LeeRAIsPEm Resource

From: Ravindra Joshi
Sent: Monday, September 22, 2008 7:33 AM
To: LeeRAIsPEm Resource
Subject: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 019 RELATED TO SRP SECTION 6.4 FOR THE WILLIAM STATES LEE III UNITS 1 AND 2 COMBINED LICENSE APPLICATION
Attachments: LEE-RAI-LTR-019.doc

Hearing Identifier: Lee_COL_RAI
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Subject: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 019 RELATED TO SRP SECTION 6.4 FOR THE WILLIAM STATES LEE III UNITS 1 AND 2 COMBINED LICENSE APPLICATION
Sent Date: 9/22/2008 7:32:39 AM
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From: Ravindra Joshi

Created By: Ravindra.Joshi@nrc.gov

Recipients:
"LeeRAIsPEm Resource" <LeeRAIsPEm.Resource@nrc.gov>
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September 22, 2008

Mr. Peter S. Hastings, P.E.
Licensing Manager, Nuclear Plant Development
Duke Energy
526 South Church Street
Charlotte, NC 28201-1006

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 019 RELATED TO SRP SECTION 6.4 FOR THE WILLIAM STATES LEE III UNITS 1 AND 2 COMBINED LICENSE APPLICATION

Dear Mr. Hastings:

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 advance 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 301-415-6191 or you may contact Brian Hughes, the lead project manager for the William States Lee III combined license at 301-415-6582.

Sincerely,

/**RA**/

Ravindra G. Joshi, 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

If you have any questions or comments concerning this matter, you may contact me at 301-415-6191 or you may contact Brian Hughes, the lead project manager for the William States Lee III combined license at 301-415-6582.

Sincerely,

/**RA**/

Ravindra G. Joshi, Project Manager
AP1000 Projects Branch 1
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-018
52-019

eRAI Tracking Nos. 907, 908 and 925

Enclosure:
Request for Additional Information

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OFFICE	RSAC/BC	SPCV/BC	NWE1/PM	OGC	NWE1/L-PM
NAME	CCox*	CJackson	RJoshi*	SBrock*	BHughes*
DATE	8/4/08	8/6/08	8/8/08	8/29/08	9/9/08

*Approval captured electronically in the electronic RAI system.

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William States Lee III Nuclear Station Units 1 and 2
Duke Energy Carolinas, LLC
Docket No. 52-018 and 52-019
SRP Section: 6.4 – Control Room Habitability System
Application Section: 6.4

QUESTIONS from Containment & Ventilation Branch 1 (SPCV) and Siting & Accident Consequences Branch (RSAC)

06.04-1
WLS COL 6.4-1, states "…although concentrations at the intake may be elevated, concentrations in the control room remain well below one half of the published values…." It is important to know the actual maximum possible concentration of chlorine the control room operators may be exposed to in order to determine whether toxic gas monitoring is required or not. Therefore, please provide the results of the analysis, including the highest calculated chlorine level that the operators will be exposed to, based on the results of the EXTRAN module of HABIT 1.1 and the CHEM software module. What reference(s) did WLS use for "published values", what value was selected, and what was the basis for selecting this value?

06.04-2
Table 6.4-201 of the Lee FSAR provides the input values used in CHEM analysis of a chlorine event. Table 2.2-209 of the Lee FSAR provides the parameters used in the EXTRAN analysis of a toxic chemical event. Neither Section 6.4.4.3 nor Section 2.2.3 identifies the source of the input values used in the HABIT1.1 analysis, or other assumptions needed to perform a confirmatory analysis of the toxic release event. Identify the source of the input values in Tables 6.4-201 and 2.2-209, as well as the normal VBS flow rate, the control room volume, and the inleakage rate used in these analyses. Also, provide the basis, methodology, inputs, and assumptions for calculating the toxic chemical (chlorine) concentration inside the control room with potential air flow rates.

06.04-3
In Section 2.2.3.1.3.3, of the Lee COL FSAR, it states "…under ideal conditions a pressurized liquid chlorine tractor trailer burst type accident…." State/define what is meant by "ideal conditions".

06.04-4
Section 2.2.3.1.3.3, of the Lee COL FSAR states "Meteorological data was analyzed to determine the worst meteorological conditions at the site. In the case of a released gaseous hazardous material cloud, the worst case condition is essentially a calm night. A wind speed of 2.5 m/s and Class G stability conditions were utilized in the model to represent these worst-case conditions." Explain how 2.5 m/s is the worst wind speed condition (producing the highest chlorine concentration in the control room).

06.04-5
The capability of the control room habitability systems to maintain a suitable environment for prolonged occupancy throughout the toxic gas release, as well as the other events in Chapter 15 is based on the AP1000 assumption of a maximum of 11 operators in the control room. Do plant procedures specify

the maximum number of operators allowed in the control room when the habitability systems are intended to protect the control room occupants?

06.04-6
Table 6.4-201 of the COL, Input Values Used in Analyses of Chlorine, states that the value assumed for inleakage is 0.0023 m^3/sec. Will 0.0023 m^3/sec be confirmed in control room air tightness testing, and how will the effects of wind pressure and temperature differences (including expansion of outside cold air after entering the control room) be accounted for?

06.04-7
Lee's toxic gas analysis, discussed in FSAR Section 6.4.4.2, precludes the need for toxic gas monitoring because chlorine concentrations in the control room remain below "published values". Since no chlorine detection instruments are provided by Lee, other than the operators using their sense of smell, specify what actions (operator response) will occur if chlorine is detected by the control room operators using their sense of smell. In the response, define the human/odor threshold WLS uses for chlorine (value and units), list the bases for this threshold, and indicate if analysis predicts chlorine concentrations to reach the odor threshold in the CR. Explain how this response assures protection for the operator against the worst case accidental chlorine release. Discuss expectations related to Operations personnel baseline and periodic testing requirements that verify an operators capacity to reliably serve as a chlorine detector.

06.04-8
FSAR Table 2.3-285, provides control room atmospheric dispersion factors for a release point called “steam vent.” This term for a release point was not used in the AP1000 DCD, Rev. 16, Table 15A-6, which is the comparable table in the AP1000 DCD for use in design basis radiological consequences analyses. Describe which AP1000 DCD Table 15A-6 design reference release point is equivalent to the Lee FSAR Table 2.3-285 release point termed “Steam Vent,” and which associated design basis accident analyses use those control room atmospheric dispersion factors.