

VIRGINIA ELECTRIC AND POWER COMPANY  
RICHMOND, VIRGINIA 23261

October 10, 2001

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

Serial No.: 01- 582  
CM/RAB R0  
Docket Nos.: 50-338  
50-339  
License Nos.: NPF-4  
NPF-7

Gentlemen:

**VIRGINIA ELECTRIC AND POWER COMPANY (DOMINION)**  
**NORTH ANNA POWER STATION UNITS 1 AND 2**  
**PROPOSED IMPROVED TECHNICAL SPECIFICATIONS**  
**REQUEST FOR ADDITIONAL INFORMATION**  
**SECTION 3.3.1: DISCUSSION OF CHANGE A.24**  
**BEYOND SCOPE ISSUE (TAC Nos. MB 2073 and MB 2075)**

This letter transmits our response to the NRC's request for additional information (RAI) regarding the North Anna Power Station (NAPS) Units 1 and 2 proposed Improved Technical Specifications (ITS). The North Anna ITS license amendment request was submitted to the NRC in a December 11, 2000 letter (Serial No. 00-606). The NRC requested additional information regarding removal of a statement from the current Technical Specifications. This change was justified by Discussion of Change A.24 in ITS Section 3.3.1. This information was requested in a NRC letter dated September 7, 2001 (TAC Nos. MB2073 and MB2075).

Attached is the NRC's RAI, our response to the RAI, and copies of the affected ITS submittal pages.

If you have any further questions or require additional information, please contact us.

Very truly yours,



Leslie N. Hartz  
Vice President - Nuclear Engineering

Attachment

Commitments made in this letter: The Technical Requirements Manual will ensure that gains are properly determined and implemented.

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**North Anna ITS RAI**  
**LCO 3.3.1 – RTS Instrumentation**  
**Beyond Scope Issue (TAC Nos. MB2073 and MB 2075)**

**RAI:** On the basis of the NRC's review of the staff-identified beyond-scope issue, Discussion of Change (DOC) A.24 for Section 3.3.1, "Reactor Trip System (RTS) Instrumentation," the following information is requested:

**Comment:** DOC A.24 requested the removal of the statement "with gains to be selected based on measured instrument response during plant startup tests such that." If this statement is removed from the Improved Technical Specifications (ITS), where will it be located to ensure that gains are properly determined and implemented? It is requested that VEPCO identify other means to ensure that if the gains must be adjusted in the future, they will be "based on measured instrument response during plant startup."

**Response:**

The Technical Requirements Manual (TRM) will ensure that gains are properly determined and implemented. DOC A.24 has been deleted and DOC LA.17 has been added to address the issue. DOC LA.17 moves the requirement, "with gains to be selected based on measured instrument response during plant startup tests such that:" from the Technical Specifications to the TRM. Any changes to the TRM are made using the 10 CFR 50.59 process, which ensures changes are properly evaluated. The TRM provides a centralized location for similar requirements moved out of the Technical Specifications.

The movement of this requirement to the Core Operating Limits Report (COLR) was considered, but it was determined that this type of information is not appropriate to be included in that document. The COLR typically contains numerical values, such as setpoints or operating limits, and not requirements that provide procedural direction.

The pages of the ITS submittal that were revised as a result of this RAI response are attached.

ITS  
Table 3.3.1-1  
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A.1

TABLE 2.2-1 (Continued) ALLOWABLE VALUES  
REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS  
NOTATION (Continued)

LA.11

Operation with 3 Loops

K<sub>1</sub> = 1.264  
K<sub>2</sub> = 0.0220  
K<sub>3</sub> = 0.001152

Operation with 2 Loops  
(no loops isolated)

K<sub>1</sub> = ( )  
K<sub>2</sub> = ( )  
K<sub>3</sub> = ( )

Operation with 2 Loops  
(1 loop isolated)

K<sub>1</sub> = ( )  
K<sub>2</sub> = ( )  
K<sub>3</sub> = ( )

A.6

LA.5

L.119

and  $I_1(\Delta t)$  is a function of the indicated difference between top and bottom detectors of the power-range nuclear ion chambers; with gains to be selected based on measured instrument response during plant startup tests such that:

LA.17

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LA.5

- (I) for  $q_1 - q_b$  between  $-4.4$  percent and  $+5$  percent,  $I_1(\Delta t) = 0$  (where  $q_1$  and  $q_b$  are percent RATED THERMAL POWER in the top and bottom halves of the core respectively, and  $q_1 + q_b$  is total THERMAL POWER in percent of RATED THERMAL POWER).
- (II) for each percent that the magnitude of  $(q_1 - q_b)$  exceeds  $-4.4$  percent, the  $\Delta T$  trip setpoint shall be automatically reduced by  $1.67$  percent of its value at RATED THERMAL POWER.
- (III) for each percent that the magnitude of  $(q_1 - q_b)$  exceeds  $+5$  percent, the  $\Delta T$  trip setpoint shall be automatically reduced by  $2.00$  percent of its value at RATED THERMAL POWER.

LA.5

LA.5

ITS  
3.3.1  
3-3-92

\* Values dependent on NRC approval of ECCS evaluation for these operating conditions.  
\* The value for K<sub>1</sub> shall be equal to 1.132 for the period of operation until steam generator replacement.

A.6

LA.5

The values denoted by \* are specified in the COLR.

A.1

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Table 3.3.1-1  
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TABLE 2.2-1. (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION

ALLOWABLE VALUES

TRIP SETPOINTS

NOTATION (Continued)

Operation with 3 loops

$K_1$  1.264  
 $K_2$  0.0220  
 $K_3$  0.001152

Operation with 2 Loops  
(no loops isolated)\*

$K_1 = ( )$   
 $K_2 = ( )$   
 $K_3 = ( )$

Operation with 2 Loops  
(1 loop isolated)\*

$K_1 = ( )$   
 $K_2 = ( )$   
 $K_3 = ( )$

and  $f_1 (\Delta I)$  is a function of the indicated difference between top and bottom detectors of the power-range nuclear ion chambers; with gains to be selected based on measured instrument response during plant startup tests such that:

- (i) for  $q_t - q_b$  between  $-49$  percent and  $+3$  percent,  $f_1 (\Delta I) = 0$ .  
(where  $q_t$  and  $q_b$  are percent RATED THERMAL POWER in the top and bottom halves of the core respectively, and  $q_t + q_b$  is total THERMAL POWER in percent of RATED THERMAL POWER).
- (ii) for each percent that the magnitude of  $(q_t - q_b)$  exceeds  $49$  percent, the  $\Delta T$  trip setpoint shall be automatically reduced by  $1.67$  percent of its value at RATED THERMAL POWER.
- (iii) for each percent that the magnitude of  $(q_t - q_b)$  exceeds  $53$  percent, the  $\Delta T$  trip setpoint shall be automatically reduced by  $2.00$  percent of its value at RATED THERMAL POWER.

\*Values dependent on NRC approval of ECCS evaluation for these operating conditions.

The values denoted by \* are specified in the COLR

LA.11

A.6

LA.5

L.119

LA.17

LA.5

LA.5

LA.5

A.6

LA.5

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## DISCUSSION OF CHANGES

### ITS 3.3.1, RTS INSTRUMENTATION

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tested. Under the CTS Frequency for the listed functions, two trains must complete the required testing in 62 days. The ITS Frequency requirement for each of these functions requires a train to be tested every 31 days with both trains completed in 62 days. Therefore, the testing requirements in the CTS and ITS require the same frequency for each function. This change is designated as administrative because it does not result in technical changes to the CTS.

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A.24 Not used.

A.25 CTS Table 4.3-1 Function 18, Turbine Trip, specifies a CHANNEL FUNCTIONAL TEST with a frequency of S/U <sup>(1)</sup>. The S/U stands for prior to a reactor startup and Note <sup>(1)</sup> specifies "If not performed within the previous 31 days." Action 9 must be entered for an inoperable channel. Action 9 states, "With the number of channels OPERABLE less than the Total Number of Channels OPERABLE requirement, STARTUP and POWER OPERATION may proceed provided the inoperable channel is placed in the tripped condition within 72 hours and the Minimum Channels OPERABLE Requirement is met or reduce power to less than the P-8 setpoint in the next 4 hours." ITS Table 3.3.1-1 Function 16 Turbine Trip requires SR 3.3.1.15, a TADOT, to be performed. The Frequency for the SR states, "prior to exceeding the P-8 interlock whenever the unit has been in MODE 3, if not performed within the previous 31 days." A Note to the SR states, "Verification of setpoint is not required." This changes the CTS surveillance requirement frequency from startup, if not performed in the previous 31 days to prior, to exceed P-8 setpoint whenever the unit has been in MODE 3, if not performed in the previous 31 days and specifically states that verification of the setpoint is not required.

This change is acceptable because the frequency of the required test continues to be performed in the same time period as required by the CTS. The ITS Frequency is set to be consistent with the MODE of applicability for the Turbine Trip function. The intent of the CHANNEL FUNCTIONAL TEST in the CTS is to ensure that the turbine trip signal would generate a reactor trip signal. Therefore, the addition of the ITS Note stating that no verification of setpoint is required is not a change in the requirement, but is provided for clarification. This change is designated as administrative because it does not result in technical changes to the CTS.

A.26 CTS Table 3.3-1 Action 1 states with the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement the unit must be shutdown within a given time. Additionally, Action 1 states that one channel may be bypassed for up to 4 hours for concurrent surveillance testing of the RTB and automatic trip logic provided the other channel is OPERABLE. Action 1 applies to Function 21 Reactor Trip Breakers. ITS Table 3.3.1 -1 for function 19 requires Condition P to be entered for an inoperable train. Condition P requires with one RTB train inoperable, it must be restored to OPERABLE status or the unit must be shutdown. Three Notes modify Condition P. Note 3 states that one RTB train may be bypassed for up to 4 hours for concurrent surveillance testing of the RTB and

## DISCUSSION OF CHANGES

### ITS 3.3.1, RTS INSTRUMENTATION

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Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

- LA.17 (*Type 3 – Removing Procedural Details for Meeting TS Requirements and Related Reporting Problems*) CTS Table 2.2-1 Functional Unit 7 states the requirement for the Overtemperature (OT)  $\Delta T$  as Note 1. The Allowable Value for the function is calculated with the application of Note 3 to Note 1. A portion of Note 1 states that the gains set for the equation are selected based on measured instrument response obtained during plant startup testing. ITS Table 3.3.1-1 Function 6 requires the OT $\Delta T$  Allowable Value to be calculated via the formula stated in ITS Note 1. Note 1 in the ITS combines the CTS Notes 1 and 3 with modifications. ITS Note 1 does not contain the requirement “with gains to be selected based on measured instrument response during plant startup tests . . .” This changes the CTS by moving the information of the gain selection from the specification to the Technical Requirements Manual (TRM).

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The removal of these details for performing actions from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement for calculating OT $\Delta T$  Allowable Value in the specification. Also, this change is acceptable because these types of procedural details will be adequately controlled in the TRM. Any changes to the TRM are made under 10 CFR 50.59, which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

#### LESS RESTRICTIVE CHANGES

- L.1 (*Category 4 – Relaxation of Required Action*) CTS Table 3.3-1 requires for various functions that Action 15 be entered for an inoperable channel in MODES 3\*, 4\*, and 5\*. Note \* states, “With the reactor trip system breakers in the closed position and the control rod drive system capable of rod withdrawal.” Action 15 states that an inoperable channel shall be returned to OPERABLE status within 48 hours or open the Reactor Trip Breakers (RTBs) within the next hour. ITS Table 3.3.1-1 for these functions requires ITS Action C to be entered. Action C states with one channel or train inoperable, restore the function to OPERABLE status in 48 hours or initiate action to fully insert all rods. The Rod Control System must be placed in a condition incapable of rod withdrawal within the next hour. The applicable MODES or other specified conditions for MODES 3, 4, and 5 are modified by Note <sup>(a)</sup>. Note <sup>(a)</sup> states, “With Rod Control System capable of rod withdrawal or one or more rods not fully inserted.” This changes the CTS by not requiring the RTBs to be opened but allowing an alternative action to disable the Rod Control System.