

CCNPP3eRAIPEm Resource

From: Arora, Surinder
Sent: Tuesday, August 20, 2013 8:19 AM
To: Infanger, Paul; UNECC3Project@unistarnuclear.com
Cc: CCNPP3eRAIPEm Resource; Segala, John; Wilson, Anthony; McCoppin, Michael; Tammara, Seshagiri; Clark, Phyllis; McLellan, Judith
Subject: FINAL RAI 397 RPAC 7209
Attachments: FINAL RAI 397 RPAC 7209.docx

Paul,

Attached to this email message is Final RAI No. 397 (eRAI No. 7209) pertaining to section 2.2.3 of the FSAR applicable to the Combined License Application for Calvert Cliffs Nuclear Power Plant, Unit 3. The draft of this RAI was previously discussed with you and it was decided that the NRC can issue the subject RAI as "FINAL". This email, therefore, transmits the "final" version of this RAI.

The schedule that we have established for review of your application assumes that your technically complete response to the RAI question or a schedule for providing the response must be received within 30 days of the final RAI. Please note that if you are providing a response schedule in lieu of the technically complete response, the staff will re-evaluate the completion schedule of the chapter based on your proposed response date.

Additionally, please make sure that your response letter includes a statement whether or not your response contains any sensitive or proprietary information.

Thanks.

SURINDER ARORA, PE
LEAD PROJECT MANAGER,
Calvert Cliffs Unit 3 Project
Office of New Reactors
US Nuclear Regulatory Commission

Phone: 301 415-1421
FAX: 301 415-6406
Email: Surinder.Arora@nrc.gov

Hearing Identifier: CalvertCliffs_Unit3Col_RAI
Email Number: 318

Mail Envelope Properties (B46615B367D1144982B324704E3BCEED01075212453E)

Subject: FINAL RAI 397 RPAC 7209
Sent Date: 8/20/2013 8:19:07 AM
Received Date: 8/20/2013 8:19:08 AM
From: Arora, Surinder

Created By: Surinder.Arora@nrc.gov

Recipients:

"CCNPP3eRAIPEm Resource" <CCNPP3eRAIPEm.Resource@nrc.gov>

Tracking Status: None

"Segala, John" <John.Segala@nrc.gov>

Tracking Status: None

"Wilson, Anthony" <Anthony.Wilson@nrc.gov>

Tracking Status: None

"McCoppin, Michael" <Michael.McCoppin@nrc.gov>

Tracking Status: None

"Tammara, Seshagiri" <Seshagiri.Tammara@nrc.gov>

Tracking Status: None

"Clark, Phyllis" <Phyllis.Clark@nrc.gov>

Tracking Status: None

"McLellan, Judith" <Judith.McLellan@nrc.gov>

Tracking Status: None

"Infanger, Paul" <paul.infanger@unistarnuclear.com>

Tracking Status: None

"UNECC3Project@unistarnuclear.com" <UNECC3Project@unistarnuclear.com>

Tracking Status: None

Post Office: HQCLSTR01.nrc.gov

Files	Size	Date & Time
MESSAGE	1276	8/20/2013 8:19:08 AM
FINAL RAI 397 RPAC 7209.docx		30992

Options

Priority: Standard

Return Notification: No

Reply Requested: No

Sensitivity: Normal

Expiration Date:

Recipients Received:

Request for Additional Information 397 (eRAI 7209)

Issue Date: 08/20/2013

Application Title: Calvert Cliffs Unit 3 - Docket Number 52-016

Operating Company: UniStar

Docket No. 52-016

Review Section: 02.02.03 - Evaluation of Potential Accidents

Application Section: 2.2.3

QUESTIONS

02.02.03-9

UniStar, in a letter dated July 19, 2013 to the U.S. NRC (ADAMS Accession No. ML13204A401), identified two additional hazardous chemicals (acetone and acetylene) transported/stored for the use of Calvert Cliffs Unit 1 and Unit 2 and addressed their impact on the safe operation of CCNPP Unit 3. This UniStar letter also provided the summary of results of their evaluation in FSAR Tables 2.2-8, 2.2-9, and 2.2-10. The applicant included COLA changes to document this evaluation in the mark up of FSAR Rev. 9 Chapter 2. Upon review of the information provided, the staff finds that UniStar has not provided enough details to facilitate the staff's review and confirmatory analysis. The additional information is needed to ensure that the potential hazards in the site vicinity are identified and evaluated to meet the siting criteria in 10 CFR 100.20(b) and 10 CFR 100.21(e). The NRC staff's review and confirmatory analysis covering potential impacts from explosion, vapor cloud explosion and toxic chemical concentration for control room habitability require the details pertaining to the methodology, basis, modeling assumptions, and data that were used for the applicant's analysis.

Therefore, the staff is requesting the following additional information from the applicant:

1. Though UniStar's cover letter (referenced above) states that UniStar identified additional Calvert Cliffs Units 1 & 2 chemical hazard materials transported/stored, which required evaluation for impact on CCNPP Unit 3 chemical hazards analysis, the evaluation analysis seems to address only impacts due to storage and not transportation. Please provide information pertaining to the transportation impact of these chemicals on Unit 3.
2. For acetylene, the applicant's results pertaining to explosion scenario presented in Table 2.2-8 exceeded the nearest distance to CCNPP Unit 3 SSC. The applicant, based on the citation of the probability of catastrophic acetylene tank failure of 1×10^{-6} per year, concluded that the acetylene explosion is not considered a design-basis event, and would not adversely affect the safe operation of Unit 3. The probability is not calculated based on the data, but is based on a documented value in literature. Moreover, in the same document, for a release scenario through 10 mm orifice, the probability is given to be 1×10^{-5} per year. Therefore, the staff requests the applicant to provide details such as methodology, assumptions, justification and rationale in selection of the probability of 1×10^{-6} per year in concluding that the explosion of acetylene would not adversely affect the safe operation of Unit 3.

For acetylene vapor cloud explosion scenario, in determining the distances to UFL, LFL, and vapor cloud explosion presented in FSAR Table 2.2-9; and in determining the concentration in the control room, and distance to reach IDLH concentration presented in FSAR Table 2.2-10, please provide the methodology, basis, assumptions, and the model inputs used for your analysis or provide your calculations for the staff's audit through the electronic reading room.