body dose of 4.73E-1 mrem/yr is from the immersion doses from noble gases (as it is also described in Regulatory Guide 1.109).

The staff requests the applicant address the following:

1. Provide staff with the reasoning behind using two different sets of dose values to meet the 10 CFR 50 Appendix I dose objectives, or make consistent the two sets of values used in meeting the dose objectives.
2. In making clear the assumptions used to meet the dose objectives, provide updates to Table 11.3-205, “Calculated Maximum Individual Doses Compared to 10 CFR 50 Appendix I Limits.” These updates are to include footnotes that describe the pathways that make up each dose result. For example, Table 11.3-205 uses Regulatory Guide 1.109 to describe the various dose pathways used to calculate the dose result.
3. Updates to Tables 11.3-206, “Maximum Individual Doses from Both Units due to Routine Gaseous Effluents Compared to 10 CFR 20.1301 Limits,” and 11.3-207, “Collective Gaseous Doses Compared to 40 CFR 190 Limits” are also requested to make these consistent with the updates requested by staff for Table 11.3-205.

Please revise the FSAR as appropriate and provide markups.