

VoglecolRAIsPEm Resource

From: Patel, Chandu
Sent: Monday, June 29, 2015 2:23 PM
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Cc: VoglecolRAIsPEm Resource; Grady, Anne-Marie
Subject: Draft RAI 7968, SRP Section 6.2.5 (LAR 15-003) for Vogtle Units 3 and 4
Attachments: Draft RAI_7968.docx

Hi,

Please see attached draft RAI 7968 for LAR 15-003 regarding Hydrogen Igniter Addition. Please let me know if you need any clarifications. Otherwise, I will issue it as final after July 2, 2015.

Sincerely,

Chandu Patel, Senior Project Manager
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Request for Additional Information (Draft)

Issue Date:

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-XX

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.