Eugene S. Grecheck
Vice President
Nuclear Development

Dominion Energy, Inc. • Dominion Generation
Innsbrook Technical Center
5000 Dominion Boulevard, Glen Allen, VA 23060
Phone: 804-273-2442, Fax: 804-273-3903
E-mail: Eugene.Grecheck@dom.com

Dominion®

December 1, 2008

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D. C. 20555

Serial No. NA3-08-121R
Docket No. 52-017
COL/MWH

DOMINION VIRGINIA POWER
NORTH ANNA UNIT 3 COMBINED LICENSE APPLICATION
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION LETTER 029 (FSAR CHAPTERS 8 AND 16)

On October 16, 2008, the NRC requested additional information to support the review of certain portions of the North Anna Unit 3 Combined License Application (COLA). The response to the following RAIs is provided in Enclosures 1 through 7:

- RAI Question 08.02-29 Underground Cable Testing
- RAI Question 08.02-30 Identify Switchyard Transformers
- RAI Question 08.02-31 Switchyard Stability Analysis
- RAI Question 08.02-32 34.5 kV Loads Impact on Grid Stability
- RAI Question 08.02-36 10 CFR 50.65a)(4) Applicability to Switchyard
- RAI Question 08.02-37 Site Grounding System
- RAI Question 16-1 Technical Specifications Site-Specific information

This information will be incorporated into a future submission of the North Anna Unit 3 COLA, as described in the Enclosures.

Responses to supplemental RAIs 08.02-33, -34, and -35, included in the October 16, 2008 NRC letter, are not provided at this time. Dominion had previously responded to the same issues regarding the applicability of GDC 2, 4, and 5 to offsite power in our July 28, 2008 letter (responses to RAIs 08.02-16, -17, and -18, respectively). Because our responses to the supplemental RAIs would essentially be a re-statement of our previous positions, Dominion instead requests a meeting with the appropriate NRC staff to discuss the RAIs in more detail. We will contact the NRC North Anna COLA Project Manager to schedule a meeting.

D089
NRO

Please contact Regina Borsh at (804) 273-2247 (regina.borsh@dom.com) if you have questions.

Very truly yours,

Eugene S. Grecheck

COMMONWEALTH OF VIRGINIA

COUNTY OF HENRICO

The foregoing document was acknowledged before me, in and for the County and Commonwealth aforesaid, today by Eugene S. Grecheck, who is Vice President-Nuclear Development of Virginia Electric and Power Company (Dominion Virginia Power). He has affirmed before me that he is duly authorized to execute and file the foregoing document on behalf of the Company, and that the statements in the document are true to the best of his knowledge and belief.

Acknowledged before me this 1st day of December, 2008
My registration number is 7173057 and my
Commission expires: August 31, 2012

Wanda K. Marshall
Notary Public

WANDA K. MARSHALL
Notary Public
Commonwealth of Virginia
7173057
My Commission Expires Aug 31, 2012

Enclosures:

1. Response to RAI Letter Number 029, RAI Question 08.02-29
2. Response to RAI Letter Number 029, RAI Question 08.02-30
3. Response to RAI Letter Number 029, RAI Question 08.02-31
4. Response to RAI Letter Number 029, RAI Question 08.02-32
5. Response to RAI Letter Number 029, RAI Question 08.02-36
6. Response to RAI Letter Number 029, RAI Question 08.02-37
7. Response to RAI Letter Number 029, RAI Question 16-1

Commitments made by this letter:

1. The information provided in the RAI responses will be incorporated into a future submission of the North Anna Unit 3 COLA, as described in the Enclosures.

cc: U. S. Nuclear Regulatory Commission, Region II
T. A. Kevern, NRC
J. T. Reece, NRC
J. J. Debiec, ODEC
G. A. Zinke, NuStart/Entergy
T. L. Williamson, Entergy
R. Kingston, GEH
K. Ainger, Exelon
P. Smith, DTE

ENCLOSURE 1

Response to NRC RAI Letter 029

RAI Question 08.02-29

NRC RAI 08.02-29

In response to RAI 8.2-4, the applicant, on July 28, 2008, stated that the normal preferred power supply and alternate preferred power supply both use 230 kV cable. In addition, the applicant stated that periodic monitoring of cable insulation for underground medium and high voltage cable will be conducted to detect potential cable degradation from moisture intrusion using one of the following methods or an equivalent: partial discharge testing, time domain reflectometry, dissipation factor testing, or very low frequency ac testing. The staff needs the applicant to provide technical justification of using one of the testing methods indicated above will be adequate to detect potential high voltage (230 kV) cable degradation.

In addition, the staff finds that the applicant did not address the testing frequency. The staff also finds that the testing specified alone is not sufficient. The staff believes that testing of cables and inspection of manholes for water accumulation are required in order to avoid cable degradation. The manholes should be inspected every six months for water accumulation and adequate corrective actions (increase frequency) should be taken if water accumulation is found. The staff requests that the applicant address the above concerns.

Dominion Response

In our response to RAI 8.2-4, Dominion committed to conduct periodic monitoring of cable insulation for underground medium and high voltage cable to detect potential cable degradation from moisture intrusion using one of several methods listed or an equivalent. Because of the difficulty interpreting the data from such diagnostic tests and estimating the risk of future cable failure, the intent was to commit to cable monitoring but allow for improvements in technology before selecting the exact method.

Dominion has further reviewed the available methods for periodic testing of underground cable and the types of cable available for underground application and has determined that 230 kV metallic sheathed cable can be specified for use that is designed to prevent moisture ingress into the cable insulation.

Typically, medium voltage (5kV - 35kV) cables utilized on utility distribution systems and in generation facilities do not have metallic sheaths to prevent moisture ingress into the insulation layer. Consequently, older design cables manufactured with different processes and insulating materials have experienced earlier than expected failures from a phenomenon known as "water treeing". Also, moisture can be introduced into the insulation during the curing (cross-linking) process if a steam cure is used, further aggravating the water treeing process and leading to early failure. Dominion specifies a dry cure process for its 230 kV cross-linked polyethylene (XLPE) cable during manufacture.

Specifications for 230kV XLPE cables procured by Dominion require the cables to have a metallic sheath to prevent moisture ingress into the cable insulation. The metallic sheath is machine applied to the cable core and mechanically sealed to form a continuous barrier against moisture. This metallic sheath is moisture impervious and makes such a cable design suitable for installation in wet locations. Typically, metallic sheathed cables do not experience water treeing or failures related to water intrusion

into the cable insulation. FSAR Section 8.2.1.2 will be revised to include the design requirements for this cable.

Because of the continuous barrier formed by the sheath, the only point of entry available to moisture is at splices or terminations where the sheath is disturbed. Splice kits and termination kits for metallic sheathed cable are designed to seal to the metallic sheath at the cable ends and restore the continuous barrier to moisture intrusion. However, there are no splices designed into the underground portion of either the normal preferred power source feeder or the alternate preferred power source feeder, i.e. each is a continuous circuit.

Therefore, because Dominion will use cable with design features that avoid cable insulation degradation from moisture intrusion, no periodic testing will be required.

As a conservative measure to minimize the possibility of exposure of the cable to moisture, manholes associated with the normal preferred power supply and alternate preferred power supply 230 kV cable will be inspected every six months for water accumulation. Under the corrective action program, actions (such as increased inspection frequency) will be taken if excessive water accumulation is found. FSAR Section 8.2.1.2 will be revised to include the requirement for manhole inspections for water accumulation.

Proposed COLA Revision

- FSAR Section 8.2.1.2 will be revised as indicated on the attached markup.

Markup of North Anna COLA

The attached markup represents Dominion's good faith effort to show how the COLA will be revised in a future COLA submittal in response to the subject RAI. However, the same COLA content may be impacted by revisions to the ESBWR DCD, responses to other COLA RAIs, other COLA changes, plant design changes, editorial or typographical corrections, etc. As a result, the final COLA content that appears in a future submittal may be somewhat different than as presented herein.

lines from offsite power sources is shown in Figure 8.2-202. Figure 8.2-203 maps the offsite transmission lines.

The transmission lines and towers connecting the switchyard to the transmission system are as follows:

- Two 500 kV overhead lines to the Ladysmith substation (approximately 15 miles)
- A 500 kV overhead line to the Midlothian substation (approximately 41 miles)
- A 500 kV overhead line to the Morrisville substation (approximately 33 miles)
- A 230 kV overhead line to the Gordonsville substation (approximately 31 miles)

The two Ladysmith lines (one of which was constructed for Units 1 and 2) utilize a common right-of-way. Each of the other lines utilizes separate rights-of-way. The 230 kV Gordonsville line crosses under the 500 kV Ladysmith and Morrisville lines near the switchyard.

Transmission tower separation, line installation, and clearances are consistent with the National Electric Safety Code (NESC) and Dominion transmission line standards. Basic tower structural design parameters, including the number of conductors, height, materials, color, and finish are consistent with Dominion transmission line design standards. Adequate clearance exists between wire galloping ellipses to minimize conductor or structure damage. (Reference 8.2-202)

8.2.1.2 Offsite Power System

Replace the first and second paragraphs with the following.

NAPS COL 8.2.4-3-A
NAPS COL 8.2.4-4-A

The offsite power system is a nonsafety-related system. Power is supplied to the plant from multiple independent and physically separate offsite power sources. The normal preferred power source is any one of the four 500 kV lines, and the alternate preferred power source is any other one of the four 500 kV lines.

The normal preferred power source is supplied to the UATs through the intermediate transformer, MODs and isolation circuit breakers. The normal preferred power interface with the offsite power system occurs at the incoming disconnect switch of the intermediate switchyard. The MOD

feeding a faulted UAT will be opened after the UAT high voltage breaker opens.

Delete the last paragraph and add the following paragraph.

Underground cables connect the normal and alternate preferred power sources to the UATs and RATs, respectively. The underground cables have a metallic sheath to prevent moisture ingress into the cable insulation. The metallic sheath is machine applied to the cable core and mechanically sealed to form a continuous barrier against moisture. To maintain their independence from each other, the underground cables are routed in duct banks and are physically and electrically separate from each other. Manholes associated with these duct banks are inspected every six months for excessive accumulation of water.

Control, instrumentation, and miscellaneous power cables associated with the normal and alternate preferred circuits are routed in duct bank between the power block and the Intermediate Switchyard. Adequate separation is ensured by either routing cables associated with the normal preferred circuit in a separate duct bank from cables associated with the alternate preferred circuit, or by routing these cables in separate conduits within the same duct bank.

~~Periodic monitoring of cable insulation for underground medium and high voltage cable will be conducted to detect potential cable degradation from moisture intrusion using one of the following methods: partial discharge testing, time domain reflectometry, dissipation factor testing, or very low frequency AC testing.~~

8.2.1.2.1 **Switchyard**

Replace the last paragraph with the following.

NAPS COL 8.2.4-2-A
NAPS COL 8.2.4-6-A
NAPS COL 8.2.4-7-A
NAPS COL 8.2.4-8-A

The NAPS switchyard, prior to the point of interconnection with Unit 3, is a 500/230 kV, air-insulated, breaker-and-a-half bus arrangement. Unit 3 is connected to this switchyard by an overhead conductor circuit.

The physical location and electrical interconnection of the switchyard is shown on Figure 8.2-201 and Figure 8.2-202.

Control and relay protection systems are provided. Support systems, such as grounding, raceway, lighting, AC/DC station service, and switchyard lightning protection, are also provided.

ENCLOSURE 2

Response to NRC RAI Letter 029

RAI Question 08.02-30

NRC RAI 08.02-30

In response to RAI 8.2-6, on July 28, 2008, the applicant stated that transformers 1, 2, 3, 5, and 6 in the North Anna switchyard are protected by sudden pressure relays. Transformers 1 and 2 have solid grounds on their 500 kV, wye connected windings. The 34.5 kV delta connected windings have zig-zag transformers connected on the bus creating a ground source. This ground source is monitored by relays for ground fault detection. Differential relays applied across these transformers also provide ground fault protection. Since the transformers 3, 5, and 6 have no tertiary winding, differential relays provide ground fault protection.

On the basis of its review, the staff finds that the applicant did not identify transformers 1, 2, 3, 5, and 6 in Figure 8.2-201. The staff requests that the applicant revise or supplement figure 8.2-201 accordingly.

Dominion Response

FSAR Figure 8.2-201 will be revised to identify transformers 1, 2, 3, 5, and 6 as shown in the attached FSAR mark-up.

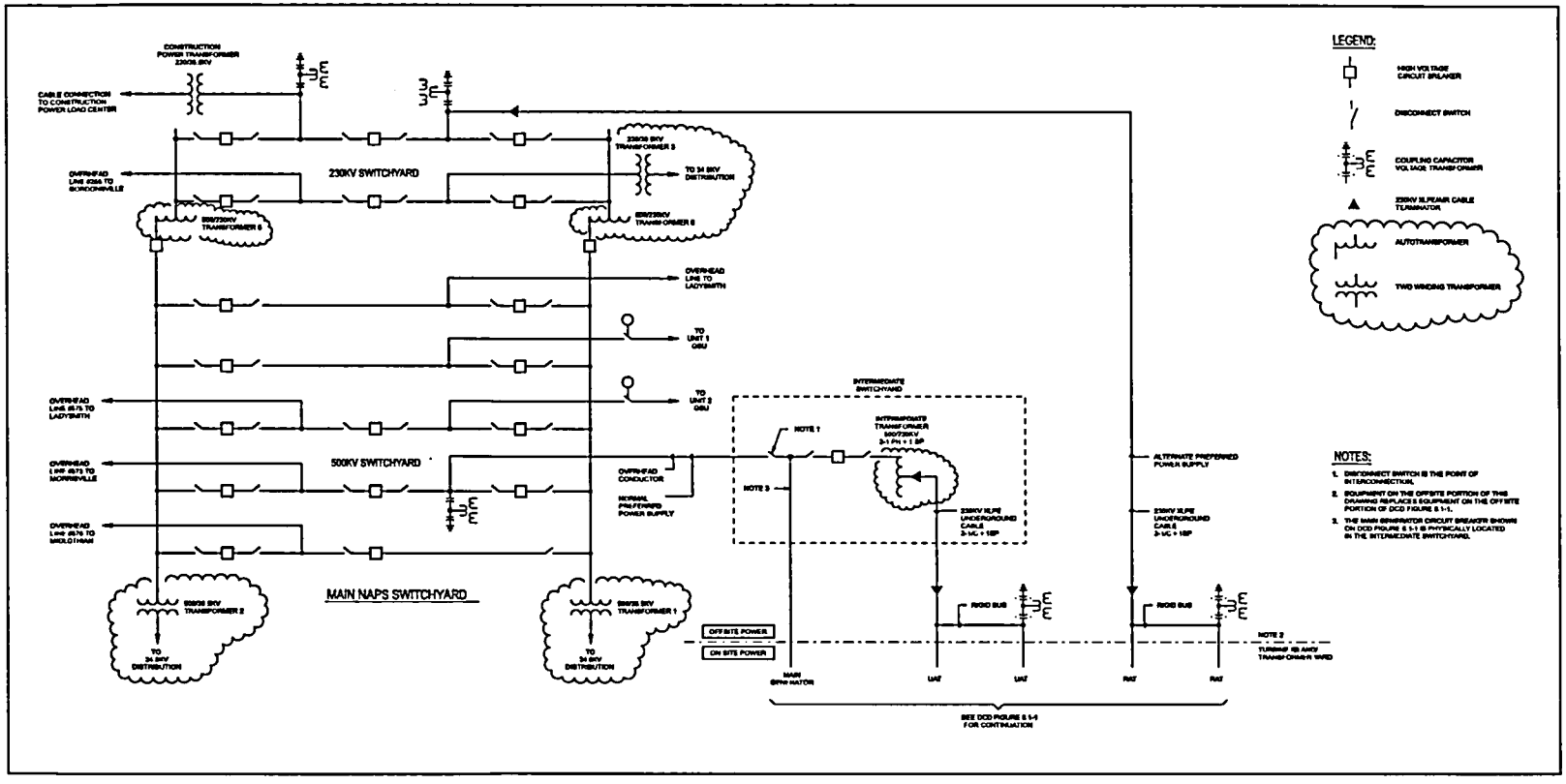
Proposed COLA Revision

- FSAR Figure 8.2-201 will be revised as indicated on the attached markup.

Markup of North Anna COLA

The attached markup represents Dominion's good faith effort to show how the COLA will be revised in a future COLA submittal in response to the subject RAI. However, the same COLA content may be impacted by revisions to the ESBWR DCD, responses to other COLA RAIs, other COLA changes, plant design changes, editorial or typographical corrections, etc. As a result, the final COLA content that appears in a future submittal may be somewhat different than as presented herein.

NAPS COL 8.2.4-1-A Figure 8.2-201 500/230 kV Switchyard Single-Line Diagram



ENCLOSURE 3

Response to NRC RAI Letter 029

RAI Question 08.02-31

NRC RAI 08.02-31

As referenced in SRP section 8.2, operating experience has indicated that Palo Verde Nuclear Generating Station lost offsite power and all three units tripped on June 14, 2004. As a result of this operating experience, the staff requested the applicant to clarify whether the stability analysis for North Anna switchyard included tripping of all three nuclear units.

In RAI 8.2-10 response, you have stated that stability analysis was performed in accordance with NERC Categories A, B, and C for no contingency evaluations, N-1 evaluations and N-2 evaluations. NERC Category D includes a case for loss of all generating units at a single station and is considered an extreme event analysis and exceeds N-2. NERC Category D analyses are not applicable to North Anna.

However, the staff requests that the applicant provide a discussion (including failure mode and effect analysis) why they believe that event similar to Palo Verde will not cause the loss of three units at North Anna Station, or should such an event occur it will not impact grid stability.

Dominion Response

The Palo Verde event discussed in this supplement to RAI 08.02-10 was originally described in NRC Information Notice (IN) 2005-15. According to the IN 2005-15, a fault across a degraded insulator on a 230 kV transmission line initiated a series of events that resulted in the isolation of the Palo Verde Nuclear Generating Station switchyard from the transmission system and shutdown of all three nuclear units. The NRC noted in IN 2005-15 that "The single-failure susceptibility of a transmission line protection system was the primary cause of the cascading blackout." IN 2005-15 also noted that "the tripping scheme lacked redundancy that could have prevented the failure of the protective scheme to clear the fault."

As a result of the review of IN 2005-15 by Dominion for applicability to its nuclear sites, certain modifications to the protection scheme within the 230 kV portion of the North Anna switchyard were implemented. Specifically, the Transformer 5 differential zone of protection was modified to include its associated 230 kV bus, and Transformer 3 high-side leads were provided with redundant protection. These modifications to the North Anna switchyard were completed in October 2007. The modified equipment ensures a proper overlapping protection scheme in the 230 kV switchyard.

The 500 kV portion of the North Anna switchyard and its connecting substations have circuit breakers with dual trip coils and dual control circuits. This is a standard Dominion configuration.

The 230 kV portion of the North Anna switchyard and its connecting substation have circuit breakers with single trip coils and single control circuits. This is a standard Dominion configuration.

The circuit protection scheme at the 230 kV transmission level uses overlapping zones of protection and relies on communications that span the transmission lines from substation to switchyard. Should a fault occur on the 230 kV line at the first remote substation from the North Anna switchyard and the remote substation breaker fails to open, a transfer trip signal will be sent to open the North Anna breaker. This same logic is true for a fault on the 230 kV line near the North Anna switchyard. Also, should a fault occur on the 230 kV line at North Anna that is

not immediately cleared due to breaker failure to operate, trip signals will be generated to open breakers in expanding zones of protection until the fault is cleared. If necessary, the 500 kV breakers will open to isolate the 230 kV portion of the switchyard. At this level, the breakers have dual trip coils and dual control circuits. Since North Anna Units 1 and 2 interconnect at the 500 kV level, and since Unit 3 is proposed to interconnect at the 500 kV level, the generating units are ultimately protected by equipment that uses dual trip coils and dual control circuits, thus limiting the possibility for an event similar to the Palo Verde event.

Proposed COLA Revision

None

ENCLOSURE 4

Response to NRC RAI Letter 029

RAI Question 08.02-32

NRC RAI 08.02-32

In response to RAI 8.2-11, you have stated that the angular stability analysis is performed at the transmission voltage level and would, as such, excludes loads operating at distribution voltage levels of 34.5 kV as they have limited ability to cause angular stability difficulties at the transmission level. However, the staff requests that the applicant quantify the 34.5 kV distribution loads (MW/MVA) in terms of the total load modeled at the 500 kV transmission system. In addition, please explain why you believe the distribution loads have limited ability to affect the grid stability.

Dominion Response

FSAR Section 8.2.2.1 states, regarding the transmission system impact study, that "The equipment considered is from the point of interconnection of Unit 3 to the switchyard out to the 500 kV transmission system. This included the 230 kV buses and interconnections. The 34.5 kV portion of the North Anna switchyard is not considered." The Dominion response to RAI 08.02-11 (letter NA3-08-056R, dated July 28, 2008) states that "The study is performed at the transmission voltage level and would, as such, exclude loads operating at distribution voltage levels of 34.5 kV as they have limited ability to cause angular stability difficulties at the transmission level." These statements identify that the 34.5 kV buses, and loads at the 34.5 kV voltage level, are not individually modeled in the analysis. The load on the 34.5 kV distribution buses are, however, considered in the model used for the system impact study, as discussed below. FSAR Section 8.2.2.1 will be revised to provide clarification that the 34.5 kV loads are included in the transmission system impact study at the 500 kV level.

At normal, full load operation of Units 1 and 2, 29.3 Mw (36 MVA) of load at the 500 kV level can be attributed to the combination of the 34.5 kV buses. The Dominion area load modeled at the 500 kV transmission system for the light load stability case is 10,506 MW, representing 50 % of the summer peak.

In the North Anna switchyard, the 34.5 kV buses are fed from either the 500 kV switchyard or the 230 kV switchyard. Each of the 34.5 kV buses serves plant auxiliary loads associated with Units 1 and 2 only. There is no generation source connected to the 34.5 kV buses. As stated in the Dominion response to RAI 08.02-11, the stability analysis discussed in FSAR Section 8.2.2.1 is an angular stability analysis that verifies stability of the transmission system and, as such, is performed at transmission level voltages. Because of this, the 34.5 kV buses in the North Anna switchyard were not explicitly modeled in the study, but the plant auxiliary loads on each of these buses were included at the 500 kV level. Further, since there is no generation source connected to any of the 34.5 kV buses, there is no need to individually model these buses when determining the angular stability of the transmission system.

Proposed COLA Revision

- FSAR Section 8.2.2.1 will be revised as indicated on the attached markup.

Markup of North Anna COLA

The attached markup represents Dominion's good faith effort to show how the COLA will be revised in a future COLA submittal in response to the subject RAI. However, the same COLA content may be impacted by revisions to the ESBWR DCD, responses to other COLA RAIs, other COLA changes, plant design changes, editorial or typographical corrections, etc. As a result, the final COLA content that appears in a future submittal may be somewhat different than as presented herein.

Routine switchyard testing activities include, but are not necessarily limited to, the following:

- Semiannual dissolved gas analysis on transformers
- Biennial circuit breaker profile or timing tests
- Biennial 500 kV relay testing
- Triennial 230 kV relay testing
- 4-year dissolved gas analysis on transformer load tap changers
- 5-year battery discharge testing
- 8-year PT testing
- 8-year ground grid testing
- 10-year CCVT testing
- 10-year arrester testing
- 10-year wave trap testing

Switchyard protection system monitoring, maintenance, and testing are performed in accordance with North American Electric Reliability Corporation (NERC) Standard PRC-005-1, "Transmission and Generation Protection System Maintenance and Testing," Standard PRC-008-0, "Underfrequency Load Shedding Equipment Maintenance Program," and Standard PRC-017-0, "Special Protection System Maintenance and Testing."

8.2.2.1 Reliability and Stability Analysis

Replace this section with the following.

NAPS COL 8.2.4-9-A
NAPS COL 8.2.4-10A

A system impact study analyzed load flow, transient stability and fault analysis for the addition of Unit 3. (Reference 8.2-201) The study was prepared using 2011 summer light-load and 2014 summer base-case projections.

The analysis was performed using Power Technology International Software PSS/E. The analysis examined conditions involving loss of the largest generating unit, loss of the most critical transmission line, and multiple facility contingencies. The study also examined import/export power flows between transmission system utilities.

NAPS COL 8.2.4-10A

The equipment considered is from the point of interconnection of Unit 3 to the switchyard out to the 500 kV transmission system. This included the

230 kV buses and interconnections. The 34.5 kV portion of the North Anna switchyard is not ~~considered~~ modeled separately, but the 34.5 kV loads are considered at the 500 kV level. Maximum and minimum switchyard voltage limits have been established for the 500 kV switchyard at 534 kV and 505 kV, respectively. Normal operating and abnormal procedures exist to maintain the switchyard voltage schedule and address challenges to the maximum and minimum limits. Upon approaching or exceeding a limit, these procedures verify the availability of required and contingency equipment and materials, and direct notifications to outside agencies, until the normal voltage schedule can be maintained. Dominion has established a Switchyard Interface Agreement and protocols for Maintenance, Communications, Switchyard Control, and System Analysis sufficient to safely operate and maintain the power station interconnection to the transmission system.

The TSO provides analysis capabilities for both Long Term Planning and Real Time Operations. System conditions are evaluated to ensure a bounding analysis and model parameters are selected that are influential in determining the system's ability to provide offsite power adequacy. Elements included in the analysis are system load forecasts (including sufficient margin to ensure a bounding analysis over the life of the study), system generator dispatch (including outages of generators known to be particularly influential in offsite power adequacy of affected nuclear units), outage schedules for transmission elements that have significant influence on offsite power adequacy, cross-system power transfers and power imports/exports, and system modification plans and schedules. A Real Time State Estimator is used to assist in the evaluation of actual system conditions. These capabilities are described in the System Analysis Protocol of the Switchyard Interface Agreement.

The study concluded that with the additional generating capacity of Unit 3, the transmission system remains stable under the analyzed conditions, preserving the grid connection and supporting the normal and shutdown power requirements of Unit 3.

The reliability of the overall system design is indicated by the fact that there have been no widespread system interruptions. Failure rates of individual facilities are low. Transmission lines are designed to have less than one lightning flashover per 100 miles per year, and the record shows much better performance, indicating conservative designs. Most lightning-caused outages are momentary, with few instances of line

ENCLOSURE 5

Response to NRC RAI Letter 029

RAI Question 08.02-36

NRC RAI 08.02-36

In response to RAI 8.2-19, on July 28, 2008, the applicant stated that North Anna 3 complies with the requirements of 10 CFR 50.65(a)(4). In particular, the subject regulation is one aspect of the "Maintenance Rule" (10 CFR 50.65), an operational program, the implementation of which is addressed by Item 17 in FSAR Table 13.4-201 and the content of which is discussed in FSAR Section 17.6. However, the staff finds that the applicant did not address the applicability of the Maintenance Rule to switchyard equipment. The staff requests that the applicant address applicability of the Maintenance Rule to switchyard components, discuss actions to be taken to limit the risk associated with transmission system degradation and discuss actions required before performing grid-risk-sensitive maintenance activities of switchyard components (see NRC Generic Letter 2006-02: Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power referenced in SRP section 8.2).

Dominion Response

As stated in the response to RAI 8.2-19 (Dominion letter NA3-08-056R, dated July 28, 2008), North Anna Unit 3 offsite power system compliance with the requirements of 10 CFR 50.65(a)(4) is indicated in FSAR Table 1.9-201 by the stated conformance to SRP Section 8.2, Acceptance Criterion II.8. The implementation of the requirements of 10 CFR 50.65 is addressed as an operational program by Item 17 in FSAR Table 13.4-201 with an implementation schedule of prior to fuel load authorization.

Maintenance Rule Program (10 CFR 50.65) implementation is discussed in FSAR Section 17.6, which incorporates by reference NEI Technical Report 07-02, *Generic FSAR Template Guidance for Maintenance Rule Program Description for Plants Licensed Under 10 CFR Part 52.* NRC has reviewed NEI 07-02 and issued their final Safety Evaluation (SE) on January 24, 2008. NEI re-issued the report, after incorporating the NRC SE and RAIs, as NEI 07-02A. The reference to this topical report in FSAR Table 1.6-201 was updated in the response to NA3 COLA RAI 17.06-1 (Dominion letter NA3-08-052R dated July 14, 2008) to reference NEI 07-02A.

The scope of structures, systems, and components (SSCs) covered by the maintenance rule program is determined using the scoping procedure defined in the maintenance rule program description per NEI 07-02A. This scoping evaluation is performed as part of the program implementation and is not required to be completed prior to COL issuance. The offsite power system and its components will be evaluated for inclusion into the maintenance rule program in accordance with these scoping procedures during program implementation. As discussed in the program description, the expert panel is used to scope SSCs into and out of the maintenance rule program. This aspect of the program was evaluated by the NRC staff as documented in the staff's safety evaluation report for NEI 07-02A.

NEI 07-02A, Section 17.X.1.5, addresses risk assessment and risk management per 10 CFR 50.65(a)(4) and includes consideration of the issues associated with grid/offsite power system reliability as identified in NRC Generic Letter 2006-02, Items 5 and 6. NEI 07-02A, Section 17.X.5 identifies a Maintenance Rule Program implementation schedule consistent with FSAR Table 13.4-201, Item 17 (i.e., by the time that initial fuel loading has been authorized).

Therefore, although detailed Maintenance Rule Program development is not anticipated in advance of the schedule defined in Table 13.4-201, performance of grid reliability evaluations as

part of the maintenance risk assessment before performing "grid-risk-sensitive" maintenance activities (such as surveillances, post-maintenance testing, and preventive and corrective maintenance) is considered to be a necessary consideration of the program in accordance with NEI 07-02A guidance.

Proposed COLA Revision

None

ENCLOSURE 6

Response to NRC RAI Letter 029

RAI Question 08.02-37

NRC RAI 08.02-37

In response to RAI 8.2-24, you have stated that description of the station ground grid is provided in Section 8, Appendix 8A. However, the staff notes that the North Anna Station ground grid consists of the switchyard ground grid, existing Unit 1 and 2 ground grid and the new Unit 3 ground grid. The staff requests that the applicant discuss the interface and impact of station grounding due to addition of Unit 3 ground grid to the existing station ground consisting of switchyard and Unit 1 and 2 grounding. In addition, please provide a summary description of the existing grounding system at North Anna and the proposed grounding of Unit 3 in order to achieve a single point ground at that site.

Dominion Response

The existing North Anna Power Station site includes North Anna Units 1 and 2 and a switchyard, each having an installed ground grid. The addition of Unit 3 will introduce additional ground grids at the existing site.

The existing switchyard grounding system was overlaid in 2004 with a new ground grid that was tied to the existing switchyard ground grid. The new ground grid was designed and installed in accordance with the Dominion Substation Engineering Manual and IEEE 80, "Guide for Safety in AC Substation Grounding." The new ground grid uses bare 4/0 stranded copper conductors installed a minimum of 18" below grade. The new ground grid was designed to provide proper grounding for the switchyard without consideration of any other grounding system, including the existing ground grid in the switchyard and the ground grid for Units 1 and 2. The new ground overlay is connected to the existing ground grid in the switchyard, which serves to improve the quality of the entire switchyard ground grid.

The addition of Unit 3 at North Anna will also require installation of an Intermediate Switchyard, which will include a grounding grid designed and installed by the Dominion Electric Transmission Department using IEEE-80 and the Dominion Substation Engineering Manual. This ground grid design will provide proper grounding for the Intermediate Switchyard without consideration of other grounding systems.

North Anna Unit 3 will have a ground grid, designed in accordance with the codes and standards identified in ESBWR DCD Section 8A.1.2, including IEEE-80, IEEE-665, "Guide for Generation Station Grounding," and IEEE-666, "Design Guide for Electric Power Service Systems for Generating Stations."

The ground grids for Unit 3, the Intermediate Switchyard, and the existing North Anna switchyard will be interconnected. Since each of these ground grids either will provide, or is currently designed to provide, adequate grounding for the associated structures and equipment, the interconnection of all of these ground grids will serve to improve the quality of each of the ground grids. Analysis of the final interconnected configuration is not required as each ground grid individually is adequate to perform its intended function for the structures and equipment served, and the interconnection of the grids only serves to increase the individual quality of each.

Proposed COLA Revision

None

ENCLOSURE 7

Response to NRC RAI Letter 029

RAI Question 16-1

NRC RAI 16-1

In its combined license (COL) application for North Anna Unit 3, Dominion proposes that certain COL action (or information) items be addressed after COL issuance by the COL holder as a condition of the COL. The site-specific information for completing these action items mostly consists of numerical values of technical specification (TS) limits and is indicated by the use of brackets, reviewer's notes, footnotes, or other "placeholder" indicators in the generic technical specifications (GTS), and also in the proposed plant-specific technical specifications (PTS). However, this site-specific information must be provided or confirmed by the COL applicant in the COL application. The proposal for the COL holder to provide this information after COL issuance as a condition of the COL is not consistent with applicable regulations and statutes (see COL/DC-ISG-8, "Technical Specification Information that Combined License Applicants Must Provide in Combined License Applications").

Accordingly, for each site-specific information item, provide or confirm, in order of preference, (1) the site-specific information, (2) useable information that bounds the sitespecific information, or (3) a reference to an associated TS in PTS administrative controls Section 5.5, "Programs and Manuals," or 5.6, "Reporting Requirements," that requires using an NRC-approved methodology to determine the site-specific information and establishing a program or report in which the site-specific information will be documented external to the PTS.

The applicant shall describe in its COL application, including in the PTS bases as applicable (i.e., TS, TS Bases and FSAR), the following:

- *For site-specific information, the method used to determine the information and why the information is useable for facility operation in all applicable operational modes including power operation up to the proposed thermal power limit.*

-or-

- *For bounding information, the method used to determine the information and that the information is bounding to the site-specific information, and why the information is useable for facility operation in all applicable operational modes including power operation up to the proposed thermal power limit.*

-or-

- *Regarding the methodology approach, the administrative control TS shall (a) explicitly reference by title and date the NRC-approved methodology that is specified for determining the site-specific information, (b) require establishing an associated document or report in which to record and maintain the site-specific information external to the PTS, and (c) specify any other information or restrictions necessary and appropriate to satisfy 10 CFR 50.36. This would satisfy 10 CFR 50.36 with respect to the relocated site-specific information by virtue of the approved methodology and the restrictions spelled out in the administrative control TS; this is consistent with the standard technical specification administrative controls that require maintaining specified plant*

operating limits in the core operating limits report and the reactor coolant system pressure temperature limits report.

To facilitate a comprehensive response to this information request, a listing of all COL action, or information, items identified in chapters 16 and 16B of the ESBWR design control document, revision 5, is attached. The applicant is requested to verify that the list is complete and in addition identify which of three options listed above will be used to satisfy the requirements of 10 CFR 50.36 for each item. If the methodology approach is taken, then the applicant should explain why one of the other two options was not taken. Please see the attached tables for the list of items.

Dominion Response

The attached table lists all COL information items identified in chapters 16 and 16B of the ESBWR Design Control Document, Revision 5. The site-specific information for completing each COL information item is included in the table provided with this RAI response. The table provides the following information for each COL information item:

1. The associated general GTS COL information item number (16.0-1-A or 16.0-2-H).
2. The specific GTS COL information item number.
3. A reference to the GTS sections with which the COL information item is associated.
4. A description of the information that must be addressed in the PTS.
5. The option that was chosen to satisfy the requirements of 10 CFR 50.36.
6. The justification for the option chosen.
7. The location in the FSAR that contains the justification

Information provided to complete the COL items is not dependent upon the operational mode or thermal power level. Therefore, the information provided supports operation in all applicable operational modes including power operation up to the proposed thermal power limit.

Because Dominion's licensing approach to the ongoing DCD and COL licensing actions has been to treat the DCD as if the ESBWR design were certified, two exemptions are necessary to implement the options chosen to complete COL information items 3.1.5-1 and 5.5.13-1. Specifically, the first exemption is needed to remove the expected accumulator pressure value in Bases Surveillance Requirement 3.1.5.1. The second exemption is needed to revise the Bases description for SR 3.7.2.3 to include an expanded discussion of the acceptance criteria for the differential pressure across the Emergency Filter Unit (EFU). Dominion will work with GEH so that the need for the exemptions would be eliminated through a DCD revision. The North Anna COLA would then be revised accordingly.

Proposed COLA Revision

COLA Part 4 will be revised to address the COL information items as described above. COLA Part 7 will be revised to include the identified exemptions.

GTS COL Information Item Group	GTS COL Information Item No.	GTS References	Description of Information that Dominion Must Address in PTS	Option	Resolution / Justification	Location of Justification
16.0-2-H	1.1-1	1.1	Pressure Temperature Limits Report (PTLR) definition.	n/a	The PTLR will be submitted to the NRC in the second quarter of 2009.	n/a
16.0-1-A	3.1.3-1	TS 3.1.3 Required Action A.1 and bases	Stuck control rod separation requirements between "slow" control rod(s).	n/a	The bracketed provision for "slow" scram times will be removed because this optional flexibility is not supported at this time. The PTS require all scram times to meet the analytical time, which assures conservative reactivity insertion rates.	Introduction
16.0-1-A	3.1.3-2	SR 3.1.3.4 and bases	Maximum scram time limits for operable control rods. Applicant to choose either: "Verify each control rod scram time from fully withdrawn to [60]% rod insertion is $\leq$ [ ] seconds" or "Perform applicable SRs of LCO 3.1.4."	n/a	The bracketed provision for "slow" scram times will be removed because this optional flexibility is not supported at this time. The PTS require all scram times to meet the analytical time, which assures conservative reactivity insertion rates.	Introduction
16.0-1-A	3.1.4-1	GTS 3.1.4 and bases; LCO 3.1.4, and bases; Action A and bases; Table 3.1.4-1 Notes and bases; bases Applicable Safety Analyses (ASA) discussion; SR 3.1.4.2 and SR 3.1.4.3 bases.	"Slow" control rod optional allowance.	n/a	The bracketed provision for "slow" scram times will be removed because this optional flexibility is not supported at this time. The PTS require all scram times to meet the analytical time, which assures conservative reactivity insertion rates.	Introduction
16.0-2-H	3.1.5-1	SR 3.1.5.1 and bases	Minimum and nominal control rod scram accumulator pressure.	2**	The bracketed item for minimum scram accumulator pressure will be completed. An expected pressure will be removed based on the justification provided in the exemption in Part 7 of the COLA.	B3.1.5.1
16.0-1-A	3.1.7-1	TS 3.1.7 Required Action A.1 and bases	Alternative Action for sodium pentaborate concentration not within limits.	n/a	The bracketed information will be removed because this optional flexibility is not supported at this time.	Introduction

OPTIONS:
(1) Site-specific information
(2) Useable information that bounds site-specific information
(3) NRC-approved methodology referenced

** An exemption is being requested for this item. See Part 7 of the COLA.

GTS COL Information Item Group	GTS COL Information Item No.	GTS References	Description of Information that Dominion Must Address in PTS	Option	Resolution / Justification	Location of Justification
16.0-2-H	3.1.7-2 (should be 3.1.7-1)	SR 3.1.7.8	Allowable Value for SLC system accumulator level instrumentation setting	3	The bracketed items for allowable values will be completed with reference to the Technical Specification Administrative Program in TS 5.5.11, Setpoint Control Program (SCP) because the program implements the NRC approved methodology for determining allowable values for these limits. The methodology approach was chosen because it provides greater operational flexibility.	Introduction
16.0-2-H	3.3.1.1-1	SR 3.3.1.1.3	Allowable Values for RPS Instrumentation function channel trip settings for Functions 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16	3	The bracketed items for allowable values will be completed with reference to the Technical Specification Administrative Program in TS 5.5.11, Setpoint Control Program (SCP) because the program implements the NRC approved methodology for determining allowable values for these limits. The methodology approach was chosen because it provides greater operational flexibility.	Introduction
16.0-1-A	3.3.1.1-2	Bases for SR 3.3.1.1.4	Allowance to exclude certain sensors or other instrumentation components from Response Time Testing	n/a	The bracketed provision for response time testing relaxation will be removed because this optional flexibility is not supported at this time.	Introduction
16.0-1-A	3.3.1.2-1	Bases for SR 3.3.1.2.4	Allowance to exclude certain portions of the actuation circuitry from Response Time Testing.	n/a	The bracketed provision for response time testing relaxation will be removed because this optional flexibility is not supported at this time.	Introduction

OPTIONS:
(1) Site-specific information
(2) Useable information that bounds site-specific information
(3) NRC-approved methodology referenced

** An exemption is being requested for this item. See Part 7 of the COLA.

GTS COL Information Item Group	GTS COL Information Item No.	GTS References	Description of Information that Dominion Must Address in PTS	Option	Resolution / Justification	Location of Justification
16.0-2-H	3.3.1.4-1	SR 3.3.1.4.5	Allowable values for NMS Instrumentation function channel trip settings for Functions 1.a, 1.b, 2.a, 2.b, 2.c	3	The bracketed items for allowable values will be completed with reference to the Technical Specification Administrative Program in TS 5.5.11, Setpoint Control Program (SCP) because the program implements the NRC approved methodology for determining allowable values for these limits. The methodology approach was chosen because it provides greater operational flexibility.	Introduction
16.0-1-A	3.3.1.4-2	Bases for SR 3.3.1.4.7	Allowance to exclude certain sensors or other instrumentation components from Response Time Testing	n/a	The bracketed provision for response time testing relaxation will be removed because this optional flexibility is not supported at this time.	Introduction
16.0-2-H	3.3.1.5-1		Not used	n/a	n/a	n/a
16.0-1-A	3.3.1.5-2	Bases for SR 3.3.1.5.4	Allowance to exclude certain portions of the actuation circuitry from Response Time Testing	n/a	The bracketed provision for response time testing relaxation will be removed because this optional flexibility is not supported at this time.	Introduction
16.0-2-H	3.3.1.6-1	SR 3.3.1.6.3	Minimum SRNM count rate (cps)	1	The bracketed value for minimum SRNM count rate will be completed based on vendor (GEH) review and confirmation that the ABWR and historically accepted source range minimum count-rate is appropriate and acceptable to support ESBWR operations.	Introduction
16.0-1-A	3.3.3.2-1	GTS 3.3.3.2 and bases	Post Accident Monitoring (PAM) Instrumentation	n/a	The bracketed information will be removed because PAM Type A Variables are not applicable to the ESBWR safety analyses. There are no operator actions are required for the first 72 hours post-DBA.	Introduction

OPTIONS:
(1) Site-specific information
(2) Useable information that bounds site-specific information
(3) NRC-approved methodology referenced

** An exemption is being requested for this item. See Part 7 of the COLA.

GTS COL Information Item Group	GTS COL Information Item No.	GTS References	Description of Information that Dominion Must Address in PTS	Option	Resolution / Justification	Location of Justification
16.0-2-H	3.3.5.1-1	SR 3.3.5.1.3	Allowable Values for ECCS Instrumentation channel trip settings for Functions 1 and 2	3	The bracketed items for allowable values will be completed with reference to the Technical Specification Administrative Program in TS 5.5.11, Setpoint Control Program (SCP) because the program implements the NRC approved methodology for determining allowable values for these limits. The methodology approach was chosen because it provides greater operational flexibility.	Introduction
16.0-1-A	3.3.5.1-2	Bases for SR 3.3.5.1.4	Allowance to exclude certain sensors or other instrumentation components from Response Time Testing	n/a	The bracketed provision for response time testing relaxation will be removed because this optional flexibility is not supported at this time.	Introduction
16.0-1-A	3.3.5.2-1	Bases for SR 3.3.5.2.4	Allowance to exclude certain portions of the actuation circuitry from Response Time Testing	n/a	The bracketed provision for response time testing relaxation will be removed because this optional flexibility is not supported at this time.	Introduction
16.0-2-H	3.3.5.3-1	SR 3.3.5.3.3	Allowable Values for ICS Instrumentation channel trip settings for Functions 1, 2, 3, 4 and 5	3	The bracketed items for allowable values will be completed with reference to the Technical Specification Administrative Program in TS 5.5.11, Setpoint Control Program (SCP) because the program implements the NRC approved methodology for determining allowable values for these limits. The methodology approach was chosen because it provides greater operational flexibility.	Introduction
16.0-1-A	3.3.5.3-2	Bases for SR 3.3.5.3.4	Allowance to exclude certain censors or other instrumentation components from Response Time Testing	n/a	The bracketed provision for response time testing relaxation will be removed because this optional flexibility is not supported at this time.	Introduction

OPTIONS:
(1) Site-specific information
(2) Useable information that bounds site-specific information
(3) NRC-approved methodology referenced

** An exemption is being requested for this item. See Part 7 of the COLA.

GTS COL Information Item Group	GTS COL Information Item No.	GTS References	Description of Information that Dominion Must Address in PTS	Option	Resolution / Justification	Location of Justification
16.0-1-A	3.3.5.4-1	Bases for SR 3.3.5.4.4.	Allowance to exclude certain portions of the actuation circuitry from Response Time Testing	n/a	The bracketed provision for response time testing relaxation will be removed because this optional flexibility is not supported at this time.	Introduction
16.0-2-H	3.3.6.1-1	SR 3.3.6.1.3	Allowable Values for MSIV Instrumentation channel trip settings for Functions 1, 2, 3, 4, 5, 6, 7	3	The bracketed items for allowable values will be completed with reference to the Technical Specification Administrative Program in TS 5.5.11, Setpoint Control Program (SCP) because the program implements the NRC approved methodology for determining allowable values for these limits. The methodology approach was chosen because it provides greater operational flexibility.	Introduction
16.0-1-A	3.3.6.1-2	Bases for SR 3.3.6.1.4	Allowance to exclude certain sensors or other instrumentation components from Response Time Testing	n/a	The bracketed provision for response time testing relaxation will be removed because this optional flexibility is not supported at this time.	Introduction
16.0-1-A	3.3.6.2-1	Bases for SR 3.3.6.2.4	Allowance to exclude certain portions of the actuation circuitry from Response Time Testing	n/a	The bracketed provision for response time testing relaxation will be removed because this optional flexibility is not supported at this time.	Introduction
16.0-2-H	3.3.6.3-1	SR 3.3.6.3.3	Allowable Values for Isolation Instrumentation channel trip settings for Functions 1 through 12	3	The bracketed items for allowable values will be completed with reference to the Technical Specification Administrative Program in TS 5.5.11, Setpoint Control Program (SCP) because the program implements the NRC approved methodology for determining allowable values for these limits. The methodology approach was chosen because it provides greater operational flexibility.	Introduction

OPTIONS:
(1) Site-specific information
(2) Useable information that bounds site-specific information
(3) NRC-approved methodology referenced

** An exemption is being requested for this item. See Part 7 of the COLA.

GTS COL Information Item Group	GTS COL Information Item No.	GTS References	Description of Information that Dominion Must Address in PTS	Option	Resolution / Justification	Location of Justification
16.0-1-A	3.3.6.3-2	Bases for SR 3.3.6.3.4	Allowance to exclude certain sensors or other instrumentation components from Response Time Testing	n/a	The bracketed provision for response time testing relaxation will be removed because this optional flexibility is not supported at this time.	Introduction
16.0-1-A	3.3.6.4-1	Bases for SR 3.3.6.4.4	Allowance to exclude certain portions of the actuation circuitry from Response Time Testing	n/a	The bracketed provision for response time testing relaxation will be removed because this optional flexibility is not supported at this time.	Introduction
16.0-2-H	3.3.7.1-1	SR 3.3.7.1.3	Allowable Values for CRHAVS Instrumentation channel trip settings for Functions 1 and 2	3	The bracketed items for allowable values will be completed with reference to the Technical Specification Administrative Program in TS 5.5.11, Setpoint Control Program (SCP) because the program implements the NRC approved methodology for determining allowable values for these limits. The methodology approach was chosen because it provides greater operational flexibility.	Introduction
16.0-1-A	3.3.7.1-2	Bases Background for TS 3.3.7.1	Control Room Habitability Area option for design features to protect occupant exposures to hazardous chemicals	n/a	The bracketed information pertaining to hazardous chemicals will be removed because hazardous chemical protection for the CRHAVS is not required based on the site-specific evaluation presented in FSAR Section 6.4.5.	Introduction
16.0-1-A	3.3.7.1-3	Bases for SR 3.3.7.1.4	Allowance to exclude certain sensors or other instrumentation components from Response Time Testing	n/a	The bracketed provision for response time testing relaxation will be removed because this optional flexibility is not supported at this time.	Introduction
16.0-1-A	3.3.7.2-1	Bases Background for TS 3.3.7.2	Control Room Habitability Area option for design features to protect occupant exposures to hazardous chemicals	n/a	The bracketed information pertaining to hazardous chemicals will be removed because hazardous chemical protection for the CRHAVS is not required based on the site-specific evaluation presented in FSAR Section 6.4.5	Introduction

OPTIONS:
(1) Site-specific information
(2) Useable information that bounds site-specific information
(3) NRC-approved methodology referenced

** An exemption is being requested for this item. See Part 7 of the COLA.

GTS COL Information Item Group	GTS COL Information Item No.	GTS References	Description of Information that Dominion Must Address in PTS	Option	Resolution / Justification	Location of Justification
16.0-1-A	3.3.7.2-2	Bases for SR 3.3.7.2.4	Allowance to exclude certain portions of the actuation circuitry from Response Time Testing	n/a	The bracketed provision for response time testing relaxation will be removed because this optional flexibility is not supported at this time.	Introduction
16.0-2-H	3.3.8.1-1	SR 3.3.8.1.3	Allowable Values for DPS Instrumentation channel trip settings for Functions 1, 2, 3, and 4	3	The bracketed items for allowable values will be completed with reference to the Technical Specification Administrative Program in TS 5.5.11, Setpoint Control Program (SCP) because the program implements the NRC approved methodology for determining allowable values for these limits. The methodology approach was chosen because it provides greater operational flexibility.	Introduction
16.0-1-A	3.4.4-1	LCO 3.4.4 and bases; SRs 3.4.4.1, 2, 3, 4, and 5, and bases; bases Background	Reference to PTLR or plant-specific PT curves as figures in PTS 3.4.4.	n/a	The PTLR will be submitted to the NRC in the second quarter of 2009.	n/a
16.0-1-A	3.4.4-2	Notes to SR 3.4.4.4 and SR 3.4.4.5, and bases.	Temperature for applicability of verification that reactor vessel flange and head flange temperatures are within limits.	n/a	The PTLR will be submitted to the NRC in the second quarter of 2009.	n/a
16.0-1-A	3.4.4-3	Bases References for GTS 3.4.4	Topical report(s) providing the methodology for determining the PT limits	n/a	The PTLR will be submitted to the NRC in the second quarter of 2009.	n/a
16.0-2-H	3.5.1-1 (Not listed in DCD)	Bases for SR 3.5.1.5 (deleted)	Not used (SRV manual actuation test conditions). This SR was deleted based on ESBWR DC RAI 3.9-168 Supplement 2 resolution. Ref. MFN 08-458.	n/a	n/a	n/a

OPTIONS:
(1) Site-specific information
(2) Useable information that bounds site-specific information
(3) NRC-approved methodology referenced

** An exemption is being requested for this item. See Part 7 of the COLA.

GTS COL Information Item Group	GTS COL Information Item No.	GTS References	Description of Information that Dominion Must Address in PTS	Option	Resolution / Justification	Location of Justification
16.0-2-H	3.7.1-1	SR 3.7.1.9	Allowable Values for IC/PCC expansion pool level instrumentation channel trip setting	3	The bracketed items for allowable values will be completed with reference to the Technical Specification Administrative Program in TS 5.5.11, Setpoint Control Program (SCP) because the program implements the NRC approved methodology for determining allowable values for these limits. The methodology approach was chosen because it provides greater operational flexibility.	Introduction
16.0-1-A	3.7.2-1 (related to COL item 6.4-2-A)	GTS 3.7.2 Required Action B.2 and bases; bases Background discussion; ASA discussion; and bases for LCO 3.7.2 and SR 3.7.2.7.	Control Room Habitability Area option for design features to protect occupant exposures to hazardous chemicals.	n/a	The bracketed information pertaining to hazardous chemicals will be removed because hazardous chemical protection for the CRHAVS is not required based on the site-specific evaluation presented in FSAR Section 6.4.5	Introduction
16.0-2-H	3.7.2-1 (should be 3.7.2-2)	SR 3.7.2.6	Allowable Value for CRHAVS main control room temperature instrumentation channel trip setting.	3	The bracketed items for allowable values will be completed with reference to the Technical Specification Administrative Program in TS 5.5.11, Setpoint Control Program (SCP) because the program implements the NRC approved methodology for determining allowable values for these limits. The methodology approach was chosen because it provides greater operational flexibility.	Introduction

OPTIONS:
(1) Site-specific information
(2) Useable information that bounds site-specific information
(3) NRC-approved methodology referenced

** An exemption is being requested for this item. See Part 7 of the COLA.

GTS COL Information Item Group	GTS COL Information Item No.	GTS References	Description of Information that Dominion Must Address in PTS	Option	Resolution / Justification	Location of Justification
16.0-1-A	3.7.4-1	LCO 3.4.7 and bases; bases ASA discussion; bases for Required Action A.1	Applicant to determine whether to adopt in LCO 3.7.4 an alternative to requiring the Main Turbine Bypass System to be operable. The alternative LCO is to make applicable the LCO 3.2.2, "Minimum Critical Power Ratio (MCPR)," limits for an inoperable Main Turbine Bypass System, as specified in the Core Operating Limits Report (COLR).	n/a	The bracketed information will be removed because this optional flexibility is not supported at this time.	Introduction
16.0-1-A	3.7.4-2	SR 3.7.4.1 Frequency and bases	Applicant to determine whether to propose a surveillance interval greater than 31 days for cycling a turbine bypass valve.	n/a	The brackets will be removed from the frequency of SR 3.7.4.1 and the stated frequency of 31 days will be used because this optional flexibility is not supported at this time.	Introduction
16.0-1-A	3.7.6-1	LCO 3.7.6 and bases; Bases ASA discussion; Bases for Required Action A.1	Applicant to determine whether to adopt in LCO 3.7.6 an alternative to requiring all Selected Control Rod Run-In (SCRRI) and Select Rod Insert (SRI) functions to be operable. The alternative LCO is to make applicable the LCO 3.2.2, "Minimum Critical Power Ratio (MCPR)," limits for an inoperable SCRRI and/or SRI function, as specified in the COLR.	n/a	The bracketed information will be removed because this optional flexibility is not supported at this time.	Introduction
16.0-2-H	3.7.6-2	SR 3.7.6.6	Allowable Value for SCRRI/SRI loss-of-feedwater-heating instrumentation channel temperature trip setting	3	The bracketed items for allowable values will be completed with reference to the Technical Specification Administrative Program in TS 5.5.11, Setpoint Control Program (SCP) because the program implements the NRC approved methodology for determining allowable values for these limits. The methodology approach was chosen because it provides greater operational flexibility.	Introduction

OPTIONS:
(1) Site-specific information
(2) Useable information that bounds site-specific information
(3) NRC-approved methodology referenced

** An exemption is being requested for this item. See Part 7 of the COLA.

GTS COL Information Item Group	GTS COL Information Item No.	GTS References	Description of Information that Dominion Must Address in PTS	Option	Resolution / Justification	Location of Justification
16.0-2-H	3.8.1-1	SR 3.8.1.2 and bases	Acceptance criteria for battery charger testing (minimum duration of test in hours) consistent with battery size	2	The bracketed value will be completed with bounding values based on GUTOR manufacturer's recommendations for battery charger test duration. Rated battery charger output current value is in ESBWR DCD Tier 2 Table 8.3-4.	Bases for SR 3.8.1.2
16.0-2-H	3.8.1-2	Bases for GTS 3.8.1 Required Action A.2	Acceptance criteria for verification that battery is fully charged consistent with manufacturer recommendations	1	The bracketed values will be completed for stabilized charging current or float current based on BAE battery manufacturer's recommended fully charged float current limits for BAE 2V-24OPzV-3000 battery string.	Bases for GTS 3.8.1 and 3.8.3
16.0-2-H	3.8.1-3	SR 3.8.1.3 Note and bases	Use of a modified performance test for verification of battery capacity consistent with manufacturer recommendations.	1	The bracketed option to utilize a modified performance discharge test in lieu of the battery service test will be removed because the operational flexibility for the ESBWR valve regulated lead-acid battery is not being sought. The remaining testing required will not impose an impediment to normal plant operations.	Introduction
16.0-2-H	3.8.1-4	Bases for SR 3.8.1.1	Battery cell parameters consistent with manufacturer specifications.	1	The bracketed values for battery cell parameters will be completed. Various values for battery parameters are based on the BAE 2V-24OPzV-3000 battery manufacturer's recommendations. Total number of battery cells is supported in ESBWR DCD Tier 2 Table 8.3-4.	Introduction
16.0-2-H	3.8.1-5	Bases background for GTS 3.8.1, and bases for SR 3.8.1.1	Battery margin for aging factor and state of charge uncertainty (from expected battery life).	1	The bracketed values for battery cell parameters will be completed based on the BAE 2V-24OPzV-3000 battery manufacturer's recommendations. The battery life is provided in ESBWR DCD Tier 2 Section 8.3.2.1.1.	Introduction

OPTIONS:
(1) Site-specific information
(2) Useable information that bounds site-specific information
(3) NRC-approved methodology referenced

** An exemption is being requested for this item. See Part 7 of the COLA.

GTS COL Information Item Group	GTS COL Information Item No.	GTS References	Description of Information that Dominion Must Address in PTS	Option	Resolution / Justification	Location of Justification
16.0-2-H	3.8.3-1	SR 3.8.3.1 and bases; bases for Required Action B.2	Acceptance criteria for verification that battery is fully charged [stabilized charging current or float current within limits] consistent with manufacturers recommendations	1	The bracketed values will be completed for stabilized charging current or float current based on BAE battery manufacturer's recommended fully charged float current limits for BAE 2V-24OPzV-3000 battery string.	Bases for GTS 3.8.1 and 3.8.3
16.0-2-H	3.8.3-2	SR 3.8.3.6 and bases	Use of a modified performance test for verification of battery capacity	1	The bracketed option to utilize a modified performance discharge test in lieu of the battery service test will be removed because the operational flexibility for the ESBWR valve regulated lead-acid battery is not being sought. The remaining testing required will not impose and impediment to normal plant operations.	Introduction
16.0-2-H	3.8.3-3	TS 3.8.3: Actions A and F and SR 3.8.3.5; SR 3.8.3.2; bases Background; bases for Actions A, B, and F; bases for SRs 3.8.3.2 and 3.8.3.5	Battery cell parameters consistent with manufacturer specifications. Minimum connected cell float voltage. Minimum pilot cell float voltage.	1	The bracketed values for battery cell parameters will be completed. Various values for battery parameters are based on the BAE 2V-24OPzV-3000 battery manufacturer's recommendations. Total number of battery cells is supported in ESBWR DCD Tier 2 Table 8.3-4.	Introduction
16.0-2-H	3.8.3-4	SR 3.8.3.6 Frequency and bases	Battery margin for aging factor and state of charge uncertainty	1	The bracketed values for battery cell parameters will be completed based on the BAE 2V-24OPzV-3000 battery manufacturer's recommendations. The battery life is provided in ESBWR DCD Tier 2 Section 8.3.2.1.1.	Introduction
16.0-2-H	3.9.5-1	SR 3.9.5.2 and bases; Bases for LCO 3.9.5	Minimum CRD scram accumulator pressure	2**	The bracketed item for minimum scram accumulator pressure will be completed. An explicit normal operating pressure will be removed based on the justification provided in the exemption in Part 7 of the COLA.	Bases for SR G643.1.5.1

OPTIONS:
(1) Site-specific information
(2) Useable information that bounds site-specific information
(3) NRC-approved methodology referenced

** An exemption is being requested for this item. See Part 7 of the COLA.

GTS COL Information Item Group	GTS COL Information Item No.	GTS References	Description of Information that Dominion Must Address in PTS	Option	Resolution / Justification	Location of Justification
16.0-1-A	4.1-1	TS 4.1	Plant-specific description of site location.	n/a	The bracketed information will be replaced with the plant-specific description of the plant location that is consistent with the FSAR description of the site location.	Introduction
16.0-1-A	5.2.2-1	TS 5.2.2	Non-licensed operator manning requirements for multi-unit site	n/a	The standard wording applicable to single-unit manning will be maintained because the ESBWR is a single unit facility.	Introduction
16.0-1-A	5.3.1-1	TS 5.3.1	Unit staff qualifications requirements	n/a	The bracketed information on the specification of minimum qualifications for members of the unit staff will be removed and an exception for cold license operator training added. The unit staff qualification standards provided are consistent with the FSAR, including FSAR Section 13.2, for the stated exception.	Introduction
16.0-1-A	5.4.1-1	TS 5.4.1.a	Guidance documents for written procedures	n/a	The brackets will be removed because written procedures are established, implemented, and maintained covering activities defined in the bracketed guidance documents.	Introduction
16.0-1-A	5.4.1-2	TS 5.4.1.b	Guidance documents for emergency operating procedures	n/a	The brackets will be removed because written procedures are established, implemented, and maintained covering activities defined in the bracketed guidance documents.	Introduction
16.0-1-A	5.5.6-1	TS 5.5.6	Outdoor Liquid Storage Tank Radioactivity Monitoring Program	n/a	The bracketed information for applicants incorporating unprotected outdoor liquid radioactive storage tanks in their design will be removed because the plant-specific design does not include temporary outdoor liquid storage tanks.	Introduction
16.0-1-A	5.5.9-1	TS 5.5.9	Containment Leakage Rate Testing Program plant-specific exceptions to Regulatory Guide 1.163	n/a	The bracketed information for applicants requiring additional exemptions to RG 1.163 will be removed because no further exemptions to RG 1.163 are requested in the COLA.	Introduction

OPTIONS:
(1) Site-specific information
(2) Useable information that bounds site-specific information
(3) NRC-approved methodology referenced

** An exemption is being requested for this item. See Part 7 of the COLA.

GTS COL Information Item Group	GTS COL Information Item No.	GTS References	Description of Information that Dominion Must Address in PTS	Option	Resolution / Justification	Location of Justification
16.0-2-H	5.5.10-1	TS 5.5.10.a	Battery cell parameters consistent with manufacturer specifications. Minimum connected cell float voltage	1	The bracketed values for battery cell parameters will be completed. Various values for battery parameters are based on the BAE 2V-24OPzV-3000 battery manufacturer's recommendations. Total number of battery cells is supported in ESBWR DCD Tier 2 Table 8.3-4.	Bases for SR 3.8.1.1
16.0-2-H	5.5.11-1	TS 5.5.11	Setpoint Control Program references to NRC staff-approved setpoint methodology and the associated NRC SER	n/a	Removal of the brackets requires NRC approval of the GEH setpoint methodology. Following NRC approval of the GEH setpoint methodology, the approved setpoint methodology revision and the corresponding NRC Safety Evaluation date, as well as the applicable ADAMS accession numbers will be provided in a subsequent submittal to complete these brackets.	Introduction
16.0-1-A	5.5.12-1	TS 5.5.12	Control Room Habitability Area (CRHA) Boundary Program requirements for hazardous chemical releases	n/a	The bracketed information pertaining to hazardous chemicals will be removed because hazardous chemical protection for the CRHAVS is not required based on the site-specific evaluation presented in FSAR Section 6.4.5	Introduction

OPTIONS:
(1) Site-specific information
(2) Useable information that bounds site-specific information
(3) NRC-approved methodology referenced

** An exemption is being requested for this item. See Part 7 of the COLA.

GTS COL Information Item Group	GTS COL Information Item No.	GTS References	Description of Information that Dominion Must Address in PTS	Option	Resolution / Justification	Location of Justification
16.0-2-H	5.5.13-1	TS 5.5.13.d	Ventilation Filter Test Program (VFTP) requirement for control room habitability area (CRHA) heating, ventilation, and air conditioning (HVAC) subsystem (CRHAVS) emergency filtration unit (EFU) differential pressure acceptance criteria (EFU includes HEPA filters, prefilters, and carbon adsorbers)	2**	The bracketed values for the maximum pressure drop across combined HEPA filters, the prefilters, and the carbon adsorbers will be completed. The value provided is a bounding value based upon the ability of the EFU fan to deliver the required flow considering the pressure drop, such that the EFU fan motor current remains within the value assumed in the battery load calculations. Additional discussions will be incorporated in the Bases for SR 3.7.2.3 describing the assumptions used in developing the bounding value based on the justification provided in the exemption in Part 7 of the COLA.	Bases for SR 3.7.2
16.0-1-A	5.6.1-1	TS 5.6.1	Applicant to determine if allowance for multiple unit stations is applicable to PTS. If applicable, a single Annual Radiological Environmental Operating Report may be prepared.	n/a	The brackets will be removed from the Notes because multi-unit site options and standards formatting in the Notes apply to the plant-specific site.	Introduction
16.0-1-A	5.6.1-2	TS 5.6.1	Applicant to determine format of Annual Radiological Environmental Operating Report.	n/a	The brackets allowing the applicant to specify the format of the Annual Radiological Environmental Operating Report will be removed to retain the standard option provided in TS 5.6.1 because the standard format applies to the plant-specific site.	Introduction

OPTIONS:
(1) Site-specific information
(2) Useable information that bounds site-specific information
(3) NRC-approved methodology referenced

** An exemption is being requested for this item. See Part 7 of the COLA.

GTS COL Information Item Group	GTS COL Information Item No.	GTS References	Description of Information that Dominion Must Address in PTS	Option	Resolution / Justification	Location of Justification
16.0-1-A	5.6.2-1	TS 5.6.2	Applicant to determine if allowance for multiple unit stations is applicable to PTS. If applicable, a single Radioactive Effluent Release Report, with content required for a multiple unit report, may be prepared.	1	The bracketed option to specify the format of the Annual Radiological Environmental operating Report will be removed and that standard option retained because the standard format applies to the plant-specific site.	Introduction
16.0-1-A	5.6.3-1	TS 5.6.3	Core Operating Limits Report (COLR) reference to Specification 3.7.4, "Main Turbine Bypass System." See COL item 3.7.4-1.	n/a	The bracketed information will be removed because this optional flexibility is not supported at this time.	Introduction
16.0-1-A	5.6.3-2	TS 5.6.3	Applicant to reference in TS 5.6.3.a any additional individual specifications that address core operating limits, and in TS 5.6.3.b the associated NRC approved methods used to determine the core operating limits.	n/a	The bracketed information allowing the option to list additional specifications that may reference COLR will be removed because there are no additional Specifications addressing COLR.	Introduction
16.0-2-H	5.6.4-1	TS 5.6.4	Applicant to add listing of analytical methods used to determine the RCS pressure and temperature limits in Specification for PTLR, if PTLR adopted in PTS. In lieu of a PTLR, the applicant may insert its plant-specific PT curves as figures in TS 3.4.4 and omit TS 5.6.4.	n/a	The PTLR will be submitted to the NRC in the second quarter of 2009. The approved PTLR methodology revision and the corresponding NRC Safety Evaluation date, as well as applicable ADAMS accession numbers will be provided in a subsequent submittal.	n/a
16.0-1-A	5.6.5-1	TS 5.6.5	Post Accident Monitoring Report	n/a	The bracketed information will be removed because PAM Type A Variables are not applicable to the ESBWR safety analyses. There are no operator actions are required for the first 72 hours post-DBA.	Introduction

OPTIONS:
(1) Site-specific information
(2) Useable information that bounds site-specific information
(3) NRC-approved methodology referenced

** An exemption is being requested for this item. See Part 7 of the COLA.