June 23, 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. 012 (SRP SECTIONS 05.02.05, 10.04.05, 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 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,

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

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/RA/

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Docket No. 52-017
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NAME	DReddy*	JSegalla*	MEudy*	TKevern for RWeisman *	TKevern *
DATE	05/20/2008	05/29/2008	06/11/2008	06/23/2008	06/23/2008
OFFICE	TR:SBPB	BC:SBPB	PM:DNRL:NGE1	OGC	PM:DNRL:NGE1
NAME	CLi*	PWilson*	CPatel*	TKevern for RWeisman *	TKevern *
DATE	06/16/2008	06/16/2008	06/16/2008	06/17/2008	06/23/2008

*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: 05.02.05 - Reactor Coolant Pressure Boundary Leakage Detection; 10.04.05 - Circulating Water System; 14.02 - Initial Plant Test Program - Design Certification and New License Applicants
Application FSAR Sections: 5.2.5, 10.4.5, and 14.2

QUESTIONS

05.02.05-1

FSAR Section 5.2.5.9, "Leak Detection Monitoring," identifies STD COL 5.2.2-H as follows: "Operators are provided with procedures to determining the identified and unidentified leakage in order to establish whether the leakage rates are within the limits in the Technical Specifications. These procedures assist operators in monitoring, recording, trending, determining the source of leakage, and evaluating potential corrective action. These procedures address the conversion of different parameter indications for identified and unidentified leakage (e.g, sump pump run time, sump level, condensate transfer rate) into common leak rate equivalent (e.g., volumetric or mass flow) and leak rate rate-of-change values. A description of the plant procedures program and implementation milestones are provided in Section 13.5." Staff review identified that this FSAR text differs from the DCD text of STD COL 5.2.2-H (DCD Rev 4 Section 5.2.6) by not referencing Section 5.2.5.9 and by inclusion of reference to "Technical Specifications" and, therefore, appears to inappropriately limit the intended scope of the procedures. In addition, inclusion in FSAR text of the examples "sump pump run time, sump level, and condensate transfer rate" without inclusion of "radioactivity" (DCD Section 5.2.5.9), also appears to inappropriately limit the scope of the procedures.

Please provide the following:

(a) Revise the FSAR to clarify the scope of procedures relative to Technical Specifications (TS). In addition to establishing the leakage rates for the limits in the TS, the operators should be able to use the procedures to identify and monitor the unidentified leakage at a level much lower than the TS limit so that the operator can monitor leakage, evaluate trends, determine the source of leakage, and evaluate potential corrective actions. This level to provide operators an early alert to initiate actions prior to the TS limit should be established as an alarm. The alarm level being established in an approved revision of DCD Tier 2 Section 5.2.5 is acceptable for the COL application.

(b) Confirm the procedure scope addresses the conversion of different parameter indications to include all three detection instrumentation in Technical Specifications LCO 3.3.4.1.and clarify STD COL 5.2.2-H accordingly. The procedures should include indications from 1) the drywell floor drain high conductivity water sump monitoring system, 2) drywell air coolers condensate flow monitoring system, and 3) drywell fission product monitoring system (LCO 3.3.4.1).

10.04.05-1

FSAR Section 10.4.5.2.2, “Component Description,” states: “Codes and standards applicable to the CIRC (circulating water system) are in accordance with DCD Section 3.2 with the exception of large bore piping (piping with a nominal diameter of 700 mm (27.6 in) and larger). Large bore CIRC piping is constructed using AWWA (American Water Works Association) standards. The system is designed and constructed in accordance with Quality Group D specification.” However, staff review of ESBWR DCD Table 3.2-3 identified that the DCD specifies standard ASME B31.1 for quality group D piping consistent with Regulatory Guide 1.26, “Quality Group Classifications and Standards for Water-, Steam-, and Radioactive-Waste-Containing Components of Nuclear Power Plants.” In addition, SRP Section 10.4.5, Item III.1, identifies the need to incorporate design provisions that minimize the effect of hydraulic transients upon the functional capability and integrity of the system components. Please clarify the apparent inconsistency with the DCD and describe conformance with the regulatory guidance. In addition, please discuss and confirm that failure of this large bore piping will not affect the intended functions of the safety-related equipment and/or systems.

10.04.05-2

FSAR Section 10.4.5.8, “Normal Power Heat Sink,” states that site arrangement and cooling tower construction will prevent damage to any Seismic Category 1 or 2 structures, or any safety related structures, systems or components (SSCs) from possible missiles generated by cooling tower mechanical fan failure. However, the FSAR does not specifically address flooding considerations due to a hybrid cooling tower failure. SRP Section 10.4.5, “Circulating Water System,” Item II.1, identifies the need to provide design provisions to accommodate the effects of discharging water that may result from a failure of a component or piping in the circulating water system. Please provide additional information, consistent with SRP Section 10.4.5, regarding the cooling tower failure analysis and its effects on SSCs.

14.02-2

Regulatory Guide 1.68, Section C.1, “Criteria for Selection of Plant Features to be Tested,” provides the criteria for selection of plant features to be tested during the initial test program (ITP). FSAR Section 14.2.9, “Site Specific Preoperational and Startup Tests,” contains the site-specific ITP testing that may be required for systems, structures, and components (SSCs) outside of the ESBWR design certification. The list of test abstracts includes the following systems: Station Service Water Preoperational Test, Cooling Tower Preoperational Test, Personnel Monitors and Radiation Survey Instruments Preoperational Test, Electrical Switchyard System Preoperational Test, and Cooling Tower Performance Test. Please confirm that there are no additional site-specific SSCs and/or design features that meet the criteria RG 1.68 Section C.1. If additional testing is identified, please add such testing to FSAR Section 14.2.

14.02-3

SRP 14.2 and RG 1.206, C.I.XIV identify the need for a COL applicant to include the administrative controls document that governs the development and implementation of the Initial Test Program (ITP). The staff review identified that the application does not include such administrative controls. At public meetings on May 13 and 22, 2008, Dominion and other design-centered working group representatives presented a proposed test program administrative document for staff consideration. Staff review indicates this document is consistent with the guidance provided in SRP 14.2. Please formally submit this manual on the North Anna docket as part of the FSAR.

14.02-4

SRP Section 14.2, paragraph II.3.F, "Review, Evaluation, and Approval of Test Results," states that the COL applicant should develop procedures to control the review, evaluation, and approval of test results for each phase of the test program and Regulatory Guide 1.16 addresses startup test reports. FSAR Subsection 14.2.2.5, "Test Records," states "Startup test reports are prepared in accordance with RG 1.16." Staff review indicates Subsection 14.2.2.5 does not include provisions that ensure design organizations participate in the resolution of design-related problems that result in, or contribute to, a failure to meet test acceptance criteria. Please revise Subsection 14.2.2.5 to include such provisions.