August 21, 2008

Mr. Eugene S. Grecheck
Vice President - Nuclear Development
Dominion
Innsbrook Technical Center
5000 Dominion Boulevard
Glen Allen, VA 23060-6711

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 027 (SRP SECTIONS: 12.01 and 12.03-12.04) RELATED TO THE NORTH ANNA UNIT 3 COMBINED LICENSE APPLICATION

Dear Mr. Grecheck:

By letter dated November 26, 2007, Dominion Virginia Power (Dominion) submitted a combined license application for North Anna Unit 3 pursuant to 10 CFR Part 52. The U.S. Nuclear Regulatory Commission (NRC) staff is performing a detailed review of this application.

The staff has identified that additional information is needed to continue portions of the review and the request for additional information (RAI) is contained in the enclosure to this letter. To support the review schedule, Dominion is requested to respond within 45 days of the date of this letter. If the RAI response involves changes to application documentation, Dominion is requested to include the associated revised documentation with the response.

Should you have questions, please contact me at (301) 415-0224 or Thomas.Kevern@nrc.gov.

Sincerely,

/RA/

Thomas A. Kevern, Senior Project Manager
ESBWR/ABWR Projects Branch 1
Division of New Reactor Licensing
Office of New Reactors

Docket No. 52-017

Enclosure:
Request for Additional Information

August 21, 2008

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Vice President - Nuclear Development
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Dear Mr. Grecheck:

By letter dated November 26, 2007, Dominion Virginia Power (Dominion) submitted a combined license application for North Anna Unit 3 pursuant to 10 CFR Part 52. The U.S. Nuclear Regulatory Commission (NRC) staff is performing a detailed review of this application.

The staff has identified that additional information is needed to continue portions of the review and the request for additional information (RAI) is contained in the enclosure to this letter. To support the review schedule, Dominion is requested to respond within 45 days of the date of this letter. If the RAI response involves changes to application documentation, Dominion is requested to include the associated revised documentation with the response.

Should you have questions, please contact me at (301) 415-0224 or Thomas.Kevern@nrc.gov.

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Docket No. 52-017
Enclosure:
Request for Additional Information
Distribution:

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E-RAI Tracking No: 858, 870, 884

ADAMS Accession No.: ML082340072 NRO-002

OFFICE	TR: CHPB	BC: CHPB	PM:DNRL:NGE1	PM:DNRL:NGE1
NAME	CHinson*	TFrye*	AJohnson*	TKevern*
DATE	07/23/08	08/13/08	08/19/08	08/21/08

***Approval captured electronically in the electronic RAI system.**

OFFICIAL RECORD COPY

Request for Additional Information
North Anna, Unit 3
Dominion
Docket Number 52-017
SRP Sections: 12.01 - Assuring that Occupational Radiation Exposures Are As Low as is Reasonably Achievable; 12.03-12.04 - Radiation Protection Design Features
Application: FSAR Sections 12.1.4, 12.4.6.1, 12.3

QUESTIONS

12.01-1

FSAR Section 12.1.4, STD COL 12.1-1-A, STD COL 12.1-2-A, STD COL 12.1-3-A, and STD COL 12.1-4-A includes a commitment to the use of the Radiation Protection Program as an operational program document, based on NEI Template 07-03, which is currently under NRC staff review. This NEI template presents the functional elements of the Radiation Protection Program, which, if met, would demonstrate compliance with Regulatory Guides (RG)1.8, 8.8, and 8.10, and 10 CFR 20.1101. Upon final NRC acceptance of NEI Template 07-03, verify that the applicant will update the commitment of FSAR Section 12.1.4, STD COL 12.1-1-A, STD COL 12.1-2-A, STD COL 12.1-3-A, and STD COL 12.1-4-A to reference the final version of this template (or otherwise update the FSAR to address any differences from this final template version), consistent with RG 1.206 and Section 12.1 of the Standard Review Plan (NUREG-0800). Accordingly, the applicant should update all internal citations to the final NEI Template 07-03 in applicable FSAR subsections and references.

12.01-2

FSAR Section 12.1.4, STD COL 12.1-3-A includes a commitment to the NEI 07-03 template. The NEI 07-03 template describes methods for establishing and implementing procedures to maintain exposures ALARA for dose related activities found at each plant. The template states that COL applicants may modify the template to indicate alternate or additional procedures for maintaining exposures ALARA. Since the Inclined Fuel Transfer Tube (IFTT) system is unique to the ESBWR, procedures to maintain exposures associated with operation of the IFTT system ALARA are not included in the NEI template 07-03. However, the operation of the IFTT system could result in high dose rates in rooms and spaces adjacent to the IFTT during fuel transfer. Describe procedures that will be used to maintain exposures ALARA during operation of the IFTT system. Additionally, provide a description of any alternate or additional procedures not generally described in the NEI 07-03 template that will be used to maintain exposures ALARA.

12.01-3

FSAR STD SUP 12.1-1 includes a commitment to the use of guidance for ensuring that occupational radiation exposures are as low as is reasonably achievable (ALARA), based on draft NEI Template 07-08, which is currently under NRC staff review. This NEI template discusses operational policies and operational considerations to ensure that occupational radiation exposures are ALARA. Upon final staff acceptance of NEI

Template 07-08, please update the commitment of FSAR Section 12.1 and Appendices 12 AA and 12 BB to reference the final version of this template (or otherwise update the FSAR to address any differences from this final template version). Accordingly, the applicant should update all internal citations to the final NEI Template 07-08 in applicable FSAR subsections and references

12.03-12.04-5

FSAR supplemental information (NAPS SUP 12.4-1 (Section 12.4.6.1 Annual Doses to Construction Workers)), states that changes have been made to the locations and readings for TLDs located closest to the Unit 3 site since issuance of the North Anna ESP. Since the applicant used readings from the TLDs located closest to the Unit 3 site to calculate the direct radiation dose component of the annual dose to construction workers, please specify what effect, if any, these changes to the TLD readings and locations have on the estimated direct radiation dose component contribution to construction workers working on Unit 3.

12.03-12.04-6

FSAR supplemental information (NAPS SUP 12.4-1 (Section 12.4.6.1 Annual Doses to Construction Workers)), states that the spent fuel cask types planned for the onsite Independent Spent Fuel Storage Installation (ISFSI) have changed since the issuance of the North Anna ESP. The ESP-ER stated that the expected dose from the ISFSI to the construction workers is 9.8×10^{-2}mSv/yr (9.8 mrem/yr). Please discuss the following:

a. Identify changes made to the types of spent fuel casks that will be stored in the onsite ISFSI
b. Describe how storage of spent fuel in these new cask types will affect the expected annual dose from the ISFSI to the construction workers
c. Describe what effect the storage of spent fuel in these new cask types will have on the expected total annual dose to construction workers.

12.03-12.04-7

FSAR supplemental information (NAPS SUP 12.4-1 (Section 12.4.6.1 Annual Doses to Construction Workers)), states the estimated peak number of construction workers has changed from 5000 (stated in the ESP-ER) to between 2500 and 3500 workers. The applicant concludes that the estimated maximum annual dose of 120 person-rem (specified in the COLA ER) remains a conservative estimate of the maximum annual collective dose to the construction work force. Please discuss the following:

a. Specify any changes to the estimate for the annual dose per construction worker and, if so, verify that the estimated individual worker doses still comply with the dose limits in 10 CFR 20.1301
b. Provide the revised estimate for the maximum annual dose to the construction workforce based on the revised peak estimate of 2500-3500 construction workers.

12.03-12.04-8

Using the guidance provided in RG 4.21, “Minimization of Contamination and Radioactive Waste Generation: Life Cycle Planning” (June 2008), provide a description of all of the operational programs and how the facility's procedures for operations will meet the requirements of 10 CFR 20.1406(a) (i.e., minimize to the extent practicable, contamination of the facility and the environment, facilitate eventual decommissioning, and minimize, to the extent practicable, the generation of radioactive waste). [Note that the NRC issued RAIs to the ESBWR DC applicant requesting general description of how each of the main design objectives contained in RG 4.21 will be met in the generic design and, in addition, to address the objectives which are more operational or procedural in nature by identifying COL items in the appropriate DCD sections for COLA’s referencing the ESBWR design.]

Please revise appropriate sections of the FSAR to include a detailed description of how the COL items contained in the revised DCD will be resolved along with a listing addressing each of these COL items in FSAR Section 12.3. For example, an acceptable description of a groundwater monitoring program should include implementation considerations and a description of the key components of the program such as types and periodicity of routine samples to be taken, threshold activities to be detected, actions to be taken upon detection of leakage into the groundwater, and a description of quality assurance practices to be used to ensure a reasonable assurance of prompt identification of leakage into the groundwater.