LevyCountyRAIsPEm Resource

From: Habib, Donald
Sent: Wednesday, September 02, 2015 2:13 PM
To: LevyCountyRAIsPEm Resource
Subject: RAI Letter No. 131 Related to SRP Section 12.03-12.04, Radiation Protection Design Features, for the Levy Nuclear Plant Units 1 and 2 COL Application
Attachments: 2015-09-02 RAI Letter 131 for MCR Dose MCB 8219.docx

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Subject: RAI Letter No. 131 Related to SRP Section 12.03-12.04, Radiation Protection Design Features, for the Levy Nuclear Plant Units 1 and 2 COL Application
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From: Habib, Donald

Created By: Donald.Habib@nrc.gov

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UNITED STATES
NUCLEARREGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

September 2, 2015

Mr. Christopher M. Fallon
Vice President, Nuclear Development
Duke Energy Florida, Inc.
P.O. Box 1006 – EC12L
Charlotte, NC 28201-1006

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 131 RELATED TOSTANDARD REVIEW PLAN SECTION12.03-12.04, RADIATION PROTECTION DESIGN FEATURES, FOR THE LEVY NUCLEAR PLANT UNITS 1AND 2 COMBINED LICENSE APPLICATION

Dear Mr. Fallon:

By letter dated July 28, 2008, as supplemented by a letter dated September 12, 2008, Progress Energy Florida, Inc., now Duke Energy Florida, submitted its application to the U. S. Nuclear Regulatory Commission(NRC) for a combined license (COL) for two AP1000 advanced passive pressurized waterreactors pursuant to 10 CFR Part 52. The NRC staff is performing a detailed review of thisapplication 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 thereview. The staff's request for additional information (RAI) is contained in the enclosure to thisletter.

To support the review schedule, you are requested to respond within 30 days of the date of thisletter. If changes are needed to the final safety analysis report, the staff requests that the RAIresponse include the proposed wording changes.

C. Fallon

If you have any questions or comments concerning this matter, you may contact me at 301-415-1035.

Sincerely,

Donald Habib, Project Manager
Licensing Branch 4
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-029
52-030

eRAI Tracking No. 8219

Enclosures:
Requests for Additional Information

C. Fallon

If you have any questions or comments concerning this matter, you may contact me at 301-415-1035.

Sincerely,

Donald Habib, Project Manager
Licensing Branch 4
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-029
52-030

eRAI Tracking Nos. 8219

Enclosures:
Requests for Additional Information

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DATE	8/21/15	8/23/15	9/2/15

*Approval captured electronically in the electronic RAI system.

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Request for Additional Information Letter 131, RAI 8219

Issue Date: 09/02/2015
Application Title: Levy County, Units 1 and 2 - Dockets 52-029 and 52-030
Operating Company: Duke Energy Florida
Review Section: 12.03-12.04 - Radiation Protection Design Features

QUESTIONS

12.03-10

As part of its review of the Levy Nuclear Plant Units 1 and 2 Combined License Application, the NRC staff performed an audit that included Westinghouse document APP-SSAR-GSC-722, "AP1000 – Containment Penetration and Direct Dose Evaluation Outside Containment in Post-Accident Condition," Revision 2. The audit plan describes the purpose and scope of the audit (ADAMS Accession Number ML15231A003). APP-SSAR-GSC-722 states that **[ ]** sealant is applied to the main steam and main feed water piping penetrations through the Shield Building. The patent cited in the **[ ]** (manufacturer's) catalog describes the material as a silicone gel material containing lead and lead oxide. According to the product information sheet in the catalog, the maximum service temperature of **[ ]** is 206ºF, and the radiation resistance (γ) is 1.13 x 10^8Rads.

Because the temperatures of the main steam and feed water are significantly higher than 206ºF and the staff's unfamiliarity with the proposed configuration of the **[ ]** material in the penetrations, the staff requests additional information in order to complete its review with respect to General Design Criterion (GDC) 4 ("Environmental and dynamic effects design bases"). The additional information is related to how the **[ ]** material could affect the surrounding materials (e.g., penetration hardware, piping, Shield Building concrete), either as a result of the presence or degradation of the **[ ]**. Please provide the following information:

a. What temperature profiles do your analyses predict the **[ ]** material to see during normal operation and during postulated accident conditions? Describe the potential effects of these temperatures on the **[ ]** functionality and material integrity. Describe the inspections and controls which will be used to prevent degradation of the **[ ]** functionality and material integrity.
b. What temperature profiles do your analyses predict the shield building concrete to see during normal operation and during postulated accident conditions in the presence of the **[ ]** material?
c. What are the potential effects on other components such as the penetration hardware, insulation, piping, and Shield Building (e.g., concrete), as a result of this material replacing the air gap in the present design?
d. What level of radiation exposure do your analyses predict for the **[ ]** material over its installed lifetime? Describe the potential effects of this radiation on the **[ ]** functionality and material integrity. Describe the inspections and controls which will be used to limit degradation of the **[ ]** functionality and material integrity.

e. If the conditions of exposure of the containment penetrations cause dysfunction or degradation of the **[ ]** (e.g., due to temperature and radiation), and/or interaction with the surrounding environment, what are the potential effects on other components, including the penetration hardware, insulation, piping, and the Shield Building (e.g., concrete). Describe the inspections and controls in place to prevent those effects.

f. Describe the results of your evaluation of potentially detrimental materials that **[ ]** introduces into the penetration area if it degrades (e.g., lead).