January 12, 2009

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. 031 (SRP SECTIONS 12.03-12.04, 13.03, AND 14.02) 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 30 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

January 12, 2009

Mr. Eugene S. Grecheck
Vice President - Nuclear Development
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5000 Dominion Boulevard
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SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 031 (SRP SECTIONS 12.03-12.04, 13.03, AND 14.02) 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 30 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
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DATE	12/08/08	12/11/08	01/12/09	01/12/09	
OFFICE	TR: NSIR/LIB	BC: NSIR/LIB	PM:DNRL:NGE1	PM:DNRL:NGE1	
NAME	ERobinson*	KWilliams*	TKevern*	TKevern*	
DATE	12/10/08	12/10/08	01/12/09	01/12/09	
OFFICE	TR: CHPB	BC: CHPB	PM:DNRL:NGE1	OGC (NLO)	PM:DNRL:NGE1
NAME	CHinson*	TFrye*	TKevern*	SBrock*	TKevern*
DATE	11/25/08	11/26/08	01/12/09	12/01/08	01/12/09

*Approval captured electronically in the electronic RAI system.

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Request for Additional Information
North Anna, Unit 3
Dominion
Docket Number 52-017
SRP Sections: 12.03-12.04; 13.03; and, 14.02
Application: FSAR Sections: 12.3; 13.3; and, 14.2.9.1.3

QUESTIONS

12.03-12.04-10

RAI 12.03/04-3 addressed the ESBWR Zinc Injection System. The staff requests additional information as follows:

a. In response to RAI 12.03/04-3, the applicant states that North Anna 3 will not utilize ESBWR Zinc Injection System because GEH has reduced the amount of cobalt in contaminated applications throughout the plant and reduced the use of stainless steel in the coolant system. The applicant also states that reduced dose rates have been achieved at Japan's ABWR Kashiwazaki-Kariwa without the use of zinc injection by using low cobalt materials. Section 12.3.1 of the ESBWR DCD provides a description of some of the material considerations to minimize the cobalt content for primary coolant piping and other components in contact with the primary coolant in the ESBWR design. Provide your basis for selecting the listed components as candidates for cobalt minimization/elimination.

b. A majority of the operating BWRs in the US utilize zinc injection as a means to reduce dose rates resulting from cobalt plateout in contaminated applications throughout the plant. In light of this industry experience regarding the positive effects of using zinc injection to reduce cobalt plateout levels, provide the basis for your determination that the cobalt reduction measures described in Section 12.3.1 of the ESBWR DCD are adequate to reduce the cobalt levels in the reactor coolant to sufficiently low levels that use of a Zinc Injection System would not be necessary.

c. Section 1.2.2.12.15 of the ESBWR DCD states that the "ESBWR includes the capability to connect a Zinc Injection System, but the system itself is not part of the ESBWR Standard Plant design." State whether the applicant will retain the option of utilizing a Zinc Injection System in the event that the cobalt levels in the contaminated applications throughout the plant reach such levels that the use of a Zinc Injection System would prove to be beneficial in reducing such cobalt levels in the plant.

12.03-12.04-11

In response to RAI 12.03/04-3, the applicant revised FSAR Appendix 12BB (specifically the bracketed "Note" portion of Section 12.5.4.4 (Access Controls) of NEI 07-03) to address some access controls that will be implemented to restrict personnel access to Very High Radiation Areas (VHRA) at North Anna 3, in accordance with the requirements of 10 CFR 20.1602. The applicant's response did not address all of the information specified in this bracketed section of NEI 07-03. As specified in this section of NEI 07-03, the applicant should provide the following additional information in FSAR Appendix 12BB:

a. A listing of all areas in the plant designated as Very High Radiation Areas with reference to its location on plant layout diagrams in FSAR Sections 12.3-4.

b. The purpose why each of these areas would need to be accessed and the anticipated access frequency for each of these areas.

c. Detailed drawings for each Very High Radiation Area that indicate physical barriers that completely enclose the respective area in a manner that is sufficient to thwart undetected entry into the area. Alternately, if such detailed drawings are not available, describe how such barriers will be verified in the final design of the facility.

13.03-3

The initial Emergency Action Levels (EALs), which are required by 10 CFR 50.47(b)(4) and Section IV.B of Appendix E to 10 CFR Part 50, must be approved by the NRC. Recent combined license (COL) applications have been submitted that do not fully address certain aspects of the required EAL scheme. This is because various equipment set points and other information cannot be determined until the as-built information is available; e.g., head corrections, radiation shine, final technical specifications, and equipment calculations and tolerances. The NRC has been evaluating possible options to ensure applicants address the regulations and provides the following:

Option 1 – Submit an entire EAL scheme, which contains all site-specific information, including set points. Until this information is finalized, EALs would remain an open item.

Option 2 – Submit emergency plan Section D, "Emergency Classification System," which addresses the four critical elements of an EAL scheme (listed below). The NRC will determine the acceptability of the EAL scheme.

- *Critical Element 1* – Applicant proposes an overview of its emergency action level scheme including defining the four emergency classification levels, (i.e., Notification of Unusual Event, Alert, Site Area Emergency, and General Emergency), as stated in NEI 99-01, Revision 5, with a general list of licensee actions at each emergency classification level.

- *Critical Element 2* – Applicant proposes to develop the remainder of its EAL scheme by using a specified NRC endorsed guidance document. In the development of its EALs, the proposed EALs should be developed with few or no deviations or differences, other than those attributable to the specific reactor design. NEI 07-01, if endorsed, will be applicable to the AP1000 and ESBWR (passive) reactor designs, and NEI 99-01 is applicable to all (non-passive) reactor designs. If applicable, EALs related to digital instrumentation and control must be included. The NRC must find in the Safety Evaluation Report that this approach is acceptable for each site.

- *Critical Element 3* – Applicant proposes a License Condition (LC) that the applicant will create a fully developed set of EALs in accordance with the specified guidance document. These fully developed EALs must be submitted to the NRC for confirmation at least 180 days prior to fuel load.

- *Critical Element 4* – The EALs must be kept in a document controlled by 10 CFR 50.54(q), such as the emergency plan; or a lower tier document, such as the Emergency Plan Implementing Procedures.

Please review the two options provided above, identify which option will be chosen, and provide the detailed EAL information in support of the chosen option. Please inform the NRC which option you intend to pursue within two weeks of receipt of this RAI.

14.02-9

Dominion's response to RAI 14.02-5 states that site-specific personnel monitors and radiation survey instruments do not meet the RG 1.68 criteria for plant features to be tested in the Initial Test Program (ITP). Therefore, the applicant states that these monitors will not be included in the ITP but, instead, will be tested in accordance with the Radiation Protection Program (as delineated in NEI template 07-03). Accordingly, the applicant proposed to delete Section 14.2.9.1.3 , "Personnel Monitors and Radiation Survey Instruments Preoperational Test" from the North Anna FSAR and take exception to Appendix A, Item 1.k(2) , "personnel monitors and radiation survey instruments" of RG 1.68.

In complying with COL Item 12.5-2-A (Compliance with Paragraph 50.34(f)(2)(xxvii) of 10 CFR and NUREG-0737 Item III.D.3.3), the applicant commits to having a portable monitoring system capable of sampling and analyzing for radioiodine in areas of the plant during and following an accident. Since this system is used to ensure that specified design conditions of the facility are not exceeded during any condition of normal operation, including anticipated operational occurrences, or as a result of postulated accident conditions, provide your reasoning for not including this system in the ITP.

14.02-10

Dominion's response to RAI 14.02-6 states that site-specific laboratory equipment used to analyze or measure radiation levels and radioactivity concentrations do not meet the RG 1.68 criteria for plant features to be tested in the Initial Test Program (ITP). Site-specific laboratory equipment can be used to analyze post-accident primary reactor coolant samples, as well as liquid and gaseous waste samples, and airborne contaminants. Whole-body counters are used to detect and quantify personnel intakes of radioactivity. Some of these systems are used to ensure that specified design conditions of the facility are not exceeded during any condition of normal operation, including anticipated operational occurrences, or as a result of postulated accident conditions. Provide your reasoning for not including these systems in the ITP.