

PMNorthAnna3COLPEmails Resource

From: Wanda.K.Marshall@dom.com
Sent: Tuesday, September 16, 2008 3:48 PM
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Subject: Response to Request for Additional Information Letter No. 028 (FSAR Chapter 2)
Attachments: 091608 D ltr. Response to Request for Additional Information Letter No. 028.pdf
Importance: High

cc list:

Please see attached.

Wanda K. Marshall

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Options

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September 16, 2008

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

Serial No. NA3-08-106R
Docket No. 52-017
COLWDC

DOMINION VIRGINIA POWER
NORTH ANNA UNIT 3 COMBINED LICENSE APPLICATION
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 028
(FSAR CHAPTER 2)

On August 21, 2008, the NRC requested additional information to support the review of certain portions of the North Anna Unit 3 Combined License Application (COLA). The letter contained three RAIs. The response to the following one RAI is provided in Enclosure 1:

- RAI Question 02.04.02-1 Topography Values and Drainage

The responses to RAI Questions 01-1, Construction Costs, and 01-2, Ownership and Responsibility, contain proprietary information and will be submitted by September 29, 2008.

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

Very truly yours,

Eugene S. Grecheck

Enclosure

1. Response to RAI Letter Number 028, RAI Question 02.04.02-1

Commitments made by this letter:

1. Submit response to RAI Letter Number 028, RAI Questions 01-1 and 01-2 by September 29, 2008.

COMMONWEALTH OF VIRGINIA

COUNTY OF HENRICO

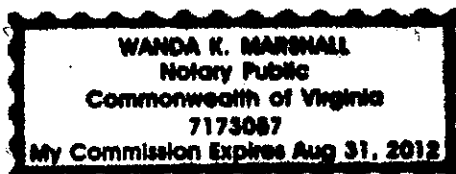
The foregoing document was acknowledged before me, in and for the County and Commonwealth aforesaid, today by Eugene S. Grecheck, who is Vice President-Nuclear Development of Virginia Electric and Power Company (Dominion Virginia Power). He has affirmed before me that he is duly authorized to execute 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 16th day of September, 2008

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
T. A. Kevern, NRC
J. T. Reece, NRC
J. J. Debiec, ODEC
G. A. Zinke, NuStart/Entergy
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R. Kingston, GEH
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ENCLOSURE 1

**Response to NRC RAI Letter Number 28
RAI Question Number 02.04.02-1**

NRC RAI 02.04.02-1

Based on the requirements associated with GDC 2, 10 CFR 52.79, and 10 CFR 100.20(c), the applicant computed the effects of locally-intense precipitation falling on and near the site. Results from these computations are described in FSAR Section 2.4.2. On June 10, 2008, Dominion submitted the HEC-RAS input files that were used to compute the reported water surface elevation values. Based on the staff's review of the FSAR and the HEC-RAS files, staff requests that Dominion explain why a 3-inch safety margin is sufficient to provide reasonable assurance that runoff from the Unit 3 site will not impact the Units 1 and 2 site (FSAR page 2-127). Specifically, the staff requests that Dominion provide:

- a. Assurance that the 'as-built' site topography will match values provided in the HEC-RAS cross-sections (locations shown in FSAR Figure 2.4-203) and that this topography will remain static (or is a conservative assumption) considering the length of the Unit 3 licensing period;*
- b. A description of provisions to prevent placement of obstructions or other channel blockages in key drainage canals throughout the Unit 3 licensing period, and hence justify the selected HEC-RAS model parameters (e.g, contraction/expansion coefficients, channel roughness, and channel geometry values);*
- c. A description of how runoff from each building and parking lot shown in FSAR Figure 2.4-201 have been captured in the HEC-RAS model and hence are correctly represented in the sub-basin drainage boundaries shown in FSAR Figure 2.4-201.*

Dominion Response

The local PMP analysis performed for FSAR Section 2.4.2 incorporated conservative assumptions so that the resulting water levels presented in FSAR Section 2.4.2 are conservatively high. The conservative assumptions in the analysis included the following:

- A high runoff coefficient (0.9) for all pervious areas compared with values between 0.6 and 0.8 typically used for such areas.
- A 25% reduction in calculated time of concentration values for each sub-basin, which increases calculated peak discharges.
- The runoff from sub-basins N1 through N5 will be contained in the north ditch and not overflow the plant access road on the north side of the power block and thus will discharge to the storm water management basin. During a local PMP event, some of this flow will overflow the road and flow off site through the water treatment area bypassing the storm water management basin. By including this flow in the storm water management basin, water levels in the basin are higher than what they would otherwise be, resulting in more conservative upstream water levels.
- Any attenuation of peak discharges resulting from channel or basin storage is ignored by not utilizing channel or basin storage routing in the runoff analysis.

- Culverts, storm drain pipes, and enclosed outlet structures are assumed clogged and non-operational to convey any of the PMP runoff and thus, computed water levels are conservative.
- The estimated peak discharges for each sub-basin are applied to the upstream-most cross-section in each sub-basin rather than distributing the discharges throughout the sub-basin based on contributing area. This approach results in more conservative computed water levels.

Overall, the conservative assumptions described above provide reasonable assurance that the 3-inch safety margin is sufficient to ensure that runoff from the Unit 3 site will not impact the existing units.

The responses to the specific NRC requests are addressed below:

- a. The HEC-RAS cross-sections were developed from the finished grade as shown on Figure 2.4-203. Drawings issued for construction are checked against the finished grade drawings and the local PMP analysis prior to issue. Changes to finished grade topography shown on Figure 2.4-203 are assessed by a revaluation of the PMP flooding in accordance with 10 CFR 50.59 requirements. Likewise, once the Unit 3 combined license is issued, changes to site topography that would result in a change to the cross sections or parameters used in the HEC-RAS model will be assessed in accordance with 10 CFR 50.59 requirements.
- b. A Stormwater Pollution Prevention Plan (SWPPP) and Erosion & Sediment Control Plan are prepared to obtain land disturbance permits associated with stormwater for construction-related activities. The permits/plans require stormwater control structures/conveyances to be maintained during construction. Similarly, the existing Virginia Pollutant Discharge Elimination System (VPDES) SWPPP for North Anna Units 1 and 2 will be modified to include Unit 3 when Unit 3 begins operation. The SWPPPs include provisions to prevent placement of obstructions or blockages in drainage canals.

In addition, the drainage channels shown on Figures 2.4-201 and 2.4-203 include 3-to-1 side slopes and narrow bottom widths which restrict the placement of objects that could obstruct flow paths. Note also that the hydraulic analysis includes the conservative assumptions of blocked culverts, storm drain pipes and enclosed outlets.

- c. Runoff from roofs is divided amongst the sub-basins as shown on Figure 2.4-201. During the PMP event, roof drainage structures, such as drains and pipes, are assumed to be clogged and non-operational. The roof drainage will flow over the edges of the roof and fall directly to the ground where it will follow the finished grading towards the drainage ditches. Finished grade contours were used to delineate sub-basin boundaries, so the flow from roof tops is accounted for on the basis of these boundaries.

No detention or lag is included in the analysis for runoff from the roofs. Roofs are included as impervious areas in the sub-basin. If final roof configurations indicate different runoff patterns than what is shown on Figure 2.4-201, a reanalysis of the PMP flooding will be performed in accordance with 10 CFR 50.59 requirements. It should be noted that runoff from the oil storage tank enclosure area in sub-basin S1 is included in the PMP runoff analysis although, in actuality, the open enclosure around the tanks will collect and hold the PMP runoff. Thus, the discharge from sub-basin S1 is conservative.

As shown on Figure 2.4-201, there are no parking lots in the power block area for North Anna Unit 3. The only parking lot is near the administration building. Runoff from this parking lot discharges to the storm water basin located at the southeast corner of the parking lot. The basin then discharges to existing drainage to the south which eventually discharges to the Waste Heat Treatment Facility south of the Unit 3 site. Thus, this parking lot is not included in the local PMP analysis as it does not contribute to the power block and drainage near the safety-related facilities. However, surfaces, including gravel surfaces, in the power block area, other than grassed slopes in sub-basins S2, N4, and N5, are considered impervious with a runoff coefficient of 1.0.

Proposed COLA Revision

None.