PMNorthAnna3COLPEmails Resource

From: Patel, Chandu
Sent: Thursday, December 02, 2010 4:22 PM
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Cc: NorthAnna3COL Resource; Roy, Tarun; Tammara, Seshagiri
Subject: RAI 5210 for North Anna 3 COLA- LTR 50
Attachments: RAI 5210 LTR 50.doc

By letter dated November 26, 2007, Dominion Virginia Power (Dominion) submitted a Combined License Application for North Anna, Unit 3, pursuant to Title 10 of the *Code of Regulations,* Part 52. The U.S. Nuclear Regulatory Commission (NRC) staff is performing a detailed review of this COLA.

The NRC staff has identified that additional information is needed to continue portions of the review and a Request for Additional Information (RAI), is enclosed. To support the review schedule, Dominion is requested to respond within 45 days of the date of this request. If the RAI response involves changes to the application documentation, Dominion is requested to include the associated revised documentation with the response

Sincerely,
Chandu Patel

Hearing Identifier: NorthAnna3_Public_EX
Email Number: 893

Mail Envelope Properties (8C658E9029C91D4D90C6960EF59FC0D61AA689FB12)

Subject: RAI 5210 for North Anna 3 COLA- LTR 50
Sent Date: 12/2/2010 4:21:36 PM
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From: Patel, Chandu

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Files	**Size**	**Date & Time**
MESSAGE	775	12/2/2010 4:21:38 PM
RAI 5210 LTR 50.doc	32250	

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

Letter No. 50
12/2/2010
North Anna, Unit 3
Dominion
Docket No. 52-017
SRP Section: 02.02.03 - Evaluation of Potential Accidents
Application Section: SRP 2.2.3

QUESTIONS for Siting and Accident Conseq Branch (RSAC)

Request for Additional Information No. 5210

02.02.03-8

RG 1.206 provides guidance regarding the information that NRC needs to ensure potential hazards in the site vicinity are identified and evaluated to meet the siting criteria in 10 CFR 100.20 and 10 CFR 100.21. The staff has performed confirmatory calculations which show that carbon dioxide concentrations at the control room air intake could exceed the National Institute for Occupational Safety and Health (NIOSH) immediately dangerous to life or health (IDLH) concentration limit of 40,000 ppm. However, the applicant's calculated concentration is lower than the IDLH concentration (COL FSAR Table 6.4-201). Therefore, the staff requests that the applicant provide the input data it used in ALOHA modeling of this chemical. Please also provide the rationale for using an urban or forest roughness factor selected in ALOHA modeling compared to the open country option used for on-site chemicals stored at Units 1 and 2.

As shown in COL FSAR Table 6.4-201, the applicant showed that calculated distances up to which IDLH concentrations could be exceeded would exceed the distances to the nearest control room air intake for each of the following chemicals: Ammonium Hydroxide(19%), Dimethylamine(40%), Hydrazine(20%), Hydrochloric Acid (30%) for Unit 3, and Ammonium Hydroxide (30%) and Carbon Dioxide for Units 1 and 2. This implies that the concentration of the above chemicals exceed respective IDLH concentrations at the control room air intake. However, the applicant calculated maximum concentrations of these chemicals using ALOHA in Table 6.4-201 are lower than the respective IDLH concentrations inside the control room. Please provide rationale and justification for using ALOHA model instead of HABIT model identified in the guidance provided in RG 1.78. Provide the concentrations of chemicals at the control room air intake along with the concentration in the control room for comparison.

02.02.03-9

RG 1.206 provides guidance regarding the information that NRC needs to ensure that potential hazards in the site vicinity are identified and evaluated in order to meet the siting criteria in 10 CFR 100.20 and 10 CFR 100.21. North Anna 3 USAPWR COL FSAR Section 2.2.3.1.3 (Table 2.2-204) addresses vapor cloud explosions and flammable vapor cloud (delayed ignition) explosions due to on-site chemicals. The staff’s confirmatory calculation for ethanol resulted in minimum safe distance exceeding the distance to nearest SSC for unit 3 of 94 ft. Therefore, the staff requests that the applicant provide the methodology, assumptions and data used in its calculations.