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July 30, 2012

U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D. C. 20555

Serial No. NA3-12-016R  
Docket No. 52-017  
COL/BCB

**DOMINION VIRGINIA POWER**  
**NORTH ANNA UNIT 3 COMBINED LICENSE APPLICATION**  
**SRP 01.05: RESPONSE TO RAI LETTER 102**

On June 25, 2012, the NRC requested additional information to support the review of certain portions of the North Anna Unit 3 Combined License Application (COLA), which consisted of three questions. The responses to the following Request for Additional Information (RAI) Questions are provided in Enclosures 1 through 3:

- RAI 6529, Question 01.05-1      Potential Impacts of CEUS-SSC Model
- RAI 6529, Question 01.05-2      Reliable Spent Fuel Pool Instrumentation
- RAI 6529, Question 01.05-3      Enhancing Emergency Preparedness

This information will be incorporated into a future submission of the North Anna Unit 3 COLA, as described in the enclosures.

Please contact Regina Borsh at (804) 273-2247 (regina.borsh@dom.com) if you have questions.

Very truly yours,

A handwritten signature in black ink, appearing to read "Eugene S. Grecheck", written in a cursive style.

Eugene S. Grecheck

DO89  
KRO

Enclosures:

1. Response to NRC RAI Letter No. 102, RAI 6529, Question 01.05-1
2. Response to NRC RAI Letter No. 102, RAI 6529, Question 01.05-2
3. Response to NRC RAI Letter No. 102, RAI 6529, Question 01.05-3

Commitments made by this letter:

1. This information will be incorporated into a future submission of the North Anna Unit 3 COLA, as described in the enclosures.

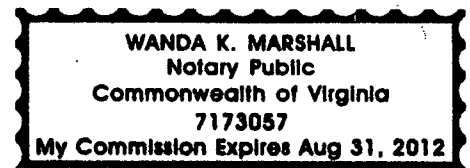
COMMONWEALTH OF VIRGINIA

COUNTY OF HENRICO

The foregoing document was acknowledged before me, in and for the County and Commonwealth aforesaid, today by Eugene S. Grecheck, who is Vice President-Nuclear Development of Virginia Electric and Power Company (Dominion Virginia Power). He has affirmed before me that he is duly authorized to execute and file the foregoing document on behalf of the Company, and that the statements in the document are true to the best of his knowledge and belief.

Acknowledged before me this 30<sup>th</sup> day of July, 2012  
My registration number is 7173057 and my  
Commission expires: August 31, 2012

Wanda K. Marshall  
Notary Public



cc: U. S. Nuclear Regulatory Commission, Region II  
C. P. Patel, NRC  
T. S. Dozier, NRC  
G. J. Kolcum, NRC

**ENCLOSURE 1**

**Response to NRC RAI Letter No. 102**

**RAI No. 6529, Question 01.05-1**

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**RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION**

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**North Anna Unit 3**

**Dominion**

**Docket No. 52-017**

**RAI NO.: 6529 (RAI LETTER NO. 102)**

**SRP SECTION: 01.05 – OTHER REGULATORY CONSIDERATIONS**

**QUESTIONS for USAPWR Projects Branch (NMIP)**

**DATE OF RAI ISSUE: 06/25/2012**

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**QUESTION NO.: 01.05-1**

This request for additional information (RAI) specifically addresses Recommendation 2.1, of the Fukushima Near-Term Task Force recommendations contained in SECY-12-0025 as it pertains to the seismic hazard evaluation. This recommendation specifies the use of NUREG-2115, "Central and Eastern United States Seismic Source Characterization for Nuclear Facilities," (CEUS-SSC) in a site probabilistic seismic hazard analysis (PSHA). Consistent with Recommendation 2.1, as well as the need to consider the latest available information in the (PSHA) for North Anna Unit 3 planned reactor site, the NRC staff requests that Dominion:

- a) Evaluate the potential impacts of the newly released CEUS-SSC model, with potential local and regional refinements as identified in the CEUS-SSC model, on the seismic hazard curves and the site-specific ground motion response spectra (GMRS)/foundation input response spectra (FIRS). For re-calculation of the PSHA, please follow either the cumulative absolute velocity (CAV) filter or minimum magnitude specifications outlined in Attachment 1 to Seismic Enclosure 1 of the March 12, 2012 letter "Request for information pursuant to Title 10 of the *Code of Federal Regulations* 50.54(f) regarding Recommendations 2.1, 2.3, and 9.3, of the near-term task force review of insights from the Fukushima Dai-Ichi accident." (ML12053A340).
- b) In your response, please identify the method you selected from the above choices to perform the evaluation. Modify and submit the site-specific GRMS and FIRS changes, as necessary, given the evaluation performed in part (a) above. Provide the bases supporting your position. In addition, please identify any necessary variance associated with ESP-003.

**Dominion Response**

- a) The recently published CEUS SSC model (NUREG-2115) will be used, considering the latest available information, to recalculate the North Anna Unit 3 hard rock probabilistic seismic hazards analysis (PSHA) and will be reflected in the site-specific ground motion response spectra (GMRS) and the foundation input response spectra (FIRS) for each Seismic Category I and II structure. The plans for these analyses are described in the comprehensive North Anna Unit 3 Seismic Closure Plan (SCP), which was submitted to the NRC in Dominion Letter No. NA3-12-010 (ML12151A302), dated May 29, 2012.
- b) The methodology to be used to recalculate the hard rock PSHA will be consistent with Regulatory Guide (RG) 1.208 and with the minimum magnitude specifications, as outlined in the March 12, 2012 letter from the NRC referenced in the RAI question above.

The North Anna Unit 3 SCP includes a table that identifies the impacts that the SCP activities will have on S-COLA content. As identified in the SCP table, the FSAR descriptions of the PSHA, GMRS, and FIRS will be revised and submitted to the NRC.

In the section of the SCP table relating to S-COLA Part 7, Departures Report, one variance associated with ESP-003 is identified as being affected. Existing variance NAPS ESP VAR 2.0-4, "Vibratory Ground Motion," will be revised to reflect the use of the new CEUS SSC model, the use of RG 1.208, and the deeper embedment depth of the new US-APWR common reactor building complex basemat design. Changes to other existing variances are not expected, but will depend on the results of the ongoing analyses. No new variances have been identified.

**Proposed COLA Revision**

None.

**ENCLOSURE 2**

**Response to NRC RAI Letter No. 102**

**RAI No. 6529, Question 01.05-2**

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**RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION**

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**North Anna Unit 3**

**Dominion**

**Docket No. 52-017**

**RAI NO.: 6529 (RAI LETTER NO. 102)**

**SRP SECTION: 01.05 – OTHER REGULATORY CONSIDERATIONS**

**QUESTIONS for USAPWR Projects Branch (NMIP)**

**DATE OF RAI ISSUE: 06/25/2012**

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**QUESTION NO.: 01.05-2**

By letter dated May 16, 2012, (ML12125A131), the NRC staff informed you that the NRC staff has been directed by the Commission to implement the Fukushima Near-Term Task Force recommendations contained in SECY-12-0025, "Proposed Orders and Requests for Information in Response to Lessons Learned from Japan's March 11, 2011, Great Tohoku Earthquake and Tsunami" dated February 17, 2012. This request for additional information (RAI) specifically addresses Recommendation 7.1, "Reliable Spent Fuel Pool Instrumentation." The NRC staff requests that you address each of the provisions for monitoring key spent fuel pool parameters as described in the March 12, 2012 Order, EA-12-051, "Issuance of Order to Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation," (ADAMS Accession No. ML12054A679), including any proposals for changes to your current application.

**Dominion Response**

NRC Order EA-12-051 describes nine design features required for spent fuel pool instrumentation. As stated in Mitsubishi Heavy Industries' (MHI) response to US-APWR DCD RAI 944-6516, Question 01.05-1, dated July 18, 2012, a technical report that addresses these design features and any resulting changes proposed for the DCD will be submitted to the NRC by February 28, 2013. DCD changes that address the subject design features will be incorporated by reference into the North Anna Unit 3 COLA.

NRC Order EA-12-051 also describes three program requirements (i.e., training, procedures, and testing and calibration) to maintain the availability and reliability of spent fuel pool instrumentation. As stated in MHI's response to US-APWR DCD RAI 944-6516, Question 01.05-1, a new COL item(s) will be added to the DCD that assigns

to the COL applicant the responsibility of addressing these three program requirements. The new COL item(s) will be addressed in the North Anna Unit 3 COLA in a revision of the applicable FSAR sections.

A supplemental response to this RAI question will be submitted within 60 days following the submission of the DCD revision that includes the changes discussed above. The supplemental response will include proposed FSAR revision markups that address the DCD changes and new COL item(s) described above.

**Proposed COLA Revision**

None.



**ENCLOSURE 3**

**Response to NRC RAI Letter No. 102**

**RAI No. 6529, Question 01.05-3**

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**RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION**

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**North Anna Unit 3**

**Dominion**

**Docket No. 52-017**

**RAI NO.: 6529 (RAI LETTER NO. 102)**

**SRP SECTION: 01.05 – OTHER REGULATORY CONSIDERATIONS**

**QUESTIONS for USAPWR Projects Branch (NMIP)**

**DATE OF RAI ISSUE: 06/25/2012**

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**QUESTION NO.: 01.05-3**

By letter dated May 16, 2012, (ML12125A131), the NRC staff informed you that the NRC staff has been directed by the Commission to implement the Fukushima Near-Term Task Force recommendations contained in SECY-12-0025, "Proposed Orders and Requests for Information in Response to Lessons Learned from Japan's March 11, 2011, Great Tohoku Earthquake and Tsunami" dated February 17, 2012. This request for additional information (RAI) specifically addresses Recommendation 9.3, "provisions for enhancing emergency preparedness." The NRC staff requests that you address each of the provisions for enhancing emergency preparedness as described in Enclosure 7 of SECY-12-0025, including any proposals for changes to your current application.

**Dominion Response**

Enclosure 7 of SECY-12-0025 includes 5 enclosures that describe the Requests for Information associated with Fukushima Near-Term Task Force Recommendations 2.1, 2.3, and 9.3. Enclosure 5 (of SECY-12-0025 Enclosure 7) specifically addresses Recommendation 9.3, which requests an assessment of communications systems and staffing needed to respond to an emergency event. A response to each request, as described in Enclosure 5, is provided below.

**Communications**

1. An assessment of the US-APWR standard plant communications systems will be performed by Mitsubishi Heavy Industries (MHI), considering the provisions for enhancing emergency preparedness as described in SECY-12-0025. As stated

in MHI's response to US-APWR DCD RAI 944-6516, Question 01.05-2, dated July 18, 2012, the results of the assessment will be compiled in a technical report and submitted to the NRC by February 28, 2013, along with any changes proposed for the DCD. DCD changes regarding standard plant communications systems will be incorporated by reference into the North Anna Unit 3 COLA.

MHI's response to US-APWR DCD RAI 944-6516, Question 01.05-2, also states that a new COL item(s) will be added to the DCD that assigns to the COL applicant the responsibility of assessing offsite communications considering the provisions for enhancing emergency preparedness, as described in SECY-12-0025.

Dominion will assess site-specific onsite and offsite communications systems based on the guidance and criteria in NEI 12-01, *Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities*, Revision 0. The results of these assessments, including any design change descriptions, will be incorporated into the North Anna Unit 3 COLA to address the new COL item(s) described above.

2. The request to describe interim actions is not applicable to North Anna Unit 3. The communications assessments will be completed and the resulting actions will be implemented before initial fuel loading.
3. As discussed above, the US-APWR standard plant communications assessment will be completed by February 28, 2013. The site-specific onsite and offsite communications assessments will be completed within 90 days following the submission of the DCD revision that includes the changes discussed above.

A supplemental response to this RAI question will be submitted within 60 days following the completion of the site-specific onsite and offsite communications assessments. The supplemental response will include proposed FSAR revision markups that address the DCD changes and new COL item(s) described above.

#### Staffing

1. Dominion will assess onsite and augmented staffing needs to respond to a large scale natural event, as described in SECY-12-0025. The assessments will be conducted based on the guidance and criteria in NEI 12-01, *Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities*, Revision 0.
2. The staffing assessments will be completed and implemented, as described in SECY-12-0025 and in accordance with NEI 12-01, before the emergency planning full-participation exercise, which will be performed within 2 years prior to the scheduled date for initial loading of fuel (Reference: FSAR Table 13.4-201, Item 14). This schedule is based on the milestones for implementing other

operational programs that are necessary to support the staffing assessments. For example, emergency plan implementing procedures are needed to perform a detailed analysis demonstrating that on-shift personnel assigned emergency plan implementation functions are not assigned collateral duties or additional responsibilities that would prevent the timely performance of their assigned functions as specified in the emergency plan. As described in FSAR Table 13.4-201 (Item 14), the emergency plan implementing procedures will not be developed until after COL issuance. Furthermore, the ability to perform initial emergency plan implementing duties is assessed during operations training and emergency response drills and exercises. Time-motion studies may be performed to determine if assigned duties are acceptable. These studies employ direct performance observation in a drill or exercise.

FSAR Table 13.4-201 (Item 14) will be revised to include a new milestone that requires the staffing assessments to be conducted in accordance with NEI 12-01 prior to the full participation exercise milestone.

3. The notification of augmented staff, given degraded communications capabilities, will be addressed in conjunction with the staffing assessments described above.
4. The methods of accessing the site after a widespread large scale natural event will be addressed in conjunction with the staffing assessments described above.
5. The request to describe interim actions is not applicable to North Anna Unit 3. The staffing assessments will be completed and the resulting actions will be implemented before initial fuel loading.
6. The emergency plan will be revised in conjunction with the staffing assessments described above to reflect on-shift or augmented staffing changes.

#### **Proposed COLA Revision**

FSAR Section 13.3.5 and Table 13.4-201 will be revised as shown in the attached markup.

### **Markup of North Anna COLA**

The attached markup represents Dominion's good faith effort to show how the COLA will be revised in a future COLA submittal in response to the subject RAI. However, the same COLA content may be impacted by revisions to the DCD, responses to other COLA RAIs, other COLA changes, plant design changes, editorial or typographical corrections, etc. As a result, the final COLA content that appears in a future submittal may be somewhat different than as presented herein.

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**13.3.5 References**

Add the following reference after the last reference in DCD Subsection 13.3.5.

13.3-201 Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities, NEI 12-01, Revision 0, Nuclear Energy Institute, May 2012.

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**NAPS SUP 13.3(1)**

**13.3.6 ESP Information**

SSAR Section 13.3 is incorporated by reference for historical purposes.

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**13.4 Operational Program Implementation**

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

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**STD COL 13.4(1)**

Replace the sentence in the DCD Section 13.4 with the following.

Table 13.4-201 identifies the required Operational Programs including the associated FSAR Sections and committed Milestones for implementation. Each operational program is "fully described" in the associated FSAR Sections.

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**NAPS COL 13.4(2)**

A leakage monitoring and prevention program, as described in Technical Specification Section 5.5.2, and which includes appropriate methods and acceptance criteria defined in NUREG-0734 Item III.D.1.1, will be developed prior to initial fuel load.

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**13.4.1 Combined License Information**

Replace the content of DCD Subsection 13.4.1 with the following.

**STD COL 13.4(1)**  
**NAPS COL 13.4(1)**

**13.4(1) *Operational Programs as defined in SECY-05-0197 (Ref. 13.4-1)***

*This COL item is addressed in Section 13.4, including Table 13.4-201.*

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**NAPS COL 13.4(2)**

**13.4(2) *Leakage monitoring and prevention program as defined in NUREG-0737 Item III.D.1.1.***

*This COL item is addressed in Section 13.4.*

NAPS COL 5.2(4)  
NAPS COL 5.2(5)  
NAPS COL 13.4(1)  
NAPS COL 13.6(1)

**Table 13.4-201 Operational Programs Required by NRC Regulation and Program Implementation**

Item	Program Title	Program Source (Required by)	FSAR (SRP) Section	Implementation	
				Milestone	Requirement
14.	Emergency Planning	10 CFR 50.47 10 CFR 50, Appendix E	13.3	<u>Staffing assessments conducted in accordance with NEI 12-01 (Ref. 13.3-201) and resulting changes incorporated into Emergency Plan prior to full participation exercise</u>	<u>License Condition</u>
				Full participation exercise conducted within 2 years prior to scheduled date for initial loading of fuel	10 CFR 50, Appendix E.IV.F.2.a(ii)
				Onsite exercise conducted within 1 year prior to the schedule date for initial loading of fuel	10 CFR 50, Appendix E.IV.F.2.a(ii)
				Detailed implementing procedures for emergency planning submitted no less than 180 days prior to scheduled date for initial loading of fuel	10 CFR 50, Appendix E.V.