ArevaEPRDCPEm Resource

From: WILLIFORD Dennis (AREVA) [Dennis.Williford@areva.com]
Sent: Friday, April 19, 2013 12:05 PM
To: Snyder, Amy
Cc: Buckberg, Perry; DELANO Karen (AREVA); LEIGHLITER John (AREVA); ROMINE Judy (AREVA); RYAN Tom (AREVA); WILLS Tiffany (AREVA); ANDERSON Katherine (EXTERNAL AREVA); LENTZ Tony (EXTERNAL AREVA); HONMA George (EXTERNAL AREVA)
Subject: Response to U.S. EPR Design Certification Application FINAL RAI No. 577, FSAR Ch. 14 (ITAAC question from Rev 4 Review)
Attachments: RAI 577 Response US EPR DC.pdf

Amy,

Attached please find AREVA NP Inc.'s technically correct and complete response to the subject request for additional information (RAI). This was discussed with NRC staff during the ITAAC public meeting held on April 4th and 5th. The attached file, "RAI 577 Response US EPR DC.pdf," provides a technically correct and complete final response to the one question in RAI No. 577.

Appended to this file are affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format which support the response to RAI 577, Question 14.03.03-54.

The following table indicates the respective pages in the response document, "RAI 577 Response US EPR DC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 577 — 14.03.03-54	2	5

This concludes the formal AREVA NP response to RAI 577, and there are no questions from this RAI for which AREVA NP has not provided responses.

Sincerely,

Dennis Williford, P.E.
U.S. EPR Design Certification Licensing Manager
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From: Snyder, Amy [mailto:Amy.Snyder@nrc.gov]
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To: ZZ-DL-A-USEPR-DL
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Subject: U.S. EPR Design Certification Application FINAL RAI No. 577, FSAR Ch. 14 (ITAAC question from Rev 4 Review)

Attached please find the subject request for additional information (RAI). An advanced RAI was provided to you on March 8, 2013. On March 20, 2013 AREVA had a clarification call with the staff on March 20. On March 20, 2013, you informed us that the advanced RAI does not contain proprietary information and that the advanced RAI is clear and no clarification is needed. As result, no changes were made to the advanced RAI.

The schedule we have established for review of your application assumes technically correct and complete responses within 30 days of receipt of RAIs,. For any RAIs that cannot be answered **within 30 days or April 19, 2013**, it is expected that a date for receipt of this information will be provided to the staff within the 30-day period so that the staff can assess how this information will impact the published schedule.

Thank You,

Amy

Amy Snyder, U.S. EPR Design Certification Lead Project Manager
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Response to

Request for Additional Information No.577, Revision 0

3/21/2013
U.S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 14.03.03 - Piping Systems and Components - Inspections, Tests, Analyses, and Acceptance Criteria
Application Section: 14.3.3
SRSB Branch

Question 14.03.03-54:

The NRC staff requests that AREVA respond to the following comments on the ITAAC for functional qualification and testing of pumps and valves in Revision 4 to the U.S. EPR FSAR Tier 1:

a. Revision 4 to the U.S. EPR FSAR modified the functional qualification ITAAC for pumps and valves from previously acceptable ITAAC language in Revision 3 to the U.S. EPR FSAR. For example, Table 2.2.1-5 (Reactor Coolant System ITAAC) in ITAAC 3.1 indicates the following changes to specify functional qualification under design-basis accident conditions only, rather than specifying functional qualification for conditions ranging from normal operating to design-basis accident conditions (underlined text in FSAR Revision 4; crossed-out text previously acceptable in FSAR Revision 3):

Design Commitment

Pumps and valves listed in Table 2.2.1-1 will be functionally designed and qualified such that each valve is capable of performing its intended function for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable) under design basis accident conditions.

~~Pumps and valves listed in Table 2.2.1-1 will be functionally designed and qualified such that each pump and valve is capable of performing its intended function for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable) under conditions ranging from normal operating to design-basis accident conditions.~~

Inspections, Tests, Analyses (ITA)

Tests or type tests of pumps and valves will be performed to demonstrate that the pumps and valves function under design basis accident conditions.

~~Tests or type tests of the pumps and valves listed in Table 2.2.1-1 will be conducted to demonstrate that the pumps and valves function under conditions ranging from normal operating to design-basis accident conditions.~~

Acceptance Criteria

A report concludes that the pumps and valves listed in Table 2.2.1-1 are capable of performing their intended function for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable) under design basis accident conditions.

~~A test report exists and concludes that the pumps and valves listed in Table 2.2.1-1 function under conditions ranging from normal operating to design-basis accident conditions.~~

The revised ITAAC language in Revision 4 to the U.S. EPR FSAR Tier 1 is not consistent with Regulatory Guide (RG) 1.206, Section C.II.1.2.3, *ITAAC for Piping Systems and Components*, which states that ITAAC verify that installed pumps and valves “have the capability to perform their intended functions under expected ranges of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design-basis conditions.” AREVA is requested to revise the ITAAC for functional qualification of pumps and valves in the applicable

Tier 1 tables of the U.S. EPR FSAR to be consistent with RG 1.206 and the previously acceptable ITAAC language in Revision 3 to the U.S. EPR FSAR.

b. Revision 4 to the U.S. EPR FSAR Tier 1 in Table 2.2.6-3 (Chemical and Volume Control System ITAAC) and Table 2.3.3-3 (Severe Accident Heat Removal System [SAHRS] ITAAC) does not include ITAAC for pumps listed in Tables 2.2.6-1 and 2.3.3-1, respectively. In particular, Table 2.2.6-3 does not include functional qualification ITAAC for the charging pumps, and Table 2.3.3-3 does not include functional qualification or preoperational flow testing ITAAC for the SAHRS pump. Although these pumps have nonsafety-related functions in the U.S. EPR, the AP1000 Design Control Document (DCD) included ITAAC for certain nonsafety-related functions of components listed in its Tier 1 tables. For example, AP1000 DCD Tier 1, Section 2.3.6 included ITAAC for the nonsafety-related functions of the normal residual heat removal system (RNS) pumps. (The ITA column in ITAAC 3.1 of Tables 2.2.6-3 and 2.3.3-3 of Revision 4 to the U.S. EPR FSAR Tier 1 indicates pumps in the tests or type tests to be performed.) AREVA is requested to discuss its approach in establishing ITAAC for pumps with nonsafety-related functions listed in the Tier 1 tables of the U.S. EPR FSAR.

c. Table 2.5.4-4 (Emergency Diesel Generator ITAAC) in Revision 4 to the U.S. EPR FSAR Tier 1 includes ITAAC to demonstrate that valves listed in Table 2.5.4-2 fail to the position listed in the table on loss of power. Other ITAAC tables do not include ITAAC for loss of power to valves, such as Tables 2.2.1-5 (Reactor Coolant System ITAAC), 2.2.2-3 (In-Containment Refueling Water Storage Tank System ITAAC), 2.2.3-3 (Safety Injection System and Residual Heat Removal System ITAAC), 2.2.4-3 (Emergency Feedwater System ITAAC), 2.2.5-3 (Fuel Pool Cooling and Purification System ITAAC), 2.2.6-3 (Chemical and Volume Control System ITAAC), 2.2.7-3 (Extra Borating System ITAAC), 2.3.3-3 (Severe Accident Heat Removal System ITAAC), 2.6.8-4 (Containment Building Ventilation System ITAAC), and 2.7.1-3 (Component Cooling Water System ITAAC), which addresses loss of power to hydraulic-operated valves only. AREVA is requested to discuss its approach for establishing ITAAC for testing the fail safe position of valves on loss of power.

d. Table 2.2.7-3 (Extra Borating System ITAAC) in Revision 4 to the U.S. EPR FSAR Tier 1 does not appear to include ITAAC for pump preoperational flow testing. AREVA is requested to clarify whether ITAAC are included for pump preoperational flow testing for the Extra Borating System.

e. Table 2.6.8-4 (Containment Building Ventilation System ITAAC) in Revision 4 to the U.S. EPR FSAR Tier 1 does not appear to include ITAAC to demonstrate the function of valves in the system under normal operating conditions. AREVA is requested to clarify whether ITAAC are included for valve function testing under normal operating conditions for the Containment Building Ventilation System.

Response to Question 14.03.03-54:

a) Table 03.06.01-14-1 provides the revised ITAAC based on the criteria in the NRC Question. Table 03.06.01-14-2 lists those ITAAC that will be modified in U.S. EPR FSAR Tier 1, Chapters 2 and 3.

b) ITAAC 3.1 for functional qualification of the valves in U.S. EPR FSAR Tier 1, Section 2.3.3 will be revised to include functional qualification of the pumps listed in U.S. EPR FSAR Tier 1,Table 2.3.3-1.

An ITAAC will be added in U.S. EPR FSAR Tier 1, Section 2.3.3 to require verification of flow from the EBS pumps to the Reactor Containment.

ITAAC 3.1 for functional qualification of the valves in U.S. EPR FSAR Tier 1, Section 2.2.6 will be revised to include functional qualification of the pumps listed in U.S. EPR FSAR Tier 1,Table 2.2.6-1.

c) The valves listed in U.S. EPR FSAR Tier 1, Table 2.5.4-4 that fail closed on loss of power are solenoid operated valves. All other valves in U.S. EPR FSAR Tier 1 are motor operated valves, except for some hydraulic-operated valves in the Component Cooling Water System. Because motor operated valves fail as-is on loss of power, there are no ITAAC for these valves. No revision to the U.S. EPR FSAR Tier 1 will be made as a result of this question.

d) An ITAAC will be added in U.S. EPR FSAR Tier 1, Section 2.2.7 to require verification of flow from the EBS pumps to the RCS cold legs 1 and 2.

e) An ITAAC will be added in U.S. EPR FSAR Tier 1, Section 2.6.8 to demonstrate the function of valves listed in U.S. EPR FSAR Tier 1, Table 2.6.8-1 under normal operating conditions.

FSAR Impact:

U.S. EPR FSAR, Tier 1, Sections 2.2.1, 2.2.2, 2.2.3, 2.2.4, 2.2.5, 2.2.6, 2.2.7, 2.3.3, 2.5.4, 2.6.8, 2.7.1, 2.7.2, 2.7.11, 2.8.2, 2.8.6, 2.8.7, and 3.5 will be revised as described in the response and indicated on the enclosed markup.

Table 14.03.03-54-1—Revised ITAAC for Functional Qualification of Pumps and Valves

3.x Pumps and valves listed in Table x.x.x-x will be functionally designed and qualified such that each pump and valve is capable of performing its intended function under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design-basis accident conditions.

Commitment Wording	Inspections, Tests, Analyses	Acceptance Criteria
Pumps and valves listed in Table x.x.x-x will be functionally designed and qualified such that each pump and valve is capable of performing its intended function under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design-basis accident conditions.	Tests or type tests of pumps and valves will be performed to demonstrate that the pumps and valves function under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design-basis accident conditions.	A report concludes that the pumps and valves listed in Table x.x.x-x are capable of performing their intended function under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design-basis accident conditions.

Table 14.03.03-54-2—Revised ITAAC for Functional Qualification of Pumps and Valves

U.S. EPR FSAR Tier 1 Section	Design Commitment and ITAAC number
2.2.1	3.1
2.2.2	3.1
2.2.3	3.1
2.2.4	3.1
2.2.5	3.1
2.2.6	3.1
2.2.7	3.1
2.3.3	3.1
2.5.4	3.1
2.6.8	3.1
2.7.1	3.1
2.7.2	3.1
2.7.11	3.1
2.8.2	3.1
2.8.6	3.1
2.8.7	3.1
3.5	3.1

U.S. EPR Final Safety Analysis Report Markups

Equipment and Valve Actuator Power Supplies and Controls, 2.2.1-3—Instrumentation Power Supplies, Classification, and Displays, and 2.2.1-4—Minimum Flow (% of Initial Flow) During Four Pump Coastdown, and as shown on Figure 2.2.1-1—RCS Functional Arrangement.

2.2 The functional arrangement of the RPV and heavy reflector is as described in the Design Description of Section 2.2.1, Table 2.2.1-6—RPV Key Dimensions and Acceptable Variations, and as shown on Figure 2.2.1-2—RPV Functional Arrangement.

2.3 Deleted.

2.4 The RCS loops are physically separated from each other.

3.0 Mechanical Design Features

3.1 ~~Pumps and v~~Valves listed in Table 2.2.1-1 will be functionally designed and qualified such that each ~~pump and~~ valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.

3.2 Check valves listed in Table 2.2.1-1 will function to change position as listed in Table 2.2.1-1 under normal operating conditions.

3.3 Equipment identified as Seismic Category I in Table 2.2.1-1 can withstand seismic design basis loads without a loss of the function listed in Table 2.2.1-1.

3.4 Deleted.

3.5 The steam outlet nozzles on the SGs include flow-limiting devices.

3.6 Deleted.

3.7 The piping and interconnected equipment nozzles listed in Table 2.2.1-1 are evaluated for leak-before-break (LBB).

3.8 The RPV internals will withstand the effects of flow-induced vibration.

3.9 The RCS allows movement of the equipment for thermal expansion and contraction.

3.10 Deleted.

3.11 Deleted.

3.12 Deleted.

3.13 Deleted.

3.14 Deleted.

Table 2.2.1-5—Reactor Coolant System ITAAC
Sheet 1 of 11

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	The functional arrangement of the RCS is as described in the Design Description of Section 2.2.1, Tables 2.2.1-1, 2.2.1-2, 2.2.1-3, 2.2.1-4, and as shown on Figure 2.2.1-1.	An inspection of the as-built RCS functional arrangement will be performed.	The RCS conforms to the functional arrangement as described in the Design Description of Section 2.2.1, Tables 2.2.1-1, 2.2.1-2, 2.2.1-3, 2.2.1-4, and as shown on Figure 2.2.1-1.
2.2	The functional arrangement of the RPV and heavy reflector is as described in the Design Description of Section 2.2.1, Table 2.2.1-6, and as shown on Figure 2.2.1-2.	An inspection of the as-built RPV and heavy reflector functional arrangement will be performed.	The RPV and heavy reflector conforms to the functional arrangement as described in the Design Description of Section 2.2.1, Table 2.2.1-6, and as shown on Figure 2.2.1-2.
2.3	Deleted.	Deleted.	Deleted.
2.4	The RCS loops are physically separated from each other.	An inspection will be performed to verify physical separation of the as-built RCS loops.	The RCS loops are physically separated from each other by a wall as shown on Figure 2.1.1-6.
3.1	~~Pumps and v~~Valves listed in Table 2.2.1-1 will be functionally designed and qualified such that each valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	Tests or type tests of ~~pumps and~~ valves will be performed to demonstrate that the ~~pumps and~~ valves function under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	A report concludes that the ~~pumps and~~ valves listed in Table 2.2.1-1 are capable of performing their intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.
3.2	Check valves listed in Table 2.2.1-1 will function to change position as listed in Table 2.2.1-1 under normal operating conditions.	Tests will be performed to verify the ability of check valves to change position under normal operating conditions.	The check valves change position as listed in Table 2.2.1-1 under normal operating conditions.

2.2.2 In-Containment Refueling Water Storage Tank System

Design Description

1.0 System Description

The in-containment refueling water storage tank system (IRWSTS) is a safety-related system. The IRWSTS provides the following safety-related function:

- Borated water supply for the emergency core cooling systems.

The IRWSTS provides the following non-safety-related function:

- Borated water supply to the severe accident heat removal system (SAHRS) during a severe accident.

2.0 Arrangement

2.1 The functional arrangement of the IRWSTS is as described in the Design Description of Section 2.2.2, Tables 2.2.2-1—IRWSTS Equipment Mechanical Design and 2.2.2-2—IRWSTS Equipment I&C and Electrical Design, and as shown on Figure 2.2.2-1—In-Containment Refueling Water Storage Tank System Functional Arrangement.

2.2 Deleted.

2.3 Physical separation exists between divisions of the IRWSTS as shown on Figure 2.2.2-1.

3.0 Mechanical Design Features

3.1 Valves listed in Table 2.2.2-1 will be functionally designed and qualified such that each valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.

3.2 Check valves listed in Table 2.2.2-1 will function to change position as listed in Table 2.2.2-1 under normal operating conditions.~~Deleted.~~

3.3 Equipment identified as Seismic Category I in Table 2.2.2-1 can withstand seismic design basis loads without a loss of the function listed in Table 2.2.2-1.

3.4 Deleted.

3.5 Deleted.

3.6 Deleted.

Table 2.2.2-3—In-Containment Refueling Water Storage Tank System ITAAC
Sheet 1 of 7

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	The functional arrangement of the IRWSTS is as described in the Design Description of Section 2.2.2, Tables 2.2.2-1 and 2.2.2-2, and as shown on Figure 2.2.2-1.	An inspection of the as-built IRWSTS functional arrangement will be performed.	The IRWSTS conforms to the functional arrangement as described in the Design Description of Section 2.2.2, Tables 2.2.2-1 and 2.2.2-2, and as shown on Figure 2.2.2-1.
2.2	Deleted.	Deleted.	Deleted.
2.3	Physical separation exists between divisions of the IRWSTS as shown on Figure 2.2.2-1.	An inspection will be performed to verify that the as-built divisions of the IRWSTS are physically separated.	The divisions of the IRWSTS are physically separated in the Reactor Building as shown on Figure 2.2.2-1. The IRWSTS equipment in the Safeguard Buildings is located in separate Safeguard Buildings as listed in Table 2.2.2-1.
3.1	Valves listed in Table 2.2.2-1 will be functionally designed and qualified such that each valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	Tests or type tests of valves will be performed to demonstrate that the pumps and valves function under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	A report concludes that the valves listed in Table 2.2.2-1 are capable of performing their intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.
3.2	Check valves listed in Table 2.2.2-1 will function to change position as listed in Table 2.2.2-1 under normal operating conditions.~~Deleted.~~	Tests will be performed to verify the ability of check valves to change position under normal operating conditions.~~Deleted.~~	The check valves change position as listed in Table 2.2.2-1 under normal operating conditions.~~Deleted.~~

2.2.3 Safety Injection System and Residual Heat Removal System

Design Description

1.0 System Description

The safety injection system and residual heat removal system (SIS/RHRS) is a safety-related system. The SIS/RHRS has four divisions. The SIS/RHRS provides the following safety-related functions:

- Emergency core cooling.
- Residual heat removal.
- Reactor coolant pressure boundary integrity.
- Containment isolation.

2.0 Arrangement

2.1 The functional arrangement of the SIS/RHRS is as described in the Design Description of Section 2.2.3, Tables 2.2.3-1—SIS/RHRS Equipment Mechanical Design and 2.2.3-2—SIS/RHRS Equipment I&C and Electrical Design, and as shown on Figure 2.2.3-1—Safety Injection System and Residual Heat Removal System Functional Arrangement.

2.2 Deleted.

2.3 Physical separation exists between divisions of the SIS/RHRS located in the Safeguard Buildings as shown on Figure 2.2.3-1.

3.0 Mechanical Design Features

3.1 Pumps and valves listed in Table 2.2.3-1 will be functionally designed and qualified such that each pump and valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable) and with debris-laden coolant fluids~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions with debris-laden coolant fluids up to and including design basis accident conditions.

3.2 Check valves listed in Table 2.2.3-1 will function to change position as listed in Table 2.2.3-1 under normal operating conditions.

3.3 Deleted.

3.4 Equipment identified as Seismic Category I in Table 2.2.3-1 can withstand seismic design basis loads without a loss of the function listed in Table 2.2.3-1.

3.5 Deleted.

Table 2.2.3-3—Safety Injection System and Residual Heat Removal System ITAAC
Sheet 1 of 9

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	The functional arrangement of the SIS/RHRS is as described in the Design Description of Section 2.2.3, Tables 2.2.3-1 and 2.2.3-2, and as shown on Figure 2.2.3-1.	An inspection of the as-built SIS/RHRS functional arrangement will be performed.	The SIS/RHRS conforms to the functional arrangement as described in the Design Description of Section 2.2.3, Tables 2.2.3-1 and 2.2.3-2, and as shown on Figure 2.2.3-1.
2.2	Deleted.	Deleted.	Deleted.
2.3	Physical separation exists between divisions of the SIS/RHRS located in the Safeguard Buildings as shown on Figure 2.2.3-1.	An inspection will be performed to verify that the as-built divisions of the SIS/RHRS are located in separate Safeguard Buildings.	The divisions of the SIS/RHRS are located in separate Safeguard Buildings as shown on Figure 2.2.3-1.
3.1	Pumps and valves listed in Table 2.2.3-1 will be functionally designed and qualified such that each pump and valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions with debris-laden coolant fluids up to and including design basis accident conditions.	Tests or type tests of pumps and valves will be performed to demonstrate that the pumps and valves function under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions with debris-laden coolant fluids up to and including design basis accident conditions.	A report concludes that the pumps and valves listed in Table 2.2.3-1 are capable of performing their intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions with debris-laden coolant fluids up to and including design basis accident conditions.
3.2	Check valves listed in Table 2.2.3-1 will function to change position as listed in Table 2.2.3-1 under normal operating conditions.	Tests will be performed to verify the ability of check valves to change position under normal operating conditions.	The check valves change position as listed in Table 2.2.3-1 under normal operating conditions.
3.3	Deleted.	Deleted.	Deleted.

2.2.4 Emergency Feedwater System

Design Description

1.0 System Description

The emergency feedwater system (EFWS) is a safety-related system. The EFWS has four divisions. The EFWS provides the following safety-related functions:

- Restoration and maintaining of the steam generator (SG) water inventory in the unaffected SGs.
- Manual EFW isolation.
- Automatic closure of the SG isolation valve and the SG level control valve.

2.0 Arrangement

2.1 The functional arrangement of the EFWS is as described in the Design Description of Section 2.2.4, Tables 2.2.4-1—EFWS Equipment Mechanical Design and 2.2.4-2—EFWS Equipment I&C and Electrical Design, and as shown on Figure 2.2.4-1—Emergency Feedwater System Functional Arrangement.

2.2 Deleted.

2.3 Physical separation exists between divisions of the EFWS located in the Safeguard Buildings as shown on Figure 2.2.4-1.

3.0 Mechanical Design Features

3.1 Pumps and valves listed in Table 2.2.4-1 will be functionally designed and qualified such that each pump and valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.

3.2 Check valves listed in Table 2.2.4-1 will function to change position as listed in Table 2.2.4-1 under normal operating conditions.

3.3 Deleted.

3.4 Equipment identified as Seismic Category I in Table 2.2.4-1 can withstand seismic design basis loads without a loss of the function listed in Table 2.2.4-1.

3.5 Deleted.

3.6 Deleted.

3.7 Deleted.

Table 2.2.4-3—Emergency Feedwater System ITAAC
Sheet 1 of 6

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	The functional arrangement of the EFWS is as described in the Design Description of Section 2.2.4, Tables 2.2.4-1 and 2.2.4-2, and as shown on Figure 2.2.4-1.	An inspection of the as-built EFWS functional arrangement will be performed.	The EFWS conforms to the functional arrangement as described in the Design Description of Section 2.2.4, Tables 2.2.4-1 and 2.2.4-2, and as shown on Figure 2.2.4-1.
2.2	Deleted.	Deleted.	Deleted.
2.3	Physical separation exists between divisions of the EFWS located in the Safeguard Buildings as shown on Figure 2.2.4-1.	An inspection will be performed to verify that the as-built divisions of the EFWS are located in separate Safeguard Buildings.	The divisions of the EFWS are located in separate Safeguard Buildings as shown on Figure 2.2.4-1.
3.1	Pumps and valves listed in Table 2.2.4-1 will be functionally designed and qualified such that each pump and valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	Tests or type tests of pumps and valves will be performed to demonstrate that the pumps and valves function under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	A report concludes that the pumps and valves listed in Table 2.2.4-1 are capable of performing their intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.
3.2	Check valves listed in Table 2.2.4-1 will function to change position as listed in Table 2.2.4-1 under normal operating conditions.	Tests will be performed to verify the ability of check valves to change position under normal operating conditions.	The check valves change position as listed in Table 2.2.4-1 under normal operating conditions.
3.3	Deleted.	Deleted.	Deleted.

2.2.5 Fuel Pool Cooling and Purification System

Design Description

1.0 System Description

The fuel pool cooling and purification system (FPCPS) is made up of the following two separate subsystems:

- Fuel pool cooling system (FPCS).
- Fuel pool purification system (FPPS).

The FPCS is a safety-related system with two divisions. The FPCS provides the safety-related function of removing decay heat from the spent fuel pool (SFP).

The FPPS is a non-safety-related system that provides the following safety-related functions:

- Provides SFP makeup water.

2.0 Arrangement

2.1 The functional arrangement of the FPCPS is as described in the Design Description of Section 2.2.5, Tables 2.2.5-1— FPCPS Equipment Mechanical Design and 2.2.5-2—FPCPS Equipment I&C and Electrical Design, and as shown on Figure 2.2.5-1—Fuel Pool Cooling and Purification System Functional Arrangement.

2.2 Deleted.

2.3 Physical separation exists between divisions of the FPCS located in the Fuel Building as shown on Figures 2.1.1-38 through 2.1.1-42.

3.0 Mechanical Design Features

3.1 Pumps and valves listed in Table 2.2.5-1 will be functionally designed and qualified such that each pump and valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.

3.2 Check valves listed in Table 2.2.5-1 will function to change position as listed in Table 2.2.5-1 under normal operating conditions.

3.3 Deleted.

3.4 Equipment identified as Seismic Category I in Table 2.2.5-1 can withstand seismic design basis loads without a loss of the function listed in Table 2.2.5-1.

Table 2.2.5-3—Fuel Pool Cooling and Purification System ITAAC
Sheet 1 of 6

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	The functional arrangement of the FPCPS is as described in the Design Description of Section 2.2.5, Tables 2.2.5-1 and 2.2.5-2, and as shown on Figure 2.2.5-1.	An inspection of the as-built FPCPS functional arrangement will be performed.	The FPCPS conforms to the functional arrangement as described in the Design Description of Section 2.2.5, Tables 2.2.5-1 and 2.2.5-2, and as shown on Figure 2.2.5-1.
2.2	Deleted.	Deleted.	Deleted.
2.3	Physical separation exists between divisions of the FPCS located in the Fuel Building as shown on Figures 2.1.1-38 through 2.1.1-42.	An inspection will be performed to verify that the as-built divisions of the FPCS are physically separated in the Fuel Building.	The divisions of the FPCS are physically separated by a wall in the Fuel Building as shown on Figures 2.1.1-38 through 2.1.1-42.
3.1	Pumps and valves listed in Table 2.2.5-1 will be functionally designed and qualified such that each pump and valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	Tests or type tests of pumps and valves will be performed to demonstrate that the pumps and valves function under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	A report concludes that the pumps and valves listed in Table 2.2.5-1 are capable of performing their intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.
3.2	Check valves listed in Table 2.2.5-1 will function to change position as listed in Table 2.2.5-1 under normal operating conditions.	Tests will be performed to verify the ability of check valves to change position under normal operating conditions.	The check valves change position as listed in Table 2.2.5-1 under normal operating conditions.
3.3	Deleted.	Deleted.	Deleted.

2.2.6 Chemical and Volume Control System

Design Description

1.0 System Description

The chemical and volume control system (CVCS) is a non-safety-related system that provides some safety related functions. The CVCS provides the following safety-related functions:

- Boron dilution mitigation.
- Reactor coolant pressure boundary integrity.
- Charging flow isolation.

The CVCS provides the following non-safety-related functions:

- Pressurizer auxiliary spray.
- Reactor coolant pump seal water.
- Reactor coolant chemistry control.

2.0 Arrangement

2.1 The functional arrangement of the CVCS is as described in the Design Description of Section 2.2.6, Tables 2.2.6-1—CVCS Equipment Mechanical Design and 2.2.6-2—CVCS Equipment I&C and Electrical Design, and as shown on Figure 2.2.6-1—Chemical and Volume Control System Functional Arrangement.

2.2 Deleted.

3.0 Mechanical Design Features

3.1 Pumps and ~~V~~valves listed in Table 2.2.6-1 will be functionally designed and qualified such that each pump and valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.

3.2 Check valves listed in Table 2.2.6-1 will function to change position as listed in Table 2.2.6-1 under normal operating conditions.

3.3 Deleted.

3.4 Equipment identified as Seismic Category I in Table 2.2.6-1 can withstand seismic design basis loads without a loss of the function listed in Table 2.2.6-1.

Table 2.2.6-3—Chemical and Volume Control System ITAAC
Sheet 1 of 6

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	The functional arrangement of the CVCS is as described in the Design Description of Section 2.2.6, Tables 2.2.6-1 and 2.2.6-2, and as shown on Figure 2.2.6-1.	An inspection of the as-built CVCS functional arrangement will be performed.	The CVCS conforms to the functional arrangement as described in the Design Description of Section 2.2.6, Tables 2.2.6-1 and 2.2.6-2, and as shown on Figure 2.2.6-1.
2.2	Deleted.	Deleted.	Deleted.
3.1	Pumps and ~~V~~valves listed in Table 2.2.6-1 will be functionally designed and qualified such that each pump and valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	Tests or type tests of pumps and valves will be performed to demonstrate that the pumps and valves function under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	A report concludes that the pumps and valves listed in Table 2.2.6-1 are capable of performing their intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.
3.2	Check valves listed in Table 2.2.6-1 will function to change position as listed in Table 2.2.6-1 under normal operating conditions.	Tests will be performed to verify the ability of check valves to change position under normal operating conditions.	The check valves change position as listed in Table 2.2.6-1 under normal operating conditions.
3.3	Deleted.	Deleted.	Deleted.

2.2.7 Extra Borating System

Design Description

1.0 System Description

The extra borating system (EBS) is a safety-related system. The EBS has two divisions. The EBS provides the following safety related functions:

- Core reactivity control.
- Reactor coolant pressure boundary integrity.

The EBS provides the following non-safety-related functions:

- Borated water to the RCS for beyond design basis events.

2.0 Arrangement

2.1 The functional arrangement of the EBS is as described in the Design Description of Section 2.2.7, Tables 2.2.7-1—EBS Equipment Mechanical Design and 2.2.7-2—EBS Equipment I&C and Electrical Design, and as shown on Figure 2.2.7-1—Extra Borating System Functional Arrangement.

2.2 Deleted.

2.3 Physical separation exists between divisions of the EBS, except for the suction piping interconnect, located in the Fuel Building as shown on Figures 2.1.1-38 and 2.1.1-39.

3.0 Mechanical Design Features

3.1 Pumps and valves listed in Table 2.2.7-1 will be functionally designed and qualified such that each pump and valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.

3.2 Check valves listed in Table 2.2.7-1 will function to change position as listed in Table 2.2.7-1 under normal operating conditions.

3.3 Deleted.

3.4 Equipment identified as Seismic Category I in Table 2.2.7-1 can withstand seismic design basis loads without a loss of the function listed in Table 2.2.7-1.

3.5 Deleted.

3.6 Deleted.

3.7 Deleted.

6.0 Environmental Qualifications

6.1 Equipment designated as harsh environment in Table 2.2.7-2 will perform the function listed in Table 2.2.7-1 under normal environmental conditions, containment test conditions, anticipated operational occurrences, and accident and post-accident environmental conditions.

7.0 Equipment and System Performance

7.1 The pumps listed in Table 2.2.7-1 have net positive suction head available (NPSHA) that is greater than net positive suction head required (NPSHR) at system run-out flow.

7.2 Class 1E valves listed in Table 2.2.7-2 will function to change position as listed in Table 2.2.7-1 under normal operating conditions.

7.3 The EBS has provisions to allow flow testing of each EBS pump during plant operation.

7.4 The EBS delivers water to RCS cold legs 1 and 2.~~Deleted.~~

Inspections, Tests, Analyses, and Acceptance Criteria

Table 2.2.7-3 lists the EBS ITAAC.

Table 2.2.7-3—Extra Borating System ITAAC
Sheet 1 of 6

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	The functional arrangement of the EBS is as described in the Design Description of Section 2.2.7, Tables 2.2.7-1 and 2.2.7-2, and as shown on Figure 2.2.7-1.	An inspection of the as-built EBS functional arrangement will be performed.	The EBS conforms to the functional arrangement as described in the Design Description of Section 2.2.7, Tables 2.2.7-1 and 2.2.7-2, and as shown on Figure 2.2.7-1.
2.2	Deleted.	Deleted.	Deleted.
2.3	Physical separation exists between divisions of the EBS, except for the suction piping interconnect, located in the Fuel Building as shown on Figures 2.1.1-38 and 2.1.1-39.	An inspection will be performed to verify that the as-built divisions of the EBS, except for the suction piping interconnect, are physically separated in the Fuel Building.	The divisions of the EBS, except for the suction piping interconnect, are physically separated by a wall in the Fuel Building as shown on Figures 2.1.1-38 and 2.1.1-39.
3.1	Pumps and valves listed in Table 2.2.7-1 will be functionally designed and qualified such that each pump and valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	Tests or type tests of pumps and valves will be performed to demonstrate that the pumps and valves function under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	A report concludes that the pumps and valves listed in Table 2.2.7-1 are capable of performing their intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.
3.2	Check valves listed in Table 2.2.7-1 will function to change position as listed in Table 2.2.7-1 under normal operating conditions.	Tests will be performed to verify the ability of check valves to change position under normal operating conditions.	The check valves change position as listed in Table 2.2.7-1 under normal operating conditions.
3.3	Deleted.	Deleted.	Deleted.

Table 2.2.7-3—Extra Borating System ITAAC
Sheet 6 of 6

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
7.1	The pumps listed in Table 2.2.7-1 have NPSHA that is greater than NPSHR at system run-out flow.	Tests and analyses will be performed to verify pump NPSHA that is greater than NPSHR at system run-out flow.	The pumps listed in Table 2.2.7-1 have NPSHA that is greater than NPSHR at system run-out flow.
7.2	Class 1E valves listed in Table 2.2.7-2 will function to change position as listed in Table 2.2.7-1 under normal operating conditions.	Tests will be performed to verify the ability of Class 1E valves to change position under normal operating conditions.	Class 1E valves listed in Table 2.2.7-2 change position as listed in Table 2.2.7-1 under normal operating conditions.
7.3	The EBS has provisions to allow flow testing of each EBS pump during plant operation.	Tests will be performed to verify EBS has provisions to allow flow testing of each EBS pump during plant operation.	The EBS pump flow test line recirculates a minimum of 49 gpm back to the EBS tank.
7.4	The EBS delivers water to RCS cold legs 1 and 2.~~Deleted.~~	Tests will be performed to verify the EBS delivers water to RCS cold legs 1 and 2.~~Deleted.~~	Each EBS pump delivers a minimum flow of 52 gpm to RCS cold legs 1 and 2.~~Deleted.~~

2.3.3 Severe Accident Heat Removal System

Design Description

1.0 System Description

The severe accident heat removal system (SAHRS) is a dedicated cooling water system for the primary containment to support mitigation of beyond design basis events (BDBEs). The system does not operate during normal plant operations or design basis accidents.

The SAHRS provides the following safety related functions:

- Containment isolation.
- Provides integrity of the IRWST boundary.

The SAHRS provides the following non-safety related functions:

- Passive cooling of the core melt stabilization system (CMSS).
- Active spray for environmental control of the containment atmosphere.
- Active recirculation cooling of the CMSS and containment.

2.0 Arrangement

2.1 The functional arrangement of the SAHRS is as described in the Design Description of Section 2.3.3, Tables 2.3.3-1—SAHRS Equipment Mechanical Design. and 2.3.3-2—SAHRS Equipment I&C and Electrical Design, and as shown on Figure 2.3.3-1—SAHRS Functional Arrangement.

2.2 Deleted.

3.0 Mechanical Design Features

3.1 Pumps and ~~V~~valves listed in Table 2.3.3-1 will be functionally designed and qualified such that each pump and valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.

3.2 Check valves listed in Table 2.3.3-1 will function to change position as listed in Table 2.3.3-1 under normal operating conditions.

3.3 Deleted.

3.4 Equipment identified as Seismic Category I in Table 2.3.3-1 can withstand seismic design basis loads without a loss of the function listed in Table 2.3.3-1.

6.0 Environmental Qualifications

6.1 Equipment designated as harsh environment in Table 2.3.3-2 will perform the function listed in Table 2.3.3-1 under normal environmental conditions, containment test conditions, anticipated operational occurrences, and accident and post-accident environmental conditions.

7.0 Equipment and System Performance

7.1 Each SAHRS pump delivers water to the Reactor Containment.~~Deleted.~~

7.2 Class 1E valves listed in Table 2.3.3-2 will function to change position as listed in Table 2.3.3-1 under normal operating conditions.

7.3 Deleted.

Inspections, Tests, Analyses, and Acceptance Criteria

Table 2.3.3-3 lists the SAHRS ITAAC.

Table 2.3.3-3—Severe Accident Heat Removal System ITAAC
Sheet 1 of 5

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	The functional arrangement of the SAHRS is as described in the Design Description of Section 2.3.3, Tables 2.3.3-1 and 2.3.3-2, and as shown on Figure 2.3.3-1.	An inspection of the as-built SAHRS functional arrangement will be performed.	The SAHRS conforms to the functional arrangement as described in the Design Description of Section 2.3.3, Tables 2.3.3-1 and 2.3.3-2, and as shown on Figure 2.3.3-1.
2.2	Deleted.	Deleted.	Deleted.
3.1	Pumps and ~~V~~valves listed in Table 2.3.3-1 will be functionally designed and qualified such that each pump and valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	Tests or type tests of pumps and valves will be performed to demonstrate that the pumps and valves function under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	A report concludes that the pumps and valves listed in Table 2.3.3-1 are capable of performing their intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.
3.2	Check valves listed in Table 2.3.3-1 will function to change position as listed in Table 2.3.3-1 under normal operating conditions.	Tests will be performed to verify the ability of check valves to change position under normal operating conditions.	The check valves change position as listed in Table 2.3.3-1 under normal operating conditions.
3.3	Deleted.	Deleted.	Deleted.
3.4	Equipment identified as Seismic Category I in Table 2.3.3-1 can withstand seismic design basis loads without a loss of the function listed in Table 2.3.3-1.	a. Type tests, analyses, or a combination of type tests and analyses will be performed on the equipment identified as Seismic Category I in Table 2.3.3-1 using analytical assumptions, or under conditions, which bound the Seismic Category I design requirements.	a. Test/analysis reports conclude that the equipment identified as Seismic Category I in Table 2.3.3-1 can withstand seismic design basis loads without a loss of the function listed in Table 2.3.3-1 including the time required to perform the listed function.

Table 2.3.3-3—Severe Accident Heat Removal System ITAAC
Sheet 5 of 5

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
7.1	Each SAHRS pump delivers water to the Reactor Containment.~~Deleted.~~	Tests will be performed to verify the SAHRS delivers water to the Reactor Containment.~~Deleted.~~	Each SAHRS pump delivers a minimum flow of 52 gpm to the Reactor Containment.~~Deleted.~~
7.2	Class 1E valves listed in Table 2.3.3-2 will function to change position as listed in Table 2.3.3-1 under normal operating conditions.	Tests will be performed to verify the ability of Class 1E valves to change position under normal operating conditions.	Class 1E valves listed in Table 2.3.3-2 change position as listed in Table 2.3.3-1 under normal operating conditions.
7.3	Deleted.	Deleted.	Deleted.

3.0 Mechanical Design Features

3.1 Pumps and valves listed in Table 2.5.4-1 will be functionally designed and qualified such that each pump and valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including ~~conditions ranging from normal operating to~~ design basis accident conditions.

3.2 Deleted.

3.3 Deleted.

3.4 Deleted.

3.5 Deleted.

3.6 Deleted.

3.7 Equipment identified as Seismic Category I in Table 2.5.4-1 can withstand seismic design basis loads without a loss of the function listed in Table 2.5.4-1.

3.8 Deleted.

3.9 Each EDG has a fuel oil storage tank.

3.10 Each EDG has a fuel oil day tank.

3.11 Each fuel oil transfer pump capacity is greater than EDG fuel oil consumption at the continuous rating.

3.12 Each EDG starting air system is capable of providing air to start the respective EDG without being recharged.

3.13 Check valves listed in Table 2.5.4-1 will function to change position as listed in Table 2.5.4-1 under normal operating conditions.

3.14 Each EDG lubricating oil system provides lubrication to the engine and turbocharger wearing parts during engine operation.

3.15 Each EDG exhaust path has a bypass exhaust path.

3.16 Deleted.

3.17 Deleted.

3.18 Deleted.

3.19 Deleted.

3.20 Deleted.

Table 2.5.4-4—Emergency Diesel Generator ITAAC
Sheet 2 of 9

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
3.1	Pumps and valves listed in Table 2.5.4-1 will be functionally designed and qualified such that each pump and valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	Tests or type tests of pumps and valves will be performed to demonstrate that the pumps and valves function under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	A report concludes that the pumps and valves listed in Table 2.5.4-1 are capable of performing their intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.
3.2	Deleted.	Deleted.	Deleted.
3.3	Deleted.	Deleted.	Deleted.
3.4	Deleted.	Deleted.	Deleted.
3.5	Deleted.	Deleted.	Deleted.
3.6	Deleted.	Deleted.	Deleted.

2.0 Arrangement

2.1 The functional arrangement of the CBVS is as described in the Design Description of Section 2.6.8, Tables 2.6.8-1—Containment Building Ventilation System Containment Isolation Valves Mechanical Design, 2.6.8-2—Containment Building Ventilation System Equipment Mechanical Design and 2.6.8-3—Containment Ventilation System Equipment I&C and Electrical Design, and as shown on Figure 2.6.8-1—Containment Building Ventilation System Functional Arrangement.

2.2 Deleted.

3.0 Mechanical Design Features

3.1 Valves listed in Table 2.6.8-1 will be functionally designed and qualified such that each valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.

3.2 Valves listed in Table 2.6.8-1 will function to change position as listed in Table 2.6.8-1 under normal operating conditions.~~Deleted.~~

3.3 Class 1E dampers listed in Table 2.6.8-3 will function to change position as listed in Table 2.6.8-2 under normal operating conditions.

3.4 Equipment identified as Seismic Category I in Tables 2.6.8-1 and 2.6.8-2 can withstand seismic design basis loads without a loss of the function listed in Tables 2.6.8-1 and 2.6.8-2.

3.5 Equipment listed in Table 2.6.8-2 as ASME AG-1 Code are designed in accordance with ASME AG-1 Code requirements.

3.6 Equipment listed in Table 2.6.8-2 as ASME AG-1 Code are fabricated in accordance with ASME AG-1 Code requirements, including welding requirements.

3.7 Equipment listed in Table 2.6.8-2 as ASME AG-1 Code are installed, inspected, and tested in accordance with ASME AG-1 Code requirements.

3.8 Deleted.

3.9 As-built ASME Code Class 1, 2 and 3 components are reconciled with the design requirements.

3.10 Pressure-boundary welds in ASME Code Class 1, 2 and 3 components meet ASME Code Section III non-destructive examination requirements.

3.11 ASME Code Class 1, 2 and 3 components retain their pressure-boundary integrity at their design pressure.

Table 2.6.8-4—Containment Building Ventilation System ITAAC
Sheet 1 of 6

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	The functional arrangement of the CBVS is as described in the Design Description of Section 2.6.8, Tables 2.6.8-1, 2.6.8-2 and 2.6.8-3, and as shown on Figure 2.6.8-1.	An inspection of the as-built CBVS functional arrangement will be performed.	The CBVS conforms to the functional arrangement as described in the Design Description of Section 2.6.8, Tables 2.6.8-1, 2.6.8-2 and 2.6.8-3, and as shown on Figure 2.6.8-1.
2.2	Deleted.	Deleted.	Deleted.
3.1	Valves listed in Table 2.6.8-1 will be functionally designed and qualified such that each valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	Tests or type tests of valves will be performed to demonstrate that the valves function under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	A report concludes that the valves listed in Table 2.6.8-1 are capable of performing their intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.
3.2	Valves listed in Table 2.6.8-1 will function to change position as listed in Table 2.6.8-1 under normal operating conditions.~~Deleted.~~	Tests will be performed to demonstrate the ability of valves to change position under normal operating conditions~~Deleted.~~	Valves listed in Table 2.6.8-1 change position as listed in Table 2.6.8-1 under normal operating conditions.~~Deleted.~~
3.3	Class 1E dampers listed in Table 2.6.8-3 will function to change position as listed in Table 2.6.8-2 under normal operating conditions.	Tests will be performed to verify the ability of Class 1E dampers to change position under normal operating conditions.	Class 1E dampers listed in Table 2.6.8-3 change position as listed in Table 2.6.8-2 under normal operating conditions.

2.3 Physical separation exists between divisions of the CCWS as shown on Figure 2.7.1-1.

3.0 Mechanical Design Features

3.1 Pumps and valves listed in Table 2.7.1-1 will be functionally designed and qualified such that each pump and valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.

3.2 Check valves listed in Table 2.7.1-1 will function to change position as listed in Table 2.7.1-1 under normal operating conditions.

3.3 Deleted.

3.4 Equipment identified as Seismic Category I in Table 2.7.1-1 can withstand seismic design basis loads without a loss of the function listed in Table 2.7.1-1.

3.5 Deleted.

3.6 Deleted.

3.7 Deleted.

3.8 Deleted.

3.9 Deleted.

3.10 Deleted.

3.11 Deleted.

3.12 Deleted.

3.13 Deleted.

3.14 ASME Code Class 1, 2 and 3 piping systems are designed in accordance with ASME Code Section III requirements.

3.15 As-built ASME Code Class 1, 2 and 3 components are reconciled with the design requirements.

3.16 Pressure-boundary welds in ASME Code Class 1, 2 and 3 components meet ASME Code Section III non-destructive examination requirements.

3.17 ASME Code Class 1, 2 and 3 components retain their pressure-boundary integrity at their design pressure.

3.18 ASME Code Class 1, 2 and 3 components are fabricated, installed, and inspected in accordance with ASME Code Section III requirements.

Table 2.7.1-3—Component Cooling Water System ITAAC
Sheet 1 of 11

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	The functional arrangement of the CCWS is as described in the Design Description of Section 2.7.1, Tables 2.7.1-1 and 2.7.1-2, and as shown on Figure 2.7.1-1.	An inspection of the as-built CCWS functional arrangement will be performed.	The CCWS conforms to the functional arrangement as described in the Design Description of Section 2.7.1, Tables 2.7.1-1 and 2.7.1-2, and as shown on Figure 2.7.1-1.
2.2	Deleted.	Deleted.	Deleted.
2.3	Physical separation exists between divisions of the CCWS as shown on Figure 2.7.1-1.	An inspection will be performed to verify that as-built divisions of the CCWS are located in separate Safeguard Buildings.	The divisions of the CCWS are located in separate Safeguard Buildings as shown on Figure 2.7.1-1.
3.1	Pumps and valves listed in Table 2.7.1-1 will be functionally designed and qualified such that each pump and valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	Tests or type tests of pumps and valves will be performed to demonstrate that the pumps and valves function under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	A report concludes that the pumps and valves listed in Table 2.7.1-1 are capable of performing their intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.
3.2	Check valves listed in Table 2.7.1-1 will function to change position as listed in Table 2.7.1-1 under normal operating conditions.	Tests will be performed to verify the ability of check valves to change position under normal operating conditions.	The check valves change position as listed in Table 2.7.1-1 under normal operating conditions.
3.3	Deleted.	Deleted.	Deleted.

2.7.2 Safety Chilled Water System

Design Description

1.0 System Description

The safety chilled water system (SCWS) is a safety-related system that delivers refrigerated chilled water to the safety-related heating, ventilation, air conditioning (HVAC) systems and to Division 1 and Division 4 low head safety injection (LHSI) motor cooler and pump seal cooler.

The SCWS significant safety-related function is to provide chilled water as a heat sink to safety-related HVAC systems, the main control room (MCR) habitability, and cooling of the LHSI pump seal coolers and motor coolers in Division 1 and Division 4 in the event of a design basis accident.

The SCWS significant non-safety-related function is for Division 1 and Division 4 to function in the event of a station blackout (SBO) or loss of ultimate heat sink.

2.0 Arrangement

2.1 The functional arrangement of the SCWS is as described in the Design Description of Section 2.7.2, Tables 2.7.2-1—Safety Chilled Water System Equipment Mechanical Design and 2.7.2-2—Safety Chilled Water System Equipment I&C and Electrical Design, and as shown on Figure 2.7.2-1—Safety Chilled Water System Functional Arrangement.

2.2 Deleted.

2.3 Physical separation exists between divisions of the SCWS, excluding cross-connected piping, as shown on Figure 2.7.2-1.

3.0 Mechanical Design Features

3.1 Pumps and valves listed in Table 2.7.2-1 will be functionally designed and qualified such that each pump and valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.

3.2 Check valves listed in Table 2.7.2-1 will function to change position as listed in Table 2.7.2-1 under normal operating conditions.

3.3 Deleted.

3.4 Equipment identified as Seismic Category I in Table 2.7.2-1 can withstand seismic design basis loads without a loss of the function listed in Table 2.7.2-1.

Table 2.7.2-3—Safety Chilled Water System ITAAC
Sheet 1 of 7

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	The functional arrangement of the SCWS is as described in the Design Description of Section 2.7.2, Tables 2.7.2-1 and 2.7.2-2, and as shown on Figure 2.7.2-1.	An inspection of the as-built SCWS functional arrangement will be performed.	The SCWS conforms to the functional arrangement as described in the Design Description of Section 2.7.2, Tables 2.7.2-1 and 2.7.2-2, and as shown on Figure 2.7.2-1.
2.2	Deleted.	Deleted.	Deleted.
2.3	Physical separation exists between divisions of the SCWS, excluding cross-connected piping, as shown on Figure 2.7.2-1.	An inspection will be performed to verify that the as-built divisions of the SCWS, excluding cross-connected piping, are located in separate Safeguard Buildings.	The divisions of the SCWS, excluding cross-connected piping, are located in separate Safeguard Buildings as shown on Figure 2.7.2-1.
3.1	Pumps and valves listed in Table 2.7.2-1 will be functionally designed and qualified such that each pump and valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	Tests or type tests of pumps and valves will be performed to demonstrate that the pumps and valves function under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	A report concludes that the pumps and valves listed in Table 2.7.2-1 are capable of performing their intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.
3.2	Check valves listed in Table 2.7.2-1 will function to change position as listed in Table 2.7.2-1 under normal operating conditions.	Tests will be performed to verify the ability of check valves to change position under normal operating conditions.	The check valves change position as listed in Table 2.7.2-1 under normal operating conditions.
3.3	Deleted.	Deleted.	Deleted.

- Deleted.
- The ESW normal makeup water system provides makeup water to the ESW system to replenish cooling water lost to evaporation, drift, and other losses in order to ensure cooling tower basin water levels remain within established limits. The ESW normal makeup water system also provides water to the cooling tower riser keep-fill.
- The ESW system provides the means of transferring heat loads from the dedicated CCW heat exchanger under severe accident conditions to ensure containment integrity.
- Freeze protection is provided by diverting ESW return flow directly to the tower basin and controlling fan operation under low load/low ambient temperature conditions.

The non-safety-related dedicated ESWS train provides water as a cooling medium to the non-safety-related dedicated CCWS train heat exchanger and to the division 4 ESWS ESWPBVS room cooler for the removal of reject heat under severe accident conditions.

2.0 Arrangement

2.1 The functional arrangement of the ESWS is as described in the Design Description of Section 2.7.11, Tables 2.7.11-1—Essential Service Water System Equipment Mechanical Design and 2.7.11-2—Essential Service Water System Equipment I&C and Electrical Design, and as shown in Figure 2.7.11-1—Essential Service Water System Functional Arrangement.

2.2 Deleted.

2.3 Physical separation exists between divisions of the ESWS as shown on Figure 2.7.11-1.

2.4 Deleted.

2.5 Deleted.

3.0 Mechanical Design Features

3.1 Pumps and valves listed in Table 2.7.11-1 will be functionally designed and qualified such that each pump and valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.

3.2 Check valves listed in Table 2.7.11-1 will function to change position as listed in Table 2.7.11-1 under normal operating conditions.

3.3 Deleted.

Table 2.7.11-3—Essential Service Water System ITAAC
Sheet 1 of 8

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	The functional arrangement of the ESWS is as described in the Design Description of Section 2.7.11, Tables 2.7.11-1 and 2.7.11-2, and as shown on Figure 2.7.11-1.	An inspection of the as-built ESWS functional arrangement will be performed.	The ESWS conforms to the functional arrangement as described in the Design Description of Section 2.7.11, Tables 2.7.11-1 and 2.7.11-2, and as shown on Figure 2.7.11-1.
2.2	Deleted.	Deleted.	Deleted.
2.3	Physical separation exists between divisions of the ESWS as shown on Figure 2.7.11-1.	An inspection will be performed to verify that the as-built divisions of the ESWS are located in separate ESWS and Safeguard Buildings.	The divisions of the ESWS are located in separate ESWS and Safeguard Buildings as shown on Figure 2.7.11-1.
2.4	Deleted.	Deleted.	Deleted.
2.5	Deleted.	Deleted.	Deleted.
3.1	Pumps and valves listed in Table 2.7.11-1 will be functionally designed and qualified such that each pump and valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	Tests or type tests of pumps and valves will be performed to demonstrate that the pumps and valves function under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	A report concludes that the pumps and valves listed in Table 2.7.11-1 are capable of performing their intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.
3.2	Check valves listed in Table 2.7.11-1 will function to change position as listed in Table 2.7.11-1 under normal operating conditions.	Tests will be performed to verify the ability of check valves to change position under normal operating conditions.	The check valves change position as listed in Table 2.7.11-1 under normal operating conditions.
3.3	Deleted.	Deleted.	Deleted.

2.8.2 Main Steam System

Design Description

1.0 System Description

The main steam system (MSS) is a safety-related system. It transports steam from the steam generators to the turbine generator during normal operations. The MSS also isolates the steam generators and the safety-related portion of MSS from the non-safety-related portion during design basis accidents. The main steam pipe lines from the steam generators to and including the fixed seismic restraints downstream of the main steam isolation valves (MSIVs) are safety related. The main steam lines downstream of the fixed seismic restraints to the turbine generator are non-safety-related.

The MSS provides the following safety-related functions:

- The MSS isolates the steam generators and associated portion of main steam lines.
- The MSS provides residual heat removal by venting steam to the atmosphere via the main steam relief trains (MSRTs) and the main steam safety valves (MSSVs).

The MSS provides the following non-safety-related functions:

- The MSS and the turbine bypass system provide the capability to dump steam to the main condenser.

2.0 Arrangement

2.1 The functional arrangement of the MSS is as described in the Design Description of Section 2.8.2, Tables 2.8.2-1—MSS Equipment Mechanical Design and 2.8.2-2—MSS Equipment I&C and Electrical Design, and as shown on Figure 2.8.2-1—MSS Functional Arrangement.

2.2 Deleted.

2.3 Physical separation exists between divisions of the safety-related portions of the MSS as listed in Table 2.8.2-1.

3.0 Mechanical Design Features

3.1 Valves listed in Table 2.8.2-1 will be functionally designed and qualified such that each valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.

3.2 Deleted.

Table 2.8.2-3—Main Steam System ITAAC
Sheet 1 of 7

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	The functional arrangement of the MSS is as described in the Design Description of Section 2.8.2, Tables 2.8.2-1 and 2.8.2-2, and as shown on Figure 2.8.2-1.	An inspection of the as-built MSS functional arrangement will be performed.	The MSS conforms to the functional arrangement as described in the Design Description of Section 2.8.2, Tables 2.8.2-1 and 2.8.2-2, and as shown on Figure 2.8.2-1.
2.2	Deleted.	Deleted.	Deleted.
2.3	Physical separation exists between divisions of the safety-related portions of the MSS as listed in Table 2.8.2-1.	An inspection will be performed to verify that the as-built safety-related portions of the MSS are located in separate valve rooms in Safeguard Buildings 1 and 4.	The divisions of the safety-related portions of the MSS are located in separate valve rooms in Safeguard Buildings 1 and 4 as listed in Table 2.8.2-1.
3.1	Valves listed in Table 2.8.2-1 will be functionally designed and qualified such that each valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	Tests or type tests of valves will be performed to demonstrate that the valves function under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	A report concludes that the valves listed in Table 2.8.2-1 are capable of performing their intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.
3.2	Deleted.	Deleted.	Deleted.

2.8.6 Main Feedwater System

Design Description

1.0 System Description

The main feedwater system (MFWS) is a non-safety-related system with portions that are safety related. It transports and controls feedwater from the deaerator/feedwater storage tank to the steam generators (SG). It includes the startup/shutdown feedwater supply. The MFWS is safety related from the connections to the SGs to the fixed seismic restraint in each main feedwater line and to the fixed seismic restraint in each startup/shutdown feedwater line.

The MFWS provides the following safety-related function:

- Shut off main feedwater supply and startup/shutdown feedwater supply.

The MFWS provides the following non-safety-related functions:

- The MFWS supplies feedwater to the SGs for power operation.
- A startup/shutdown system supplies feedwater to the SGs for low-power operation.

2.0 Arrangement

2.1 The functional arrangement of the MFWS is as described in the Design Description of Section 2.8.6, Tables 2.8.6-1—MFWS Equipment Mechanical Design and 2.8.6-2—MFWS Equipment I&C and Electrical Design, and as shown on Figure 2.8.6-1—MFWS Functional Arrangement.

2.2 Deleted.

2.3 Physical separation exists between divisions of the safety-related portions of MFWS as listed in Table 2.8.6-1.

3.0 Mechanical Design Features

3.1 Valves listed in Table 2.8.6-1 will be functionally designed and qualified such that each valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.

3.2 Check valves listed in Table 2.8.6-1 will function to change position as listed in Table 2.8.6-1 under normal operating conditions.

3.3 Deleted.

Table 2.8.6-3—Main Feedwater System ITAAC
Sheet 1 of 6

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	The functional arrangement of the MFWS is as described in the Design Description of Section 2.8.6, Tables 2.8.6-1 and 2.8.6-2, and as shown on Figure 2.8.6-1.	An inspection of the as-built MFWS functional arrangement will be performed.	The MFWS conforms to the functional arrangement as described in the Design Description of Section 2.8.6, Tables 2.8.6-1 and 2.8.6-2, and as shown on Figure 2.8.6-1.
2.2	Deleted.	Deleted.	Deleted.
2.3	Physical separation exists between divisions of the safety-related portions of MFWS as listed in Table 2.8.6-1.	An inspection will be performed to verify that the as-built safety-related portions of the MFWS are located in separate valve rooms in Safeguard Buildings 1 and 4.	The divisions of the safety-related portions of the MFWS are located in separate valve rooms in Safeguard Buildings 1 and 4 as listed in Table 2.8.6-1.
3.1	Valves listed in Table 2.8.6-1 will be functionally designed and qualified such that each valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under design basis accident conditions.	Tests or type tests of valves will be performed to demonstrate that the valves function under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	A report concludes that the valves listed in Table 2.8.6-1 are capable of performing their intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.
3.2	Check valves listed in Table 2.8.6-1 will function to change position as listed in Table 2.8.6-1 under normal operating conditions.	Tests will be performed to verify the ability of check valves to change position under normal operating conditions.	The check valves change position as listed in Table 2.8.6-1 under normal operating conditions.
3.3	Deleted.	Deleted.	Deleted.

2.8.7 Steam Generator Blowdown System

Design Description

1.0 System Description

The steam generator blowdown system (SGBS) is a non-safety-related system with safety-related portions. It assists in maintaining the chemical characteristics of the secondary water within permissible limits. The SGBS is safety related from its connections to the steam generators to the outer containment isolation valves. The remaining portion of the blowdown system downstream of the outer containment isolation valves is non-safety-related.

The SGBS provides the following safety-related functions:

- Containment isolation.
- SG blowdown isolation (emergency feedwater (EFW) actuation signal, or high main steam activity signal with a partial cooldown signal, or high SG level signal with a partial cooldown signal).

The SGBS provides the following non-safety-related functions:

- SG blowdown isolation (high SGBS blowdown activity signal with a partial cooldown, or high blowdown temperature downstream of the blowdown coolers).

2.0 Arrangement

2.1 The functional arrangement of the SGBS is as described in the Design Description of Section 2.8.7, Tables 2.8.7-1— SGBS Equipment Mechanical Design and 2.8.7-2— SGBS Equipment I&C and Electrical Design, and as shown on Figure 2.8.7-1—SGBS Functional Arrangement.

2.2 Deleted.

3.0 Mechanical Design Features

3.1 Valves listed in Table 2.8.7-1 will be functionally designed and qualified such that each valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.

3.2 Deleted.

3.3 Equipment identified as Seismic Category I in Table 2.8.7-1 can withstand seismic design basis loads without a loss of the function listed in Table 2.8.7-1.

Table 2.8.7-3—Steam Generator Blowdown System ITAAC
Sheet 1 of 6

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	The functional arrangement of the SGBS is as described in the Design Description of Section 2.8.7, Tables 2.8.7-1 and 2.8.7-2, and as shown on Figure 2.8.7-1.	An inspection of the as-built SGBS functional arrangement will be performed.	The SGBS conforms to the functional arrangement as described in the Design Description of Section 2.8.7, Tables 2.8.7-1 and 2.8.7-2, and as shown on Figure 2.8.7-1.
2.2	Deleted.	Deleted.	Deleted.
3.1	Valves listed in Table 2.8.7-1 will be functionally designed and qualified such that each valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	Tests or type tests of valves will be performed to demonstrate that the ~~pumps and~~ valves function under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	A report concludes that the valves listed in Table 2.8.7-1 are capable of performing their intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.
3.2	Deleted.	Deleted.	Deleted.

3.5 Containment Isolation

Design Description

1.0 System Description

The Reactor Building (RB) consists of a Reactor Containment Building (RCB) and a Reactor Shield Building (RSB). The RCB provides the primary means of confining radioactivity that may be released following a postulated design basis accident. The RCB and RSB are penetrated by systems to provide various functions for systems housed inside containment. These penetrations are made for mechanical and electrical systems, and include facilities for the transport of personnel and equipment.

The function for containment isolation is to isolate fluid system piping that penetrates the RB to prevent the discharge of radioactivity from containment following a postulated design basis accident. Containment isolation barriers are components of the penetrating systems and are generally included with the system descriptions in Tier 1, Chapter 2. This section includes containment isolation barriers that are not included in Tier 1, Chapter 2.

2.0 Arrangement

2.1 The functional arrangement of the containment isolation equipment is as described in the Design Description of Section 3.5~~.1~~ and~~,~~ Table 3.5-1—Containment Isolation Equipment Mechanical Design, Table 3.5-2—Containment Isolation Equipment I&C and Electrical Design, and Table 3.5-3—Containment Isolation Valves~~, and as shown on Figure 3.5-1—Representative Containment Isolation Valve Arrangement~~.

2.2 Deleted.

3.0 Mechanical Design Features

3.1 Valves listed in Table 3.5-1 will be functionally designed and qualified such that each valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.

3.2 Check valves listed in Table 3.5-1 will function to change position as listed in Table 3.5-1 under normal operating conditions.

3.3 Deleted.

3.4 Equipment identified as Seismic Category I in Table 3.5-1 can withstand seismic design basis loads without a loss of the function listed in Table 3.5-1.

3.5 Deleted.

Table 3.5-4—Containment Isolation ITAAC
Sheet 1 of 9

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	The functional arrangement of the containment isolation equipment is as described in the Design Description of Section 3.5 and~~,~~ Tables 3.5-1, 3.5-2, and 3.5-3~~, and as shown on Figure 3.5-1~~.	An inspection of the as-built containment isolation equipment functional arrangement will be performed.	The containment isolation equipment conforms to the functional arrangement as described in the Design Description of Section 3.5 and~~,~~ Tables 3.5-1, 3.5-2, and 3.5-3~~, and as shown on Figure 3.5-1~~.
2.2	Deleted.	Deleted.	Deleted.
3.1	Valves listed in Table 3.5-1 will be functionally designed and qualified such that each valve is capable of performing its intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	Tests or type tests of valves will be performed to demonstrate that the ~~pumps and~~ valves function under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.	A report concludes that the valves listed in Table 3.5-1 are capable of performing their intended function ~~for a full range of system differential pressure and flow, ambient temperatures, and available voltage (as applicable)~~ under the full range of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis accident conditions.
3.2	Check valves listed in Table 3.5-1 will function to change position as listed in Table 3.5-1 under normal operating conditions.	Tests will be performed to demonstrate the ability of check valves to change position under normal operating conditions.	The check valves change position as listed in Table 3.5-1 under normal operating conditions.
3.3	Deleted.	Deleted.	Deleted.