

May 20, 2002

MEMORANDUM TO: File

FROM: Omid Tabatabai, Project Manager **/RA/**
License Renewal Section
License Renewal and Environmental Impacts Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

SUBJECT: DOMINION'S RESPONSES TO STAFF'S QUESTIONS DURING A
TELECOMMUNICATION ON NOVEMBER 21, 2001

On November 21, 2001, Mike Henig of Virginia Electric and Power Company (VEPCo) transmitted an electronic mail (e-mail) to Robert Prato and provided Dominion's responses to the staff's questions during a telecommunication on November 21, 2001, regarding Sections 2.3.3 and 2.3.4 of the applications. The e-mail response from VEPCo is attached.

Attachment: As Stated

cc: PUBLIC

Docket Nos. 50-338, 50-339, 50-280, and 50-281

Item 2.3.4.1-1 In both LRA, Auxiliary steam drawings (NAS) 11715-LRM-072A, Sh. 2, and 12050-LRM-072A, Sh. 2, and (SPS) 11448-LRM-066A, Sh. 2 and 11548-LRM-066A, Sh. 2 show the associated piping and valves for containment penetration 89 as being within the scope of license renewal.

a. Why was containment isolation not identified as an intended function in the system description?

Response:

Pen 89 components have SV and VP system designators.

Surry LRA –

Section 2.3.3.19 Secondary Vents (SV) system description identifies the containment pressure boundary function (LRA Page 2-70).

Section 2.3.3.20 Vacuum Priming (VP) system description identifies the containment pressure boundary function (LRA Page 2-71).

North Anna LRA –

Section 2.3.3.19 Secondary Vents (SV) system description identifies the containment pressure boundary function (LRA Page 2-71).

Section 2.3.3.20 Vacuum Priming (VP) system description identifies the containment pressure boundary function (LRA Page 2-72).

b. The penetration itself is not highlighted, please verify that the associated penetration is included as being within the scope of license renewal and is included in the AMR for containment penetration in the containment section of the LRA.

Response:

The penetrations are considered structural components, and in-scope and are included in the Containment section 2.4.1 of the LRA. As a note, structural components are not highlighted on mechanical drawings.

Why was the scope of this containment isolation not extend to the second outside containment isolation valve (similar to the arrangement for the similar penetrations for North Anna Units 1 and 2)?

Response:

The criteria for the containment isolation boundary is different between Surry and North Anna. Refer to NAPS UFSAR Table 6.2-37, “Condenser Air Ejector Vent” for the credited isolation boundary. Similarly, refer to SPS UFSAR table 5.2-1, “Condenser Air Ejector Discharge” for the credited containment isolation valves. Thus, the LR scope is consistent the UFSAR containment isolation boundary.

Item 2.3.4.1-2 In both LRA, Auxiliary steam drawings (NAS) 11715-LRM-072A, Sh. 1, and 12050-LRM-072A, Sh. 1, and (SPS) 11448-LRM-066A, Sh. 1, and 11548-LRM-

066A, Sh. 1, Note B, states that the large bore piping downstream of the main steam trip and bypass valves is in scope, however, the integrity of the small bore piping does not impact the Appendix R or SBO function. Please verify that the drain-lines to the first steam traps are not within scope of these events under your CLB. If not, please provide a brief explanation as to how the station can cope with these events without the integrity of these lines?

Response:

The Appendix R and SBO function of the large-bore MS piping is to prevent excessive reactor cooldown in the event the MSTVs can not be shut due to an Appendix R fire or an SBO event. Smaller lines such as the 3/4" line to the steam trap header do not provide the capacity to cause excessive cooldown and are not in-scope for the Appendix R and SBO function.

Item 2.3.4.2-2 For the SPS LRA, identify the system that cools the secondary side of the blowdown heat exchangers? If it is component cooling water why aren't the blowdown heat exchanger shells within scope for license renewal in an analogous fashion to the North Anna blowdown heat exchanger shells for CC pressure boundary integrity intended function?

Response:

The SPS blowdown heat exchangers are cooled by the condensate system (CN) (Refer: 11448-LRM-124A, Sh 4 and 11548-LRM-124A, Sh 4), and are not in the scope of LR.

Item 2.3.4.3-1 In the NAS LRA, Section 2.3.4.3, the Condensate (CN) System, the applicant states that the primary purpose of the condensate (CN) system is to provide chemically treated water to the suction of the main feedwater pumps at sufficient pressure to support main feedwater pump operation. The CN system also provides the piping, valves, water storage, and make-up supply for auxiliary feedwater. An emergency condensate storage tank is provided for each unit. Each tank supplies water to the three auxiliary feedwater pumps through individual lines. These tanks and the associated components up to the suction of the pumps comprise the portion of the CN system that is subject to aging management review. Provide the following information:

a. Why are valves not identified as being within the scope of license renewal on Table 2.3.4-3, Condensate (CN)?

Response:

Valves are designated as FW based on mark number designation and evaluated accordingly in the FW section of the LRA.

b. Why is the 6" line up to and including the vacuum breaker on condensate storage tank 1-CN-TK-1 and the similar 4" line to the vacuum breaker on condensate storage tank 2-CN-TK-1 not identified as being within license renewal scope? Can the failure of these

lines could jeopardize the safety function of the vacuum breaker? If so, can the failure of the vacuum breaker cause the failure of the associated tank?

Response:

The piping associated with the vacuum breaker does not perform a license renewal intended function. Failure of the vacuum breaker piping would not affect the function of any in-scope equipment from performing its intended function.

c. Confirm that there is an open 6" vent line on condensate storage tank 2-CN-TK-1 along with a nitrogen pressurization system and a vacuum breaker in parallel.

Response:

2-CN-TK-1 has an open 6" vent line, a nitrogen pressurization line, and a vacuum breaker installed in parallel as shown on drawing 12050-LRM-074A, Sheet 3.

d. Regarding UFSAR, Section 10.4.4.2, the condenser air ejector discharge is diverted to the reactor containment on high radioactivity. Is this function credited in the safety analysis or otherwise considered safety-related? At a minimum it would appear that the containment isolation portions of this line, shown on UFSAR Figure 10.4.3, Condensate system sheet 3 of 4, should be on a license renewal drawing for the condensate system with some segments within scope.

Response:

The diversion function is not credited in the safety analysis or otherwise safety-related. Therefore, it is not a license renewal intended function.

Item 2.3.4.3-1 In the SPS LRA, Section 2.3.4.3, the Condensate (CN) System, the applicant states that the primary purpose of the condensate (CN) system is to provide chemically treated water to the suction of the main feedwater pumps at sufficient pressure to support main feedwater pump operation. The CN system also provides the piping, valves, water storage, and make-up supply for auxiliary feedwater. An emergency condensate storage tank is provided for each unit. Each tank supplies water to the three auxiliary feedwater pumps through individual lines. These tanks and the associated components up to the suction of the pumps comprise the portion of the CN system that is subject to aging management review. A portion of the CN system provides the component cooling (CC) system pressure boundary at the make-up connection to the CC surge tank. The components that support this function are also subject to aging management review. Provide the following information:

a. As noted in UFSAR, Section 10.3.6.2, a radiation monitor is installed in the evacuation exhaust path to control the release of potentially radioactive materials from the main condenser. Is this function credited in the safety analysis or otherwise considered safety-related?

Response:

The diversion function is not credited in the safety analysis or otherwise safety-related. Therefore, it is not a license renewal intended function.

b. The main condenser is identified as being within scope for license renewal on drawings 11448-LRM-071A, Sh. 2 and 11548-LRM-071A, Sh. 2. For the purpose of AMR (Table 2.3.4-3 Condensate) is the condenser shell within scope for pressure boundary, and if so, how is it included as being within the scope of license renewal (as a tank)?

Response:

The condenser shell is not in scope for license renewal. The condenser water boxes that form the CW system pressure boundary are in-scope as indicated in Table 2.3.3-5.

Item 2.3.4.6-1 In the NAS LRA, Section 2.3.4.6, which includes the scoping for the steam drain (SD) system, the applicant only includes a single isolation for the main steam system pressure boundary function performed by the SD system. Should there be a double isolation, if not, please provide a brief explanation as to why not. This question also applies to the WT system.

Response:

As stated in LRA Section 2.1.5.1, the LR boundaries for a system have typically been extended to the first normally-closed manual valve, check valve or automatic valve that gets a signal to go closed. The SD valves are normally closed.

Item 2.3.4.6-2 The NAS components of the SD system that are within the scope of license renewal identify isolation valves, however, only piping is identified in Table 2.3.4.6-1. As part of the staff's review, we noted that the valves have an MS designation. Please confirm that the valves identified as being within the scope of LR for this system are included in the AMR for the MS system.

Response:

The valves do not have SD system designators. They have MS system designators. They are included within the component group "valves" for the MS system Table 2.3.4-5 "Main Steam".

Item 2.3.4.7-1 In the NAS LRA Section 2.3.4.7, the NAS water treatment (WT) system chemical addition line to the steam generator does not include an isolation valve, none is shown on drawings 11715-LRM-074A, Sh. 1, and 12050-LRM-074A. If one of the functions, which brings the WT system within the scope of license renewal, is steam generator pressure boundary, then should there be an isolation valve for this portion of the system. If so, identify the valve and include in the AMR for the WT system, or provide a technical justification as to why an isolation valve is not needed.

Response:

The WT system between the steam generator and the outside containment isolation check valve is within the steam generator pressure boundary and is within license renewal scope. The WT piping shown on 11715-LRM-074A, Sh. 1, indicates that the line is continued on 11715-LRM-102A Sh 2. This drawing indicates that the piping is within scope including two normally closed manual isolation valves for each steam generator inside containment, and one containment isolation check valve for each steam generator outside of containment. The unit 2 configuration is similar.

Item 2.3.4.7-2 In the SPS LRA, Section 2.3.4.7, drawings 11448-LRM-124A Shts 1-3 and 11448-LRM-124B Shts 1-3, shows the WT system from the S/G to 1-RT-1 and from 1-RT-2 to 1-RT-6 as being within the scope of license renewal. From the S/G to 1-RT-1 provides the S/G pressure boundary function. 1-RT-2 to 1-RT-6 provides the containment pressure boundary function. Containment penetrations are included under the Containment Scoping steam generators require a double isolation function to ensure pressure boundary is maintained during normal plant operation, which is provided by the components between 1-RT-2 to 1-RT-6. However, it is unclear if a double isolation is required for the S/G. If so then the piping between 1-RT-1 and 1-RT-2 and 1RT RV-100a, and 1 RT-63 should be included within the scope of license renewal. Please confirm that only a single isolation is required for the S/G and the basis, or include within the scope of license renewal, the piping between 1-RT-1 and 1-RT-2 and 1RT RV-100a, and 1- RT-63.

Response:

The piping between valves 1-RT-1 and 1-RT-2 is not in license renewal scope. As stated in 2.1.5.1 the LR boundaries for a system have typically been extended to the first normally-closed manual valve, check valve or automatic valve that gets a signal to go closed. The section of pipe in question is beyond the single isolation valve system pressure boundary and not within the containment double isolation valve boundary.

Item 2.3.3.21-1 In both LRAs, Table 2.3.3-21, the applicant lists components that are subject to an AMR for the heating and ventilation (HV) system. However, for some systems that are within the scope of license renewal select components are not highlighted. Identify whether the following components are subject to an AMR, and if so, provide the relevant information about the components to complete Table 2.3.3-21. If any component is not considered subject to an AMR, provide justification for its exclusion.

a. Exhaust fan housings (NAS drawings 1-HV-F-5A and 1-HV-F-5B; 1-HV-F-7A and 1-HV-F-7B; 1-HV-F-56A and 1-HV-F-56B) (SPS drawings 1-VS-F-40A and 1-VS-F-40B; 1-VS-F-8A and 1-VS-F-8B; 1-VS-F-59; 2-VS-F-40A and 2-VS-F-40B) and its associated damper housings (NAS drawings 11715-LRB-006A, Unit 1, AC&PS Sh.3 @ F-7, B-7, and C-8) (SPS drawings 11448-LRB-006D, Units 1 & 2, AVS Sh.2 @ B-7, C-4, B-4, and E-7).

Response:

NAPS exhaust fan housings 1-HV-F-5A, 5B, 7A, 7B, F56A, and 56B do not perform an intended function and are not in-scope of license renewal (Refer to 11715-LRB-006A), sheet 3).

SPS exhaust fan housings 1-VS-F-40A, 40B, 8A, 8B, F59A, and 2-VS-F-40A, 40B do not perform an intended function and are not in-scope of license renewal (Refer to 11448-LRB-006D), sheet 2).

b. Birdscreen or wire mesh is not identified, if provided as a protective cover for a vent stack (NAS drawing 11715-LRB-006A, Unit 1) (Surry drawings 11448-LRB-006D, Units 1 & 2, AVS Sh.4 @ E-3 and E-8).

Response:

There is no bird wire or wire mesh identified as a protective cover.

c. Sealant materials in the auxiliary building HVAC

Response:

Sealant materials were not identified in the Auxiliary Building HVAC.

Item 2.3.3.21-2 With regard to the NAS LRA, please define "Future HEPA Charcoal" and briefly explain its relationship to the scope of the auxiliary building (LRA drawing 11715-LRB-006A, Unit 1).

Response:

The filter unit is a three element housing where two of the three element compartments are being used as "HEPA" and "Charcoal" filtering functions. The third compartment has nothing installed and is labeled as "Future".

Item 2.3.3.21-3 In both LRAs, although the evaluation boundary of the main control room and the different switchgear rooms are identified, the applicant does not define the areas that constitute the main control room envelope. Describe the main control room envelope, and its intended functions, for both NAS and SPS in sufficient detail such that the staff can perform its review consistent with the information provided in the LRAs. Ensure that the discussion includes sufficient correlation with the scoping and AMR activities contained in the LRA to allow the staff to utilize the information already provided. Identify any SCs that need to be added to the scope and AMR already identified in the LRA, and include all the applicable information.

Response:

Refer to SPS UFSAR Section 9.13.3.6 and to NAPS UFSAR Section 9.4.1 for a further description of the control room envelope boundaries.

Item 2.3.3.21-4 Clarify whether sealants used to maintain the main control room envelope at positive pressure with respect to the adjacent areas are included within the scope of license renewal and subject to an AMR. If in the scope of license renewal, identify where in the LRA is it subject to an AMR. If the sealants are not subject to an AMR, provide justification for its exclusion.

Response:

Sealants used to maintain the control room pressure boundary are in the scope of license renewal. The sealants are covered under Sections 2.4.11 and 3.5.11 of the application, Miscellaneous Structural Commodities. The sealants are identified as “fire barrier penetration seals” in Tables 2.4.11-1 and 3.5.11-1.

Item 2.3.3.21-5 For the SPS LRA, Table 2.3.3-21, describe the components that make up the commodity “Instrumentation.” Discuss why the NAS LRA, Table 2.3.3-21, does not identify a similar commodity group.

Response:

As indicated in the footnote to North Anna LRA Table 2.3.3-21, the component group 'Instrumentation' includes miscellaneous in-line instrumentation that performs a PB function. For Surry Ventilation system, there are no components identified for inclusion in a component group 'Instrumentation', therefore, this component group is not included in Surry LRA Table 2.3.3-21.

Item 2.3.3.21-6 For both LRAs, the respective UFSARs discuss radiation, chlorine, and smoke detection monitors. However, these monitors are not consistently highlighted on the HV LRA drawings or included in Table 2.3.3-21 of either LRA. Radiation, chlorine, and smoke detection monitors are not identified in Section 2.3.3.21 of the LRA relative to the scope of license renewal and an AMR. Discuss the function of these monitors relative to including or excluding them from the scope of license renewal.

Response:

Chlorine detectors are not installed at either SPS or NAPS stations.

Smoke detectors are in-scope of license renewal, but the monitor has no passive components subject to an aging management review.

With the exception of the containment high range radiation monitors (CHRRMS) at SPS and Naps, the radiation monitoring function has been determined not to be an intended function. The CHRRMS monitor does serve an intended function for radiation monitoring and is in-scope for license renewal, but the monitor has no passive components subject to an aging management review.

Item 2.3.3.21-7 In both LRAs, various drawing identify air bottles as being within the scope of license renewal. However, Table 2.3.3-21 of the SPS LRA lists air bottles as a commodity of component that is subject to an AMR. Then NAS LRA, Table 2.3.3-21, does

not identify air bottles as a commodity, please explain this difference in Table 2.3.3-21 of the LRAs.

Response:

The Surry Ventilation System (VS) contains gas bottles that are included within the scope of license renewal. The corresponding gas bottles for North Anna, however, are contained in systems other than the Heating and Ventilation (HV) system as clarified below.

The control room air bottles for both stations are in LR scope and perform a passive pressure boundary function and, as such, are highlighted on the LR drawings. However, the bottles are periodically replaced and, therefore, do not require an aging management review and are not shown on LRA screening summary tables. The control room air bottles are contained within the VS system for Surry and the compressed air (CA) system for North Anna.

The Surry VS system also contains an in-scope long-lived air bottle which performs an intended function for air operated dampers within the VS System. This air bottle is represented by the component group "Gas Bottles" in Surry LRA Table 2.3.3-21. The corresponding gas bottles for the North Anna are also within scope and are long-lived; but are contained within the Instrument Air (IA) system. See North Anna LRA Table 2.3.3-14.

Item 2.3.4.4-1 In both LRAs (NAS Unit 1 drawing 11715-LRM-070A, Sh. 3 and Unit 2 drawing 12050-LRM-070A, Sh. 3) (SPS, Unit 1 drawing 11448-LRM-064A, Sh. 4 and Unit 2 drawing 11548-LRM-064A, Sh. 4), the applicant shows the turbine cases for auxiliary feedwater pumps to be within the scope of license renewal. Provide a technical justification as to why the 6" lines attached to the casing that vents the exhaust to atmosphere and any bolting attaching these lines are not also within the scope and subject to an AMR.

Response:

Dominion understands the question, forward RAI.

Item 2.3.4.4-2 In the NAS LRA, Unit 1 drawing 11715-LRM-074A, Sh. 1, and Unit 2 drawing 12050-LRM-074A, Sh. 1, the applicant identifies the 16 inch main feedwater lines as being within the scope of license renewal for high energy line break considerations. These lines contain flow elements 1-FW-FE-1476, -1486, and -1496 and 2-FW-FE-2476, -2486, and -2496. Table 2.3.4-4 lists the flow elements as being within the scope for both the pressure boundary and restrict flow intended functions. State if the flow elements are included for its flow detection intended function of providing the source of a safety-related sensing function. If not provide a technical justification as to these flow elements are not subject to an aging management review for its flow measuring intended function.

Response:

The flow elements are in scope of LR and have license renewal intended functions of pressure boundary and restrict flow. The restrict flow intended function includes the the flow detection intended function.

Item 2.3.4.4-3 In the SPS LRA, Table 3.4-4, the applicant lists stainless steel and carbon steel as the materials for the filters and strainers. The NAS LRA, Table 3.4-4, only identifies carbon steel as the material for filters and strainers. The drawings do not indicate any differences in the components. The tables do not highlight any differences between the tables as is done throughout the application. Please confirm that the differences in the tables are accurate and discuss the any differences in convention from the rest of the application and provide any appropriate justification.

Response:

The feedwater filter/strainers at SPS are constructed of carbon steel and stainless steel. The feedwater filter/strainers at NAPS are constructed of carbon steel. The information in the tables is accurate and the conventions for identifying plant specific information described in Table 1.1-1 did not require the identification of a difference.

Item 2.3.4.4-4 In the NAS LRA, Table 3.3-4, the applicant did not identify accumulators as a commodity group subject to an AMR even though accumulators are included in the evaluation boundary as is indicated on drawings 11715-LRM-074A, Sh. 4 and 12050-LRM-074A, Sh. 4 for AFW flow control valves. Clarify that these components are within the scope of license renewal and identify where the AMR for these components can be found in the LRA. If not subject to an AMR, provide a technical justification for not requiring an AMR.

Response:

The subject air accumulators are included within the feedwater system as “Gas Bottles” which are included with the components subject to an aging management review referenced in section 2.3.4.4 and Table 2.3.4-4 “Feedwater”.

Item 2.3.4.4-5 The SPS LRA identifies cavitating venturis that have been installed in the 3-inch auxiliary feedwater lines leading to each steam generator. Clarify the intended function of these components (e.g., flow restrictors or flow elements). Identify where in the LRA is the AMR for these components, or provide a technical justification as to why these components are not subject to an AMR.

Response:

These cavitating venturies are in license renewal scope. The cavitating venturis are identified as “Flow Elements” and have passive functions of pressure boundary and restrict flow. Refer to section 2.3.4.4 and Table 2.3.4-4 “Feedwater”.

Item 2.3.4.4-6 In the SPS LRA, Unit 1 drawing 11448-LRM-068A, Sh. 1 and Unit 2 drawing 11548-LRM-068A, Sh. 1, the applicant does not include the 14 inch main feedwater lines in the scope of license renewal. These 14 inch lines contain flow elements 1-FW-FE-1476, -1486, and -1496 and 2-FW-FE-2476, -2486, and - 2496. Provide a technical justification for not including these flow elements and the associated lines within the scope of license renewal. Please include in your discussion the safety related sensing

function (flow restriction for measurement purpose - reactor power measurement; feedwater flow for various actuations), as well as any other intended function that should be considered when determining the scope of license renewal and the need to subject them to an AMR.

Response:

Dominion understands the question, forward RAI.

Item 2.3.4.4-7 Contrary to the NAS LRA, the SPS LRA does not identify the auxiliary feedwater pump turbine lube oil cooling as being within the scope of license renewal, nor was this difference identified in the LRAs (highlighted per the stated conventions). Provide a technical justification as to why the auxiliary feedwater pump turbine lube oil cooling is not within scope of license renewal or include this system within the scope of license renewal and perform an AMR.

Response:

The auxiliary feedwater pump turbine lube oil cooling for SPS is in the scope of LR. See drawing 11448-LRM-063A, Sh 3 (D-7). Section 2.3.4.4 of the SPS and NAPS LRAs states, "The auxiliary feedwater pumps lubricating oil and seal cooling components support the function of the pump and are also subject to aging management review."

Item 2.3.4.4-8 In the SPS LRA, Section 2.3.4.4, the applicant identifies back-up compressed air components, as required for the function of selected feedwater isolation valves, are subject to an aging management review. In the SPS UFSAR, Section 10.3.5.2 notes that steam enters the turbine-driven pump through two parallel air operated valves. These parallel air operated valves are controlled by double acting piston actuators that normally hold the valves closed. On a loss-of-power to the air supply solenoid, the pneumatic double acting piston actuator fails the valves open. A bottled nitrogen system is installed to provide control of the air operated valves for a minimum of 2 hours independent of instrument air. Although similar components were identified in the NAS LRA as being within scope of license renewal (drawings 11715-LRM-074A, Sh. 4 and 12050-LRM-074A, Sh. 4 for AFW flow control valves), similar SPS components do not appear on the feedwater system drawings referenced in the Surry application. Provide a technical justification for not including these components within the scope of license renewal and subject to an AMR.

Response:

Similar components are in-scope at Surry. The valves and instrument tubing are shown in SPS LRA Table 2.3.4-4 (FW systems). The associated nitrogen bottles are replaced on a set frequency and have been deemed to be short-lived and not requiring aging management review. Because less level of detail is provided in Surry drawings, the components are not shown.

Item2.3.4.5-1 In regards to the NAS LRA, provide a technical justification as to why the piping from the exhausts of the main steam safety valves and main steam power operated relief valve to atmosphere are not included within scope of license renewal (Unit 1 drawings 11715-LRM-070B, Sh. 1, 11715-LRM-070B, Sh. 2, 11715-LRM-070B, Sh. 3; Unit 2 drawings 12050-LRM-070B, Sh. 1, 12050-LRM- 070B, Sh. 2, 12050-LRM-070B, Sh. 3). In your justification, discuss the potential safety-related, station blackout, and Appendix R applications associated with this piping?

Response:

Dominion understands the question, send the RAI.

Item2.3.4.5-2 In the NAS LRA, the MS evaluation boundary ends at a manual valve immediately upstream of the pneumatically controlled decay heat release valves (1-MS-HCV-104 and 2-MS-HCV-204 on drawings 11715-LRM-070B, Sh. 2 and 12050-LRM-070B, Sh. 2, respectively). The UFSAR notes that the decay heat release valve is a Seismic Class I, Quality Assurance Category I valve located in the main steam valve house. Provide a technical justification as to why this valve is not within the scope of license renewal. In your justification, include a discussion on the potential safety related, SBO, and Appendix R applications for this valve.

Response:

1-MS-HCV-104 and -204 do not perform an intended function and the valves are isolated by a manual valve.

Item2.3.4.5-3 In the NAS LRA, Drawing 11715-LRM-070B, Sh. 1, the applicant identifies a set of air cylinders for valve 1-MS-TV-101A. The other Unit 1 valves and the similar Unit 2 valves do not show air cylinders. The NAS UFSAR indicates that air pressure is used to released to trip these valves. Please discuss the potential omission of other lines. In addition, clarify the purpose of the air service to main steam trip valves with regards to its safety-related, SBO, or Appendix R application.

Response:

The main steam trip valves do not require air to trip closed. The MSTVs are not opened during an DBE, Appendix R or Station Blackout event. Therefore, the air supply to the trip valves is not required to support a license renewal intended function. The main steam trip valves are within the scope of license renewal since they perform a pressure boundary function.

Item2.3.4.5-4 In both LRA, the evaluation boundary for the piping leading to the small bore piping downstream of the main steam trip valves such as main steam drains does not extend to any valve or trap. The license renewal boundary for this portion of piping terminates at the large bore pipe connection, without any physical means of isolation. A

note on drawings states that large bore piping downstream of the main steam trip and trip bypass valves is in scope of license renewal for SBO or Appendix R applications, but the small bore piping does not impact the intended functions thus is not in scope. Provide additional technical justification, a basis, for this statement. Include such information as to the means for this determination and such details as to what size line break can be tolerated while still fulfilling the SBO and Appendix R intended functions. Also discuss the fact that drain lines are consistently shown as out of scope; however, the small drain lines eventually combine together into a large bore (12-inch) main steam line exhausting into the main condenser (e.g., SPS drawings 11448-LRM-064A, Sh. 5 ((Unit 1) and 11548-LRM-064A, Sh. 5 (Unit 2)).

Response:

The main steam turbine stop valves, the condenser steam dump valves, and their associated main steam piping are credited for providing main steam system pressure boundary in the SBO and Appendix R analysis and are included in the scope of license renewal. This pressure boundary ensures that an uncontrolled cooldown will not occur in the event that a main steam trip valve fails to close. The cooldown analysis is based on a 6-inch opening in the main steam system. Therefore, failure of a line smaller than 6 inches will not result in an uncontrolled cooldown of the reactor coolant system.

The individual drain lines to the 12-inch condenser drain header are equipped with steam traps, which limit continuous blowdown from these lines.

Item 2.3.4.5-5 In both LRA (NAS drawing 11715-LRM-070A, Sh. 2) (SPS drawing 11715-LRM-070A, Sh. 2), a 3 inch line branching from the 8 main inch line is shown as not being within scope for license renewal for two of the four moisture separator reheaters for each unit. The line size for the symmetrical lines to the other MSR's (A and B) are not shown. Similarly, the line size for the branch line is not shown for MSR B (NAS drawing 12050-LRM-070A, Sh. 2) (SPS drawing 12050-LRM-070A, Sh. 2). What size are these branch lines? Provide a technical justification for excluding these lines from the scope of license renewal.

Response:

The branch lines in question are the moisture separator reheater warm-up lines. These are 3-inch diameter lines at North Anna and 1-inch diameter lines at Surry.

The main steam turbine stop valves, the condenser steam dump valves, and their associated main steam piping are credited for providing main steam system pressure boundary in the SBO and Appendix R analysis and are included in the scope of license renewal. This pressure boundary ensures that an uncontrolled cooldown will not occur in the event that a main steam trip valve fails to close. The cooldown analysis is based on a 6-inch opening in the main steam system. Therefore, failure of a line smaller than 6 inches will not result in an uncontrolled cooldown of the reactor coolant system.

Item 2.3.4.5-6 The NAS UFSAR notes that flow limiting devices were installed during the steam generator replacement modification to limit the blowdown rate of steam from the steam generator in the unlikely event of a main steam line rupture. In addition, a venturi tube flow restrictor is located in the main steam line downstream of each steam outlet nozzle. These flow restrictors were installed during original construction of the plant and, prior to the installation of the steam nozzle flow limiting devices, functioned both as the flow limiters during a postulated main steam line rupture downstream of the venturis and as flow elements for steam flow measurement during normal operation of the unit. The applicable drawings do not show these flow limiting devices as being within the scope of license renewal. Provide a technical justification for not including the main steam line flow limiting devices within the scope of license renewal.

Response:

The flow limiting device integral with the steam generator outlet nozzle (steam flow limiter) is addressed in NAPS LRA Table 2.3.1-5 (page 2-147), and the flow limiting device integral with the flow venturi in the main steam piping is addressed in NAPS LRA Table 2.3.4-5 (page 2-207) and is shown highlighted on 11715-LRM-070B sheets 1, 2 and 3. These items are in scope of License Renewal.

Item 2.3.4.5-7 The NAS UFSAR notes that an atmospheric steam dump valve with a manually adjustable setpoint is provided on each main steam header upstream of the non-return valve outside the containment. Control air is supplied to the atmospheric dump valves from the instrument air system; with seismic back up including an air tank for each valve. The air lines and tanks are not shown on the main steam license renewal drawings. Identify where in the LRA are these air supplies included within the scope of license renewal, or provide a technical justification as to why they are not in scope of license renewal.

Response:

The air supplies are identified in LRA Section 2.3.3.14, "Instrument Air". The subject air-lines and seismic tanks are shown on LR drawings 11715-LRM-082M sheet 1 of 1 and on LR drawing 12050-LRM-082C sheet 1 of 2.

Item 2.3.4.5-8 In the SPS LRA, the piping from the exhausts of the main steam safety valves and main steam power operated relief valve to atmosphere is not included within scope of license renewal (Unit 1 drawings 11448-LRM-064A, Sh. 1, 11448-LRM-064A, Sh. 2, 11448-LRM-064A, Sh. 3; Unit 2 drawings 11548-LRM-064A Sh. 1, 11548-LRM-064A, Sh. 2, 11548-LRM-064A, Sh. 3). Provide a technical justification for excluding this piping for the scope of license renewal. Include in your justification safety-related, SBO, and Appendix R applications.

Response:

Dominion understands the question, send RAI.

Item 2.3.4.5-9 In regards to the SPS LRA, clarification is needed as to the purpose of the air service to main steam trip valves with regards to its safety-related, SBO, or Appendix R applications. Venting of the air pressure is noted to place the valves in their closed position to isolate the steam generators. Drawings 11448-LRM-064A, Sh. 1, 11448-LRM-064A, Sh. 2, 11448-LRM-064A, Sh. 3, 11548-LRM-064A, Sh. 1, 11548-LRM-064A, Sh. 2, 11548-LRM-064A, Sh. 3 indicates that this service is outside the scope of license renewal, while the remainder of the main steam piping downstream of the main steam trip valve is in scope. Provide a technical justification for excluding this valve from the scope of license renewal.

Response:

The main steam trip valves do not require air to trip closed. The main steam trip valves are not opened during a DBE, Appendix R or Station Blackout event. Therefore, the air supply to the trip valves is not required to support a license renewal intended function. The main trip valves are within the scope of license renewal since they perform a pressure boundary function

Item 2.3.4.5-10 In the SPS LRA, drawings 11448-LRM-064A, Sh. 5 ((Unit 1) and 11548-LRM-064A, Sh. 5 (Unit 2) contain capped pipe segments immediately upstream of the turbine stop trip valves which are not identified as being within the scope of license renewal. These capped segments are attached to the in-scope main steam pipe without an isolation valve/device. Provide a technical justification for not including these capped pipe segments within the scope of license renewal.

Response:

The main steam turbine stop valves, the condenser steam dump valves, and their associated main steam piping are credited for providing main steam system pressure boundary in the SBO and Appendix R analysis and are included in the scope of license renewal. This pressure boundary ensures that an uncontrolled cooldown will not occur in the event that a main steam trip valve fails to close. The cooldown analysis is based on a 6-inch opening in the main steam system. Therefore, failure of a line (and capped pipe segments) smaller than 6 inches will not result in an uncontrolled cooldown of the reactor coolant system.

Item 2.3.4.5-11 In the SPS UFSAR notes that a flow limiting device is installed at the outlet nozzle of the steam generator. Is this the flow device that limits the blowdown rate of steam from the steam generator in the unlikely event of a main steam line rupture, or are the venturi tube flow restrictors located in the main steam line downstream of each steam outlet nozzle credited with this function. Identify where in the LRA is the AMR for this main steam line flow limiting devices, or provide a technical justification for not including this device as being within the scope of license renewal, and subjecting it to an AMR.

Response:

The flow restrictor (steam flow limiter) in the steam generator outlet is the restrictor that is taken credit for in the event of a main steam line break. The flow restrictors are addressed in SPS LRA table 2.3.1-5.

Item 2.4.8-1 In the NAS LRA, Section 2.4.8, the applicant states that the aging management review (AMR) results for the safety related Service Water Reservoir (SWR) spray piping braced frame superstructure are provided in section 3.5.10, General Structural Supports. The components associated with the braced frame superstructure do not appear to be included in table 3.5.10-1, General Structural Supports. Table 3.5.10-1 should be revised to include SCs identified as part of the braced frame superstructure of the spray piping system in section 2.4.8 that are subject to an AMR.

Response:

The structural members associated with the SWR spray piping braced frame superstructure are within the scope of LR and have been evaluated as part of General Structural Supports. The environment for these structural members is described on page 3-73 of the NAS LRA and Table 3.5-10 identifies these structural members as “structural support subcomponents such as plate and structural shapes”.

Item 2.4.8-2 In the NAS LRA, Section 2.4.8, the applicant states that an underwater bypass system is installed for winter operations. The underwater bypass system is an integral part of the SWR in supporting normal operation of safety related equipment and cooling water for plant shutdown. The staff requests the applicant to clarify whether the underwater bypass system needed for winter operation of the SWR are included within the scope of license renewal and subject to an AMR.

Response:

The under water bypass system is included in the Service Water System of the LRA. See LR Drawing 11715-LRM-078H, Sheet 1 of 1.

Item 2.4.8-3 In the SPS LRA, Section 2.4.8, the applicant states that the intake canal is located between the low level and high level intake structure as indicated on page 2-116 of the LRA. The Updated Final Safety Analysis Report (UFSAR), Section 15.6, Other Class I Structures, page 15.6-1, states that the high level portion of the intake canal has under drains and pressure relief valves that prevent uplift of the concrete liner by unbalanced hydrostatic pressure. The staff request the applicant to clarify whether this system of under drains and pressure relief valves extends the length of the intake canal. Since the under drains and pressure relief valves provide protection to the intake canal concrete liner the applicant should include these SCs within the scope of license renewal or provide a justification for why they should not be included within the scope and subject to an AMR.

Response:

The under drains extend the length of the intake canal. The underdrains and pressure relief valves were provided to prevent uplift of the concrete liner by unbalanced hydrostatic pressure that could have occurred during construction. There is no potential for uplift on

the concrete liner with water maintained in the intake canal. Therefore, these drains do not perform an intended function.

Item 2.4.8-4 In the SPS LRA, Section 2.4.8, the applicant states that at three separate locations, concrete storm sewer lines are installed underneath the canal to route storm runoff. These storm drains appear to be integral to the intake canal structure in providing protection from excessive storm run-off. The staff request the applicant to provide justification as to why the storm sewer lines are not within the scope of license renewal and subject to an AMR.

Response:

The storm sewer lines are in scope of license renewal and are included in Table 2.4.8-1- Earthen Structures on page 2-238 as concrete culverts.

Item 2.4.10-1 In both LRAs, Section 2.4.10, the applicant states that, as a commodity evaluation, there are structural supports included within the evaluation boundary that, upon detailed review, would not be within the scope of license renewal. Provide the staff with information regarding how these components were reviewed and three examples of supports that were within the evaluation boundary, reviewed, and excluded from the scope of license renewal.

Response:

As discussed in the SPS and NAS LRAs, structural supports were evaluated as a commodity. As such, in the areas of the plant that mechanical and electrical components within the scope of license renewal are located, there was no attempt to exclude from the scope of license renewal structural supports located in these areas. All of the structural supports located in the areas that housed components within the scope of License Renewal were evaluated as part of the AMR process.

Item 2.4.12-1 In both LRAs, Section 2.4.12, the applicant states that elements of load-handling cranes and devices that are subject to AMR are limited to those load bearing elements that support the lift in a passive manner. Provide the staff with detailed drawings of two examples indicating the SCs in the load path subject to an AMR. Additionally, structural systems on the load handling cranes and devices support mechanical and electrical systems. Provide justification for why the structural components that support the mechanical and electrical systems of cranes and other load-handling devices were excluded from the scope of license renewal and not subject to an AMR.

Response:

As noted in Section 2.4-12 of the LRAs, the structural members that are within the scope of license renewal and subject to an AMR include structural beams, girders, columns, trolley rails, baseplates and anchors for attachment to structures, and retaining clips. These structural members also provide support for mechanical and electrical systems for cranes and other load-handling devices. However, elements that can be classified as

moving parts or as components which change configuration are active components and are not subject to an AMR.

Item 3.5.10-1 In the staff's review of Section 3.5.10, "General Structural Supports," in both LRAs, the staff identified the need for the following clarifications:

a. In both IRAs, Section 3.5.9 and 3.5.10, the applicant recognizes the need to manage supports for the purpose of maintaining the intended functions of the associated SCs under design load conditions. However, the applicant did not identify the need to manage those supports that are within the scope of license renewal and perform the functions of allowing for thermal expansion and seismic restraint. Buildup of debris or material on the non-moving surface can cause an obstruction that can impede the ability to expand and, therefore, prohibit the ability to allow for thermal expansion. Therefore, the staff requests that the applicant include fouling of the component surface as an applicable aging effect for these supports that needs to be managed and to identify the AMA that will be used to manage this fouling, or provide a technical justification as to why fouling is not an applicable aging effect.

Response:

Structural supports are designed to accommodate various loading conditions which include but are not limited to thermal expansion and seismic loadings. Dominion did not identify separate intended functions for each of these various loading conditions. The intended function identified by Dominion for structural supports designed to accommodate thermal expansion or provide seismic restraint is structural and/or functional support.

With regards to fouling of a component surface as an applicable aging effect, Dominion has not identified OE where this was a concern and is unaware of this issue being addressed by previous applicants.