UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

February 29, 2016

Mr. David A. Heacock
President and Chief Nuclear Officer
Virginia Electric and Power Company
Innsbrook Technical Center
5000 Dominion Boulevard
Glen Allen, VA 23060-6711

SUBJECT: SURRY POWER STATION, UNITS 1 AND 2 – ISSUANCE OF AMENDMENTS FOR GENERIC LETTER 2008-01 (GAS ACCUMULATION) (CAC NOS. MF5600 AND MF5601)

Dear Mr. Heacock:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 287 to Renewed Facility Operating License No. DPR-32 and Amendment No. 287 to Renewed Facility Operating License No. DPR 37 for the Surry Power Station, Unit Nos. 1 and 2, respectively. The amendments change the Technical Specifications (TSs) in response to the Virginia Electric and Power Company (Dominion, the licensee) application dated January 14, 2015, as supplemented by letters dated February 19, August 19, December 3, 2015 and January 25, 2016. These letters may be accessed in the Agencywide Documents Access and Management System (ADAMS) at Accession Nos. ML15021A130, ML15057A047, ML15244B155, ML15342A063 and ML16029A078, respectively. The supplements provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determined.

Dominion requested to adopt U.S. Nuclear Regulatory Commission-approved Technical Specifications Task Force (TSTF) Standard Technical Specifications Change Traveler TSTF-523, Revision 2, "Generic Letter 2008-01, Managing Gas Accumulation" (ADAMS Accession No. ML13053A075), dated February 21, 2013. Dominion is proposing addition of a surveillance requirement only for systems that are susceptible to gas accumulation.

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

Karen Cotton

Karen Cotton, Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-280 and 50-281

Enclosures:
1. Amendment No. 287 to DPR-32
2. Amendment No. 287 to DPR-37
3. Safety Evaluation

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

VIRGINIA ELECTRIC AND POWER COMPANY

DOCKET NO. 50-280

SURRY POWER STATION, UNIT NO. 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 287
Renewed License No. DPR-32

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Virginia Electric and Power Company (the licensee) dated January 14, 2015, as supplemented by letters dated February 19, August 19, December 3, 2015 and January 25, 2016, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Renewed Facility Operating License No. DPR-32 is hereby amended to read as follows:

   (B) Technical Specifications

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 287, are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Michael T. Markley, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to License No. DPR-32
and the Technical Specifications

Date of Issuance: February 29, 2016

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

VIRGINIA ELECTRIC AND POWER COMPANY

DOCKET NO. 50-281

SURRY POWER STATION, UNIT NO. 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 287
Renewed License No. DPR-37

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Virginia Electric and Power Company (the licensee) dated January 14, 2015, as supplemented by letters dated February 19, August 19, December 3, 2015 and January 25, 2016, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Renewed Facility Operating License No. DPR-37 is hereby amended to read as follows:

(B) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 287, are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Michael T. Markley, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes License No. DPR-37
and the Technical Specifications

Date of Issuance: February 29, 2016

ATTACHMENT TO

LICENSE AMENDMENT NO. 287

RENEWED FACILITY OPERATING LICENSE NO. DPR-32

DOCKET NO. 50-280

AND

LICENSE AMENDMENT NO. 287

RENEWED FACILITY OPERATING LICENSE NO. DPR-37

DOCKET NO. 50-281

Replace the following pages of the Licenses and the Appendix A Technical Specifications (TSs) with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove Pages	Insert Pages
License	License
License No. DPR-32, page 3	License No. DPR-32, page 3
License No. DPR-37, page 3	License No. DPR-37, page 3
TSs	TSs
3.3-3	3.3-3
3.4-4	3.4-4
3.5-2	3.5-2
4.11-3	4.11-3
4.11-4	4.11-4
	4.11-4a

3. This renewed license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations: 10 CFR Part 20, Section 30.34 of 10 CFR Part 30, Section 40.41 of 10 CFR Part 40, Sections 50.54 and 50.59 of 10 CFR Part 50, and Section 70.32 of 10 CFR Part 70; and is subject to all applicable provisions of the Act and the rules, regulations, and orders of the Commission nor or hereafter in effect; and is subject to the additional conditions specified below:

   A. Maximum Power Level

      The licensee is authorized to operate the facility at steady state reactor core power levels not in excess of 2587 megawatts (thermal).

   B. Technical Specifications

      The Technical Specifications contained in Appendix A, as revised through Amendment No. 287 are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the Technical Specifications.

   C. Reports

      The licensee shall make certain reports in accordance with the requirements of the Technical Specifications.

   D. Records

      The licensee shall keep facility operating records in accordance with the requirements of the Technical Specifications.

   E. Deleted by Amendment 65

   F. Deleted by Amendment 71

   G. Deleted by Amendment 227

   H. Deleted by Amendment 227

   I. Fire Protection

      The licensee shall implement and maintain in effect the provisions of the approved fire protection program as described in the Updated Final Safety Analysis Report and as approved in the SER dated September 19, 1979, (and Supplements dated May 29, 1980, October 9, 1980, December 18, 190, February 13, 1981, December 4, 1981, April 27, 1982, November 18, 1982, January 17, 1984, February 25, 1988, and

E. Pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such by product and special nuclear materials as may be produced by the operation of the facility.

3. This renewed license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations: 10 CFR Part 20, Section 30.34 of 10 CFR Part 30, Section 40.41 of 10 CFR Part 40, Sections 50.54 and 50.59 of 10 CFR Part 50, and Section 70.32 of 10 CFR Part 70; and is subject to all applicable provisions of the Act and the rules, regulations, and orders of the Commission nor or hereafter in effect; and is subject to the additional conditions specified below:

A. Maximum Power Level

The licensee is authorized to operate the facility at steady state reactor core power Levels not in excess of 2587 megawatts (thermal)

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 287 are hereby incorporated in this renewed license. The licensee shall operate the facility in accordance with the Technical Specifications.

C. Reports

The licensee shall make certain reports in accordance with the requirements of the Technical Specifications.

D. Records

The licensee shall keep facility operating records in accordance with the Requirements of the Technical Specifications.

E. Deleted by Amendment 54

F. Deleted by Amendment 59 and Amendment 65

G. Deleted by Amendment 227

H. Deleted by Amendment 227

maintenance provided that not more than one valve has power restored, and the testing and maintenance is completed and power removed within 4 hours.

3. With one safety injection subsystem inoperable, restore the inoperable subsystem to OPERABLE status within 72 hours or place the reactor in HOT SHUTDOWN within the next 6 hours.

C. If the requirements of Specification 3.3.A are not satisfied as allowed by Specification 3.3.B, the reactor shall be placed in COLD SHUTDOWN in the following 30 hours.

Basis

The normal procedure for starting the reactor is, first, to heat the reactor coolant to near operating temperature by running the reactor coolant pumps. The reactor is then made critical by withdrawing control rods and/or diluting boron in the coolant. With this mode of startup the Safety Injection System is required to be OPERABLE as specified. During LOW POWER PHYSICS TESTS there is a negligible amount of energy stored in the system. Therefore, an accident comparable in severity to the Design Basis Accident is not possible, and the full capacity of the Safety Injection System would not be necessary.

Management of gas voids is important to Safety Injection System operability. The OPERABLE status of the subsystems is to be demonstrated by periodic tests, detailed in TS Section 4.11. A large fraction of these tests are performed while the reactor is operating in the power range. If a subsystem is found to be inoperable, it will be possible in most cases to effect repairs and restore the subsystem to full operability within a relatively short time. A subsystem being inoperable does not negate the ability of the system to perform its function, but it reduces the redundancy provided in the reactor design and thereby limits the ability to tolerate additional subsystem failures. In some cases, additional components (i.e., charging pumps) are installed to allow a component to be inoperable without affecting system redundancy.

In addition to supplying water to the Containment Spray System, the refueling water storage tank is also a source of water for safety injection following an accident. This water is borated to a concentration which assures reactor shutdown by approximately 5 percent $\Delta k/k$ when all control rods assemblies are inserted and when the reactor is cooled down for refueling.

Management of gas voids is important to the operability of the Spray Systems. Based on a review of system design information, including piping and instrumentation drawings, isometric drawings, plan and elevation drawings, and calculations, as supplemented by system walk downs, the Containment Spray Subsystem, Inside Recirculation Spray Subsystem, and Outside Recirculation Spray Subsystem are not susceptible to gas intrusion. Once the piping in the Spray Systems is procedurally filled and placed in service for normal operation, no external sources of gas accumulation or intrusion have been identified for these systems that would affect spray system operation or performance. Thus, the piping in the Spray Systems will remain sufficiently full during normal operation, and periodic monitoring for gas accumulation or intrusion is not required.

References

(1)	UFSAR Section 4	Reactor Coolant System
(2)	UFSAR Section 5.4	Containment Design Evaluation
(3)	UFSAR Section 6.3.1	Spray System
(4)	UFSAR Section 14.5	Loss of Coolant Accident

1. One residual heat removal pump may be out of service, provided immediate attention is directed to making repairs.

2. One residual heat removal heat exchanger may be out of service, provided immediate attention is directed to making repairs.

Basis

The Residual Heat Removal System is required to bring the Reactor Coolant System from conditions of approximately 350°F and pressures between 400 and 450 psig to cold shutdown conditions. Heat removal at greater temperatures is by the Steam and Power Conversion System. The Residual Heat Removal System is provided with two pumps and two heat exchangers. If one of the two pumps and/or one of the two heat exchangers is not operative, safe operation of the unit is not affected; however, the time for cooldown to cold shutdown conditions is extended.

The NRC requires that the series motorized valves in the line connecting the RHRS and RCS be provided with pressure interlocks to prevent them from opening when the reactor coolant system is at pressure.

Management of gas voids is important to RHR System operability. Based on a review of system design information, including piping and instrumentation drawings, isometric drawings, plan and elevation drawings, and calculations, as supplemented by system walk downs, the RHR System is not susceptible to gas intrusion, except primarily from Safety Injection Accumulator line back leakage through the RHR discharge motor operated valves. If this condition were to occur, it would be identified and mitigated prior to placing the system in service. Once placed in service, RHR System velocities during normal cooldown are sufficient to sweep any gas voids that may have remained in local high points. Controlling RHR System operating flow rates, with the consideration to limiting inlet conditions and RCS level, prevents vortexing and air ingestion into the operating RHR pump and piping. Thus, the piping in the RHR System will remain sufficiently full of water during standby and normal system operation, and periodic monitoring for gas accumulation or intrusion is not required.

References

FSAR Section 9.3 - Residual Heat Removal System

c. Power may be restored to any valve or breaker referenced in Specifications 4.11.C.4.a and 4.11.C.4.b for the purpose of testing or maintenance provided that not more than one valve has power restored at one time, and the testing and maintenance is completed and power removed within 24 hours.

5. Verifying:

a. That each automatic valve capable of receiving a safety injection signal, actuates to its correct position upon receipt of a safety injection test signal. The charging and low head safety injection pumps may be immobilized for this test.

b. That each charging pump and safety injection pump circuit breaker actuates to its correct position upon receipt of a safety injection test signal. The charging and low head safety injection pumps may be immobilized for this test.

c. By visual inspection that the low head safety injection containment sump components are not restricted by debris and show no evidence of structural distress or abnormal corrosion.

d. That the Safety Injection System locations susceptible to gas accumulation are sufficiently filled with water.

Basis

Complete system tests cannot be performed when the reactor is operating because a safety injection signal causes containment isolation. The method of assuring operability of these systems is therefore to combine system tests to be performed during unit outages, with more frequent component tests, which can be performed during reactor operation.

The system tests demonstrate proper automatic operation of the Safety Injection (SI) System. A test signal is applied to initiate automatic operation action and verification is made that the components receive the safety injection signal in the proper sequence. The test may be performed with the pumps blocked from starting. The test demonstrates the operation of the valves, pump circuit breakers, and automatic circuitry.

During reactor operation, the instrumentation which is depended on to initiate safety injection is checked periodically, and the initiating circuits are tested in accordance with Specification 4.1. In addition, the active components (pumps and valves) are to be periodically tested to check the operation of the starting circuits and to verify that the pumps are in satisfactory running order. The test interval is determined in accordance with the Inservice Testing Program. The accumulators are a passive safeguard.

ECCS piping and components have the potential to develop voids and pockets of entrained gases. Preventing and managing gas intrusion and accumulation are necessary for proper operation of the ECCS and may also prevent water hammer, pump cavitation, and pumping of noncondensible gas into the reactor vessel.

Selection of SI System locations susceptible to gas accumulation is based on a review of system design information, including piping and instrumentation drawings, isometric drawings, plan and elevation drawings, and calculations. The design review was supplemented by system walk downs to validate the system high points and to confirm the location and orientation of important components that can become sources of gas or could otherwise cause gas to be trapped or difficult to remove during system maintenance or restoration. Susceptible locations depend on plant and system configurations, such as stand-by versus operating conditions.

The SI System is OPERABLE when it is sufficiently filled with water. Acceptance criteria are established for the volume of accumulated gas at susceptible locations. If accumulated gas is discovered that exceeds the acceptance criteria for the susceptible location (or the volume of accumulated gas at one or more susceptible locations exceeds an acceptance criterion for gas volume at the suction or discharge of a pump), the surveillance is not met. If it is determined by subsequent evaluation

that the SI System is not rendered inoperable by the accumulated gas (i.e., the system is sufficiently filled with water), the surveillance may be declared met. Accumulated gas should be eliminated or brought within the acceptance criteria limits.

SI System locations susceptible to gas accumulation are monitored and, if gas is found, the gas volume is compared to the acceptance criteria for the location. Susceptible locations in the same system flow path which are subject to the same gas intrusion mechanisms may be verified by monitoring a representative sub-set of susceptible locations. Monitoring may not be practical for locations that are inaccessible due to radiological or environmental conditions, the plant configuration, or personnel safety. For these locations, alternative methods (e.g., operating parameters, remote monitoring) may be used to monitor the susceptible location. Monitoring is not required for susceptible locations where the maximum potential accumulated gas void volume has been evaluated and determined to not challenge system operability. The accuracy of the method used for monitoring the susceptible locations and trending of the results should be sufficient to assure system operability during the surveillance interval.

System vent flow paths opened under administrative control are permitted to perform the surveillance. The administrative control will be appropriately documented (e.g., proceduralized) and will include stationing a dedicated individual at the system vent flow path who is in continuous communication with the operators in the control room. This individual will have a method to rapidly close the system vent flow path if directed.

The monitoring frequency takes into consideration the gradual nature of gas accumulation in the SI Subsystem piping and the procedural controls governing system operation and is controlled by the Surveillance Frequency Control Program. The surveillance frequency may vary by each location's susceptibility to gas accumulation.

Periodic inspections of containment sump components ensure that the components are unrestricted and stay in proper operating condition. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

References

UFSAR Section 6.2, Safety Injection System

UNITED STATES
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WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO

AMENDMENT NO. 287 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-32

AND

AMENDMENT NO. 287 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-37

VIRGINIA ELECTRIC AND POWER COMPANY

SURRY POWER STATION, UNITS 1 AND 2

DOCKET NOS. 50-280 AND 50-281

1.0 INTRODUCTION

Virginia Electric and Power Company (Dominion, the licensee) requested changes to the Technical Specifications (TSs) for Surry Power Station, Units 1 and 2 (SPS), by letter dated January 14, 2015, as supplemented by letters dated February 19, August 19, December 3, 2015 and January 25, 2016. These letters may be accessed in the Agencywide Documents Access and Management System (ADAMS) at Accession Nos. ML15021A130, ML15057A047, ML15244B155, ML15342A063 and ML16029A078, respectively. The supplements provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination.

The licensee requested to adopt U.S. Nuclear Regulatory Commission-approved Technical Specifications Task Force (TSTF) Standard Technical Specifications Change Traveler TSTF-523, Revision 2, "Generic Letter 2008-01, Managing Gas Accumulation" (ADAMS Accession No. ML13053A075), dated February 21, 2013. The availability of this Technical Specification (TS) improvement was announced in the *Federal Register* on January 15, 2014 (79 FR 2700) as part of the consolidated line item improvement process (CLIIP). Dominion is proposing addition of a surveillance requirement (SR) only for systems that are susceptible to gas accumulation. Specifically, Dominion is proposing addition of an SR for the safety injection system. TS Bases changes associated with this SR would also be made.

The licensee stated that it has reviewed the information contained in the model safety evaluation dated December 23, 2013 (ADAMS Accession No. ML13255A169) as part of the Federal Register Notice of Availability and that the justifications presented in TSTF-523 and the model safety evaluation are applicable to SPS Units 1 and 2.

2.0 REGULATORY EVALUATION

2.1 Background

Gas accumulation in reactor systems can result in water hammer, pump cavitation, and pumping of non-condensible gas into the reactor vessel. These effects may result in the subject system being unable to perform its specified safety function. The NRC issued Generic Letter (GL) 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems," in January 2008 to address the issue of gas accumulation in Emergency Core Cooling System (ECCS), decay heat removal (DHR), and containment spray (CS) systems (ADAMS Accession No. ML072910759). The industry and NRC staff agreed that a change to the standard technical specification (STS) and plant-specific TS would be necessary to address some issues discussed in GL 2008-01. TSTF-523 contains changes to the TS SRs and TS Bases to address some of the concerns in GL 2008-01. The licensee proposed amending the Surry TS using a plant-specific adoption of the TSTF-523 changes.

2.2 Technical Specification Changes

TSTF-523 and the model safety evaluation (SE) (NRC, December 23, 2013) were based on the Standard TSs. Surry, Units 1 and 2, sometimes use different numbering and titles. These are administrative differences that do not involve the technical concerns addressed in this SE.

In its letter dated January 14, 2015, (ADAMS Accession No. ML15021A130), states that the only system that is susceptible to gas accumulation is the safety injection (SI) system. TS 4.11.C.5.d SR is added to verify the SI system locations susceptible to gas accumulation are sufficiently filled with water and to provide allowances which permit performance of the verification. No TS surveillance requirements (SR) will be added for the containment spray (CS), recirculation spray (RS), and residual heat removal (RHR) systems because they are not considered to be susceptible to gas accumulation. Currently, the high head safety injection (HHSI) and low head safety injection (LHSI) piping locations susceptible to gas accumulation are monitored quarterly and when directed by engineering in accordance with the existing Gas Accumulation Monitoring Plan. These frequencies will be controlled by the Surveillance Frequency Control Program (SFCP). The NRC staff concludes that this is consistent with the NRC's guidance for following TSTF-523 implementation.

Section 3.3 of this Safety Evaluation provides a discussion of why the SI System TSs are the only requirements modified in this amendment.

2.3 Regulatory Review

Quality assurance criteria provided in 10 CFR Part 50, Appendix B, that apply to gas management in the subject systems include: Criteria III, V, XI, XVI, and XVII. Criteria III and V require measures to ensure that applicable regulatory requirements and the design basis, as defined in 10 CFR 50.2, "Definitions," and as specified in the license application, are correctly translated into controlled specifications, drawings, procedures, and instructions. Criterion XI requires a test program to ensure that the subject systems will perform satisfactorily in service and requires that test results shall be documented and evaluated to ensure that test requirements have been satisfied. Criterion XVI requires measures to ensure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material

and equipment, and nonconformance, are promptly identified and corrected, and that significant conditions adverse to quality are documented and reported to management. Criterion XVII requires maintenance of records of activities affecting quality.

The Construction Permits for SPS, Units 1 and 2, were issued prior to May 21, 1971; consequently, SPS, Units 1 and 2, were not subject to current GDC requirements (SECY-92-223, dated September 18, 1992). SPS UFUAR Section 1.4 "Compliance with Criteria," provides an assessment against the 10 CFR 50, Appendix A, General Design Criteria for Nuclear Power Plants, published in 1967 (Draft GDC). The SPS plant-specific requirements are similar to the Appendix A, GDC as related to the proposed change.

The NRC's regulatory requirements related to the content of the TSs are contained in 10 CFR 50.36(c). The regulations at 10 CFR 50.36 require that the TSs include items in the following categories: (1) safety limits, limiting safety systems settings, and limiting control settings; (2) limiting conditions for operation (LCO); (3) SRs; (4) design features; and (5) administrative controls. SRs are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the LCOs will be met. Typically, TS Section 5 requires that licensees establish, implement, and maintain written procedures covering the applicable procedures recommended in Appendix A to RG 1.33, "Quality Assurance Program Requirements (Operation)." Appendix A to RG 1.33 identifies instructions for filling and venting the ECCS and DHR system, as well as for draining and refilling heat exchangers. Standard TSs and most licensee TSs include SRs to verify that at least some of the subject systems piping is filled with water.

3.0 TECHNICAL EVALUATION

3.1 Surry, Units 1 and 2, Updated Final Safety Analysis Report (UFSAR)

The SPS UFSAR states that:

- Critical parts of the [safety injection (SI)] system and of the [reactor coolant system (RCS)] are periodically inspected.
- Active components of the SI system are tested periodically to ensure that each component is operable.
- An integrated SI system test of active components is performed periodically during shutdown without introducing flow into the RCS.
- Section 6.2.2.2.6 states that high point vents have been installed at critical points in the suction lines of the charging[1] pumps, and the discharge lines of the [low head safety injection (LHSI)] pumps where gasses could collect.
- Section 6.2.4.1.5 states that the HHSI [High Head Safety Injection or charging] suction line vent valves allow venting. LHSI discharge line vent valves are used to reduce void volumes that may result in pressure surges that could challenge LHSI discharge line relief valves upon LHSI pump starts. LHSI discharge piping to the HHSI suction (piggy-back line) vent valves allow minimization of gas intrusion into HHSI pumps and LHSI discharge line pressure surges. Following equipment maintenance or refueling outages where an SI subsystem is opened, some entrained non-condensable gases remain.

1 The Surry charging pumps are the high head safety injection (HHSI) pumps.

Each SI subsystem is filled and vented following maintenance or refueling outages and each SI subsystem is demonstrated operable prior to return to service by verifying that the SI piping is sufficiently full of water.

- Accessible portions of SI subsystems that are susceptible to gas sources are demonstrated operable periodically by verifying that the SI system piping outside of containment is sufficiently full of water through UT, venting, or other means. Maintaining the piping in the SI system sufficiently full of water ensures that the system will perform properly when required to inject into the RCS. The SI system discharge is inaccessible during reactor operations due to sub-atmospheric conditions, safety concerns and radiological concerns. The SI system discharge piping inside containment is filled and vented upon system return to service.

Dominion stated in the LAR that procedures are in place to ensure that voids are removed before the CS system is declared operable. Discharge piping downstream of the discharge header isolation valves is maintained dry during normal power operation. Following CS system start, gas initially present in the discharge piping is transported out through the spray nozzles. Thus, gas accumulation is not anticipated to adversely impact this system.

Dominion also stated that, consistent with the UFSAR, the primary purpose of the Units 1 and 2 surveillance procedures for ultrasonic examination of the SI piping is "to ensure that Safety Injection piping is free of gas...." the UFSAR and ultrasonic testing (UT) examination surveillance procedures reflect a design expectation that the SI system will be sufficiently full of water. This is consistent with other Dominion statements, such as "As left conditions were either water-solid or of negligible size that can be considered equivalent to water-solid" and the operating history that shows that all voids were effectively removed in the historic record (the as-left condition) as discussed in Section 3.4, below. Dominion also stated in a letter dated August 19, 2015, (ADAMS Accession No. ML15244B155), that "Required venting of a detected void will be accomplished in accordance with this procedural direction as soon as practical".

Since the stated expectation is that the SI piping is "free of gas," and processes are described to achieve this condition, the NRC staff concludes that the UFSAR is generally consistent with the NRC's Model Safety Evaluation.

3.2 Emergency Core Cooling System

The SI system configuration from letter dated January 25, 2016 (ADAMS Accession No. ML16029A078) is shown in figure 1.

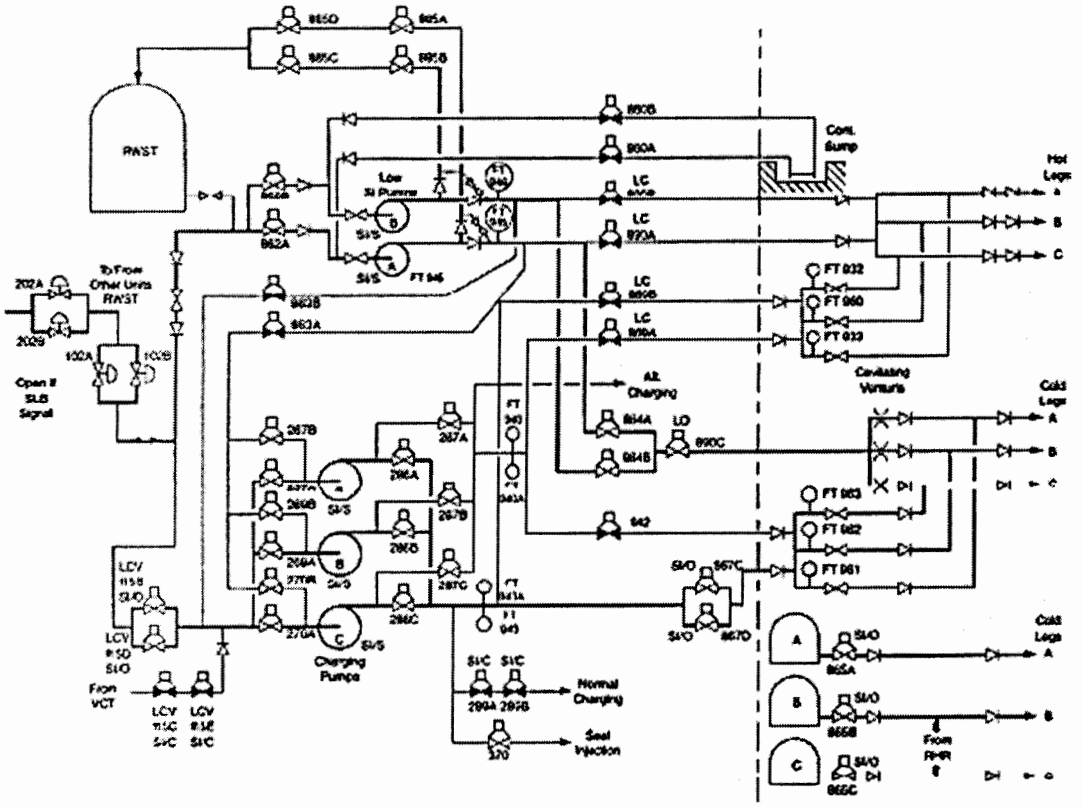

Figure 1. Surry SI System

As shown in the bottom right corner of Figure 1, SI system lines are independently connected to the RCS. Each RCS loop has a separate accumulator line connection that is independent of the HHSI and LHSI RCS loop connections. RCS pressure is significantly greater than that of the accumulators, thus, the accumulators cannot cause back-leakage into the SI system.

During normal operation, the charging and HHSI lines are pressurized to above RCS pressure and consequently RCS leakage into these lines cannot occur. This is not the case with the LHSI lines and back-leakage is potentially possible. Surry performs quarterly UT of the LHSI discharge lines. The proposed TS surveillance primarily addresses this piping.

As stated in Section 1.0, above, the only system that Dominion plans to monitor via the proposed TS SRs is the SI System. Historically, surveillances have been conducted quarterly and when entering or leaving a refueling outage (RFO). Consequently, the NRC staff considers it useful to examine the SI void history to assess the basis that underlies the SFCP.

The license stated in a letter dated August 19, 2015 (ADAMS Accession No. ML15244B155) that thirty five Unit 1 and thirty four Unit 2 SI system surveillances were conducted as of July 27, 2015. This date includes quarterly and post-RFO surveillances.

Quarterly surveillances have been performed since January 1, 2008. Originally, venting was used to identify voids. UT has been used since February, 2012. Identified voids were vented according to applicable station procedures. Surveillances were also performed when exiting an

RFO to ensure pipes were sufficiently filled with water. Void characteristics identified when exiting an RFO were not identified unless they could not be vented.

Dominion stated that if a SI subsystem is opened, it will be refilled and demonstrated operable prior to return to service by verifying that the SI system piping is sufficiently full of water through UT, venting, or by establishing water flow during pump testing to remove voids.

Dominion stated that venting procedures are performed as required after an RFO and prior to unit restart to ensure SI system susceptible areas are void free. This means that a complete set of surveillances is performed prior to restart after every RFO.

Dominion regularly performs monitoring of accumulators and RCS leakage. The monitoring is not used for void assessment but at times the results of the monitoring indicates there is a possible void. If this happens a chemistry sample is taken and analyzed to further determine if a void is present. Accumulator and RCS leakage monitoring, in addition to monitoring any other components that could indicate a potential void problem, has resulted in identification of significant voids before they were identified by periodic surveillances. In some cases, this monitoring identified a void in a situation where waiting for periodic void surveillance would have resulted in exceeding operability criteria. Therefore, the NRC staff concludes that Dominion's monitoring is acceptable void control.

Dominion relies on flow to remove any accumulated void. Froude number can be used to assess flow effectiveness. Froude number is defined by $N_{FR} = \frac{u}{\sqrt{gD}}$ where:

u = water velocity based on pipe inside diameter, ft/sec
g = gravitational constant = 32.2 ft/sec^2
D = pipe inside diameter, ft

In model safety evaluation, the NRC staff determined that use of dynamic venting is an effective means to remove gas from local high points and traps in piping when correctly based on the dynamic flow rate, void volume, Froude number, and the system water volume. Froude numbers that are consistent with the NRC acceptance criteria are provided in Table 1.

Table 1. Gas Movement as a Function of Froude Number

N_{FR}	Effect
> 0.54	Gas will move toward the downstream end of a horizontal pipe that has no local high points. Some bubbles may move downward in a vertical pipe.
< 0.8	Dynamic venting is not effective.
0.8 < N_{FR} < 2.0	Time to clear gas is a function of flow rate and piping geometry. Timing is not well characterized.
≥ 1	Gas will be removed from an inverted "U" tube heat exchanger for steady state flow lasting several minutes. This criterion is not applicable at the bottom of a vertical pipe that connects to a horizontal pipe.
≥ 2.0	All gas will be removed from a pipe but localized gas pockets may remain where full flow conditions may not exist such as in the vicinity of valves or orifices.

In its letter dated January 25, 2016, Dominion stated that the minimum N_{FR} is equal to 0.794.[2] This is acceptable when testing confirms that sufficient flow time elapsed to remove any voids, as is addressed in Table 2.

Table 2. SI Test Results

Unit	Outage	Licensee Comments
1	Spring 2009 Refueling Outage	Motor Operated Valve (MOV) -1890C[3] was closed for LHSI tests. UT confirmed no post-test voids in the flow path. Dominion concluded that post-test UT "confirmed the effectiveness of water flow to remove voids and, when used in combination with gas venting, the removal of voids was reasonably assured." Large voids downstream of 1890C were removed by post-test venting. Charging pump suction voids not in the flow path were stated to be found by UT and successfully vented. A negligible void volume remained that confirmed that essentially a water-solid condition was achieved.
2	Fall 2009 Refueling Outage	MOV-2890C was open with flow to the RCS cold legs. For the LHSI test at 3500 gpm the A and B pumps were run for 10 and 7 minutes, respectively. The N_{FR} of 3.299 was sufficient to remove any voids and UT after full flow showed no voids downstream of MOV-2890C. This pipe was stated to be susceptible to void accumulation during an RFO.
2	May 17, 2011	Charging pumps A, B, and C were run for 46, 26, and 128 minutes at 500, 500, and 320 to 500 gpm, respectively. A post-test UT revealed a void prior to entering the auxiliary building that was 24% less than allowable, a void NRC staff considers to be significant that should be removed by venting. Dominion concluded that "These UT readings confirmed that voids created during the drain and fill evolutions for these lines are effectively removed during HHSI full flow testing performed during an RFO."

2 This is discussed further in Section 3.3.1, below.
3 The "1" in "1890" refers to Unit 1; a "2" refers to Unit 2.

Table 3 identifies those applicable surveillances[4] reported January 2008 through July 2015, that resulted in discovery of a gas void.

Table 3. Surveillance History

Date	Location	ft^3 Void / Allowable	As Left ft^3	Comments
09/2009	2-SI-197, others	Not stated / 1.01	0.005	3 voids after RFO.
01/2011	1-SI-435	0.9367 / 1.01	0.0204	Acceptance criterion is ≤ 2% average void fraction at HHSI pump from LHSI discharge lines.
06/2012	1-SI-1047 and in same pipe	0.0075 / 1.01	small	Two voids. Total listed. Vented in accordance with procedures. As left void volume is small.
09/2012	1-SI-187	0.0572 / 0.80	0.0017	Vented in accordance with procedures
09/2012	1-SI-1047	0.0058 / 1.01	0.0039	Two voids. Dominion believed one void was residual from 06/2012. Difficult to completely vent one void due to piping configuration – not vented since size not significant.
12/2012	1-SI-187	0.0039 / 0.80	small	Void vented. No post vent reading due to small size.
03/2013	1-SI-179	0.1722 / 0.80	Water-solid	Void vented
03/2013	2-SI-179	1.76 / 0.80	Water-solid	The only surveillance where void size exceeded the acceptance criterion. The gas source was believed to have resulted from the previous outage.
11/2013	1-SI-MOV-1863B	0.0003 / 1.01	-	Void could not be removed by venting. Void size is not a concern.
11/2013	1-CH-458	0.0021 / 0.0108	-	Void could not be removed by venting. Void size is not a concern.
05/2014	2-SI-MOV-2863B	0.0010 / 0.03	0.0005	Further venting not recommended due to location of vent valve upstream of void. Void size is not a concern.
07/2015	1-SI-192	0.0177 / 0.7	Water-solid	First inspection after spring 2015 RFO
07/2015	1-SI-179	0.0131 / 0.8	Water-solid	"
07/2015	1-SI-435	0.0039 / 0.7	Water-solid	"

Only one surveillance resulted in discovery of gas that exceeded the acceptance criterion and two were of significant size, but below the acceptance criterion. One of the latter was close to the acceptance criterion (0.9367 ft^3 versus 1.01 ft^3). Most showed no gas and those that did, with the three, previously discussed, exceptions, were of small quantities. As-left conditions were either water-solid or of negligible size that were equivalent to water-solid.

4 With the exception of the first one, these are quarterly surveillances.

The Unit 2, SI-179 03/2013 void that exceeded the acceptance criterion and the similar Unit 1 void that was found to be of substantial, but acceptable, size were not discovered earlier because UT was not performed at those locations because (1) a mechanism for void formation was not identified and (2) there were no indications that a void was being generated. The potential for a SI-179 void remaining undiscovered has been eliminated by including that location in venting and UT procedures. Post-outage actions to address the local high point in the suction pipe from the refueling water storage tank (RWST) should eliminate any concerns that a void remains at this location and, once removed, the head of water in the RWST should prevent void formation at this location.

Based on the low incidence of failed SRs discussed above, the NRC staff considers that the quarterly surveillance history demonstrates that this frequency is effective. Therefore, the NRC staff concludes that a quarterly surveillance frequency is acceptable.

3.3 Excluded Systems

Dominion stated that the only system susceptible to gas accumulation is the SI system and, therefore, SRs would not be incorporated for the CS, RS, and RHR systems. This Dominion conclusion is examined in the remainder of Section 3.3.

3.3.1 Containment Spray System

In its letter dated January 25, 2016, Dominion stated that the CS system (including the chemical addition subsystem) is to be maintained sufficiently full from the RWST to the normally closed discharge header isolation valves. The remainder of the piping, which includes the vertical headers and the spray rings, are maintained dry. The quarterly pump operability surveillances ensure an adequate water volume is pumped through the suction and discharge piping at a velocity to adequately sweep any gas from the water filled system piping.

The CS suction piping from the RWST is illustrated in Figure 2.

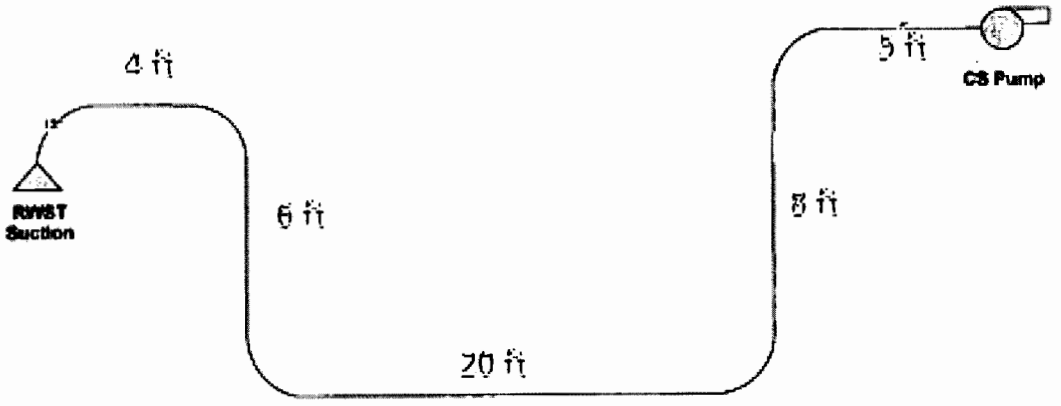

Figure 2. CS System Suction Piping

November, 2015 test data provided the following information:

CS Pump Mark Number	Test Set Range (gpm)	Total Flow Rate (gpm)	N_{FR}
1-CS-P-IA	1520 to 1636	1586.5	0.794
1-CS-P-IB	1520 to 1640	1596.9	0.799
2-CS-P-1A	1520 to 1839	1676.0	0.838
2-CS-P-IB	1530 to 1870	1676.0	0.838

Dominion concluded that the combination of N_{FR} and turbulence in the 4 foot pipe at the lowest flow rate would be sufficient to sweep gas out of the system. Based on the evaluation of Dominion's review, the NRC staff concludes this is acceptable.

As shown in Figure 3, each train has a separate pipe from the RWST

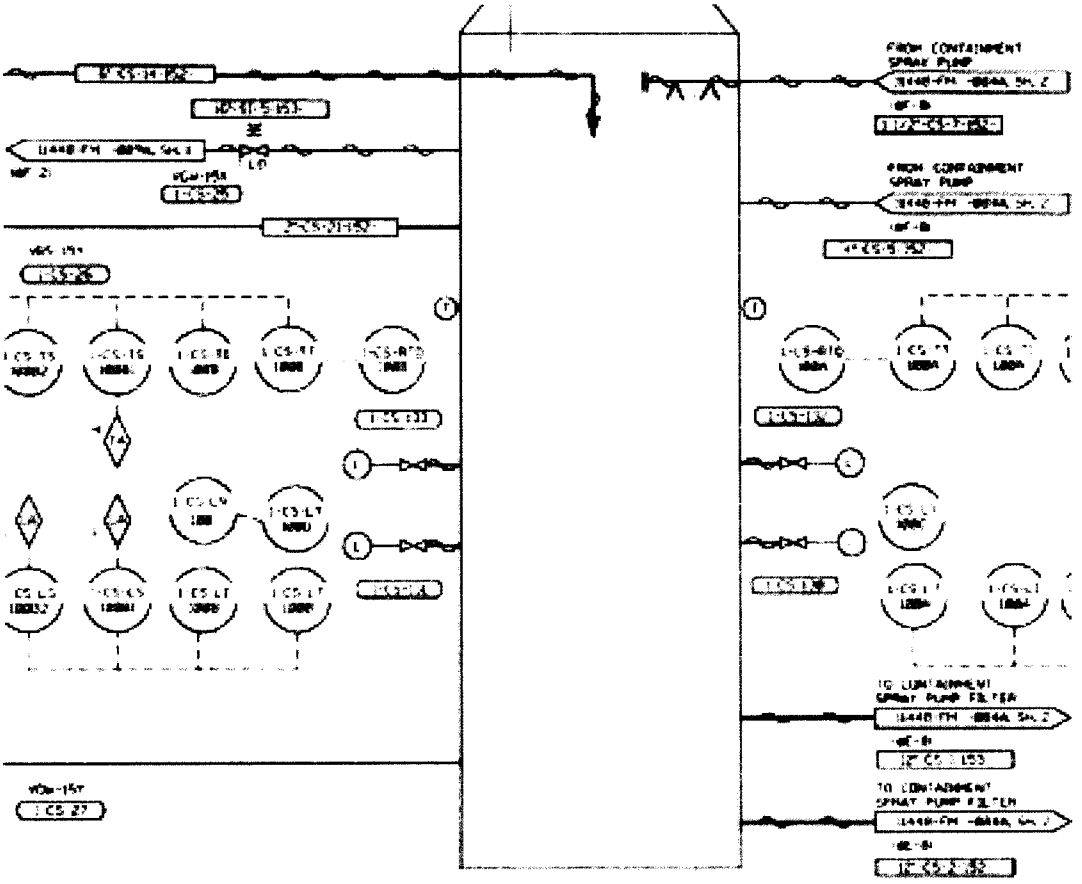

Figure 3. CS Connections to RWST

The end of the suction pipe in the RWST is shown in Figure 4.

Figure 4. CS Pump Suction Piping in the RWST

This configuration allows RWST water level to be lowered to close to the inlet elevation before gas ingestion occurs.

Dominion stated that there are no identified gas intrusion mechanisms for the CS system. Since the CS piping is free of potential gas voids, a routine surveillance to preclude gas accumulation by verifying the CS piping is sufficiently filled with water is unnecessary.

Based on the above evaluation and the NRC staff's review of the information provided by Dominion in a response to a request for additional information, the NRC staff concludes that this is acceptable to not conduct periodic surveillances of the CS system.

3.3.2 Recirculation Spray System

The RS system piping is not maintained water filled by design. The pump and piping both fill and self-vent during the course of a loss-of-coolant event and initial system operation. The RS system will only actuate based on specific actuation signals which will ensure there is adequate water available to meet net positive suction head (NPSH) requirements. Since the RS System is maintained dry, it is designed to fill and vent upon actuation, and there is no identified gas intrusion mechanism. Consequently, the NRC staff concludes that a routine surveillance to preclude gas accumulation by verifying the RS piping is sufficiently filled with water is unnecessary.

3.3.3 Residual Heat Removal System

The RHR system is located entirely inside containment and is not safety-related since it does not serve a dual low-pressure safety injection function. However, it is important to safety since

it's required to provide decay heat removal (1) following an Appendix R event, (2) when the units are in cold shutdown, and, (3) when cooling from hot shutdown to cold shutdown following a hurricane.

The RHR system inlet is from one RCS hot leg and the discharge line is to the cold leg of the other two loops. The hot leg connection is separated from the RCS by two MOVs in series. The discharge lines are separated by a check valve and an MOV.

Dominion identified in the LAR that the RHR system may be susceptible to gas intrusion from accumulator back-leakage through the RHR discharge valves, a condition that, if present, would be identified and corrected prior to placing the RHR system in service. Other documents dated February 19, 2015 (ADAMS Accession No. ML15057A047) and October 14, 2008, (ADAMS Accession No. ML082890094) identify the Chemical and Volume Control (CH) system as a potential leakage source.

In the initial GL 2008-01 evaluation, Dominion stated the relief valve set pressure was high enough to prevent degassing of any in-leakage involving the CH system and, therefore, such in-leakage could not be a source of gas voids. This was modified to include the following:

- In-leakage from the letdown system (at ~ 300 psig)
- In-leakage from the RCS via the RHR discharge line

Another potential path for gas intrusion identified by Dominion was via multiple external RHR system leaks. In this scenario, water could leak from a low elevation location that would reduce RHR system pressure which might allow air intrusion into the RHR system from a higher elevation. Once in service, RHR system flow velocities during normal cooldown were calculated to be sufficient to sweep any gas voids from the piping. Controlling RHR flow rates, with consideration to limiting inlet conditions and RCS level, has been demonstrated to prevent vortexing and air ingestion into an operating RHR pump and piping. Dominion concluded that RHR system piping will remain sufficiently full of water during standby and normal system operation, and periodic monitoring for gas accumulation or intrusion is not required.

In its letter dated February 19, 2015, Dominion noted years of RHR system operation with no observed detrimental performance were stated as justification that the RHR system has been sufficiently full of water. Operating flow rates are stated to be controlled to prevent vortexing and air ingestion.

Based on the above, the NRC staff concludes that the potential exists for gas voids to form in the RHR piping prior to its being placed in service; although the plant operating history shows that voids have not been an operational issue. The history suggests that RHR void accumulation is a low likelihood occurrence. Further, since the RHR system is inside containment, it is not practical to monitor for voids during power operation. Based on the above, the NRC staff concludes Dominion's lack of RHR system void monitoring to be acceptable since the Surry RHR system is not part of the SI system, it is not physically available for venting or void monitoring during power operation without adding sensors that communicate outside containment, operating history has not identified any operational impacts due to voids, RHR void accumulation is a low likelihood occurrence, and monitoring of accumulator and RCS

inventory would identify potential leakage from those sources. Additionally, were voiding to occur, system flow velocities would be sufficient to remove the voiding.

3.4 Chemical Sampling System

Chemical sampling system that connects to multiple locations within containment has been known, at other facilities, to cause gas accumulation due to multiple valve leaks. In a known case of the chemical sampling system being involved with a gas accumulation issue, the leaking fluid originated with an accumulator. With regard to Dominion's system, Dominion stated in the LAR pages 2 and 6 that gas intrusion through the sampling system is not credible, since chemistry samples are withdrawn external to the system and industry operating experience indicates that only the SI accumulator sample line has been identified as being susceptible to gas intrusion. However, a review of the Surry drawings for this system shows there are no system interconnections that would provide a gas intrusion concern. In a letter dated December 3, 2015, (ADAMS Accession No. ML1532A063) Dominion stated that the accumulator sampling system is not connected to the rest of the chemical sampling system. Because the configuration is different from the known case, the licensee stated test voids from Surry sampling system is not a concern. Based on the above, the NRC staff concludes that the chemical sampling system is not a practical concern as a source for gas accumulation in SI system components.

3.5 Evaluation of Technical Specification Changes

The proposed change adopted the TS format and content, to the extent practicable, contained in the changes made NUREG-1431, "Standard Technical Specifications Westinghouse Plants."

The NRC staff compared the proposed changes to the existing SRs, as well as the regulatory requirements of 10 CFR 50.36(c).

The licensee proposes to add TS 4.11.C.5.d, which would require verifying:

> That the Safety Injection System locations susceptible to gas accumulation are sufficiently filled with water.

The licensee would manage this new TS at a frequency controlled by the Surveillance Frequency Control Program (SFCP).

The new language for the SRs was developed using licensee responses to GL 2008-01 and the NRC discussion contained in Task Interface Agreement (TIA) 2008-03, "Emergency Core Cooling System (ECCS) Voiding Relative To Compliance With Surveillance Requirements (SR) 3.5.1.1, 3.5.2.3, and 3.5.3.1" (ADAMS Accession No. ML082560209). Many of the GL 2008-01 responses stated that licensees identified system locations susceptible to gas accumulation. In the TIA, the NRC stated that the intent of the TS SRs, which state "full of water," may be met if the licensee can establish, through an Operability Determination, that there is a reasonable expectation that the system in question will perform its specified safety function. Therefore the phrase, "sufficiently filled with water" was recommended for the proposed TS changes. In the TS, "sufficiently filled with water" is understood to mean "sufficiently filled with water to support Operability." The regulation at 10 CFR 50.36(c)(3) states that one of the purposes of the SR is to verify that the LCO is met. Therefore, the new SR

language, "Verify the Safety Injection System locations susceptible to gas accumulation are sufficiently filled with water," is acceptable since this language will allow the licensee to make a conclusion as to whether or not a system is operable.

3.6 Technical Evaluation Conclusion

A TS 4.11.C.5.d, SR is added to verify the SI system locations susceptible to gas accumulation are sufficiently filled with water and to provide allowances which permit performance of the verification. Currently, the HHSI piping and the LHSI piping locations susceptible to gas accumulation are monitored quarterly and when directed by engineering in accordance with the existing Gas Accumulation Monitoring Plan. In the future, these frequencies will be controlled by the SFCP after the surveillance requirement is incorporated into the TSs. Limitation of SRs to the SI system and specification of quarterly monitoring are deviations from TS changes described in TSTF-523. Because these changes will make the SRs consistent with TSTF-523, the NRC staff concludes that the deviations are acceptable.

Dominion stated that if an ECCS subsystem is opened, it will be refilled and demonstrated operable prior to return to service by verifying that the ECCS piping is sufficiently full of water through UT, venting or by establishing water flow during pump testing to remove voids. The NRC staff notes that previous operating history has evidenced the effectiveness of these ECCS subsystem surveillances for removing voids.

Dominion stated that procedures are in place to ensure that voids are removed before the CS system is declared operable. The procedures ensure that discharge piping downstream of the discharge header isolation valves is dry and that gas initially present in the discharge piping is transported out through the spray nozzles. Thus, an SR is not necessary for this system.

A routine surveillance to preclude gas accumulation by verifying the RS piping is sufficiently filled with water is unnecessary since the RS system is maintained dry and is designed to fill and vent upon actuation. Thus, an SR is not necessary for this system.

Based on the above, the NRC staff considers Dominion's conclusion regarding the lack of need for RHR system void monitoring to be acceptable since the Surry RHR system is not part of the SI system, it is not physically available for venting or void monitoring during power operation, operating history has not identified any operational impacts due to voids, and monitoring of accumulator and RCS inventory would identify potential leakage from those sources. Thus, an SR is not necessary for this system.

Dominion stated they perform monitoring of accumulators and RCS leakage is stated to be performed. The NRC staff's experience is that accumulator and RCS leakage monitoring, in addition to monitoring any other components that could indicate a potential void problem, will result in identification of significant voids before they were identified by periodic surveillances. Monitoring is acceptable.

System vent flow paths opened under administrative control are permitted to perform the surveillance. The administrative control will be appropriately documented (e.g., proceduralized) and will include stationing a dedicated individual at the system vent flow path who is in continuous communication with the operators in the control room. This individual will have a method to rapidly close the system vent flow path if directed. The presence of the individual will

ensure the valves can be closed quickly if the system needs to be put into operation while the surveillance is being performed. The NRC staff concludes that this is acceptable.

Thirty five Unit 1 and thirty four Unit 2 surveillances have been conducted as of July 27, 2015. This included quarterly and post-RFO surveillances. Only one periodic surveillance resulted in discovery of gas that exceeded the acceptance criterion and two that were of significant size but were within the acceptance criterion. One of the latter was close to the acceptance criterion (0.9367 ft^3 versus 1.01 ft^3). Most of the thirty five surveillances showed no gas and those that did, with the three exceptions, were of small quantities. As left conditions were either water-solid or of negligible size that can be considered equivalent to water-solid.

The Unit 2, SI-179 03/2013 void that exceeded the acceptance criterion and the similar Unit 1 void that was found to be of substantial size were not discovered earlier because UT was not performed at those locations because (1) a mechanism for void formation was not identified and (2) there were no indications that a void was being generated. The potential for a SI-179 void remaining undiscovered has been eliminated by including that location in venting and UT procedures.

The NRC staff finds that the proposed SRs meet the regulatory requirements of 10 CFR 50.36 because they provide assurance that the necessary quality of systems and components will be maintained and that the LCO will be met. Therefore, the NRC staff concludes that the proposed amendment is acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Virginia State official was notified of the proposed issuance of the amendments. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts and no significant change in the types of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (80 FR 35986, June 23, 2015). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors:
Margret Chernoff
Warren Lyon

Date: February 29, 2016

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

/RA/

Karen Cotton, Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-280 and 50-281

Enclosures:
1. Amendment No. 287 to DPR-32
2. Amendment No. 287 to DPR-37
3. Safety Evaluation

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OFFICE	DORL/LPL2-1/PM	DORL/LPL2-1/LA	NRR/DSS/STSB/BC	NRR/DSS/SRSB/BC
NAME	KCotton	SFigueroa	REIliott	EOesterle
DATE	2/24/2016	2/16/2016	1/19/2016	2/02/2016
OFFICE	OGC	DORL/LPL2-1/BC	DORL/LPL2-1/PM	
NAME	SFowles	MMarkley	KCotton	
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