

SAFETY EVALUATION BY THE OFFICE OF NEW REACTORS
RELATED TO EXEMPTION AND AMENDMENT NO. 39
TO THE COMBINED LICENSE NO. NPF-93 AND LICENSE NO. NPF-94
SOUTH CAROLINA ELECTRIC AND GAS COMPANY
SOUTH CAROLINA PUBLIC SERVICE AUTHORITY
VIRGIL C. SUMMER NUCLEAR STATION UNITS 2 AND 3
DOCKET NOS. 52-027 AND 52-028

1.0 INTRODUCTION

By letter dated December 18, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14353A107), South Carolina Electric and Gas Company (SCE&G/licensee) requested that the U.S. Nuclear Regulatory Commission (NRC) amend the combined licenses (COLs) for Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3, COL Numbers NPF-93 and NPF-94, respectively.

The proposed amendment would revise various portions of Appendix C of each of the VCSNS Units 2 and 3 COLs. Specifically, the proposed amendment would update the tables of various piping lines that support the system-based design descriptions and inspections, tests, analyses, and acceptance criteria (ITAAC) for the Automatic Depressurization System (ADS), Passive Containment Cooling System (PCS), Passive Core Cooling System (PXS), Normal Residual Heat Removal System (RNS), Containment Air Filtration System (VFS), Spent Fuel Pool Cooling System (SFS), and the Sanitary Discharge System (SDS). The revisions to various portions of Appendix C in each of the VCSNS Units 2 and 3 COLs in the proposed amendment would add or delete line numbers of existing piping lines, as well as update the functional capability classification of existing process flow lines, to provide consistency with the Updated Final Safety Analysis Report (UFSAR) Tier 2 information. The proposed amendment would enhance clarity and consistency in the licensing basis rather than make specific design changes.

The licensee has also requested an exemption from the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 52, Appendix D, "Design Certification Rule for the AP1000 Design," Section III.B, "Scope and Contents," to allow a departure from the corresponding portions of the certified information in Tier 1 of the generic Design Control Document (DCD).¹ The proposed Tier 1 changes related to this exemption are identical in purpose and scope to the COL Appendix C changes proposed in the license amendment described in the previous paragraph.

In letters dated June 29 and October 16, 2015 (ADAMS Accession Nos. ML15180A248 and ML15292A075, respectively), the licensee submitted additional information that supplemented and clarified the license amendment request (LAR). This additional information did not expand the scope of the LAR and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on April 28, 2015 (80 FR 23606).

By letter dated October 16, 2014 (ADAMS Accession No. ML14290A139), and as supplemented by letters dated May 14 and August 24, 2015 (ADAMS Accession Nos. ML15134A147 and ML15236A335, respectively), Southern Nuclear Operating Company, Inc. (SNC), the licensee for Vogtle Electric Generating Plant (VEGP) Units 3 and 4, submitted LAR 13-031, LAR 13-031S1 and LAR 13-031S2, respectively. VCSNS's LAR 13-28 is identical in technical content to that of the license amendment request submitted to the NRC by SNC for VEGP Units 3 and 4. On November 9, 2015 the NRC issued License Amendment 41 for VEGP Units 3 and 4 (ADAMS Accession No. ML15237A355) regarding LAR 13-031.

2.0 REGULATORY EVALUATION

As defined in Section II of Appendix D to 10 CFR Part 52, Tier 1 information includes ITAAC and design descriptions, among other things. Therefore, a licensee referencing Appendix D incorporates by reference all Tier 1 information contained in the generic DCD. The Tier 1 ITAAC and design descriptions, along with the plant-specific ITAAC, were contained in Appendix C of the COL at its issuance.

As stated in 10 CFR Part 52, Appendix D, Section VIII.A.4, exemptions from Tier 1 information are governed by the requirements in 10 CFR 52.63(b)(1) and 10 CFR 52.98(f). Additionally, the Commission will deny a request for an exemption from Tier 1 if the design change will result in a significant decrease in the level of plant safety otherwise provided by the design.

According to 10 CFR 52.63(b)(1), a licensee who references a design certification rule may request NRC approval for an exemption from one or more elements of the certification information. The Commission may only grant such a request if it determines that the exemption will comply with the requirements of 10 CFR 52.7, which in turn points to the requirements listed in 10 CFR 50.12 for specific exemptions, and if the special circumstances present outweigh the potential decrease in safety due to reduced standardization. Therefore, any exemption from the Tier 1 information certified by Appendix D to 10 CFR Part 52 must meet the requirements of 10 CFR 50.12, 52.7 and 52.63(b)(1).

¹ While the licensee describes the requested exemption as being from Section III.B of 10 CFR Part 52, Appendix D, the entirety of the exemption pertains to proposed departures from Tier 1 information in the generic DCD. In the remainder of this evaluation, the NRC will refer to the exemption as an exemption from Tier 1 information to match the language of Section VIII.A.4 of 10 CFR Part 52, Appendix D, which specifically governs the granting of exemptions from Tier 1 information.

According to 10 CFR 52.98(f), any modification to, addition to, or deletion from the terms and conditions of a COL is a proposed amendment to the license.

General Design Criterion (GDC) 1, "Quality standards and records," in Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," requires that structures, systems, and components (SSCs) important to safety shall be designed, fabricated, erected, and tested to quality standards commensurate with the importance of the safety functions to be performed. The proposed change revises Tier 1 of the plant-specific DCD to clarify design requirements, such as functional capability for certain piping lines, and revises Tier 1 tables to clarify the scope of piping lines subject to specified quality standards. Therefore, although the overall design of the plant is not changing with respect to quality standards, this criterion is considered in the evaluation to confirm that the staff's previous finding related to GDC 1 remains valid.

GDC 38, "Containment heat removal," requires that a system to remove heat from the reactor containment shall be provided. The system safety function shall be to reduce rapidly, consistent with the functioning of other associated systems, the containment pressure and temperature following any loss-of-coolant accident and maintain them at acceptably low levels. The proposed clarifications to Tier 1 design descriptions and tables involve systems responsible for the function of containment heat removal. Therefore, although the overall design of the plant is not changing with respect to containment heat removal, this criterion is considered in the evaluation to confirm that the staff's previous finding related to GDC 38 remains valid.

GDC 61, "Fuel storage and handling and radioactivity control," requires that the fuel storage and handling, radioactive waste, and other systems that may contain radioactivity shall be designed to assure adequate safety under normal and postulated accident conditions. These systems shall be designed, in part, to prevent significant reduction in fuel storage coolant inventory under accident conditions. The proposed clarifications to Tier 1 design descriptions and tables involve a system responsible for the function of maintaining fuel storage coolant inventory under accident conditions. Therefore, although the overall design of the plant is not changing with respect to fuel storage, this criterion is considered in the evaluation to confirm that the staff's previous finding related to GDC 61 remains valid.

3.0 TECHNICAL EVALUATION

3.1 EVALUATION OF EXEMPTION

INTRODUCTION

Section III.B of Appendix D to 10 CFR Part 52 requires a licensee referencing Appendix D to 10 CFR Part 52 to incorporate by reference and comply with the requirements of Appendix D, including all Tier 1 information contained in the generic AP1000 DCD. As defined in Section II of Appendix D to 10 CFR Part 52, Tier 1 information includes ITAAC and design descriptions, among other things. Therefore, a licensee referencing Appendix D incorporates by reference all Tier 1 information contained in the generic DCD. The Tier 1 ITAAC and design descriptions, along with the plant-specific ITAAC, were included in Appendix C of the COL at its issuance.

The licensee requests changes to be made to several tables in Tier 1 of the plant-specific DCD. An exemption is needed because Section VIII.A.4 of Appendix D to 10 CFR Part 52 requires a licensee to obtain an exemption to depart from the Tier 1 information of the generic AP1000

DCD.

The proposed exemption would allow various changes to the piping line information listed in several Tier 1 ITAAC tables to promote consistency with current design details, piping layouts, and UFSAR Tier 2 information. The end result of this exemption would be that the licensee can implement modifications to Tier 1 information described and justified in LAR 13-28 if and only if the NRC approves LAR 13-28. This is a permanent exemption limited in scope to the particular Tier 1 information specified.

As stated in Section VIII.A.4 of Appendix D to 10 CFR Part 52, an exemption from Tier 1 information is governed by the requirements of 10 CFR 52.63(b)(1) and 52.98(f). Additionally, the Commission will deny a request for an exemption from Tier 1 if it finds that the design change will result in a significant decrease in the level of safety otherwise provided by the design. Pursuant to 10 CFR 52.63(b)(1), the Commission may, upon application by an applicant or licensee referencing a certified design, grant exemptions from one or more elements of the certification information, so long as the criteria given in 10 CFR 52.7 are met, and that the special circumstances as defined by 10 CFR 52.7 outweigh any potential decrease in safety due to reduced standardization.

Pursuant to 10 CFR 52.7, the Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of 10 CFR Part 52. As 10 CFR 52.7 further states, the Commission's consideration will be governed by 10 CFR 50.12, "Specific exemptions," which states that an exemption may be granted when: (1) the exemptions are authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security; and (2) special circumstances are present. Specifically, 10 CFR 50.12(a)(2) lists six special circumstances for which an exemption may be granted. It is necessary for one of these special circumstances to be present in order for the NRC to consider granting an exemption request. The licensee stated that the requested exemption meets the special circumstances of 10 CFR 50.12(a)(2)(ii). That subsection defines special circumstances as when "[a]pplication of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule." The staff's analysis of each of these findings is presented below.

3.1.1 AUTHORIZED BY LAW

This exemption would allow the licensee to implement approved changes to Tier 1 of the plant-specific DCD, specifically Tables 2.1.2-2, 2.2.1-2, 2.2.2-2, 2.2.3-2, 2.3.6-2, 2.3.7-2, and 2.7.1-2. This is a permanent exemption limited in scope to particular Tier 1 information, and subsequent changes to Tier 1 Tables 2.1.2-2, 2.2.1-2, 2.2.2-2, 2.2.3-2, 2.3.6-2, 2.3.7-2, and 2.7.1-2, or any other Tier 1 information, would be subject to the exemption process specified in Section VIII.A.4 of Appendix D to 10 CFR Part 52. The NRC staff has determined that granting of the licensee's proposed exemption will not result in a violation of the Atomic Energy Act of 1954, as amended, or the Commission's regulations because, as stated above, 10 CFR Part 52, Appendix D, Section VIII.A.4 allows the NRC to grant exemptions from one or more elements of the Tier 1 information. Therefore, as required by 10 CFR 50.12(a)(1), the staff finds that the exemption is authorized by law.

3.1.2 NO UNDUE RISK TO PUBLIC HEALTH AND SAFETY

Appendix D to 10 CFR Part 52 requires that the licensee construct and operate the plant based on the approved information found in the DCD incorporated by reference into the licensee's

licensing basis. The changes proposed in the licensee's amendment request will not impact any design function because the changes will not alter the operation of any plant equipment or systems. As such, these proposed changes do not present an undue risk to the public health and safety. The proposed changes do not add any new equipment or system interfaces to the current plant design. The description changes do not introduce any new industrial, chemical, or radiological hazards that would represent a public health or safety risk, nor do they modify or remove any design or operational controls or safeguards intended to mitigate any existing on-site hazards. Furthermore, the proposed changes would not allow for a new fission product release path, result in a new fission product barrier failure mode, or create a new sequence of events that would result in significant fuel cladding failures. Therefore, as required by 10 CFR 50.12(a)(1), the staff finds that the exemption poses no undue risk to the public health and safety.

3.1.3 CONSISTENT WITH COMMON DEFENSE AND SECURITY

The proposed exemption would allow changes to elements of Tier 1 of the plant-specific DCD. This is a permanent exemption limited in scope to particular Tier 1 information. Subsequent changes to Tables 2.1.2-2, 2.2.1-2, 2.2.2-2, 2.2.3-2, 2.3.6-2, 2.3.7-2, and 2.7.1-2; or any other Tier 1 information would be subject to the exemption process in Section VIII.A.4 of Appendix D to 10 CFR Part 52. The proposed changes do not alter or impede the design, function, or operation of any plant SSCs associated with the facility's physical or cyber security, and therefore does not affect any plant equipment that is necessary to maintain a safe and secure plant status. In addition, the changes have no impact on plant security or safeguards. Therefore, as required by 10 CFR 50.12(a)(1), the staff finds that the common defense and security is not impacted by this exemption.

3.1.4 SPECIAL CIRCUMSTANCES

Special circumstances, in accordance with 10 CFR 50.12(a)(2)(ii), are present if application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule. The underlying purpose of the Tier 1 information is to ensure that the licensee will safely construct and operate the plant based on the certified information found in the AP1000 DCD, which was incorporated by reference into the licensee's licensing basis. The proposed changes in Tier 1 of the plant-specific DCD to update line number information consistent with the current design, piping layout, and DCD Tier 2 information, continue to maintain the design functions of these systems. These changes do not impact the ability of SSCs to perform their functions and do not negatively impact safety. These changes will enable the licensee to safely construct and operate the AP1000 facility consistent with the design certified by the NRC, by updating and clarifying the information found in Tables 2.1.2-2, 2.2.1-2, 2.2.2-2, 2.2.3-2, 2.3.6-2, 2.3.7-2, and 2.7.1-2 in Tier 1 of the plant-specific DCD. Therefore, because the application of the specified Tier 1 information in this circumstance does not serve the underlying purpose of the rule, the staff finds that the special circumstances required by 10 CFR 50.12(a)(2)(ii) for the granting of an exemption from the Tier 1 information exist.

3.1.5 SPECIAL CIRCUMSTANCES OUTWEIGH REDUCED STANDARDIZATION

This exemption would allow the implementation of changes to Tables 2.1.2-2, 2.2.1-2, 2.2.2-2, 2.2.3-2, 2.3.6-2, 2.3.7-2, and 2.7.1-2 in Tier 1 of the plant-specific DCD, as proposed in the LAR. The design functions of the systems associated with this request will continue to be maintained. Therefore, the standardization inherent in the systems within scope of the certified

design is not affected. Based on this, as required by 10 CFR Part 52.63(b)(1), the staff finds that the special circumstances outweigh the effects the departure has on the standardization of Tier 1 documentation associated with the AP1000 design.

3.1.6 NO SIGNIFICANT REDUCTION IN SAFETY

This exemption would allow the implementation of changes to Tables 2.1.2-2, 2.2.1-2, 2.2.2-2, 2.2.3-2, 2.3.6-2, 2.3.7-2, and 2.7.1-2 in Tier 1 of the plant-specific DCD, as proposed in the LAR. The changes are for consistency and clarity and will not impact the function of the systems described in the referenced tables. The proposed changes will not adversely affect the ability of the SSCs to perform their design functions and the level of safety provided by the SSCs is unchanged; therefore, as required by 10 CFR 52.63(b)(1), the staff finds that granting the exemption would not result in a significant decrease in the level of safety otherwise provided by the design.

3.2 EVALUATION OF PROPOSED CHANGES

As described in the introduction, the proposed changes to COL Appendix C for both VCSNS Units 2 and 3, as well as the corresponding portions of Tier 1 of the plant-specific DCD would update the tables of various piping lines that support the system-based design descriptions and ITAAC for ADS, PCS, PXS, RNS, VFS, SFS, and SDS. Specifically, Tables 2.1.2-2, 2.2.1-2, 2.2.2-2, 2.2.3-2, 2.3.6-2, 2.3.7-2, and 2.7.1-2 are proposed to be revised. The proposed revisions would add or delete line numbers of existing piping lines, as well as update the functional capability classification of existing process flow lines, to provide consistency with the UFSAR Tier 2 information. As such, the licensee's basis for the request relates to enhancing clarity and consistency in the licensing basis rather than making specific design changes.

To perform the technical review of the proposed changes, the NRC staff considered sections of the VCSNS Units 2 and 3 UFSAR, as well as portions of the AP1000 DCD, Revision 19, NUREG-1793 "Final Safety Evaluation Report Related to Certification of the AP1000 Standard Design (NUREG-1793)" and its Supplements, and the "Final Safety Evaluation Report for the Vogtle Electric Generating Plant Units 3 and 4 Combined License Application," documenting the staff's technical evaluation of those aspects of the AP1000 DCD and VCSNS Units 2 and 3 COL application, respectively. The staff reviewed these documents to understand the original basis for the staff's finding on the referenced COL Appendix C and plant-specific DCD Tier 1 information. The staff reviewed the licensee's proposed changes to COL Appendix C and Tier 1 of the plant-specific DCD to evaluate their technical acceptability in the context of the staff's original finding. The following paragraphs describe the staff's review.

Table 2.1.2-2

The NRC staff reviewed the proposed changes to Table 2.1.2-2 for the removal of functional capability requirements for safety valve discharge piping line numbers RCS [Reactor Coolant System]-L064A/B and ADS outlet piping line numbers RCS-L240A/B, and the relocation of RCS-L064A/B from "ADS Outlet Piping" to "Safety Valve Discharge Piping." The staff reviewed UFSAR Subsection 5.2.2 regarding overpressure protection, and UFSAR Subsection 5.4.6.2 for the design description of the ADS. The staff also reviewed Tier 1 (and corresponding COL Appendix C) Figure 2.1.2-1 and UFSAR Figure 5.1-1 for the ADS description. The staff determined that the applicable piping lines, RCS-L064A/B and RCS-L240A/B, are drain lines and do not perform a safety-related function. Nevertheless, these lines will maintain their integrity in accordance with the American Society of Mechanical Engineers (ASME) *Boiler and*

Pressure Vessel Code (BPV Code) Section III provisions. The staff reviewed Table 2.1.2-2 to verify that piping requiring functional capability is designated in the table. The staff noted that the licensee's request to relocate RCS-L064A/B from "ADS Outlet Piping" to "Safety Valve Discharge Piping" is also supported by DCD Tier 2, Figure 5.1-5, as the lines are located on the pressurizer safety valve discharge piping. The staff determined that the configuration and function of the piping system is not affected by the requested changes. Based on its review, the staff found that the proposed changes ensure that an accurate and complete list of all piping lines in the safety valve discharge piping and ADS outlet piping flowpaths requiring functional capability is maintained for the purpose of satisfying the applicable ITAAC.

Table 2.2.1-2

The NRC staff reviewed the proposed changes to Table 2.2.1-2 that added two ASME BPV Code Section III lines for the "Containment Purge Discharge from Containment" entry (line numbers VFS-PL-L810A/B). The staff reviewed UFSAR Subsection 6.2.1.1.4 regarding the need for vacuum relief for the containment vessel, and UFSAR Subsection 9.4.7.2.3 regarding the operation of the containment vacuum relief system under abnormal plant conditions. The staff also reviewed Tier 1 (and corresponding COL Appendix C) Figure 2.2.1-1 for the description of the containment system. The staff determined that the licensee's request for the addition of these ASME BPV Code Section III lines is consistent with the classification of existing piping lines within the same system. Based on its review, the staff finds that the proposed change ensures that Table 2.2.1-2 contains a complete listing of the piping lines in the containment vacuum relief system requiring ASME BPV Code Section III design requirements in order to satisfy the applicable ITAAC.

Table 2.2.2-2

The NRC staff reviewed the proposed changes to Table 2.2.2-2 with respect to the following:

- The addition of line PCS-PL-L052 to the "Post-72-hour SFS Makeup From Supply Line Connection" row
- The listing of line PCS-PL-L049 as both part of the "Post-72-hour SFS Makeup From Supply Line Connection" and "Post-72-hour SFS Makeup From PCCWST" rows, as well as the addition of an asterisk to this line number
- The addition of line PCS-PL-L039 to both the "Post-72-hour SFS Makeup From PCCWST" and "Post-72-hour SFS Makeup From Supply Line Connection" rows, as well as the addition of asterisks to these lines
- The addition of line PCS-PL-L041 to the "Post-72-hour SFS Makeup From PCCWST" row
- The addition of PCS-PL-L049 and PCS-PL-L039 to the asterisk note to the table

The staff reviewed UFSAR Subsection 9.1.3.4.3 regarding the performance of the SFS under abnormal operations, including sources of makeup water. UFSAR Figure 6.2.2-1 depicts the layout of the PCS. This system layout is also shown in Tier 1 (and corresponding COL Appendix C) Figure 2.2.2-1. The staff determined that the proposed changes added lines within existing piping layouts and served to document previously existing transitions between previously identified piping and reducers. Some of the proposed changes identified existing piping segments as common to multiple line names. Based on its review, the staff finds that these changes ensure that the list of piping lines for each flowpath is complete and support satisfaction of the applicable ITAAC.

Table 2.2.3-2

The NRC staff reviewed the proposed changes to Table 2.2.3-2 with respect to the following:

1. The addition of "Containment recirculation line B" lines PXS-L100, PXS-L101, and PXS-L106
2. The addition of "IRWST [In-Containment Refueling Water Storage Tank] injection line A to DVI [Direct Vessel Injection] line A" lines PXS-L133A and PXS-L134A
3. The addition of "IRWST injection line B to DVI line B" lines PXS-L133B and PXS-L134B
4. The renaming of "IRWST injection line B to DVI line B" line PXS-L114B to PXS-L114

The staff reviewed UFSAR Subsection 6.3.2.2.7 regarding the IRWST and containment recirculation screens. The staff also reviewed Tier 1 (and corresponding COL Appendix C) Figure 2.2.3-1 as well as UFSAR Figures 6.3-2 and 6.3-3 for the system configuration. For item 1 above, the staff determined that the proposed addition of lines PXS-L100, PXS-L101, and PXS-L106 to the flowpath for "Containment recirculation line B" is consistent with the flowpath shown in UFSAR Figure 6.3-2. The staff also determined that the addition of these lines supports a complete listing of the piping lines in the flow path as well as those requiring functional capability.

Specific to items 2 and 3 above, the staff requested on April 14, 2015, that the licensee confirm and verify that the piping lines were qualified for leak-before-break (LBB) and are bounded by the bounding analysis curve methodology for the AP1000 DCD.

In response to the request for clarification, the licensee provided a supplement to the LAR dated June 29, 2015, that stated that piping lines PXS-L133A, PXS-L133B, PXS-L134A, and PXS-L134B were being removed from the scope of LAR 13-28. In addition, the licensee stated that these four lines will be included in a future LAR that will include other supporting changes in UFSAR Appendix 3B. Therefore, no further review was conducted regarding the changes originally proposed as items 2 and 3 above.

For item 4 above, the staff determined that the renaming of "IRWST injection line B to DVI line B" and line PXS-L114B to PXS-L114 does not affect the function or configuration of the existing piping, but instead provides consistency between Table 2.2.3-2 and UFSAR Figure 6.3-2. Based on its review, the staff finds that the proposed changes support a complete listing of the piping lines needed to satisfy the applicable ITAAC.

Table 2.3.6-2

The NRC staff reviewed the proposed changes to Table 2.3.6-2 with respect to the following:

1. The addition of functional capability requirements for certain lines within the entry "RNS Suction Lines, from the RCS Pressure Boundary Valves, RNS-PL-V001A and RNS-PL-V001B, to the RNS pumps"
2. The addition of functional capability requirements for line number RNS-L061 within the entry "RNS Suction Line from CVS [Chemical and Volume Control System]"
3. The addition of functional capability requirements for line number RNS-L029 within the entry "RNS Suction Line from IRWST"
4. The revision of column name "RNS Discharge Line, from RNS Heat Exchanger RNS-ME-01B to Common Discharge Header RNS-DBC-L014" to delete "DBC-"

5. The addition of piping lines PXS-L019A and PXS-L019B within the entry “RNS Discharge Lines, from RCS Pressure Boundary Isolation Valves RNS-PL-V015A and RNS-PL-V015B to Reactor Vessel DVI Nozzles”

The staff reviewed UFSAR Subsection 5.4.7 for the functions of the RNS system and UFSAR Figure 5.4-7 for the RNS configuration. The staff determined that the proposed addition of functional capability requirements for certain piping lines (items 1, 2, and 3 above) clarifies the ability of the system to perform its functions. In addition, the staff determined that the proposed revision of the line name to delete “DBC-” (item 4 above) is consistent with naming conventions used for other piping lines, and the change aligned this column with similar columns in the Tier 1 information.

Specific to item 5 above, the staff requested on April 14, 2015 that the licensee confirm and verify that these piping lines were qualified for LBB and are bounded by the bounding analysis curve methodology for the AP1000 DCD.

In response to a request for clarification, the licensee provided a supplement to the LAR dated June 29, 2015, that verified that piping lines PXS-L019A and PXS-L019B were qualified for LBB in the bounding analysis curve for the RNS. These piping lines are shown in UFSAR Appendix 3B, “Leak-Before-Break Evaluation of the AP1000 Piping,” Figure 3B-18, “AP1000 Bounding Analysis Curve for RNS Discharge Line Number(s): L019A.B.” The staff confirmed that line numbers L019A and L019B are referenced in both Table 3B-1 and Figure 3B-18 of UFSAR Appendix 3B. The lines are identified appropriately as part of the PXS system, but are included (as the licensee states) in the bounding analysis curve for the RNS discharge because they connect to that system.

Based on its review, the staff finds that the proposed changes to Table 2.3.6-2 clarify the functional requirements of specific pipe lines and provide a more complete description of the applicable systems.

Table 2.3.7-2

The NRC staff reviewed the proposed changes to Table 2.3.7-2 for the addition of line L052, (“Spent Fuel Pool Containment Isolation Thermal Relief Line”), the revision of the numbering for the “Cask Loading Pit to RNS Pump Suction” line from L015 to L115, and the revision and renaming of the “Refueling Cavity Drain Line” L040 to the “Upender Pit Drain/Fill Line” L121. The staff reviewed COL UFSAR Figure 9.1-6 and Tier 1 (and corresponding COL Appendix C) Figure 2.3.7-1 for the layout of the SFS. The staff also reviewed DCD Tier 2, Figure 9.1-6 and the staff determined that piping line SFS-L052, which is upstream of pressure relief valve SFS-PL-V067, is identified on the figure, but had been previously omitted from the table, so the licensee is now proposing to include it for consistency. The staff did not identify any adverse impact from the proposed renaming of piping lines SFS-L015 to SFS-L115 and SFS-L040 to SFS-L121 regarding their function or configuration. The staff also determined that the proposed renaming of the “Refueling Cavity Drain” to “Upender Pit Drain/Fill Line” similarly does not affect the function of configuration of the line. Based on its review, the staff finds that the proposed changes to Table 2.3.7-2 correct an omission from the table and clarify the function of the applicable systems.

Table 2.7.1-2

The NRC staff reviewed the proposed changes to Table 2.7.1-2 for the addition of line SDS-PL-L182 (“Main Control Room Sanitary Drain Line”), the revision of “Main Control Room Sanitary Vent Line” numbering from SDS-PL-L035 to SDS-PL-L016, and the revision of the “Main Control Room Sanitary Drain Line” numbering from SDS-PL-L030 to SDS-PL-L179. The staff reviewed UFSAR Subsection 9.2.6 for a description of the sanitary drainage system. The staff determined that the proposed renaming of lines does not affect the function of these lines. The staff determined that the addition of piping line SDS-PL-L182 is consistent with similar lines that penetrate the main control room envelope consistent with the ASME BPV Code Section III requirements. Based on its review, the staff finds that the proposed changes to Table 2.7.1-2 support a complete listing of the piping lines needed to satisfy the applicable ITAAC.

CONCLUSION

The NRC staff reviewed the licensee’s proposed changes provided in LAR 13-28. Based on the staff’s technical evaluation described in this safety evaluation, the staff found that:

- (1) The proposed changes did not adversely affect the function of previously reviewed and approved systems.
- (2) The proposed changes provided additional clarity to existing documentation.
- (3) The proposed changes supported satisfaction of the applicable ITAAC by providing a complete listing of required piping lines.

For the reasons specified above, the staff found that the proposed changes provided in LAR 13-28 were acceptable.

Based on these findings, the staff concludes that there is reasonable assurance that the requirements of GDC 1, GDC 38, and GDC 61 of 10 CFR Part 50, Appendix A; and Appendix D to 10 CFR Part 52 (with exemptions as described in Section 3.1 above) continue to be met with the changes described in LAR 13-28.

4.0 STATE CONSULTATION

In accordance with the Commission’s regulations in 10 CFR 50.91(b)(2), the South Carolina State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR Part 20, “Standards for Protection Against Radiation.” The NRC staff has determined that the amendment involves 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 amendment involves no significant hazards consideration, and there has been no public comment on such finding (80 FR 23606, published on April 28, 2015). Accordingly, the amendment meets 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 amendment.

6.0 CONCLUSION

The NRC staff has determined that pursuant to Section VIII.A.4 of Appendix D to 10 CFR Part 52, the exemption (1) is authorized by law, (2) presents no undue risk to the public health and safety, (3) is consistent with the common defense and security, (4) is a special circumstance that outweighs the reduction in standardization, and (5) does not significantly reduce the level of safety at the licensee's facility. Therefore, the staff grants the licensee an exemption from the Tier 1 information specified by the licensee.

The staff has concluded, based on the considerations discussed in Section 3.2 and confirming that these changes do not change an analysis methodology, assumptions, or the design itself, 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 amendment will not be inimical to the common defense and security or to the health and safety of the public. Therefore, the staff finds the changes proposed in this license amendment acceptable.

7.0 REFERENCES

1. Request for License Amendment and Exemption 13-28: Piping Line Number Additions, Deletions and Functional Capability Re-Designation, letter from South Carolina Electric and Gas Company (SCE&G), dated December 18, 2014 (ADAMS Accession No. ML14353A107).
2. Supplement to Request for License Amendment and Exemption 13-28S1: Piping Line Number Additions, Deletions and Functional Capability Re-Designation, letter from SCE&G, dated June 29, 2015 (ADAMS Accession No. ML15180A248).
3. Supplement to Request for License Amendment and Exemption 13-28S2: Piping Line Number Additions, Deletions and Functional Capability Re-Designation, letter from SCE&G, dated October 16, 2015 (ADAMS Accession No. ML15292A075).
4. Virgil C. Summer Nuclear Station Updated Final Safety Analysis Report, Revision 3, dated July 1, 2015 (ADAMS Accession No. ML15196A214).
5. AP1000 Design Control Document, Revision 19, dated June 13, 2011 (ADAMS Accession No. ML11171A500).
6. U.S. Nuclear Regulatory Commission, "Final Safety Evaluation Report Related to the Combined Licenses for Virgil C. Summer Nuclear Station, Units 2 and 3," Volume 1, NUREG-2153, dated September, 2013 (ADAMS Accession No. ML13275A125)..
7. Final Safety Evaluation Report Related to Certification of the AP1000 Standard Plant Design, NUREG-1793, Supplement 2, dated August 5, 2011 (ADAMS Accession No. ML112061231).

8. Regulatory Guide 1.68, "Initial Test Programs for Water-Cooled Nuclear Power Plants," Revision 3, March 2007 (ADAMS Accession No. ML070260039).