

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

January 23, 2013

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

Serial No.: 13-007
NL&OS/ETS R2
Docket Nos.: 50-338
50-339
License Nos.: NPF-4
NPF-7

VIRGINIA ELECTRIC AND POWER COMPANY (DOMINION)
NORTH ANNA POWER STATION UNITS 1 AND 2
CONFIRMATORY ACTION LETTER
STATUS UPDATE

By letter dated November 7, 2011 (Serial No. 11-520D), Dominion submitted a compilation of long-term actions to be performed in addressing the August 23, 2011 earthquake. These long-term actions were reviewed and confirmed by the NRC in a Confirmatory Action Letter (CAL) dated November 11, 2011. As discussed with the NRC staff after the CAL was issued, Dominion agreed to provide periodic status updates for the long-term actions identified in the CAL. The initial update letter was submitted on May 8, 2012 and provided status of the long-term action commitment list that had actions to be completed by April 30, 2012. The attachment to this letter provides the status of those items that had actions to be completed by December 31, 2012.

As discussed in a telephone call on November 20, 2012 with Ms. M. Khanna of your staff, it was agreed to coordinate the submittal of summary information regarding a leak-before-break (LBB) comparison (Item 7 in the CAL) and the inspection plan for MRP-227 (Item 8 in the CAL) with the submittal of summary information on the remaining actions in the CAL which are to be completed by April 30, 2013. Thus, a summary of the LBB analysis comparison and the MRP-227 inspection plan will be submitted with the CAL closeout letter.

If you have any questions or require additional information, please contact Mr. Thomas Shaub at (804) 273-2763.

Sincerely,



J. A. Price
Vice President – Nuclear Engineering

Attachment:

Status Update for Long-Term Action Commitments

IE36
NRR

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Attachment

Status Update for Long-Term Action Commitments

**Virginia Electric and Power Company
(Dominion)
North Anna Power Station Units 1 and 2**

Long-Term Action Commitment List North Anna Power Station Units 1 and 2		
Item No.	Commitment	Scheduled Completion Date
1	<p>Dominion will perform long-term evaluations of plant structures, systems and components in accordance with RG 1.167/EPRI NP-6695, Section 6.3. Any anomalies identified during the evaluations will be entered into the corrective action system and evaluated for extent of condition.</p> <p>Status: Ongoing.</p> <p><i>The In-structure Response Spectra have been developed from the recorded time histories of the August 23, 2011 earthquake for the site structures housing safety related SSCs and the evaluations of the SSCs are ongoing.</i></p>	April 30, 2013
2	<p>Dominion will develop a plan to characterize the seismic source and any special ground motion effects due to the relative locations of the fault and the site and will update the NRC accordingly.</p> <p>Status: The action item for plan development has been completed. <i>(Ongoing activities to implement the plan will be completed as indicated below.)</i></p> <p><i>The Dominion plan to characterize the seismic source and any special ground motion effects due to the relative locations of the fault and site is presented below.</i></p> <p><i>The earthquake catalog contained within the Central and Eastern US Seismic Source Characterization (CEUS-SSC) model and database has been updated to include the last three years of seismicity data (through mid-December 2011). This update includes the Mw 5.8 earthquake in Louisa County Virginia. The updated earthquake catalog was issued March 8, 2012.</i></p> <p><i>Dominion has obtained data from the USGS and the Virginia Seismologic Observatory at Virginia Tech on the main shock and aftershocks resulting from the earthquake. The aftershocks define a planar feature in the subsurface that appears to be a previously unknown fault.</i></p> <ol style="list-style-type: none"> <i>1. Dominion is conducting a geologic reconnaissance of the relatively linear projection of the aftershock hypocenters to the ground surface and other features of significance that may be identified through review of LiDAR imagery obtained for a defined area of interest and field work. The objective of the LiDAR imagery review and field work is to document the presence or absence of any evidence for surface faulting due to the earthquake. The LiDAR survey review was completed during December 2011 and February 2012, and data evaluation is in progress. The field reconnaissance was guided by using maps that combine geologic data with LiDAR imagery. The field reconnaissance was completed on April 23, 2012. The final report was completed in May 2012.</i> <i>2. Separately, the USGS has indicated plans to perform a geophysical survey for the August 23, 2011 event during the spring of 2012. Dominion will review the data obtained from that survey and incorporate any new findings into our overall evaluation of the event.</i> <i>3. The data collected from LiDAR imagery, field reconnaissance and geologic mapping review did not provide evidence of surface fault expression the August 23, 2011 event might have caused, or longer term, larger scale deformation related to seismic activity. Though readily observable geological deformation evidence was not found during the field reconnaissance, seismic geophysical data obtained from the numerous aftershocks revealed that the August 23, 2011 event likely originated along</i> 	<p>March 31, 2012 (Complete)</p> <p>update</p>

<p align="center">Long-Term Action Commitment List North Anna Power Station Units 1 and 2</p>		
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	<p><i>a previously unmapped fault estimated to be approximately 6.2 miles in length with a N 28° to 30° E strike and 45° to 51° SE dip angle. Additional investigative work by the USGS has not been completed and will be reviewed when it becomes available.</i></p>	
3	<p>Dominion will revise the North Anna Updated Final Safety Analysis Report to document:</p>	
	<p>a. The recorded August 23, 2011 seismic event. Status: Complete <i>Section 2.7 of the UFSAR has been revised to include a description of the August 23, 2011 seismic event.</i></p>	<p>April 30, 2012 (Complete)</p>
	<p>b. A summary of the evaluation and results of the seismic analysis of the recorded event completed per RG 1.167/EPRI NP-6695. Status: Ongoing <i>The summary will be finalized and included in the UFSAR when the work/analysis activities in Item 1 are complete.</i></p>	<p>April 30, 2013</p>
	<p>c. Design controls on seismic margin management (i.e., the Seismic Margin Management Plan). Status: Complete <i>Section 3.7 of the UFSAR has been revised to include a description of the Seismic Margin Management Plan.</i></p>	<p>April 30, 2012 (Complete)</p>
	<p>d. Incorporation of Regulatory Guide (RG) 1.166, "Pre-Earthquake Planning and Immediate Nuclear Power Plant Operator Post-Earthquake Actions," and RG 1.167, "Restart of a Nuclear Power Plant Shut Down by a Seismic Event," into the North Anna licensing basis. Status: Complete <i>Section 3.7.4 of the UFSAR has been revised to include Dominion's commitment to RG 1.166 and RG 1.167.</i></p>	<p><u>December 31, 2012</u> (Complete)</p>
4	<p>Dominion will implement a design change to replace the existing seismic equipment and Main Control Room indication with upgraded and enhanced seismic monitoring instrumentation equipment, which includes installation of a permanent, free field seismic monitor. Permanent, seismically qualified backup power to a new Seismic Monitoring Panel will also be installed including a backup battery power supply. The seismic instrumentation will be installed and maintained in accordance with RG 1.12, Rev 2, <i>Nuclear Power Plant Instrumentation for Earthquakes</i>. The project will also install seismic recording instrumentation at the station Independent Spent Fuel Storage Installation (ISFSI) pad. Status: Complete <i>New seismic instruments and associated controls/indication were installed in the Unit 1 containment and main control room during the spring 2012 refueling outage and made functional. The remainder of the instruments (auxiliary building, ISFSI and free field) were installed and considered functional in November 2012.</i></p>	<p><u>December 31, 2012</u> (Complete)</p>

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5	<p>Dominion will perform a re-evaluation of the plant equipment identified in the IPEEE review with HCLPF capacity <0.3g, which will include an assessment of potential improvements.</p> <p>Status: Ongoing</p> <p><i>The preliminary re-valuation is completed. Review and documentation of the results are being performed.</i></p>	March 31, 2013
6	<p>Dominion will develop a plan with the NSSS vendor consisting of additional evaluations or inspections, as warranted, to assure long term reliability of the reactor internals.</p> <p>Status: Complete</p> <p><i>Dominion Engineering performed a systematic review of the previous evaluations, NRC correspondence, and inspections of the reactor vessel internals (RVI) that were performed following the August 23, 2011 earthquake. Data and rationale for future planned programmatic inspections were considered and included input from Westinghouse, the NSSS vendor. Results of the prior activities were summarized and evaluated regarding their demonstration of RVI integrity. As a result of the evaluation, the RVI remain capable of reliably performing their function in the future. Furthermore, RVI inspections performed during the spring 2012 Unit 1 refueling outage did not identify any seismically induced issues. Therefore, it was concluded that developing a plan consisting of additional inspections and evaluations of the RVI beyond those already required by existing programs is not warranted for assuring the long term reliability of the RVI.</i></p>	February 29, 2012 (Complete)
7	<p>Dominion will perform a comparison of the calculated load from the August 23, 2011 earthquake and the existing leak-before-break (LBB) analysis and submit the results.</p> <p>Status: Ongoing</p> <p><i>A summary of the load comparison will be submitted with the final CAL close-out letter. The comparison shows that the existing licensing basis LBB analysis remains valid.</i></p>	March 31, 2013
8	<p>Dominion will perform inspections at North Anna Power Station in accordance with the latest MRP-227 revision approved by the NRC.</p> <p>Status: Ongoing</p> <p><i>The inspection plan has been finalized and will be submitted with the final CAL close-out letter.</i></p>	In accordance with the MRP-227 inspection plan, which will be provided by March 31, 2013
9	<p>Dominion will re-evaluate the Time-Limiting Aging Analyses (TLAAs) that include seismic inputs to either: 1) quantitatively demonstrate that the TLAAs are still bounding, or 2) re-analyze the TLAAs, based on the August 23, 2011 earthquake.</p> <p>Status: Ongoing</p> <p><i>Seismic loads on equipment and piping subjected to the appropriate in-structure response spectra from the 8/23/11 seismic event have been extracted and tabulated and are being compared to the seismic loads utilized in the applicable</i></p>	March 31, 2013

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	<i>TLAAs. Comparisons indicate that the conclusions of the seismic-induced fatigue related TLAAs of components reviewed for the License Renewal Program remain valid.</i>	
10	<p>Dominion will implement a long term Seismic Margin Management Plan to address the impact of the August 23, 2011 earthquake. Specifically, to ensure adequate seismic margins are maintained for plant SSCs, Dominion will revise the design change process for North Anna Power Station to require explicit evaluation of plant modifications for the effects of the August 23, 2011 earthquake using In-Structure Response Spectra (ISRS) for the event for the Containment, Auxiliary Building, and other buildings containing safety related SSCs developed based on actual time-histories recorded during the event. In support of future plant design changes, the evaluation of plant SSCs will require design verification and code compliance with the stresses, loads, accelerations, and displacements generated from the analysis with the design basis ISRS and the analysis with the ISRS for the August 23, 2011 earthquake, whichever are higher.</p> <p><u>Status: Complete</u> <i>The Nuclear Design Control Program has been revised to incorporate controls that will ensure that seismic margin is maintained at North Anna Power Station for plant modifications performed after the August 23, 2011 earthquake.</i></p>	December 31, 2011 (Complete)
	Dominion will provide 30-days prior written notification to the NRC if it determines the Seismic Margin Management Plan is no longer required based on the implementation of comparable actions as part of the resolution of the NRC's recommendations emanating from the Fukushima Daiichi Task Force and/or Generic Issue (GI)-199.	N/A

The shaded items were previously reported in a letter dated May 8, 2012 (Serial 12-235).