PMNorthAnna3COLPEmails Resource

From: Klos, John
Sent: Wednesday, May 28, 2014 9:25 AM
To: na3raidommailbox@dom.com
Cc: PMNorthAnna3COLPEmails Resource; Klos, John; Patel, Chandu
Subject: Draft RAIs North Anna 3 Section 2.2.3
Attachments: NorthAnna_ESBWR_RAI.docx

Hi,

Please see attached draft RAIs concerning Section 2.2.3 of the FSAR for North Anna 3 COLA. If you need any clarifications, please let me know before COB June 2, 2014.
Otherwise they will be numbered, and issued as final after that date.

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RG 1.206 provides guidance regarding the information that is needed 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. In North Anna 3 COL FSAR, two 6000 gallon liquid hydrogen storage tanks, and 13000 liquid hydrogen delivery truck were evaluated and addressed for potential explosion impacts by determining minimum safe distance without producing 1 psi overpressure at the nearest safety related structure (SSC).

1. For the 6000 gallon liquid hydrogen tank, the applicant determined minimum safe distance of 495 ft due to source explosion, and of 677 ft due to vapor cloud explosion. The applicant concluded that, as these both determined minimum safe distances are less than the actual distance of 750 ft to the SSC, the storage of liquid hydrogen would not adversely affect the safe operation of Unit 3. However, the staff's confirmatory calculations resulted in minimum safe distances greater than those of the applicant's, and are in excess of the actual distance of 750 ft to SSC. Therefore, the staff requests the applicant to provide the assumptions, input data and calculations, in order to review and confirm the methodology and data used in determining the minimum safe distances.

2. For the 13000 gallon liquid hydrogen delivery truck, the applicant determined minimum safe distance is greater than the actual distance of 750 ft to SSC, and therefore, the applicant concluded that the probability of liquid hydrogen deliver truck is less than 1×10^{-6} per year without providing any details. Therefore, the staff requests the applicant to provide assumptions, input and calculations of the probability determination.

RG 1.206 provides guidance regarding the information that is needed 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. In North Anna 3 COL FSAR, the applicant evaluated 8500 gallon spill from gasoline truck by analyzing and determining the distance of 936 ft to reach the IDLH concentration of 750 ppm. Since this determined distance is less than the actual distance to the control room, the applicant concluded that the toxic concentration of gasoline would not adversely affect the control room habitability. However, the recommended concentration value for gasoline (in the absence of IDLH concentration) is Time Weighted Average(TWA) value of 300 ppm but not 750 ppm. Therefore, staff requests the applicant to clarify why 750 ppm is used for the control room habitability evaluation, instead of the conservative value of 300 ppm?