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Docket No.: 52-026

ND-23-0162  
10 CFR 52.99(c)(1)

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

Southern Nuclear Operating Company  
Vogtle Electric Generating Plant Unit 4  
ITAAC Closure Notification on Completion of ITAAC 2.2.03.05a.i [Index Number 165]

Ladies and Gentlemen:

In accordance with 10 CFR 52.99(c)(1), the purpose of this letter is to notify the Nuclear Regulatory Commission (NRC) of the completion of Vogtle Electric Generating Plant (VEGP) Unit 4 Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Item 2.2.03.05a.i [Index Number 165] to demonstrate that the Passive Core Cooling System (PXS) components identified as seismic Category I or Class 1E in the Combined License (COL) Appendix C, Table 2.2.3-1 are designed and constructed in accordance with applicable requirements.

The closure process for this ITAAC is based on 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.

This letter contains no new NRC regulatory commitments. Southern Nuclear Operating Company (SNC) requests NRC staff confirmation of this determination and publication of the required notice in the Federal Register per 10 CFR 52.99.

If there are any questions, please contact Kelli Roberts at 706-848-6991.

Respectfully submitted,



Jamie M. Coleman  
Regulatory Affairs Director Vogtle 3 & 4

Enclosure: Vogtle Electric Generating Plant (VEGP) Unit 4  
Completion of ITAAC 2.2.03.05a.i [Index Number 165]

JMC/AD/sfr

U.S. Nuclear Regulatory Commission

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cc: Regional Administrator, Region II  
Director, Office of Nuclear Reactor Regulation (NRR)  
Director, Vogtle Project Office NRR  
Senior Resident Inspector – Vogtle 3 & 4

**Southern Nuclear Operating Company  
ND-23-0162  
Enclosure**

**Vogtle Electric Generating Plant (VEGP) Unit 4  
Completion of ITAAC 2.2.03.05a.i [Index Number 165]**

## **ITAAC Statement**

### **Design Commitment:**

5.a) The seismic Category I equipment identified in Table 2.2.3-1 can withstand seismic design basis loads without loss of safety function.

7.a) The Class 1E equipment identified in Table 2.2.3-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.

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

i) Inspection will be performed to verify that the seismic Category I equipment and valves identified in Table 2.2.3-1 are located on the Nuclear Island.

ii) Type tests, analyses, or a combination of type tests and analyses of seismic Category I equipment will be performed.

iii) Inspection will be performed for the existence of a report verifying that the as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions.

i) Type tests, analyses, or a combination of type tests and analyses will be performed on Class 1E equipment located in a harsh environment.

ii) Inspection will be performed of the as-built Class 1E equipment and the associated wiring, cables, and terminations located in a harsh environment.

### **Acceptance Criteria:**

i) The seismic Category I equipment identified in Table 2.2.3-1 is located on the Nuclear Island.

ii) A report exists and concludes that the seismic Category I equipment can withstand seismic design basis dynamic loads without loss of safety function. For the PXS containment recirculation and IRWST screens, a report exists and concludes that the screens can withstand seismic dynamic loads and also post-accident operating loads, including head loss and debris weights.

iii) A report exists and concludes that the as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions. For the PXS containment recirculation and IRWST screens, a report exists and concludes that the as-built screens including their anchorage are bounded by the seismic loads and also post-accident operating loads, including head loss and debris weights.

i) A report exists and concludes that the Class 1E equipment identified in Table 2.2.3-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.

ii) A report exists and concludes that the as-built Class 1E equipment and the associated wiring, cables, and terminations identified in Table 2.2.3-1 as being qualified for a harsh environment are bounded by type tests, analyses, or a combination of type tests and analyses.

### **ITAAC Determination Basis**

This ITAAC requires that inspections, tests, and analyses be performed and documented to ensure the Passive Core Cooling System (PXS) equipment identified as seismic Category I or Class 1E in the Combined License (COL) Appendix C, Table 2.2.3-1 (the Table) is designed and constructed in accordance with applicable requirements.

i) The seismic Category I equipment identified in Table 2.2.3-1 is located on the Nuclear Island.

To assure that seismic Category I equipment can withstand seismic design basis loads without loss of safety function, all the equipment in the Table is designed to be located on the seismic Category I Nuclear Island. In accordance with Equipment Qualification (EQ) ITAAC As-Built Walkdown Guideline and the EQ ITAAC As-built Installation Documentation Guideline (References 1 and 2), an inspection was conducted of the PXS to confirm the satisfactory installation of the seismically qualified equipment. The inspection included verification of equipment make/model/serial number and verification of equipment location (Building, Elevation, Room). The EQ As-Built Reconciliation Reports (EQRR) (Reference 3) identified in Attachment A documented the results of the inspection and concluded that the seismic Category I equipment is located on the Nuclear Island.

ii) A report exists and concludes that the seismic Category I equipment can withstand seismic design basis dynamic loads without loss of safety function. For the PXS containment recirculation and IRWST screens, a report exists and concludes that the screens can withstand seismic dynamic loads and also post-accident operating loads, including head loss and debris weights.

Seismic Category I equipment in the Table requires type tests and/or analyses to demonstrate structural integrity and operability. Structural integrity of the seismic Category I valves, as well as other passive seismic Category I mechanical equipment, is demonstrated by analysis in accordance with American Society of Mechanical Engineers (ASME) Code Section III (Reference 4). Functionality of the subset of active safety-related valves under seismic loads was determined using the guidance of ASME QME-1-2007 (Reference 5). Structural integrity of the in-containment refueling water storage tank (IRWST) was demonstrated by analysis in accordance with American Concrete Institute (ACI) Standard 349-01 (Reference 6) and American Institute of Steel Construction (AISC) Specification N690 (Reference 7). Structural integrity of the pH adjustment baskets was demonstrated by analysis in accordance with AISC Specification N690 (Reference 7).

Safety-related (Class 1E) electrical equipment in the Table was seismically qualified by type testing combined with analysis in accordance with Institute of Electrical and Electronics Engineers (IEEE) Standard 344-1987 (Reference 8). This equipment includes safety-related (Class 1E) field sensors and the safety-related active valve accessories such as electric actuators, position switches, pilot solenoid valves and electrical connector assemblies. The specific qualification method (i.e., type testing, analysis, or combination) used for each piece of equipment in the Table is identified in Attachment A. Additional information about the methods used to qualify AP1000 safety-related equipment is provided in the Updated Final Safety

Analysis Report (UFSAR) Appendix 3D (Reference 9). The EQ Reports (Reference 10) identified in Attachment A contain applicable test reports and associated documentation and conclude that the seismic Category I equipment can withstand seismic design basis dynamic loads without loss of safety function. For the PXS containment recirculation and IRWST screens, the screens can withstand seismic dynamic loads and also post-accident operating loads, including head loss and debris weights.

iii) A report exists and concludes that the as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions. For the PXS containment recirculation and IRWST screens, a report exists and concludes that the as-built screens including their anchorage are bounded by the seismic loads and also post-accident operating loads, including head loss and debris weights.

An inspection (References 1 and 2) was conducted to confirm the satisfactory installation of the seismically qualified equipment in the Table. The inspection verified the equipment make/model/serial number, as-designed equipment mounting orientation, anchorage and clearances, and electrical and other interfaces. The documentation of installed configuration of seismically qualified equipment includes photographs and/or sketches/drawings of equipment/mounting/interfaces.

As part of the seismic qualification program, consideration is given to the definition of the clearances needed around the equipment mounted in the plant to permit the equipment to move during a postulated seismic event without causing impact between adjacent pieces of safety-related equipment. When required, seismic testing by measuring the maximum dynamic relative displacement of the top and bottom of the equipment was performed. EQ Reports (Reference 10) identified the equipment mounting employed for qualification and established interface requirements for assuring that subsequent in-plant installation does not degrade the established qualification. Interface requirements are defined based on the test configuration and other design requirements.

Attachment A identifies the EQRR (Reference 3) completed to verify that the as-built seismic Category I equipment listed in the Table, including anchorage, are seismically bounded by the tested or analyzed conditions, IEEE Standard 344-1987 (Reference 8), and NRC Regulatory Guide (RG) 1.100 (Reference 11). For the PXS containment recirculation and IRWST screens, the as-built screens including their anchorage are bounded by the seismic loads and also post-accident operating loads, including head loss and debris weights.

i) A report exists and concludes that the Class 1E equipment identified in Table 2.2.3-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.

The harsh environment Class 1E equipment in the Table is qualified by type testing and/or analyses. Class 1E electrical equipment type testing was performed in accordance with IEEE Standard 323-1974 (Reference 12) and RG 1.89 (Reference 13) to meet the requirements of 10 CFR 50.49. Type testing of safety-related equipment meets the requirements of 10 CFR Part 50, Appendix A, General Design Criterion 4. Attachment A identifies the EQ program and specific qualification method for each piece of safety-related mechanical or Class 1E electrical equipment located in a harsh environment. Additional information about the methods used to qualify AP1000 safety-related equipment is provided in the UFSAR Appendix 3D (Reference 9).

EQ Reports (Reference 10) identified in Attachment A contain applicable test reports and associated documentation and concluded that the equipment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.

ii) A report exists and concludes that the as-built Class 1E equipment and the associated wiring, cables, and terminations identified in Table 2.2.3-1 as being qualified for a harsh environment are bounded by type tests, analyses, or a combination of type tests and analyses.

An inspection (Reference 1 and 2) was conducted of the PXS to confirm the satisfactory installation of the Class 1E equipment in the Table. The inspection verified the equipment location, make/model/serial number, as-designed equipment mounting, wiring, cables, and terminations, and confirmed that the environmental conditions for the zone (Attachment A) in which the equipment is mounted are bounded by the tested and/or analyzed conditions. It also documented the installed configuration with photographs or sketches/drawings of equipment mounting and connections. The EQRR (Reference 3) identified in Attachment A documents this inspection and concluded that the as-built harsh environment Class 1E equipment and the associated wiring, cables, and terminations are bounded by the qualified configuration and IEEE Standard 323-1974 (Reference 12).

Together, these reports (References 3 and 10) provide evidence that the ITAAC Acceptance Criteria requirements are met:

- The seismic Category I equipment identified in Table 2.2.3-1 is located on the Nuclear Island;
- A report exists and concludes that the seismic Category I equipment can withstand seismic design basis dynamic loads without loss of safety function. For the PXS containment recirculation and IRWST screens, a report exists and concludes that the screens can withstand seismic dynamic loads and also post-accident operating loads, including head loss and debris weights;
- A report exists and concludes that the as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions. For the PXS containment recirculation and IRWST screens, a report exists and concludes that the as-built screens including their anchorage are bounded by the seismic loads and also post-accident operating loads, including head loss and debris weights;
- A report exists and concludes that the Class 1E equipment identified in Table 2.2.3-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function; and
- A report exists and concludes that the as-built Class 1E equipment and the associated wiring, cables, and terminations identified in Table 2.2.3-1 as being qualified for a harsh environment are bounded by type tests, analyses, or a combination of type tests and analyses.

References 3 and 10 are available for NRC inspection as part of the Unit 4 ITAAC 2.2.03.05a.i Completion Package (References 14).

### **ITAAC Finding Review**

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 166, 167, 170, and 171, found the following closed notice of non-conformance (NON) associated with this ITAAC:

- 1) NON 99901441/2014-201-03 (Closed - ML14307A578)
- 2) NON 99901431/2013-201-01 (Closed - ML14091A361)
- 3) NON 99901377/2012-201-02 (Closed - ML16357A724)
- 4) NON 99901377/2012-201-03 (Closed - ML16357A724)
- 5) NON 99900404/2012-201-01 (Closed - ML16307A159)
- 6) NON 99900404/2012-201-02 (Closed - ML12313A461)
- 7) NON 99900404/2012-201-03 (Closed - ML12313A461)

The corrective actions for these findings have been completed and the findings are closed. The ITAAC completion review is documented in the ITAAC Completion Package for ITAAC 2.2.03.05a.i (Reference 14) and is available for NRC review.

### **ITAAC Completion Statement**

Based on the above information, SNC hereby notifies the NRC that ITAAC 2.2.03.05a.i was performed for VEGP Unit 4 and that the prescribed acceptance criteria are met.

Systems, structures, and components verified as part of this ITAAC are being maintained in their as-designed, ITAAC compliant condition in accordance with the approved plant programs and procedures.

### **References (available for NRC inspection)**

1. ND-RA-001-014, EQ ITAAC As-Built Walkdown Guideline, Version 3.1
2. ND-RA-001-016, EQ ITAAC As-built Installation Documentation Guideline, Version 1.0
3. EQ As-Built Reconciliation Reports (EQRR) as identified in Attachment A
4. American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, Section III, "Rules for Construction of Nuclear Power Plant Components," 1998 Edition with 2000 Addenda



5. ASME QME-1-2007, "Qualification of Active Mechanical Equipment Used in Nuclear Power Plants," The American Society of Mechanical Engineers, June 2007
6. American Concrete Institute (ACI) Standard 349-01, "Code Requirements for Nuclear Safety Related Concrete Structures," 2001.
7. American National Standards Institute (ANSI) / American Institute of Steel Construction (AISC) N690-1994, "Specification for the Design, Fabrication and Erection of Safety-Related Steel Structures for Nuclear Facilities"
8. IEEE Standard 344-1987, "IEEE Recommended Practices for Seismic Qualification of Class 1E Equipment for Nuclear Power Generating Stations"
9. Vogtle 3&4 Updated Final Safety Analysis Report Appendix 3D, "Methodology for Qualifying AP1000 Safety-Related Electrical and Mechanical Equipment"
10. Equipment Qualification (EQ) Reports as identified in Attachment A
11. Regulatory Guide 1.100, Rev. 2, "Seismic Qualification of Electric and Mechanical Equipment for Nuclear Power Plants"
12. IEEE Standard 323-1974, "IEEE Standard for Qualifying Class 1E Equipment for Nuclear Power Generating Stations"
13. Regulatory Guide 1.89, Rev 1, "Environmental Qualification of Certain Electric Equipment Important to Safety for Nuclear Power Plants"
14. 2.2.03.05a.i-U4-CP-Rev0, "Completion Package for Unit 4 ITAAC 2.2.03.05a.i [Index Number 165]"

**Attachment A**

System: Passive Core Cooling System

Equipment Name <sup>+</sup>	Tag No. <sup>+</sup>	Seismic Cat. I <sup>+3</sup>	Class 1E/Qual. Harsh Envir. <sup>+3</sup>	Envir. Zone <sup>1</sup>	Envir Qual Program <sup>2</sup>	Type of Qual.	EQ Reports	As-Built EQRR
Passive Residual Heat Removal Heat Exchanger (PRHR HX)	PXS-ME-01	Yes	- / -	N/A	N/A	Analysis	SV4-ME02-Z0R-001	2.2.03.05a.i-U4-EQRR-PCD003
Accumulator Tank A	PXS-MT-01A	Yes	- / -	N/A	N/A	Analysis	SV4-MT02-Z0R-102	2.2.03.05a.i-U4-EQRR-PCD003
Accumulator Tank B	PXS-MT-01B	Yes	- / -	N/A	N/A	Analysis	SV4-MT02-Z0R-102	2.2.03.05a.i-U4-EQRR-PCD003
Core Makeup Tank (CMT) A	PXS-MT-02A	Yes	- / -	N/A	N/A	Analysis	SV4-MT01-Z0R-101	2.2.03.05a.i-U4-EQRR-PCD003
CMT B	PXS-MT-02B	Yes	- / -	N/A	N/A	Analysis	SV4-MT01-Z0R-101	2.2.03.05a.i-U4-EQRR-PCD003
IRWST	PXS-MT-03	Yes	- / -	N/A	N/A	Analysis	SV4-1100-GCR-001	2.2.03.05a.i-U4-EQRR-PCD003
IRWST Screen A	PXS-MY-Y01A	Yes	- / -	N/A	N/A	Analysis	SV4-MY03-VDR-001	2.2.03.05a.i-U4-EQRR-PCD002
IRWST Screen B	PXS-MY-Y01B	Yes	- / -	N/A	N/A	Analysis	SV4-MY03-VDR-001	2.2.03.05a.i-U4-EQRR-PCD002
IRWST Screen C	PXS-MY-Y01C	Yes	- / -	N/A	N/A	Analysis	SV4-MY03-VDR-001	2.2.03.05a.i-U4-EQRR-PCD002
Containment Recirculation Screen A	PXS-MY-Y02A	Yes	- / -	N/A	N/A	Analysis	SV4-MY03-VDR-001	2.2.03.05a.i-U4-EQRR-PCD002
Containment Recirculation Screen B	PXS-MY-Y02B	Yes	- / -	N/A	N/A	Analysis	SV4-MY03-VDR-001	2.2.03.05a.i-U4-EQRR-PCD002
pH Adjustment Basket 3A	PXS-MY-Y03A	Yes	- / -	N/A	N/A	Analysis	APP-MY07-Z0C-002	2.2.03.05a.i-U4-EQRR-PCD002
pH Adjustment Basket 3B	PXS-MY-Y03B	Yes	- / -	N/A	N/A	Analysis	APP-MY07-Z0C-002	2.2.03.05a.i-U4-EQRR-PCD002
pH Adjustment Basket 4A	PXS-MY-Y04A	Yes	- / -	N/A	N/A	Analysis	APP-MY07-Z0C-002	2.2.03.05a.i-U4-EQRR-PCD002

**Attachment A**

System: Passive Core Cooling System

Equipment Name <sup>+</sup>	Tag No. <sup>+</sup>	Seismic Cat. I <sup>+3</sup>	Class 1E/Qual. Harsh Envir. <sup>+3</sup>	Envir. Zone <sup>1</sup>	Envir Qual Program <sup>2</sup>	Type of Qual.	EQ Reports	As-Built EQRR
pH Adjustment Basket 4B	PXS-MY-Y04B	Yes	- / -	N/A	N/A	Analysis	APP-MY07-Z0C-002	2.2.03.05a.i-U4-EQRR-PCD002
Downspout Screen 1A	PXS-MY-Y81	Yes	- / -	N/A	N/A	Analysis	APP-MY02-Z0C-001	2.2.03.05a.i-U4-EQRR-PCD002
Downspout Screen 1B	PXS-MY-Y82	Yes	- / -	N/A	N/A	Analysis	APP-MY02-Z0C-001	2.2.03.05a.i-U4-EQRR-PCD002
Downspout Screen 1C	PXS-MY-Y83	Yes	- / -	N/A	N/A	Analysis	APP-MY02-Z0C-001	2.2.03.05a.i-U4-EQRR-PCD002
Downspout Screen 1D	PXS-MY-Y84	Yes	- / -	N/A	N/A	Analysis	APP-MY02-Z0C-001	2.2.03.05a.i-U4-EQRR-PCD002
Downspout Screen 2A	PXS-MY-Y85	Yes	- / -	N/A	N/A	Analysis	APP-MY02-Z0C-001	2.2.03.05a.i-U4-EQRR-PCD002
Downspout Screen 2B	PXS-MY-Y86	Yes	- / -	N/A	N/A	Analysis	APP-MY02-Z0C-001	2.2.03.05a.i-U4-EQRR-PCD002
Downspout Screen 2C	PXS-MY-Y87	Yes	- / -	N/A	N/A	Analysis	APP-MY02-Z0C-001	2.2.03.05a.i-U4-EQRR-PCD002
Downspout Screen 2D	PXS-MY-Y88	Yes	- / -	N/A	N/A	Analysis	APP-MY02-Z0C-001	2.2.03.05a.i-U4-EQRR-PCD002
CMT A Inlet Isolation Motor-operated Valve	PXS-PL-V002A	Yes	Yes/Yes	1	M * E S	Type Testing & Analysis	SV4-PV01-VBR-012 / SV4-PV01-VBR-011	2.2.03.05a.i-U4-EQRR-PCD001
CMT B Inlet Isolation Motor-operated Valve	PXS-PL-V002B	Yes	Yes/Yes	1	M * E S	Type Testing & Analysis	SV4-PV01-VBR-012 / SV4-PV01-VBR-011	2.2.03.05a.i-U4-EQRR-PCD001
CMT A Discharge Isolation Valve	PXS-PL-V014A	Yes	Yes/Yes	1	M * E S	Type Testing & Analysis	SV4-PV14-VBR-002 / SV4-PV14-VBR-001	2.2.03.05a.i-U4-EQRR-PCD001

**Attachment A**

System: Passive Core Cooling System

Equipment Name <sup>+</sup>	Tag No. <sup>+</sup>	Seismic Cat. I <sup>+3</sup>	Class 1E/Qual. Harsh Envir. <sup>+3</sup>	Envir. Zone <sup>1</sup>	Envir Qual Program <sup>2</sup>	Type of Qual.	EQ Reports	As-Built EQRR
CMT B Discharge Isolation Valve	PXS-PL-V014B	Yes	Yes/Yes	1	M * E S	Type Testing & Analysis	SV4-PV14-VBR-002 / SV4-PV14-VBR-001	2.2.03.05a.i-U4-EQRR-PCD001
CMT A Discharge Isolation Valve	PXS-PL-V015A	Yes	Yes/Yes	1	M * E S	Type Testing & Analysis	SV4-PV14-VBR-002 / SV4-PV14-VBR-001	2.2.03.05a.i-U4-EQRR-PCD001
CMT B Discharge Isolation Valve	PXS-PL-V015B	Yes	Yes/Yes	1	M * E S	Type Testing & Analysis	SV4-PV14-VBR-002 / SV4-PV14-VBR-001	2.2.03.05a.i-U4-EQRR-PCD001
CMT A Discharge Check Valve	PXS-PL-V016A	Yes	- / -	N/A	N/A	Analysis	SV4-PV03-VBR-004 / SV4-PV03-VBR-003	2.2.03.05a.i-U4-EQRR-PCD001
CMT B Discharge Check Valve	PXS-PL-V016B	Yes	- / -	N/A	N/A	Analysis	SV4-PV03-VBR-004 / SV4-PV03-VBR-003	2.2.03.05a.i-U4-EQRR-PCD001
CMT A Discharge Check Valve	PXS-PL-V017A	Yes	- / -	N/A	N/A	Analysis	SV4-PV03-VBR-004 / SV4-PV03-VBR-003	2.2.03.05a.i-U4-EQRR-PCD001
CMT B Discharge Check Valve	PXS-PL-V017B	Yes	- / -	N/A	N/A	Analysis	SV4-PV03-VBR-004 / SV4-PV03-VBR-003	2.2.03.05a.i-U4-EQRR-PCD001
Accumulator A Pressure Relief Valve	PXS-PL-V022A	Yes	- / -	N/A	N/A	Type Testing & Analysis	SV4-PV16-VBR-002 / SV4-PV16-VBR-001	2.2.03.05a.i-U4-EQRR-PCD001
Accumulator B Pressure Relief Valve	PXS-PL-V022B	Yes	- / -	N/A	N/A	Type Testing & Analysis	SV4-PV16-VBR-002 / SV4-PV16-VBR-001	2.2.03.05a.i-U4-EQRR-PCD001
Accumulator A Discharge Isolation Valve	PXS-PL-V027A	Yes	- / -	N/A	N/A	Type Testing & Analysis	SV4-PV01-VBR-012 / SV4-PV01-VBR-011	2.2.03.05a.i-U4-EQRR-PCD001
Accumulator B Discharge Isolation Valve	PXS-PL-V027B	Yes	- / -	N/A	N/A	Type Testing & Analysis	SV4-PV01-VBR-012 / SV4-PV01-VBR-011	2.2.03.05a.i-U4-EQRR-PCD001

**Attachment A**

System: Passive Core Cooling System

Equipment Name <sup>+</sup>	Tag No. <sup>+</sup>	Seismic Cat. I <sup>+3</sup>	Class 1E/Qual. Harsh Envir. <sup>+3</sup>	Envir. Zone <sup>1</sup>	Envir Qual Program <sup>2</sup>	Type of Qual.	EQ Reports	As-Built EQRR
Accumulator A Discharge Check Valve	PXS-PL-V028A	Yes	- / -	N/A	N/A	Analysis	SV4-PV03-VBR-014 / SV4-PV03-VBR-013	2.2.03.05a.i-U4-EQRR-PCD001
Accumulator B Discharge Check Valve	PXS-PL-V028B	Yes	- / -	N/A	N/A	Analysis	SV4-PV03-VBR-014 / SV4-PV03-VBR-013	2.2.03.05a.i-U4-EQRR-PCD001
Accumulator A Discharge Check Valve	PXS-PL-V029A	Yes	- / -	N/A	N/A	Analysis	SV4-PV03-VBR-014 / SV4-PV03-VBR-013	2.2.03.05a.i-U4-EQRR-PCD001
Accumulator B Discharge Check Valve	PXS-PL-V029B	Yes	- / -	N/A	N/A	Analysis	SV4-PV03-VBR-014 / SV4-PV03-VBR-013	2.2.03.05a.i-U4-EQRR-PCD001
Nitrogen Supply Containment Isolation Valve	PXS-PL-V042	Yes	Yes/No	N/A	N/A	Type Testing & Analysis	SV4-PV14-VBR-002 / SV4-PV14-VBR-001	2.2.03.05a.i-U4-EQRR-PCD001
Nitrogen Supply Containment Isolation Check Valve	PXS-PL-V043	Yes	- / -	N/A	N/A	Analysis	SV4-PV02-VBR-016 / SV4-PV02-VBR-015	2.2.03.05a.i-U4-EQRR-PCD001
PRHR HX Inlet Isolation Motor-operated Valve	PXS-PL-V101	Yes	Yes/Yes	1	M * E S	Type Testing & Analysis	SV4-PV01-VBR-012 / SV4-PV01-VBR-011	2.2.03.05a.i-U4-EQRR-PCD001
PRHR HX Control Valve	PXS-PL-V108A	Yes	Yes/Yes	1	M * E S	Type Testing & Analysis	SV4-PV20-VBR-002 / SV4-PV20-VBR-001	2.2.03.05a.i-U4-EQRR-PCD001
PRHR HX Control Valve	PXS-PL-V108B	Yes	Yes/Yes	1	M * E S	Type Testing & Analysis	SV4-PV20-VBR-002 / SV4-PV20-VBR-001	2.2.03.05a.i-U4-EQRR-PCD001
Containment Recirculation A Isolation Motor-operated Valve	PXS-PL-V117A	Yes	Yes/Yes	1	M * E S	Type Testing & Analysis	SV4-PV01-VBR-012 / SV4-PV01-VBR-011	2.2.03.05a.i-U4-EQRR-PCD001
Containment Recirculation B Isolation Motor-operated Valve	PXS-PL-V117B	Yes	Yes/Yes	1	M * E S	Type Testing & Analysis	SV4-PV01-VBR-012 / SV4-PV01-VBR-011	2.2.03.05a.i-U4-EQRR-PCD001

**Attachment A**

System: Passive Core Cooling System

Equipment Name <sup>+</sup>	Tag No. <sup>+</sup>	Seismic Cat. I <sup>+3</sup>	Class 1E/Qual. Harsh Envir. <sup>+3</sup>	Envir. Zone <sup>1</sup>	Envir Qual Program <sup>2</sup>	Type of Qual.	EQ Reports	As-Built EQRR
Containment Recirculation A Squib Valve	PXS-PL-V118A	Yes	Yes/Yes	1	M * E S	Type Testing & Analysis	SV4-PV70-VBR-003 / SV4-PV70-VBR-002	2.2.03.05a.i-U4-EQRR-PCD001
Containment Recirculation B Squib Valve	PXS-PL-V118B	Yes	Yes/Yes	1	M * E S	Type Testing & Analysis	SV4-PV70-VBR-003 / SV4-PV70-VBR-002	2.2.03.05a.i-U4-EQRR-PCD001
Containment Recirculation A Check Valve	PXS-PL-V119A	Yes	- / -	N/A	N/A	Analysis	SV4-PV03-VBR-014 / SV4-PV03-VBR-013	2.2.03.05a.i-U4-EQRR-PCD001
Containment Recirculation B Check Valve	PXS-PL-V119B	Yes	- / -	N/A	N/A	Analysis	SV4-PV03-VBR-014 / SV4-PV03-VBR-013	2.2.03.05a.i-U4-EQRR-PCD001
Containment Recirculation A Squib Valve	PXS-PL-V120A	Yes	Yes/Yes	1	M * E S	Type Testing & Analysis	SV4-PV70-VBR-003 / SV4-PV70-VBR-002	2.2.03.05a.i-U4-EQRR-PCD001
Containment Recirculation B Squib Valve	PXS-PL-V120B	Yes	Yes/Yes	1	M * E S	Type Testing & Analysis	SV4-PV70-VBR-003 / SV4-PV70-VBR-002	2.2.03.05a.i-U4-EQRR-PCD001
IRWST Injection A Check Valve	PXS-PL-V122A	Yes	- / -	N/A	N/A	Analysis	SV4-PV03-VBR-014 / SV4-PV03-VBR-013	2.2.03.05a.i-U4-EQRR-PCD001
IRWST Injection B Check Valve	PXS-PL-V122B	Yes	- / -	N/A	N/A	Analysis	SV4-PV03-VBR-014 / SV4-PV03-VBR-013	2.2.03.05a.i-U4-EQRR-PCD001
IRWST Injection A Squib Valve	PXS-PL-V123A	Yes	Yes/Yes	1	M * E S	Type Testing & Analysis	SV4-PV70-VBR-003 / SV4-PV70-VBR-002	2.2.03.05a.i-U4-EQRR-PCD001
IRWST Injection B Squib Valve	PXS-PL-V123B	Yes	Yes/Yes	1	M * E S	Type Testing & Analysis	SV4-PV70-VBR-003 / SV4-PV70-VBR-002	2.2.03.05a.i-U4-EQRR-PCD001
IRWST Injection A Check Valve	PXS-PL-V124A	Yes	- / -	N/A	N/A	Analysis	SV4-PV03-VBR-014 / SV4-PV03-VBR-013	2.2.03.05a.i-U4-EQRR-PCD001

**Attachment A**

System: Passive Core Cooling System

Equipment Name <sup>+</sup>	Tag No. <sup>+</sup>	Seismic Cat. I <sup>+3</sup>	Class 1E/Qual. Harsh Envir. <sup>+3</sup>	Envir. Zone <sup>1</sup>	Envir Qual Program <sup>2</sup>	Type of Qual.	EQ Reports	As-Built EQRR
IRWST Injection B Check Valve	PXS-PL-V124B	Yes	- / -	N/A	N/A	Analysis	SV4-PV03-VBR-014 / SV4-PV03-VBR-013	2.2.03.05a.i-U4-EQRR-PCD001
IRWST Injection A Squib Valve	PXS-PL-V125A	Yes	Yes/Yes	1	M * E S	Type Testing & Analysis	SV4-PV70-VBR-003 / SV4-PV70-VBR-002	2.2.03.05a.i-U4-EQRR-PCD001
IRWST Injection B Squib Valve	PXS-PL-V125B	Yes	Yes/Yes	1	M * E S	Type Testing & Analysis	SV4-PV70-VBR-003 / SV4-PV70-VBR-002	2.2.03.05a.i-U4-EQRR-PCD001
IRWST Gutter Isolation Valve	PXS-PL-V130A	Yes	Yes/Yes	1	M * E S	Type Testing & Analysis	SV4-PV10-VBR-003 / SV4-PV10-VBR-004	2.2.03.05a.i-U4-EQRR-PCD001
IRWST Gutter Isolation Valve	PXS-PL-V130B	Yes	Yes/Yes	1	M * E S	Type Testing & Analysis	SV4-PV10-VBR-003 / SV4-PV10-VBR-004	2.2.03.05a.i-U4-EQRR-PCD001
CMT A Level Sensor	PXS-011A	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE61-VBR-002 / SV4-JE61-VBR-001	2.2.03.05a.i-U4-EQRR-PCD004
CMT A Level Sensor	PXS-011B	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE61-VBR-002 / SV4-JE61-VBR-001	2.2.03.05a.i-U4-EQRR-PCD004
CMT A Level Sensor	PXS-011C	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE61-VBR-002 / SV4-JE61-VBR-001	2.2.03.05a.i-U4-EQRR-PCD004
CMT A Level Sensor	PXS-011D	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE61-VBR-002 / SV4-JE61-VBR-001	2.2.03.05a.i-U4-EQRR-PCD004
CMT B Level Sensor	PXS-012A	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE61-VBR-002 / SV4-JE61-VBR-001	2.2.03.05a.i-U4-EQRR-PCD004

**Attachment A**

System: Passive Core Cooling System

<b>Equipment Name <sup>+</sup></b>	<b>Tag No. <sup>+</sup></b>	<b>Seismic Cat. I <sup>+3</sup></b>	<b>Class 1E/ Qual. Harsh Envir. <sup>+3</sup></b>	<b>Envir. Zone <sup>1</sup></b>	<b>Envir Qual Program <sup>2</sup></b>	<b>Type of Qual.</b>	<b>EQ Reports</b>	<b>As-Built EQRR</b>
CMT B Level Sensor	PXS-012B	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE61-VBR-002 / SV4-JE61-VBR-001	2.2.03.05a.i-U4-EQRR- PCD004
CMT B Level Sensor	PXS-012C	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE61-VBR-002 / SV4-JE61-VBR-001	2.2.03.05a.i-U4-EQRR- PCD004
CMT B Level Sensor	PXS-012D	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE61-VBR-002 / SV4-JE61-VBR-001	2.2.03.05a.i-U4-EQRR- PCD004
CMT A Level Sensor	PXS-013A	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE61-VBR-002 / SV4-JE61-VBR-001	2.2.03.05a.i-U4-EQRR- PCD004
CMT A Level Sensor	PXS-013B	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE61-VBR-002 / SV4-JE61-VBR-001	2.2.03.05a.i-U4-EQRR- PCD004
CMT A Level Sensor	PXS-013C	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE61-VBR-002 / SV4-JE61-VBR-001	2.2.03.05a.i-U4-EQRR- PCD004
CMT A Level Sensor	PXS-013D	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE61-VBR-002 / SV4-JE61-VBR-001	2.2.03.05a.i-U4-EQRR- PCD004
CMT B Level Sensor	PXS-014A	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE61-VBR-002 / SV4-JE61-VBR-001	2.2.03.05a.i-U4-EQRR- PCD004
CMT B Level Sensor	PXS-014B	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE61-VBR-002 / SV4-JE61-VBR-001	2.2.03.05a.i-U4-EQRR- PCD004



**Attachment A**

System: Passive Core Cooling System

<b>Equipment Name <sup>+</sup></b>	<b>Tag No. <sup>+</sup></b>	<b>Seismic Cat. I <sup>+3</sup></b>	<b>Class 1E/ Qual. Harsh Envir. <sup>+3</sup></b>	<b>Envir. Zone <sup>1</sup></b>	<b>Envir Qual Program <sup>2</sup></b>	<b>Type of Qual.</b>	<b>EQ Reports</b>	<b>As-Built EQRR</b>
CMT B Level Sensor	PXS-014C	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE61-VBR-002 / SV4-JE61-VBR-001	2.2.03.05a.i-U4-EQRR- PCD004
CMT B Level Sensor	PXS-014D	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE61-VBR-002 / SV4-JE61-VBR-001	2.2.03.05a.i-U4-EQRR- PCD004
IRWST Wide Range Level Sensor	PXS-046	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE52-VBR-002 / SV4-JE52-VBR-001	2.2.03.05a.i-U4-EQRR- PCD004
IRWST Wide Range Level Sensor	PXS-047	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE52-VBR-002 / SV4-JE52-VBR-001	2.2.03.05a.i-U4-EQRR- PCD004
IRWST Wide Range Level Sensor	PXS-048	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE52-VBR-002 / SV4-JE52-VBR-001	2.2.03.05a.i-U4-EQRR- PCD004
PRHR HX Flow Sensor	PXS-049A	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE52-VBR-004 / SV4-JE52-VBR-003	2.2.03.05a.i-U4-EQRR- PCD004
PRHR HX Flow Sensor	PXS-049B	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE52-VBR-004 / SV4-JE52-VBR-003	2.2.03.05a.i-U4-EQRR- PCD004
Containment Flood-up Level Sensor	PXS-050	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE61-VBR-002 / SV4-JE61-VBR-001	2.2.03.05a.i-U4-EQRR- PCD004
Containment Flood-up Level Sensor	PXS-051	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE61-VBR-002 / SV4-JE61-VBR-001	2.2.03.05a.i-U4-EQRR- PCD004

**Attachment A**

System: Passive Core Cooling System

Equipment Name <sup>+</sup>	Tag No. <sup>+</sup>	Seismic Cat. I <sup>+3</sup>	Class 1E/Qual. Harsh Envir. <sup>+3</sup>	Envir. Zone <sup>1</sup>	Envir Qual Program <sup>2</sup>	Type of Qual.	EQ Reports	As-Built EQRR
Containment Flood-up Level Sensor	PXS-052	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE61-VBR-002 / SV4-JE61-VBR-001	2.2.03.05a.i-U4-EQRR-PCD004
IRWST Lower Narrow Range Level Sensor	PXS-066	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE52-VBR-002 / SV4-JE52-VBR-001	2.2.03.05a.i-U4-EQRR-PCD004
IRWST Lower Narrow Range Level Sensor	PXS-067	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE52-VBR-002 / SV4-JE52-VBR-001	2.2.03.05a.i-U4-EQRR-PCD004
IRWST Lower Narrow Range Level Sensor	PXS-068	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE52-VBR-002 / SV4-JE52-VBR-001	2.2.03.05a.i-U4-EQRR-PCD004
IRWST Lower Narrow Range Level Sensor	PXS-069	Yes	Yes/Yes	1	E * S	Type Testing & Analysis	SV4-JE52-VBR-002 / SV4-JE52-VBR-001	2.2.03.05a.i-U4-EQRR-PCD004
RNS Suction Leak Test Valve	PXS-PL-V208A	Yes	- / -	N/A	N/A	Analysis	SV4-PV17-VBR-004 / SV4-PV17-VBR-003	2.2.03.05a.i-U4-EQRR-PCD001

Notes:

<sup>+</sup> Excerpt from COL Appendix C Table 2.2.3-1

1. See Table 3D.5-1 of UFSAR
2. E - Electrical Equipment Program (limit switch and the motor operator, squib operator, solenoid operator)  
 M - Mechanical Equipment Program (valve)  
 S = Qualified for submergence or operation with spray  
 \* - Harsh Environment
3. Dash (-) indicates not applicable