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52-026

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ND-18-0552  
10 CFR 52.99(c)(3)

U.S. Nuclear Regulatory Commission  
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Washington, DC 20555-0001

Southern Nuclear Operating Company  
Vogtle Electric Generating Plant Unit 3 and Unit 4  
Notice of Uncompleted ITAAC 225-days Prior to Initial Fuel Load  
Item 2.3.06.02a [Index Number 355]

Ladies and Gentlemen:

Pursuant to 10 CFR 52.99(c)(3), Southern Nuclear Operating Company hereby notifies the NRC that as of April 16, 2018, Vogtle Electric Generating Plant (VEGP) Unit 3 and Unit 4 Uncompleted Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Item 2.3.06.02a [Index Number 355] has not been completed greater than 225-days prior to initial fuel load. The Enclosure describes the plan for completing this ITAAC. Southern Nuclear Operating Company will, at a later date, provide additional notifications for ITAAC that have not been completed 225-days prior to initial fuel load.

This notification is informed by the guidance described in NEI 08-01, *Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52*, which was endorsed by the NRC in Regulatory Guide 1.215. In accordance with NEI 08-01, this notification includes ITAAC for which required inspections, tests, or analyses have not been performed or have been only partially completed. All ITAAC will be fully completed and all Section 52.99(c)(1) ITAAC Closure Notifications will be submitted to NRC to support the Commission finding that all acceptance criteria are met prior to plant operation, as required by 10 CFR 52.103(g).

This letter contains no new NRC regulatory commitments.

If there are any questions, please contact Tom Petrak at 706-848-1575.

Respectfully submitted,

  
Michael J. Yox  
Regulatory Affairs Director Vogtle 3 & 4

Enclosure: Vogtle Electric Generating Plant (VEGP) Unit 3 and Unit 4  
Completion Plan for Uncompleted ITAAC 2.3.06.02a [Index Number 355]

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**Southern Nuclear Operating Company  
ND-18-0552  
Enclosure**

**Vogtle Electric Generating Plant (VEGP) Unit 3 and Unit 4  
Completion Plan for Uncompleted ITAAC 2.3.06.02a [Index Number 355]**

### **ITAAC Statement**

#### **Design Commitment:**

- 2.a) The components identified in Table 2.3.6-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements.
- 2.b) The piping identified in Table 2.3.6-2 as ASME Code Section III is designed and constructed in accordance with ASME Code Section III requirements.
- 3.a) Pressure boundary welds in components identified in Table 2.3.6-1 as ASME Code Section III meet ASME Code Section III requirements.
- 3.b) Pressure boundary welds in piping identified in Table 2.3.6-2 as ASME Code Section III meet ASME Code Section III requirements.
- 4.a) The components identified in Table 2.3.6-1 as ASME Code Section III retain their pressure boundary integrity at their design pressure.
- 4.b) The piping identified in Table 2.3.6-2 as ASME Code Section III retains its pressure boundary integrity at its design pressure.
- 5.b) Each of the lines identified in Table 2.3.6-2 for which functional capability is required is designed to withstand combined normal and seismic design basis loads without a loss of its functional capability.
6. Each of the as-built lines identified in Table 2.3.6-2 as designed for LBB meets the LBB criteria, or an evaluation is performed of the protection from the dynamic effects of a rupture of the line.

#### **Inspections, Tests, Analyses:**

Inspection will be conducted of the as-built components and piping as documented in the ASME design reports.

Inspection of the as-built pressure boundary welds will be performed in accordance with the ASME Code Section III.

A hydrostatic test will be performed on the components and piping required by the ASME Code Section III to be hydrostatically tested.

Inspection will be performed for the existence of a report verifying that the as-built piping meets the requirements for functional capability.

Inspection will be performed for the existence of an LBB evaluation report or an evaluation report on the protection from dynamic effects of a pipe break. Section 3.3, Nuclear Island Buildings, contains the design descriptions and inspections, tests, analyses, and acceptance criteria for protection from the dynamic effects of pipe rupture.

**Acceptance Criteria:**

The ASME Code Section III design reports exist for the as-built components and piping identified in Tables 2.3.6-1 and 2.3.6-2 as ASME Code Section III.

A report exists and concludes that the ASME Code Section III requirements are met for non-destructive examination of pressure boundary welds.

A report exists and concludes that the results of the hydrostatic test of the components and piping identified in Tables 2.3.6-1 and 2.3.6-2 as ASME Code Section III conform with the requirements of the ASME Code Section III.

A report exists and concludes that each of the as-built lines identified in Table 2.3.6-2 for which functional capability is required meets the requirements for functional capability.

An LBB evaluation report exists and concludes that the LBB acceptance criteria are met by the as-built RNS piping and piping materials, or a pipe break evaluation report exists and concludes that protection from the dynamic effects of a line break is provided.

**ITAAC Completion Description**

This ITAAC requires inspections, tests, and analyses be performed and documented to ensure the Normal Residual Heat Removal System (RNS) components and piping listed in the Combined License (COL) Appendix C, Table 2.3.6-1 (Attachment A) and Table 2.3.6-2 (Attachment B) that are identified as American Society of Mechanical Engineers (ASME) Code Section III, Leak Before Break (LBB), or Functional Capability Required are designed and constructed in accordance with applicable requirements.

**2.a and 2.b) The ASME Code Section III design reports exist for the as-built components and piping identified in Tables 2.3.6-1 and 2.3.6-2 as ASME Code Section III.**

Each component listed in Table 2.3.6-1 as ASME Code Section III is fabricated in accordance with the VEGP Updated Final Safety Analysis Report (UFSAR) and the ASME Code Section III requirements. The ASME Code Section III certified Design Reports for these components exist and document that the as-built components conform to the approved design details. The ASME Section III Design Report for each component is documented in the component's completed ASME Section III Code Data Report. The individual component ASME Section III Code Data Reports are documented on the ASME Section III N-5 Code Data Report(s) for the applicable piping system (Reference 1).

The as-built piping listed in Table 2.3.6-2 including the components listed in Table 2.3.6-1 as ASME Code Section III, are subjected to a reconciliation process (Reference 2), which verifies that the as-built piping are analyzed for applicable loads (e.g. stress reports) and for compliance with all design specification and Code provisions. Design reconciliation of the as-built systems, including installed components, validates that construction completion, including field changes and any nonconforming condition dispositions, is consistent with and bounded by the approved design. All applicable fabrication, installation and testing records, as well as, those for the related Quality Assurance (QA) verification/ inspection activities, which confirm adequate construction in compliance with the ASME Code Section III and design provisions, are referenced in the N-5 data report and/or its sub-tier references.

The applicable ASME Section III N-5 Code Data Report(s), which include the location of the certified Design Reports for all the components listed in Table 2.3.6-1 (Attachment A) and piping listed in Table 2.3.6-2 (Attachment B) as ASME Code Section III, exist and conclude that these installed components are designed and constructed (including their installation within the applicable as-built piping system) in accordance with the ASME Code (1998 Edition, 2000 Addenda and 1989 Edition, 1989 Addenda), Section III requirements as applicable, as described in UFSAR Subsection 5.2.1 (Reference 3). The N-5 Code Data Reports for the piping system(s) containing the components listed in the Table 2.3.6-1 and Table 2.3.6-2 are identified in Attachments A and B, respectively.

3.a and 3.b) A report exists and concludes that the ASME Code Section III requirements are met for non-destructive examination of pressure boundary welds.

Inspections are performed in accordance with ASME Code Section III (1998 Edition, 2000 Addenda) to demonstrate that as-built pressure boundary welds in components identified in Table 2.3.6-1 as ASME Code Section III meet ASME Code Section III requirements (i.e., no unacceptable indications).

The applicable non-destructive examinations (including liquid penetrant, magnetic particle, radiographic, and ultrasonic testing, as required by ASME Code Section III) of the components' pressure boundary welds are documented in the Non-destructive Examination Report(s), which support completion of the respective ASME Section III N-5 Code Data Report(s) certified by the Authorized Nuclear Inspector, as listed in Attachment A.

Per ASME Code Section III, Subarticle NCA-8300, "Code Symbol Stamps," the N-5 Code Data Report(s) (Reference 1) documents satisfactory completion of the required examination and testing of the item, which includes non-destructive examinations of pressure boundary welds. Satisfactory completion of the non-destructive examination of pressure boundary welds ensures that the pressure boundary welds in components identified in Table 2.3.6-1 as ASME Code Section III meet ASME Code Section III requirements.

An inspection is performed in accordance with Reference 2 to demonstrate that the as-built pressure boundary welds in piping identified in Table 2.3.6-2 (Attachment B) as ASME Code Section III meet ASME Code Section III requirements (i.e., no unacceptable indications). This portion of the ITAAC is complete when the piping identified in Table 2.3.6-2, which is encompassed within the respective piping system Code Symbol N-Stamp and the corresponding piping system Code N-5 Data Report Form(s) (Reference 1), is complete. The non-destructive examinations (including visual inspection, liquid penetrant, magnetic particle, radiographic, and ultrasonic testing, as required by ASME Code Section III) of the piping pressure boundary welds are documented in the Non-destructive Examination Report(s) within the piping system's supporting data package, which support completion of the respective Code Stamping and Code N-5 Data Report(s). The completion of stamping the respective piping system along with the corresponding ASME Code N-5 Data Report Form(s) (certified by the Authorized Nuclear Inspector) ensure that the piping is constructed in accordance with the design specification(s) and the ASME Code Section III and that the satisfactory completion of the non-destructive examinations of piping pressure boundary welds for the pipe lines identified in Table 2.3.6-2 meet ASME Code Section III requirements and are documented in the Non-destructive Examination Report(s) within the supporting data packages.

4.a and 4.b) A report exists and concludes that the results of the hydrostatic test of the components and piping identified in Tables 2.3.6-1 and 2.3.6-2 as ASME Code Section III conform with the requirements of the ASME Code Section III.

A hydrostatic test is performed by the vendor to demonstrate that the components identified in Table 2.3.6-1 (Attachment A) as ASME Code Section III retain their pressure boundary integrity at their design pressure. The completion of the N-5 Data Reports is governed by Reference 2.

This portion of the ITAAC is complete once each component identified in Table 2.3.6-1 has their individual Code Symbol N-Stamp and corresponding Code Data Report (Reference 1) completed, and the components are installed into the respective Code Symbol N-Stamped piping system and documented on the corresponding N-5 Code Data Report(s) (Reference 1). The hydrostatic testing results of the component's pressure boundary are documented in the Hydrostatic Testing Report(s) within the supporting component's data package, which support completion of the respective Code Stamping and Code Data Report(s).

The completion of stamping the individual components and the respective piping system along with the corresponding ASME Code Data Reports (certified by the Authorized Nuclear Inspector) ensures that the components are constructed in accordance with the Design Specifications and the ASME Code Section III and that the satisfactory completion of the hydrostatic pressure testing of each component identified in Table 2.3.6-1 as ASME Code Section III are documented in the Hydrostatic Testing Report(s) within the supporting data packages and meets ASME Code Section III requirements.

This ITAAC also verifies that the piping identified in Table 2.3.6-2 (Attachment B) fully meets all applicable ASME Code, Section III requirements and retains its pressure boundary integrity at its design pressure.

A hydrostatic test is performed in accordance with procedure XYZ (Reference 4) (as applicable) that complies with the ASME Code (1998 Edition, 2000 Addenda), Section III requirements to demonstrate that the ASME Code Section III piping identified in Table 2.3.6-2 retains its pressure boundary integrity at its design pressure.

A hydrostatic test verifies that there are no leaks at welds or piping, and that the pressure boundary integrity is retained at its design pressure. The hydrostatic testing results of the pipe lines are documented in the Hydrostatic Testing Report(s). The Hydrostatic Testing Report(s) supports completion of the ASME Section III N-5 Code Data Report(s) for the applicable piping system (i.e., RNS) (Reference 1).

The applicable ASME Section III N-5 Code Data Report(s) (Reference 1) identified in Attachments A and B documents that the results of the hydrostatic testing of the components and piping identified in Table 2.3.6-1 and Table 2.3.6-2 respectively conform with the requirements of the Code (1998 Edition, 2000 Addenda), Section III.

5.b) A report exists and concludes that each of the as-built lines identified in Table 2.3.6-2 for which functional capability is required meets the requirements for functional capability.

An inspection is performed of the ASME Section III as-built piping design report XXX to verify that the report demonstrates that each of the RNS piping lines identified in ITAAC Table 2.3.6-2 that requires functional capability is designed to withstand combined normal and seismic design basis loads without a loss of its functional capability. "Functional capability," in this context, refers to the capability of the piping to withstand the effects of earthquakes, without a loss of safety function (to convey fluids from one location to another). Specific functional capability requirements are defined in the VEGP UFSAR Table 3.9-11 (Reference 3).

Piping functional capability is not a specific ASME Code requirement but it is a requirement in the VEGP UFSAR (Reference 3). As such, information demonstrating that UFSAR functional capability requirements are met is included in the ASME Section III As-Built Design Reports for safety class piping prepared in accordance with ASME Section III NCA-3550 under the ASME Boiler & Pressure Vessel Code (1998 Edition, 2000 Addenda) Section III requirements. The as-built piping systems are subjected to a reconciliation process (Reference 2), which verifies that the as-built piping systems are analyzed for functional capability and for compliance with the design specification and ASME Code provisions. Design reconciliation of the as-built systems validates that construction completion, including field changes and any nonconforming condition dispositions, is consistent with and bounded by the approved design. As required by ASME Code, the As-Built Design Report includes the results of physical inspection of the piping and reconciliation to the design pipe stress report.

Inspections of the ASME Code Section III As-Built Piping Design Reports (Reference 5) for the RNS piping lines identified in Table 2.3.6-2 are complete and conclude that each of the as-built RNS piping lines for which functional capability is required meets the requirements for functional capability. The ASME Section III As-Built Piping Design Reports for each of the as-built RNS piping lines in Table 2.3.6-2 are identified in Attachment B.

6. An LBB evaluation report exists and concludes that the LBB acceptance criteria are met by the as-built RNS piping and piping materials, or a pipe break evaluation report exists and concludes that protection from the dynamic effects of a line break is provided.

Inspections are performed for the as-built lines identified in Table 2.3.6-2 (Attachment B) to verify that each of the as-built lines designed for LBB meets the LBB criteria, or an evaluation is performed of the protection from the dynamic effects of a rupture of the line. VEGP COL Appendix C, Section 3.3, Nuclear Island Buildings, contains the design descriptions and inspections, tests, analyses, and acceptance criteria for protection from the dynamic effects of pipe rupture.

LBB evaluations are performed as described in UFSAR subsection 3.6.3 to confirm that the as-built RNS piping (and corresponding piping materials) identified in Attachment A meet the LBB acceptance criteria described in the UFSAR, Appendix 3B, Leak-Before-Break Evaluation of the AP1000 Piping (Reference 3). In cases where an as-built RNS piping line in Attachment B cannot meet the LBB acceptance criteria, a pipe break evaluation is performed which concludes that protection from the dynamic effects of a line break is provided. The pipe break evaluation criteria is discussed in UFSAR, Section 3.6.4.1, Pipe Break Hazards Analysis (Reference 3) and is documented as a pipe rupture hazards analysis report (pipe break evaluation report).

Inspections are performed to verify that LBB as-built piping evaluation reports for the RNS piping (and corresponding piping materials) identified in Attachment B conclude that the as-built piping analysis is bounded by the applicable bounding analysis curves provided in Appendix 3B of the UFSAR (Reference 3). The results are documented in either the applicable ASME Section III as-built piping design report(s) or in separate LBB evaluation report(s). For cases where an as-built RNS piping line in Attachment B cannot meet the LBB acceptance criteria, inspections are performed to verify that a pipe rupture hazards analysis evaluation report (pipe break evaluation report) exists which concludes that protection from the dynamic effects of a line break is provided.

The applicable ASME Section III as-built piping design report(s), LBB evaluation report(s), or pipe rupture hazards analysis report(s) (pipe break evaluation report(s)) exist and are identified in Attachment B.

References 1 and 5 provide the evidence that the following ITAAC Acceptance Criteria requirements are met:

- The ASME Code Section III design reports exist for the as-built components and piping identified in Tables 2.3.6-1 and 2.3.6-2 as ASME Code Section III;
- A report exists and concludes that the ASME Code Section III requirements are met for non-destructive examination of pressure boundary welds;
- A report exists and concludes that the results of the hydrostatic test of the components and piping identified in Tables 2.3.6-1 and 2.3.6-2 as ASME Code Section III conform with the requirements of the ASME Code Section III;
- A report exists and concludes that each of the as-built lines identified in Table 2.3.6-2 for which functional capability is required meets the requirements for functional capability; and
- An LBB evaluation report exists and concludes that the LBB acceptance criteria are met by the as-built RNS piping and piping materials, or a pipe break evaluation report exists and concludes that protection from the dynamic effects of a line break is provided.

References 1 and 5 are available for NRC inspection as part of the Unit 3 and Unit 4 ITAAC 2.3.06.02a Completion Packages (References 6 and 7, respectively).

### **List of ITAAC Findings**

In accordance with plant procedures for ITAAC completion, Southern Nuclear Operating Company (SNC) performed a review of all ITAAC findings and associated corrective actions. This review, which included now consolidated ITAAC Indexes 356, 357, 358, 359, 360, 364 and 365, found no relevant ITAAC findings associated with this ITAAC.

**References (available for NRC inspection)**

1. RNS ASME N-5 Code Data Report(s)
2. APP-GW-GAP-139, "Westinghouse/WECTEC ASME N-5 Interface Procedure"
3. VEGP 3&4 Updated Final Safety Analysis Report
  - a. Subsection 5.2.1 - Compliance with Codes and Code Cases,
  - b. Table 3.9-11 - Piping Functional Capability – ASME Class 1, 2, and 3,
  - c. Subsection 3.6.3 - Leak before Break Evaluation Procedures
  - d. Subsection 3.6.4.1- Pipe Break Hazards Analysis
  - e. Appendix 3B - Leak-Before-Break Evaluation of the AP1000 Piping
4. RNS Piping Hydrostatic Test Procedure XYZ
5. RNS ASME III As Built Design Report(s)
6. Completion Package for Unit 3 ITAAC 2.3.06.02a [COL Index Number 355]
7. Completion Package for Unit 4 ITAAC 2.3.06.02a [COL Index Number 355]
8. NEI 08-01, "Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52"

**Attachment A**

**SYSTEM: Normal Residual Heat Removal System (RNS)**

| <b>Equipment Name*</b>                                   | <b>Tag No.*</b> | <b>ASME Code Section III*</b> | <b>ASME III as-built Design Report</b> | <b>N-5 Report</b>        |
|----------------------------------------------------------|-----------------|-------------------------------|----------------------------------------|--------------------------|
| RNS Pump A (Pressure Boundary)                           | RNS-MP-01A      | Yes                           | XXX                                    | RNS N-5 Code Data Report |
| RNS Pump B (Pressure Boundary)                           | RNS-MP-01B      | Yes                           | XXX                                    | RNS N-5 Code Data Report |
| RNS Heat Exchanger A (Tube Side)                         | RNS-ME-01A      | Yes                           | XXX                                    | RNS N-5 Code Data Report |
| RNS Heat Exchanger B (Tube Side)                         | RNS-ME-01B      | Yes                           | XXX                                    | RNS N-5 Code Data Report |
| RCS Inner Hot Leg Suction Motor-operated Isolation Valve | RNS-PL-V001A    | Yes                           | XXX                                    | RNS N-5 Code Data Report |
| RCS Inner Hot Leg Suction Motor-operated Isolation Valve | RNS-PL-V001B    | Yes                           | XXX                                    | RNS N-5 Code Data Report |
| RCS Outer Hot Leg Suction Motor-operated Isolation Valve | RNS-PL-V002A    | Yes                           | XXX                                    | RNS N-5 Code Data Report |
| RCS Outer Hot Leg Suction Motor-operated Isolation Valve | RNS-PL-V002B    | Yes                           | XXX                                    | RNS N-5 Code Data Report |
| RCS Pressure Boundary Thermal Relief Check Valve         | RNS-PL-V003A    | Yes                           | XXX                                    | RNS N-5 Code Data Report |
| RCS Pressure Boundary Thermal Relief Check Valve         | RNS-PL-V003B    | Yes                           | XXX                                    | RNS N-5 Code Data Report |
| RNS Discharge Motor-operated Containment Isolation Valve | RNS-PL-V011     | Yes                           | XXX                                    | RNS N-5 Code Data Report |
| RNS Discharge Containment Isolation Test Connection      | RNS-PL-V012     | Yes                           | XXX                                    | RNS N-5 Code Data Report |
| RNS Discharge Header Containment Isolation Check Valve   | RNS-PL-V013     | Yes                           | XXX                                    | RNS N-5 Code Data Report |
| RNS Discharge RCS Pressure Boundary Check Valve          | RNS-PL-V015A    | Yes                           | XXX                                    | RNS N-5 Code Data Report |
| RNS Discharge RCS Pressure Boundary Check Valve          | RNS-PL-V015B    | Yes                           | XXX                                    | RNS N-5 Code Data Report |
| RNS Discharge RCS Pressure Boundary Check Valve          | RNS-PL-V017A    | Yes                           | XXX                                    | RNS N-5 Code Data Report |

**Attachment A**

**SYSTEM: Normal Residual Heat Removal System (RNS)**

| <b>Equipment Name*</b>                                                               | <b>Tag No.*</b> | <b>ASME Code Section III*</b> | <b>ASME III as-built Design Report</b> | <b>N-5 Report</b>        |
|--------------------------------------------------------------------------------------|-----------------|-------------------------------|----------------------------------------|--------------------------|
| RNS Discharge RCS Pressure Boundary Check Valve                                      | RNS-PL-V017B    | Yes                           | XXX                                    | RNS N-5 Code Data Report |
| RNS Hot Leg Suction Pressure Relief Valve                                            | RNS-PL-V020     | Yes                           | XXX                                    | RNS N-5 Code Data Report |
| RNS Hot Leg Suction Pressure Relief Valve                                            | RNS-PL-V021     | Yes                           | XXX                                    | RNS N-5 Code Data Report |
| RNS Suction Header Motor-operated Containment Isolation Valve                        | RNS-PL-V022     | Yes                           | XXX                                    | RNS N-5 Code Data Report |
| RNS Suction from IRWST Motor-operated Isolation Valve                                | RNS-PL-V023     | Yes                           | XXX                                    | RNS N-5 Code Data Report |
| RNS Discharge to IRWST Motor-operated Isolation Valve                                | RNS-PL-V024     | Yes                           | XXX                                    | RNS N-5 Code Data Report |
| RNS Pump Discharge Relief                                                            | RNS-PL-V045     | Yes                           | XXX                                    | RNS N-5 Code Data Report |
| RNS Suction from Cask Loading Pit Motor-operated Isolation Valve                     | RNS-PL-V055     | Yes                           | XXX                                    | RNS N-5 Code Data Report |
| RNS Suction from Cask Loading Pit Check Valve                                        | RNS-PL-V056     | Yes                           | XXX                                    | RNS N-5 Code Data Report |
| RNS Pump Miniflow Air-Operated Isolation Valve                                       | RNS-PL-V057A    | Yes                           | XXX                                    | RNS N-5 Code Data Report |
| RNS Pump Miniflow Air-Operated Isolation Valve                                       | RNS-PL-V057B    | Yes                           | XXX                                    | RNS N-5 Code Data Report |
| RNS Return from Chemical and Volume Control System (CVS) Containment Isolation Valve | RNS-PL-V061     | Yes                           | XXX                                    | RNS N-5 Code Data Report |

\*Excerpts from COL Appendix C Table 2.3.6-1

**Attachment B**

**SYSTEM: Normal Residual Heat Removal System (RNS)**

| <b>Line Name*</b>                                                                                          | <b>Line No.*</b>                                                                               | <b>ASME Code Section III*</b> | <b>Leak Before Break*</b> | <b>Functional Capability Required*</b>               | <b>ASME III As-Built Design Report</b> | <b>LBB evaluation / pipe break evaluation</b> | <b>N-5 Report</b>    |
|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|-------------------------------|---------------------------|------------------------------------------------------|----------------------------------------|-----------------------------------------------|----------------------|
| RNS Suction Lines, from the RCS Hot Leg Connection to the RCS Side of Valves RNS PL-V001A and RNS-PL-V001B | RNS-L001<br>RNS-L002A<br>RNS-L002B                                                             | Yes                           | Yes                       | No                                                   | XXX                                    | YYY                                           | N-5 Code Data Report |
| RNS Suction Lines, from the RCS Pressure Boundary Valves, RNS-PL-V001A and RNS-PL-V001B, to the RNS pumps  | RNS-L004A<br>RNS-L004B<br>RNS-L005<br>RNS-L006<br>RNS-007A<br>RNS-007B<br>RNS-009A<br>RNS-009B | Yes                           | No                        | Yes<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes | XXX                                    | YYY                                           | N-5 Code Data Report |
| RNS Suction Line from CVS                                                                                  | RNS-L061                                                                                       | Yes                           | No                        | Yes                                                  | XXX                                    | YYY                                           | N-5 Code Data Report |
| RNS Suction Line from IRWST                                                                                | RNS-L029                                                                                       | Yes                           | No                        | Yes                                                  | XXX                                    | YYY                                           | N-5 Code Data Report |
| RNS Suction Line LTOP Relief                                                                               | RNS-L040<br>RNS-L090                                                                           | Yes                           | No                        | Yes                                                  | XXX                                    | YYY                                           | N-5 Code Data Report |
| RNS Discharge Lines, from the RNS Pumps to the RNS Heat Exchangers RNS-ME-01A and RNS-ME-01B               | RNS-L011A<br>RNS-L011B                                                                         | Yes                           | No                        | Yes                                                  | XXX                                    | YYY                                           | N-5 Code Data Report |
| RNS Discharge Lines, from RNS Heat Exchanger RNS-ME-01A to Containment Isolation Valve RNS-PL-V011         | RNS-L012A<br>RNS-L014                                                                          | Yes                           | No                        | Yes                                                  | XXX                                    | YYY                                           | N-5 Code Data Report |

**Attachment B**

**SYSTEM: Normal Residual Heat Removal System (RNS)**

| <b>Line Name*</b>                                                                                                                                                             | <b>Line No.*</b>                   | <b>ASME<br/>Code<br/>Section<br/>III*</b> | <b>Leak<br/>Before<br/>Break*</b> | <b>Functional<br/>Capability<br/>Required*</b> | <b>ASME III<br/>As-Built<br/>Design<br/>Report</b> | <b>LBB<br/>evaluation /<br/>pipe break<br/>evaluation</b> | <b>N-5<br/>Report</b>         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-------------------------------------------|-----------------------------------|------------------------------------------------|----------------------------------------------------|-----------------------------------------------------------|-------------------------------|
| RNS Discharge Line,<br>from RNS Heat<br>Exchanger RNS-ME-<br>01B to Common<br>Discharge Header<br>RNS-L014                                                                    | RNS-L012B                          | Yes                                       | No                                | Yes                                            | XXX                                                | YYY                                                       | N-5<br>Code<br>Data<br>Report |
| RNS Discharge Lines,<br>Containment Isolation<br>Valve<br>RNS-PL-V011 to<br>Containment Isolation<br>Valve<br>RNS-PL-V013                                                     | RNS-L016                           | Yes                                       | No                                | Yes                                            | XXX                                                | YYY                                                       | N-5<br>Code<br>Data<br>Report |
| RNS Suction Line<br>from Cask Loading Pit                                                                                                                                     | RNS-L065                           | Yes                                       | No                                | No                                             | XXX                                                | YYY                                                       | N-5<br>Code<br>Data<br>Report |
| RNS Discharge Lines,<br>from Containment<br>Isolation Valve RNS-<br>PL-V013 to RCS<br>Pressure Boundary<br>Isolation Valves RNS-<br>PL-V015A and RNS-<br>PL-V015B             | RNS-L017<br>RNS-L018A<br>RNS-L018B | Yes                                       | No                                | Yes                                            | XXX                                                | YYY                                                       | N-5<br>Code<br>Data<br>Report |
| RNS Discharge Lines,<br>from Direct Vessel<br>Injection (DVI) Line<br>RNS-BBC-L018A to<br>Passive Core Cooling<br>System (PXS) IRWST<br>Return Isolation Valve<br>RNS-PL-V024 | RNS-L020                           | Yes                                       | No                                | No                                             | XXX                                                | YYY                                                       | N-5<br>Code<br>Data<br>Report |

**Attachment B**

**SYSTEM: Normal Residual Heat Removal System (RNS)**

| <b>Line Name*</b>                                                                                                                                                      | <b>Line No.*</b>       | <b>ASME Code Section III*</b> | <b>Leak Before Break*</b> | <b>Functional Capability Required*</b> | <b>ASME III As-Built Design Report</b> | <b>LBB evaluation / pipe break evaluation</b> | <b>N-5 Report</b>    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-------------------------------|---------------------------|----------------------------------------|----------------------------------------|-----------------------------------------------|----------------------|
| RNS Discharge Lines, from RCS Pressure Boundary Isolation Valves RNS-PL-V015A and RNS-PL-V015B to RCS Pressure Boundary Isolation Valves RNS-PL-V017A and RNS-PL-V017B | RNS-L019A<br>RNS-L019B | Yes                           | No                        | Yes                                    | XXX                                    | YYY                                           | N-5 Code Data Report |
| RNS Heat Exchanger Bypass                                                                                                                                              | RNS-L008A<br>RNS-L008B | Yes                           | No                        | No                                     | XXX                                    | YYY                                           | N-5 Code Data Report |
| RNS Suction from Spent Fuel Pool                                                                                                                                       | RNS-L052               | Yes                           | No                        | No                                     | XXX                                    | YYY                                           | N-5 Code Data Report |
| RNS Pump Miniflow Return                                                                                                                                               | RNS-L030A<br>RNS-L030B | Yes                           | No                        | No                                     | XXX                                    | YYY                                           | N-5 Code Data Report |
| RNS Discharge to Spent Fuel Pool                                                                                                                                       | RNS-L051               | Yes                           | No                        | No                                     | XXX                                    | YYY                                           | N-5 Code Data Report |
| RNS Discharge to CVS Purification                                                                                                                                      | RNS-L021               | Yes                           | No                        | No                                     | XXX                                    | YYY                                           | N-5 Code Data Report |

\*Excerpts from COL Appendix C, Table 2.3.6-2