

PMNorthAnna3COLPEmails Resource

From: Patel, Chandu
Sent: Wednesday, April 02, 2014 3:05 PM
To: 'na3raidommailbox@dom.com' (na3raidommailbox@dom.com)
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Subject: Draft RAI for Section 2.5 for North Anna
Attachments: Draft RAI_7472.docx; Draft RAI_7474.docx; Draft RAI_7473.docx; Draft RAI_7468.docx

Hi,

Please see attached draft RAI for FSAR Sections 2.5 and 3.7.4. Please let me know if you need any clarifications before COB Monday April 7, 2014. Otherwise it will be issued as final after that date.

Sincerely,
Chandu Patel, Lead Project Manager
North Anna COLA

Hearing Identifier: NorthAnna3_Public_EX
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Subject: Draft RAI for Section 2.5 for North Anna
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From: Patel, Chandu

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Files	Size	Date & Time
MESSAGE	302	4/2/2014 3:05:09 PM
Draft RAI_7472.docx	30164	
Draft RAI_7474.docx	29490	
Draft RAI_7473.docx	29804	
Draft RAI_7468.docx	29386	

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Request for Additional Information (Draft)

Issue Date:

Application Title: North Anna, Unit 3 - Docket Number 52-017

Operating Company: Dominion

Docket No. 52-017

Review Section: 02.05.02 - Vibratory Ground Motion

Application Section:

QUESTIONS

Section 2.5.2.5 defines the GMRS as a hypothetical free-field geologic outcrop at an elevation of 224 ft, which corresponds to the deepest excavation at the site. First, the FSAR states that the amplification factors and UHRS corresponding to the GMRS are developed using the RB/FB soil column (Page 2-355). Later on Page 2-373 (Section 2.5.2.6.1.7), the FSAR states that to introduce conservatism, the GMRS is the envelope of the two response spectra (RS) at the RB/FB and CB.

Provide schematic locations of the 5 boreholes with shear-wave velocity measurements relative to the 3 locations chosen for the GMRS and FIRS calculations (RB/FB, CB and FWSC) and the footprints of the Cat.1 structures.

Clarify why the GMRS was calculated as an envelope of the two above mentioned RS instead of the envelope of all three RS for which FIRS are calculated or the three RS from downholes with S-wave velocity measurements (B-901, B-907 and B-909) in the power block area.

In accordance with 10 CFR 100.23 and in conformance with Regulatory Guide (RG) 1.208, please provide further details on the specific profiles used for calculation of the GMRS, not including the soil profile above the GMRS elevation. Include maximum and minimum S-wave velocities in each layer, variations in layer thicknesses (if done) and the basis for choosing the upper and lower band profiles. Provide information on modulus reductions curves and densities used for the analysis.

In order for the staff to be able to use them efficiently in its own confirmatory analyses please provide tables (in digital format, Excel) of site amplification functions used for calculation of the GMRS.

Request for Additional Information (Draft)

Issue Date:

Application Title: North Anna, Unit 3 - Docket Number 52-017

Operating Company: Dominion

Docket No. 52-017

Review Section: 03.07.04 - Seismic Instrumentation

Application Section:

QUESTIONS

Section 3.7.4.4 defines two plant-shutdown OBE spectra: (1) the first one as 1/3 of the CSDRS, and (2) the second one as the site-dependent OBE derived from the SSE spectra at grade. This section states that plant shutdown is required only if there is an exceedance of both OBE response spectra.

ISG-1 states that the OBE should be the lower of (1) and (2) to avoid explicit response or design analysis required for the OBE. Please clarify how Section 3.7.4.4 meets the guidance of ISG-1, or provide justification for an alternate approach.

Request for Additional Information (Draft)

Issue Date:

Application Title: North Anna, Unit 3 - Docket Number 52-017

Operating Company: Dominion

Docket No. 52-017

Review Section: 02.05.02 - Vibratory Ground Motion

Application Section:

QUESTIONS

Section 2.5.2.4.3.1 states that your earthquake recurrence assessment found that for sources hosting the Mineral Virginia earthquake, the updated earthquake catalog resulted in a small and localized increase on the rates per unit area and b-values for cells in the vicinity of the site as compared to the original CEUS SSC values. (p.2-347).

In accordance with 10 CFR 100.23 and in conformance with Regulatory Guide (RG) 1.208, please provide further details on the seismic hazard calculations:

1. Demonstrate quantitatively how much the recurrence rates changed by providing corresponding figures of original CEUS SSC and updated rates.
2. Provide plots of b-values demonstrating how much the b-values changed.
3. Provide comparisons of the total hazard calculated using the original CEUS SSC model and the updated model.

Request for Additional Information (Draft)

Issue Date:

Application Title: North Anna, Unit 3 - Docket Number 52-017

Operating Company: Dominion

Docket No. 52-017

Review Section: 02.05.05 - Stability of Slopes

Application Section:

QUESTIONS

RAI 2.5.5 -4

Subsection 2.5.5.5 of the revised COLA Part 2, FSAR Chapter 2 states that "[e]xisting slopes and embankments that are not impacted by Unit 3 (such as the SWR embankments) do not require analysis for Unit 3 and are not addressed here." Although the SWR embankments were built for Units 1 and 2 and the construction of Unit 3 will not impact those embankments, the reevaluation of the site seismic hazard for Unit 1 and 2 based on the lessons learned from the Fukushima event determined that the updated site-specific GMRS will exceed the original design basis. Because any breach of the SWR embankment might have an impact on the Unit 3 site, in accordance with 10 CFR 100.23 and 10 CFR Part 50, Appendix S, please address the impact of possible failure of the SWR embankment on the stability of slopes at the Unit 3 site.