

Eugene S. Grecheck  
Vice President  
Nuclear Development

**Dominion Energy, Inc. • Dominion Generation**  
Innsbrook Technical Center  
5000 Dominion Boulevard, Glen Allen, VA 23060  
Phone: 804-273-2442, Fax: 804-273-3903  
E-mail: Eugene.Grecheck@dom.com



December 9, 2010

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

Serial No. NA3-10-020  
Docket No. 52-017  
COL/MWH

**DOMINION VIRGINIA POWER**  
**NORTH ANNA UNIT 3**  
**COMBINED LICENSE APPLICATION – REVISED RESPONSE TO RAI QUESTION**  
**08.02-37 (RAI LETTER 029)**

In a letter dated November 26, 2007 (Letter Serial No. NA3-07-001), Dominion Virginia Power (Dominion) submitted the North Anna Unit 3 Combined License Application (COLA) that incorporated the ESBWR DCD by reference. North Anna Unit 3 was designated by the ESBWR DCWG as the R-COLA. In a letter dated June 28, 2010 (Letter Serial No. NA3-10-011), Dominion revised the North Anna COLA to incorporate the US-APWR DCD by reference instead. That action resulted in the North Anna Unit 3 COLA being designated as an S-COLA for the US-APWR technology. In a letter dated October 27, 2010 (Letter Serial No. NA3-10-018), Dominion provided the results of the review of its responses to NRC requests for additional information (RAI) associated with Final Safety Analysis Report (FSAR) Chapter 8 to determine whether the change in technology impacted the applicability of the RAIs to the June 28 COLA revision. That letter committed to provide a revised response to RAI Question 08.02-37.

The revised response to RAI Question 08.02-37 is provided in Enclosure 1 to this letter.

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

Very truly yours,

Eugene S. Grecheck

DOB9  
NPO

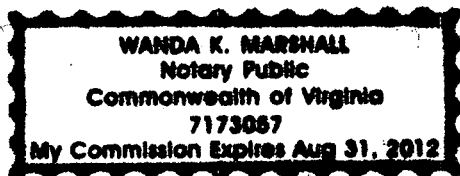
COMMONWEALTH OF VIRGINIA

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 9<sup>th</sup> day of December, 2010  
My registration number is 7173057 and my  
Commission expires: August 31, 2012

Wanda K. Marshall  
Notary Public



Enclosure:

1. Revised Response to RAI Question 08.02-37

Commitments made by this letter: None.

cc: U. S. Nuclear Regulatory Commission, Region II  
C. P. Patel, NRC  
J. B. Jessie, NRC  
T. S. Dozier, NRC  
J. T. Reece, NRC

**Enclosure 1**

**Revised Response to RAI Question 08.02-37**

**NRC RAI Question 08.02-37**

*In response to RAI 8.2-24, you have stated that description of the station ground grid is provided in Section 8, Appendix 8A. However, the staff notes that the North Anna Station ground grid consists of the switchyard ground grid, existing Unit 1 and 2 ground grid and the new Unit 3 ground grid. The staff requests that the applicant discuss the interface and impact of station grounding due to addition of Unit 3 ground grid to the existing station ground consisting of switchyard and Unit 1 and 2 grounding. In addition, please provide a summary description of the existing grounding system at North Anna and the proposed grounding of Unit 3 in order to achieve a single point ground at that site.*

**Dominion Response (Revised)**

[The following response supersedes the response to RAI Question 08.02-37 provided in Dominion letter NA3-08-121R, dated December 1, 2008 {ADAMS ML083390401}, in its entirety.]

The existing North Anna Power Station site includes North Anna Units 1 and 2 and a switchyard, each having an installed ground grid. The addition of Unit 3 will introduce an additional ground grid at the existing site.

The existing switchyard grounding system was overlaid in 2004 with a new ground grid that was tied to the existing switchyard ground grid. The new ground grid was designed and installed in accordance with the Dominion Substation Engineering Manual and IEEE 80, "Guide for Safety in AC Substation Grounding." The new ground grid uses bare 4/0 stranded copper conductors installed a minimum of 18" below grade. The new ground grid was designed to provide proper grounding for the switchyard without consideration of any other grounding system, including the existing ground grid in the switchyard and the ground grid for Units 1 and 2. The new ground overlay is connected to the existing ground grid in the switchyard, which serves to improve the quality of the entire switchyard ground grid.

North Anna Unit 3 will have a ground grid designed in accordance with the codes and standards identified in US-APWR DCD Section 8.3.1.1.11.

The ground grids for the Unit 3 site and the North Anna switchyard will be interconnected. Since each of these ground grids either will provide, or is currently designed to provide adequate grounding for the associated structures and equipment, the interconnection of these ground grids will serve to improve the quality of each of the ground grids. Analysis of the final interconnected configuration is not required as each ground grid individually is adequate to perform its intended function for the structures and equipment served, and the interconnection of the grids serves to increase the individual quality of each.

FSAR Figure 8.3.1-201 depicts the proposed grounding protection system at North Anna.

**Proposed COLA Revision**

None