

October 3, 2005

Mr. David A. Christian  
Sr. Vice President and Chief Nuclear Officer  
Virginia Electric and Power Company  
Innsbrook Technical Center  
5000 Dominion Blvd.  
Glen Allen, Virginia 23060-6711

SUBJECT: NORTH ANNA POWER STATION, UNITS 1 AND 2 - REQUEST FOR  
ADDITIONAL INFORMATION ON REVISED REACTOR VESSEL MATERIAL  
SURVEILLANCE CAPSULE WITHDRAWAL SCHEDULE (TAC NOS. MC6412  
AND MC6413)

Dear Mr. Christian:

By letter dated March 15, 2005, Virginia Electric and Power Company (VEPCO) submitted a proposed reactor vessel material surveillance capsule withdrawal schedule for Nuclear Regulatory Commission (NRC) staff review and approval. The proposed schedules were developed to accommodate the 60-year licensing period for North Anna Power Station, Units 1 and 2, and to satisfy the requirements of the American Society for Testing and Materials document E-185-82, "Standard Practice for Conducting Surveillance Tests for Light-Water Cooled Nuclear Power Reactor Vessels," and NUREG-1801, "Generic Aging Lessons Learned (GALL) Report." The NRC staff has determined that additional information is required to complete its review.

The NRC staff's questions are provided in the Enclosure. VEPCO is requested to provide a response to the request for additional information within 45 days of the date of this letter.

Sincerely,

**/RA/**

Stephen R. Monarque, Project Manager, Section 1  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket Nos. 50-338 and 50-339

Enclosure: As stated

cc w/encl: See next page

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REQUEST FOR ADDITIONAL INFORMATION  
SURVEILLANCE CAPSULE WITHDRAWAL SCHEDULE  
NORTH ANNA, UNITS 1 AND 2  
VIRGINIA ELECTRIC AND POWER COMPANY  
DOCKET NOS. 50-338 AND 50-339

By letter dated March 15, 2005, Virginia Electric and Power Company (VEPCO) submitted a proposed reactor vessel material withdrawal schedule for North Anna Power Station, Units 1 and 2. VEPCO is requested to respond to following questions below.

1. What are the projected peak neutron fluence ( $E > 1.0$  MeV) values for the North Anna, Units 1 and 2 reactor vessels at the end of their current operating licenses (which allow for a total of 60 years of power operation)?
2. Note h in Table A-1 of Appendix A to your letter dated March 15, 2005, for North Anna, Unit 1 states "capsule X may be withdrawn at the [end of life] (EOL) to provide material properties data at a fluence which exceeds that expected to be achieved at the end of the 20-year license renewal period." Clarify the definition of "EOL" as it applies to Note h. Provide the calendar day, effective full-power years (EFPY) value, and the estimated surveillance capsule X neutron fluence ( $E > 1.0$  MeV) value, which are to be understood to be consistent with withdrawal of the capsule at "EOL."
3. Note f in Table A-1 of Appendix A to your letter dated March 15, 2005, for North Anna, Unit 1, states "capsule X may be withdrawn at 44.5 EFPY in lieu of surveillance capsule Z to satisfy American Society for Testing and Materials (ASTM) E-185-82 fourth capsule requirement for the license period."
  - a. What will the estimated neutron fluence ( $E > 1.0$  MeV) value be for surveillance capsule X withdrawn at 44.5 EFPY?
  - b. If surveillance capsule X is withdrawn in lieu of surveillance capsule Z at 44.5 EFPY, what will the estimated fluence be for surveillance capsule Z at 50.3 EFPY?
4. Note f in Table A-2 of Appendix A to your letter dated March 15, 2005, for North Anna, Unit 2, was modified to allow surveillance capsule X to be withdrawn at 42.8 EFPY in lieu of surveillance capsule Z to satisfy the ASTM E-185-82 fourth surveillance capsule withdrawal requirement for the licensed period.
  - a. What will the estimated neutron fluence ( $E > 1.0$  MeV) value be for surveillance capsule X withdrawn at 42.8 EFPY?
  - b. Does this estimated fluence value meet the requirements of ASTM E-185-82 for the fourth surveillance capsule for the 60-year license period?

Enclosure

- c. If surveillance capsule X is withdrawn in lieu of surveillance capsule Z at 42.8 EFPY, what will the estimated fluence be for surveillance capsule Z at 52.3 EFPY?
5. Note g in Table A-2 of Appendix A to your letter dated March 15, 2005, for North Anna, Unit 2 states "withdrawal of surveillance capsule Z at EOL satisfies ASTM E-185-82 requirement for EOL surveillance capsule and provides material properties data at a fluence which exceeds that expected to be achieved at the end of the 20-year license renewal period." Clarify the definition of "EOL" as it applies to Note g. Provide the calendar day, EFPY value, and the estimated surveillance capsule Z neutron fluence ( $E > 1.0$  MeV) value, which are to be understood to be consistent with withdrawal of the capsule at "EOL."
6. Note h in Table A-2 of Appendix A to your letter dated March 15, 2005, for North Anna, Unit 2 states "surveillance capsule X may be withdrawn at EOL to provide material properties data at a fluence which exceeds that expected to be achieved at the end of the 20-year license renewal period." Clarify the definition of "EOL" as it applies to Note h. Provide the calendar day, EFPY value, and the estimated surveillance capsule X neutron fluence ( $E > 1.0$  MeV) value which are to be understood to be consistent with withdrawal of the capsule at "EOL."
7. Since there can be up to four standby surveillance capsules for North Anna, Units 1 and 2, these surveillance capsules have the potential to be removed for storage. However, the NRC staff notes that currently, there is no detailed guidance regarding the treatment of standby surveillance capsules. Therefore, the NRC staff requests the licensee to ensure that any surveillance capsules removed from the North Anna, Units 1 and 2 reactor vessels, without the intent to test them, are maintained in a condition that would permit their future use, if necessary. A note in the surveillance withdrawal schedule in the North Anna, Units 1 and 2 Updated Final Safety Analysis Report stating the following should be included to ensure that standby surveillance capsules are properly maintained:

All surveillance capsules placed in storage must be maintained for future insertion. Any changes to storage requirements must be approved by the NRC, as required by 10 CFR Part 50, Appendix H.

North Anna Power Station, Units 1 & 2

cc:

Mr. C. Lee Lintecum  
County Administrator  
Louisa County  
Post Office Box 160  
Louisa, Virginia 23093

Ms. Lillian M. Cuoco, Esq.  
Senior Counsel  
Dominion Resources Services, Inc.  
Building 475, 5 th floor  
Rope Ferry Road  
Waterford, Connecticut 06385

Dr. W. T. Lough  
Virginia State Corporation Commission  
Division of Energy Regulation  
Post Office Box 1197  
Richmond, Virginia 23218

Old Dominion Electric Cooperative  
4201 Dominion Blvd.  
Glen Allen, Virginia 23060

Mr. Chris L. Funderburk, Director  
Nuclear Licensing & Operations Support  
Dominion Resources Services, Inc.  
Innsbrook Technical Center  
5000 Dominion Blvd.  
Glen Allen, Virginia 23060-6711

Office of the Attorney General  
Commonwealth of Virginia  
900 East Main Street  
Richmond, Virginia 23219

Senior Resident Inspector  
North Anna Power Station  
U. S. Nuclear Regulatory Commission  
1024 Haley Drive  
Mineral, Virginia 23117

Mr. Jack M. Davis  
Site Vice President  
North Anna Power Station  
Virginia Electric and Power Company  
Post Office Box 402  
Mineral, Virginia 23117-0402

Dr. Robert B. Stroube, MD, MPH  
State Health Commissioner  
Office of the Commissioner  
Virginia Department of Health  
Post Office Box 2448  
Richmond, Virginia 23218