



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

November 11, 2011

CAL No. NRR-2011-002

Mr. David A. Heacock  
President and Chief Nuclear Officer  
Virginia Electric and Power Company  
Innsbrook Technical Center  
5000 Dominion Boulevard  
Glen Allen, VA 23060-6711

SUBJECT: CONFIRMATORY ACTION LETTER REGARDING NORTH ANNA POWER STATION, UNIT NOS. 1 AND 2, LONG-TERM COMMITMENTS TO ADDRESS EXCEEDING DESIGN BASES SEISMIC EVENT (TAC NOS. ME7254 AND ME7255)

Dear Mr. Heacock:

This letter confirms commitments by Virginia Electric Power Company (VEPCO) regarding North Anna Power Station, Unit Nos. 1 and 2 (NAPS), in your letter dated November 7, 2011 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML11314A069). Specifically, your letter listed long-term actions that are being taken or planned to be taken in response to the August 23, 2011, earthquake, which resulted in ground motion exceeding your Operating Basis Earthquake and Safe Shutdown/Design Basis Earthquake.

VEPCO committed to complete the actions listed in the enclosure to this confirmatory action letter (CAL) in order to: (1) address the long-term actions identified in the Electric Power Research Institute's (EPRI's) NP-6695, "Guidelines for Nuclear Plant Response to an Earthquake," as endorsed and modified by U.S. Nuclear Regulatory Commission (NRC) Regulatory Guide 1.167, "Restart of a Nuclear Power Plant Shut Down by a Seismic Event"; (2) address necessary actions identified by the NRC staff for the long-term reliability of NAPS following the August 23, 2011, earthquake; and (3) make revisions to the NAPS Updated Final Safety Analysis Report. Implementation of the actions listed in this CAL must be done in accordance with applicable NRC regulations (e.g., Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.59).

Pursuant to Section 182 of the Atomic Energy Act, 42 U.S.C. 2232, you are required to:

- 1) Notify me immediately if your understanding differs from that set forth above;
- 2) Notify me if for any reason you cannot complete the actions within the specified schedule and advise me in writing of your modified schedule in advance of the change; and
- 3) Notify me in writing when you have completed the actions addressed in this CAL.

Issuance of this CAL does not preclude issuance of an Order formalizing the above commitments or requiring other actions on the part of the licensee; nor does it preclude the NRC

from taking enforcement action for violations of NRC requirements that may have prompted the issuance of this letter. In addition, failure to take the actions addressed in this CAL may result in enforcement action.

This CAL will remain in effect until the NRC has concluded that all actions listed in the enclosure have been satisfactorily completed.

In accordance with Section 2.390 of 10 CFR of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

Sincerely,



Eric J. Leeds, Director  
Office of Nuclear Reactor Regulation

Docket Nos. 50-338, 50-339, 72-16,  
and 72-56  
License Nos. NPF-4, NPF-7, and SNM-2507

Enclosure:  
Long-Term Actions

cc: Listserv

VIRGINIA ELECTRIC POWER COMPANY (VEPCO)

LONG-TERM ACTIONS ASSOCIATED WITH AUGUST 23, 2011, EARTHQUAKE

NORTH ANNA POWER STATION, UNITS 1 AND 2

DOCKET NOS. 50-338, 50-339, 72-16, AND 72-56

<b>Long-Term Actions Commitment List</b>		
<b>Item No.</b>	<b>Commitment</b>	<b>Scheduled Completion Date</b>
1	Dominion will perform long-term evaluations of plant structures, systems and components in accordance with RG [Regulatory Guide] 1.167/EPRI [Electric Power Research Institute] 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.	April 30, 2013
2	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.	March 31, 2012
3	Dominion will revise the North Anna Updated Final Safety Analysis Report to document: The recorded August 23, 2011 seismic event.	April 30, 2012
	A summary of the evaluation and results of the seismic analysis of the recorded event completed per RG 1.167/EPRI NP-6695.	April 30, 2013
	Design controls on seismic margin management (i.e., the Seismic Margin Management Plan).	April 30, 2012
	Incorporation of Regulatory Guide 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.	December 31, 2012
4	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.	December 31, 2012 (subject to receipt of seismic monitoring equipment and outage schedules)
5	Dominion will perform a re-evaluation of the plant equipment identified in the IPEEE [Individual Plant Examination of External Events] review with HCLPF [high confidence of low probability of failure] capacity <0.3g, which will include an assessment of potential improvements.	March 31, 2013

Enclosure

<b>Long-Term Actions Commitment List</b>		
<b>Item No.</b>	<b>Commitment</b>	<b>Scheduled Completion Date</b>
6	Dominion will develop a plan with the NSSS [Nuclear Steam Supply System] vendor consisting of additional evaluations or inspections, as warranted, to assure long term reliability of the reactor internals.	February 29, 2012
7	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.	March 31, 2013
8	Dominion will perform inspections at North Anna Power Station in accordance with the latest [Materials Reliability Program] MRP-227 revision approved by the NRC.	In accordance with the MRP-227 inspection plan, which will be provided by March 31, 2013
9	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.	March 31, 2013
10	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 [structures, systems, and components], 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.	December 31, 2011
	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

from taking enforcement action for violations of NRC requirements that may have prompted the issuance of this letter. In addition, failure to take the actions addressed in this CAL may result in enforcement action.

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Sincerely,

/RA/  
Eric J. Leeds, Director  
Office of Nuclear Reactor Regulation

Docket Nos. 50-338, 50-339, 72-16,  
and 72-56  
License Nos. NPF-4, NPF-7, and SNM-2507

Enclosure:  
Long-Term Actions

cc: Listserv

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DATE	11/10/2011	11/10/2011	11/11/2011	