

## NorthAnnaRAIsPEm Resource

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**From:** Shea, James  
**Sent:** Tuesday, January 12, 2016 5:16 PM  
**To:** na3raidommailbox@dom.com  
**Cc:** NorthAnnaRAIsPEm Resource; Weisman, Robert; Carpentier, Marcia; Xu, Jim; Wang, Weijun; Karas, Rebecca; Jenkins, Ronaldo; Eudy, Michael; Brittner, Donald; Tardiff, Al; Norris, Michael; Keith, Felicia  
**Subject:** North Anna 3 COLA RAI letter 157  
**Attachments:** Dominion RAI Letter 157.pdf

By letter dated November 26, 2007, Dominion Virginia Power (Dominion) submitted a Combined License Application for North Anna, Unit 3, pursuant to Title 10 of the *Code of Regulations*, Part 52. The U.S. Nuclear Regulatory Commission (NRC) staff is performing a detailed review of this COLA.

The NRC staff has identified that additional information is needed to continue portions of the review and a Request for Additional Information (RAI), is enclosed. To support the review schedule, Dominion is requested to respond within 30 days of the date of this request. If the RAI response involves changes to the application documentation, Dominion is requested to include the associated revised documentation with the response.

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U.S. Nuclear Regulatory Commission

Office of New Reactors

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## Request for Additional Information 157

Issue Date: 01/12/2016

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

Operating Company: Dominion

QUESTION:

**Review Section: 01.05** - Other Regulatory Considerations

Application Section: Part 8 Security, Appendix 8C Special Nuclear Material Physical Protection Program

### 01.05-5

By letter dated October 9, 2015, (Agencywide Documents Access and Management System (ADAMS) Accession Number ML15288A072 [package]), Dominion Virginia Power (Dominion) provided a response to a request for additional information (RAI) No. 8074 for the North Anna Unit 3 Combined License Application. In its response to question No. 01.05-04 Part 2, specifically D3 on page 6 of 8 and page 7 of 8, Dominion stated in part:

[The new fuel] has not been irradiated and contains no gaseous or liquid radioactivity. A security threat to the new fuel can cause destruction and dispersion of the solid fuel, but cannot cause gaseous or liquid radioactive releases to the environment....Likewise, there is no need to create EALs [emergency action levels] since no gaseous or liquid radioactive releases can occur from a malevolent act....Therefore, Dominion does not intend to implement the Emergency Planning (EP) organization or supplement the Unit 3 EALs during the time SNM [special nuclear material] is stored in the CAA [Control Access Area].

While Dominion's response addresses the public health and safety aspects of EALs in regard to fresh fuel, RAI 8074, question no. 01.05-04, Part 2, D3 also covered common defense and security aspects of EALs. The order referenced in RAI 8074 (EA-11-272) addressed both these EAL aspects, and stated in part:

[The licensee shall] [s]upplement the Emergency Action Levels (EALs) and their thresholds in response to a range of credible or imminent threats. Declare at least an "Alert" in the event of a site-specific credible threat.

The referenced order was specific to Category-3 Fuel Facilities that by regulation have an Alert as its lowest level of emergency classification. Similarly, nuclear power reactor licensees received an order EA-02-026 requiring them to implement Interim Compensatory Measures (ICMs). This order required in part (summarized):

EALs to ensure that a credible site-specific security threat notification results in a declaration of at least a notification of unusual event (NOUE).

The order required nuclear power reactor licensees to declare an NOUE for a site-specific credible threat because it is the lowest level of emergency classification similar to the referenced Category-3 order.

In order for the NRC staff to determine whether or not the activities pursued by the applicant after licensing will be inimical to the common defense and security, Dominion needs to describe the measures it plans in regard to EALs to address the potential for theft or diversion of SNM in fresh fuel through malevolent means. The staff requests Dominion to explain how North Anna Unit 3 will implement the elements of NRC Order EA-11-272 specific to an emergency declaration or take alternative actions that accomplish the same results in the event of a site-specific credible threat (i.e., NEI 07-01, EAL HU4). Planning documents should describe: 1) how the North Anna 3 site will receive site-specific threat notifications from various sources (e.g., local law enforcement, Federal Bureau of Investigation, U.S. Nuclear Regulatory Commission (NRC)), and 2) the actions Dominion plans to conduct after receiving a

credible threat notification associated with the North Anna 3 site, including notification to State, local, and Federal agencies, including the NRC, if the agency was not source of the specific threat notification. These two elements should be described in the Special Nuclear Material Physical Protection Program plan. Having a system established that responds to a credible threat notification serves to enable the Dominion North Anna 3 staff and local law enforcement to anticipate the potential for an imminent occurrence of a security event and allows for notification to the NRC.

**Review Section: 02.05.04 - Stability of Subsurface Materials and Foundations**

Application Section: FSAR 2.5.4

**02.05.04-26**

Section 3G.10.5.5 "Foundation Stability" of FSAR Revision 9 (Draft (12/10/15), (ADAMS Accession Number ML15364A386), states that "the shear stress capacity of the [monolithic] concrete fill material is sufficient to withstand the seismic demands" for concrete fill under the FWSC foundation. However, if construction joints are used, it states that "shear resistance of the construction joints alone may not be sufficient to resist the seismic load demands on the concrete fill, and bonded construction joints or shear reinforcement may be required at some of the concrete fill construction joints to ensure the overall stability of the FWSC," and associated calculations have indicated the possibility of this behavior. Because the FWSC is a Seismic Category I structure and the stability of the concrete fill beneath it will directly affect the stability of the FWSC, to meet the requirements of 10 CFR 100.23 (d)(4), the applicant is requested to:

1. Clearly specify which code/standard(s)/procedure(s) will be followed in the construction of the in-place monolithic concrete fill;
2. Clarify under what conditions the construction joints may exist and exceed the shear resistance, including (a) how such conditions could occur without mobilizing the surrounding media and whether such condition can potentially be avoided in the field; (b) provide and justify the physical/technical basis for associated conclusion and describe how the assumptions in the supporting calculations correspond to the actual expected conditions, and (c) discuss the impact of such a condition on stability of concrete fill in terms of bearing capacity and settlements (total, differential and lateral);
3. If shear reinforcements are to be used, then specify necessary inspections, tests, analyses, and acceptance criteria to ensure the bonding condition of the concrete fill construction joints in consideration of long term effects in order to meet the required shear resistance capacity.