VogtlecolRAIsPEm Resource

From: Patel, Chandu
Sent: Monday, August 17, 2015 4:21 PM
To: VogtlecolRAIsPEm Resource
Subject: RAI Letter 7, RAI 7968, Hydrogen Igniters, Vogtle 3 and 4 (52-025, 52-026)
Attachments: VOG-RAI-LTR-07.docx

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Subject: RAI Letter 7, RAI 7968, Hydrogen Igniters, Vogtle 3 and 4 (52-025, 52-026)
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From: Patel, Chandu

Created By: Chandu.Patel@nrc.gov

Recipients:
"VogtlecolRAIsPEm Resource" <VogtlecolRAIsPEm.Resource@nrc.gov>
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August17, 2015

Mr. B. H. Whitley, Director
Regulatory Affairs
SouthernNuclear Operating Company, Inc.
42 Inverness Center Parkway, B022
Birmingham, AL 35242

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 07RELATED TO CONTAINMENT HYDROGEN IGNITER CHANGES FOR THE VOGTLE ELECTRIC GENERATING PLANT UNITS 3 AND 4COMBINED LICENSES (TAC NO. RP9506)

Dear Mr. Whitley:

By letter dated February 6, 2015,(ADAMS Accession NO. ML15037A714),Southern Nuclear Operating Company (SNC) requested an amendment to Combined License Numbers NPF-91 and NPF-92 for Vogtle Electric Generating Plant Units 3 and 4 respectively. The proposed departures consist of changes to plant-specific Tier 1 (and COL Appendix C)tables and Updated Final Safety Analysis Report (UFSAR) tables, text, and figures related to the addition of two hydrogen ignitersabove the In-containment Refueling Storage Tank (IRWST) roof vents to improve hydrogen burn capabilities, incorporating consistencychanges to a plant-specific Tier 1 table to clarify the minimum surface temperature of thehydrogen igniters and igniter location, removal of hydrogen igniters from the Protection andSafety Monitoring System (PMS) from a plant-specific Tier 1 table, and clarification of hydrogenigniter controls in a Tier 1 table.

In the course of reviewing your requestthe NRC staff has identified the need for additional information. The request for additional information (RAI) is enclosed. Please respond to this RAI within 30 days of receipt of this letter.

If you have any questions or comments concerning this matter, you may contact me at 301-415-3025 or chandu.patel@nrc.gov.

Sincerely,

/RA/

ChanduP. Patel, Senior Project Manager
Licensing Branch 4
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-025
52-026
eRAI Tracking No. 7968

Enclosure:
Request for Additional Information 07

CC: see next page

If you have any questions or comments concerning this matter, you may contact me at 301-415-3025 or chandu.patel@nrc.gov.

Sincerely,

/RA/

Chandu P. Patel, Senior Project Manager
Licensing Branch 4
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-025
52-026
eRAI Tracking No. 7968

Enclosure:
Request for Additional Information 06

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DATE	06/18/15	6/24/15	8/17/15

*Approval captured electronically in the electronic RAI system.

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Request for Additional Information 7

Issue Date: 08/17/2015
Application Title: VEGP Units 3 and 4 - LARs
Operating Company: Southern Nuclear Operating Co.
Docket No. 52-025 and 52-026
Review Section: 06.02.05 - Combustible Gas Control in Containment
Application Section:

QUESTIONS

06.02.05-1

10 CFR 52.44(c)(1) requires that a standard design certification applicant must ensure a mixed atmosphere in containment during design-basis and significant beyond design-basis accidents. A mixed atmosphere means that the concentration of combustible gases in any part of the containment is below a level that supports combustion or detonation that could cause loss of containment integrity.

The hydrogen combustion analysis to investigate the potential for deflagration to detonation transition (DDT) for AP1000 certified design was evaluated using cell width methodology, in particular the method of Sherman and Berman. (NUREG/CR-4803, “The possibility of Local Detonations During Degraded Core Accidents in the Bellefonte Nuclear Power Plant”, Jan 1987)

To evaluate the potential for DDT in or near the in containment refueling water storage tank (IRWST) including the addition of two new igniters near the IRWST vents, the analysis was revised, using the cell width methodology, but now based on the OECD State of the Art methodology (“Flame Acceleration and Deflagration-to-Detonation Transition in Nuclear Safety,” State-of the Art Report by Group of Experts, NEA/CSNI/R(2000)7, August 2000)

For the staff to review and evaluate the results of the new analysis, identify and provide for audit:

- - the original combustion analysis (basis for the certified design)
- - the revised analysis (basis for the license amendment request)
- - the validation/verification of the new analysis results

Compare the original and new analysis results, and identify any differences, with respect to local hydrogen concentration, local potential for DDT, credit for inerting, and assumptions related to reliance on hydrogen igniter performance.