

2.7.2 Safety Chilled Water System

1.0 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 sealing 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 (LUHS).

2.0 Arrangement

2.1 The functional arrangement of the SCWS is as shown in Figure 2.7.2-1—Safety Chilled Water System Functional Arrangement.

2.2 The location of the SCWS equipment is as listed in Table 2.7.2-1—Safety Chilled Water System Equipment Mechanical Design.

2.3 Physical separation exists between divisions of the SCWS.

3.0 Mechanical Design Features

3.1 Equipment listed in Table 2.7.2-1 as ASME Code Section III is designed and tested to ASME Code Section III.

3.2 Check valves listed in Table 2.7.2-1 will function as listed in Table 2.7.2-1.

3.3 Piping indicated in Figure 2.7.2-1 as ASME Code Section III is designed and tested in accordance with ASME Code Section III.

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

3.5 Supports for piping shown as ASME Section III in Figure 2.7.2-1 will be designed per ASME Section III.

3.6 Specifications exist for components listed as ASME Section III in Table 2.7.2-1.

3.7 Specifications exist for piping shown as ASME Section III in Figure 2.7.2-1.

3.8 Specifications exist for supports for piping shown as ASME Section III in Figure 2.7.2-1.

4.0 I&C Design Features, Displays and Controls

- 4.1 Displays listed in Table 2.7.2-2—Safety Chilled Water System Equipment I&C and Electrical Design are retrievable in the MCR and the remote shutdown station (RSS) as listed in Table 2.7.2-2.
- 4.2 The SCWS equipment controls are provided in the MCR and the RSS as listed in Table 2.7.2-2.
- 4.3 Actuators listed as being controlled by a priority actuation and control system (PACS) module in Table 2.7.2-2 are controlled by a PACS module.
- 4.4 The SCWS has the following interlocks: The standby recirculation pump automatically starts if the running pump trips.

5.0 Electrical Power Design Features

- 5.1 The components designated as Class 1E in Table 2.7.2-2 are powered from Class 1E division as listed in Table 2.7.2-2 in a normal or alternate feed condition.
- 5.2 Valves listed in Table 2.7.2-2 fail as-is on loss of power.

6.0 Environmental Qualifications

- 6.1 Equipment listed in Table 2.7.2-2 for harsh environment can perform the safety function in Table 2.7.2-1 following exposure to the design basis environments for the time required.

7.0 Equipment and System Performance

- 7.1 The chiller refrigerating units shown on Figure 2.7.2-1 have the capacity to provide chilled water at the temperature to support the heat removal requirements of each user.
- 7.2 The pumps listed in Table 2.7.2-1 have sufficient net positive suction head absolute.
- 7.3 The SCWS delivers water to the HVAC cooling coils of the MCR (control room air conditioning system (CRACS)), the electrical division rooms (SBVSE) in the Safeguard Buildings, safeguard building controlled-area ventilation system (SBVS), fuel building ventilation system (FBVS), and the Division 1 and Division 4 LHSI (safety injection system (SIS)/residual heat removal system (RHRS)) pump seal coolers and motor coolers and within the required time for safety-related room and equipment cooling due to design basis events.
- 7.4 Class 1E valves listed in Table 2.7.2-2 can perform the function listed in Table 2.7.2-1 under system design conditions.
- 7.5 The SCWS provides for flow testing of the chilled water circulation pumps during plant operation.



8.0 System Inspections, Tests, Analysis, and Acceptance Criteria

8.1 Table 2.7.2-3 specifies the inspections, tests, analyses, and acceptance criteria for the SCWS.

Table 2.7.2-1—Safety Chilled Water System Equipment Mechanical Design (5 Sheets)

Equipment Description	Equipment Tag Number (1)	Equipment Location	ASME Code Section III	Function	Seismic Category
Safety Chilled Water Division 1					
Air Cooled Condenser	30QKA10 AC002	Safeguard Building Division 1	Yes	Run	I
Evaporator	30QKA10 AC001	Safeguard Building Division 1	Yes	Run	I
Chilled Water Circulation Pump	30QKA10 AP107	Safeguard Building Division 1	Yes	Run	I
Chilled Water Circulation Pump	30QKA10 AP108	Safeguard Building Division 1	Yes	Run	I
Expansion Tank	30QKA10 BB101	Safeguard Building Division 1	Yes	Maintain system static pressure	I
Flow Control Valve	30QKA10 AA101	Safeguard Building Division 1	Yes	Open-Close	I
Flow Control Valve	30QKB10 AA101	Safeguard Building Division 1	Yes	Open-Close	I
Flow Control Valve	30QKC10 AA101	Safeguard Building Division 1	Yes	Open-Close	I
Pressure Relief Valve	30QKA10 AA191	Safeguard Building Division 1	Yes	Open	I
Check Valve	30QKA10 AA011	Safeguard Building Division 1	Yes	Open-Close	I
Check Valve	30QKA10 AA003	Safeguard Building Division 1	Yes	Open-Close	I
Check Valve	30QKA10 AA018	Safeguard Building Division 1	Yes	Open-Close	I

Table 2.7.2-1—Safety Chilled Water System Equipment Mechanical Design (5 Sheets)

Equipment Description	Equipment Tag Number (1)	Equipment Location	ASME Code Section III	Function	Seismic Category
Check Valve	30QKC10 AA028	Safeguard Building Division 1	Yes	Open-Close	I
Flow Control Valve	30QKC10 AA025	Safeguard Building Division 1	Yes	Open-Close	I
Safety Chilled Water Division 2					
Water Cooled Condenser	30QKA20 AC002	Safeguard Building Division 2	Yes	Run	I
Evaporator	30QKA20 AC001	Safeguard Building Division 2	Yes	Run	I
Chilled Water Circulation Pump	30QKA20 AP107	Safeguard Building Division 2	Yes	Run	I
Chilled Water Circulation Pump	30QKA20 AP108	Safeguard Building Division 2	Yes	Run	I
Expansion Tank	30QKA20 BB101	Safeguard Building Division 2	Yes	Maintain system static pressure	I
Flow Control Valve	30QKA20 AA101	Safeguard Building Division 2	Yes	Open-Close	I
Flow Control Valve	30QKB20 AA101	Safeguard Building Division 2	Yes	Open-Close	I
Flow Control Valve	30QKC20 AA101	Safeguard Building Division 2	Yes	Open-Close	I
Pressure Relief Valve	30QKA20 AA191	Safeguard Building Division 2	Yes	Open	I
Check Valve	30QKA20 AA011	Safeguard Building Division 2	Yes	Open-Close	I

Table 2.7.2-1—Safety Chilled Water System Equipment Mechanical Design (5 Sheets)

Equipment Description	Equipment Tag Number (1)	Equipment Location	ASME Code Section III	Function	Seismic Category
Check Valve	30QKA20 AA003	Safeguard Building Division 2	Yes	Open-Close	I
Check Valve	30QKA20 AA018	Safeguard Building Division 2	Yes	Open-Close	I
Safety Chilled Water Division 3					
Water Cooled Condenser	30QKA30 AC002	Safeguard Building Division 3	Yes	Run	I
Evaporator	30QKA30 AC001	Safeguard Building Division 3	Yes	Run	I
Chilled Water Circulation Pump	30QKA30 AP107	Safeguard Building Division 3	Yes	Run	I
Chilled Water Circulation Pump	30QKA30 AP108	Safeguard Building Division 3	Yes	Run	I
Expansion Tank	30QKA30 BB101	Safeguard Building Division 3	Yes	Maintain system static pressure	I
Flow Control Valve	30QKA30 AA101	Safeguard Building Division 3	Yes	Open-Close	I
Flow Control Valve	30QKB30 AA101	Safeguard Building Division 3	Yes	Open-Close	I
Flow Control Valve	30QKC30 AA101	Safeguard Building Division 3	Yes	Open-Close	I
Pressure Relief Valve	30QKA30 AA191	Safeguard Building Division 3	Yes	Open	I

Table 2.7.2-1—Safety Chilled Water System Equipment Mechanical Design (5 Sheets)

Equipment Description	Equipment Tag Number (1)	Equipment Location	ASME Code Section III	Function	Seismic Category
Check Valve	30QKA30 AA011	Safeguard Building Division 3	Yes	Open-Close	I
Check Valve	30QKA30 AA003	Safeguard Building Division 3	Yes	Open-Close	I
Check Valve	30QKA30 AA018	Safeguard Building Division 3	Yes	Open-Close	I
Safety Chilled Water Division 4					
Air Cooled Condenser	30QKA40 AC002	Safeguard Building Division 4	Yes	Run	I
Evaporator	30QKA40 AC001	Safeguard Building Division 4	Yes	Run	I
Chilled Water Circulation Pump	30QKA40 AP107	Safeguard Building Division 4	Yes	Run	I
Chilled Water Circulation Pump	30QKA40 AP108	Safeguard Building Division 4	Yes	Run	I
Expansion Tank	30QKA40 BB101	Safeguard Building Division 4	Yes	Maintain system static pressure	I
Flow Control Valve	30QKA40 AA101	Safeguard Building Division 4	Yes	Open-Close	I
Flow Control Valve	30QKB40 AA101	Safeguard Building Division 4	Yes	Open-Close	I
Flow Control Valve	30QKC40 AA101	Safeguard Building Division 4	Yes	Open-Close	I
Pressure Relief Valve	30QKA40 AA191	Safeguard Building Division 4	Yes	Open	I

Table 2.7.2-1—Safety Chilled Water System Equipment Mechanical Design (5 Sheets)

Equipment Description	Equipment Tag Number (1)	Equipment Location	ASME Code Section III	Function	Seismic Category
Check Valve	30QKA40 AA011	Safeguard Building Division 4	Yes	Open-Close	I
Check Valve	30QKA40 AA003	Safeguard Building Division 4	Yes	Open-Close	I
Check Valve	30QKA40 AA018	Safeguard Building Division 4	Yes	Open-Close	I
Check Valve	30QKC40 AA028	Safeguard Building Division 4	Yes	Open-Close	I
Flow Control Valve	30QKC40 AA025	Safeguard Building Division 4	Yes	Open-Close	I

(1) Equipment tag numbers are provided for information only and are not part of the certified design.

Table 2.7.2-2—Safety Chilled Water System Equipment I&C and Electrical Design (3 Sheets)

Equipment Description	Equipment Tag Number (1)	Equipment Location	IEEE Class 1E (2)	EQ – Harsh Env.	PACS	MRC/RSS Displays	MCR/RSS Controls
Safety Chilled Water Division 1							
Chiller Refrigerating Unit with Air Cooled Condenser	30QKA10 AH112	Safeguard Building Division 1	Division 1 ^N Division 2 ^A	Yes	N/A	On-off/On-off	Start-Stop/Start-Stop
Chilled Water Circulation Pump	30QKA10 AP107	Safeguard Building Division 1	Division 1 ^N Division 2 ^A	Yes	N/A	On-off/On-off	Start-Stop/Start-Stop
Chilled Water Circulation Pump	30QKA10 AP108	Safeguard Building Division 1	Division 1 ^N	Yes	N/A	On-off/On-off	Start-Stop/Start-Stop
Flow Control Valve	30QKA10 AA101	Safeguard Building Division 1	Division 1 ^N Division 2 ^A	Yes	N/A	Pos/Pos	Throttling/Throttling
Flow Control Valve	30QKB10 AA101	Safeguard Building Division 1	Division 1 ^N Division 2 ^A	Yes	N/A	Pos/Pos	Throttling/Throttling
Flow Control Valve	30QKC10 AA101	Safeguard Building Division 1	Division 1 ^N Division 2 ^A	Yes	N/A	Pos/Pos	Throttling/Throttling
Flow Control Valve	30QKC10 AA025	Safeguard Building Division 1	Division 1 ^N Division 2 ^A	Yes	N/A	Pos/Pos	Throttling/Throttling
Safety Chilled Water Division 2							
Chiller Refrigerating Unit with Water Cooled Condenser	30QKA20 AH112	Safeguard Building Division 2	Division 2 ^N Division 1 ^A	Yes	N/A	On-off/On-off	Start-Stop/Start-Stop
Chilled Water Circulation Pump	30QKA20 AP107	Safeguard Building Division 2	Division 2 ^N Division 1 ^A	Yes	N/A	On-off/On-off	Start-Stop/Start-Stop

Table 2.7.2–2—Safety Chilled Water System Equipment I&C and Electrical Design (3 Sheets)

Equipment Description	Equipment Tag Number (1)	Equipment Location	IEEE Class 1E (2)	EQ – Harsh Env.	PACS	MRC/RSS Displays	MCR/RSS Controls
Chilled Water Circulation Pump	30QKA20 AP108	Safeguard Building Division 2	Division 2 ^N	Yes	N/A	On-off/On-off	Start-Stop/Start-Stop
Flow Control Valve	30QKA20 AA101	Safeguard Building Division 2	Division 2 ^N Division 1 ^A	Yes	N/A	Pos/Pos	Throttling/Throttling
Flow Control Valve	30QKB20 AA101	Safeguard Building Division 2	Division 2 ^N Division 1 ^A	Yes	N/A	Pos/Pos	Throttling/Throttling
Flow Control Valve	30QKC20 AA101	Safeguard Building Division 2	Division 2 ^N Division 1 ^A	Yes	N/A	Pos/Pos	Throttling/Throttling
Safety Chilled Water Division 3							
Chiller Refrigerating Unit with Water Cooled Condenser	30QKA30 AH112	Safeguard Building Division 3	Division 3 ^N Division 4 ^A	Yes	N/A	On-off/On-off	Start-Stop/Start-Stop
Chilled Water Circulation Pump	30QKA30 AP107	Safeguard Building Division 3	Division 3 ^N Division 4 ^A	Yes	N/A	On-off/On-off	Start-Stop/Start-Stop
Chilled Water Circulation Pump	30QKA30 AP108	Safeguard Building Division 3	Division 3 ^N	Yes	N/A	On-off/On-off	Start-Stop/Start-Stop
Flow Control Valve	30QKA30 AA101	Safeguard Building Division 3	Division 3 ^N Division 4 ^A	Yes	N/A	Pos/Pos	Throttling/Throttling
Flow Control Valve	30QKB30 AA101	Safeguard Building Division 3	Division 3 ^N Division 4 ^A	Yes	N/A	Pos/Pos	Throttling/Throttling
Flow Control Valve	30QKC30 AA101	Safeguard Building Division 3	Division 3 ^N Division 4 ^A	Yes	N/A	Pos/Pos	Throttling/Throttling

Table 2.7.2–2—Safety Chilled Water System Equipment I&C and Electrical Design (3 Sheets)

Equipment Description	Equipment Tag Number (1)	Equipment Location	IEEE Class 1E (2)	EQ – Harsh Env.	PACS	MRC/RSS Displays	MCR/RSS Controls
Safety Chilled Water Division 4							
Chiller Refrigerating Unit with Air Cooled Condenser	30QKA40 AH112	Safeguard Building Division 4	Division 4 ^N Division 3 ^A	Yes	N/A	On-off/On-off	Start-Stop/Start-Stop
Chilled Water Circulation Pump	30QKA40 AP107	Safeguard Building Division 4	Division 4 ^N Division 3 ^A	Yes	N/A	On-off/On-off	Start-Stop/Start-Stop
Chilled Water Circulation Pump	30QKA40 AP108	Safeguard Building Division 4	Division 4 ^N	Yes	N/A	On-off/On-off	Start-Stop/Start-Stop
Flow Control Valve	30QKA40 AA101	Safeguard Building Division 4	Division 4 ^N Division 3 ^A	Yes	N/A	Pos/Pos	Throttling/Throttling
Flow Control Valve	30QKB40 AA101	Safeguard Building Division 4	Division 4 ^N Division 3 ^A	Yes	N/A	Pos/Pos	Throttling/Throttling
Flow Control Valve	30QKC40 AA101	Safeguard Building Division 4	Division 4 ^N Division 3 ^A	Yes	N/A	Pos/Pos	Throttling/Throttling
Flow Control Valve	30QKC40 AA025	Safeguard Building Division 4	Division 4 ^N Division 3 ^A	Yes	N/A	Pos/Pos	Throttling/Throttling

(1) Equipment tag numbers are provided for information only and are not part of the certified design.

(2) ^N denotes the division the component is normally powered from.

^A denotes the division the component is powered from when alternate feed is implemented.

**Table 2.7.2-3—Safety Chilled Water System
Inspections, Tests, Analyses, and Acceptance
Criteria (6 Sheets)**

Commitment Wording	Inspection, Analysis or Test	Acceptance Criteria
2.1 The functional arrangement of the SCWS is as shown on Figure 2.7.2-1.	Inspections of the as-built system as shown on Figure 2.7.2-1 will be conducted.	The as-build SCWS conforms to the functional arrangement as shown in Figure 2.7.2-1.
2.2 The location of the SCWS equipment is as listed in Table 2.7.2-1.	An inspection will be performed of the location of the equipment listed in Table 2.7.2-1.	The equipment listed in Table 2.7.2-1 is located as listed in Table 2.7.2-1.
2.3 Physical separation exists between divisions of the SCWS.	Inspection will be performed to verify that the divisions of the SCWS are located in separate safeguards buildings.	The divisions of the SCWS are located in separate safeguards buildings.
3.1 The components designated as ASME Code Section III in Table 2.7.2-1 are designed to ASME Code Section III requirements.	Inspections will be conducted of ASME design, NDE and hydrostatic test reports for the component listed as ASME Code Section III in Table 2.7.2-1.	A report exists and concludes that the components listed as ASME Code Section III in Table 2.7.2-1 have been designed and hydrostatically tested in accordance ASME Code Section III requirements.
3.2 Check valves listed in Table 2.7.2-1 will function as listed in Table 2.7.2-1.	Tests will be performed for the operation of the check valves listed in Table 2.7.2-1.	The check valves listed in Table 2.7.2-1 perform the functions listed in Table 2.7.2-1.
3.3a The piping identified as being within the ASME Code Section III boundary as indicated in Figure 2.7.2-1 has been designed in accordance with ASME Code Section III requirements including seismic loads.	Analysis of the as-designed piping will be performed in accordance with ASME Code Section III requirements for the piping identified in Figure 2.7.2-1.	ASME Code Section III stress reports exist and conclude that the as-designed piping identified as ASME Code Section III in Figure 2.7.2 meets ASME Code Section III design requirements.

**Table 2.7.2-3—Safety Chilled Water System
Inspections, Tests, Analyses, and Acceptance
Criteria (6 Sheets)**

Commitment Wording	Inspection, Analysis or Test	Acceptance Criteria
<p>3.3b The piping identified as being within the ASME Code Section III boundary as indicated in Figure 2.7.2-1 has been inspected and hydrostatically tested in accordance with ASME Code Section III.</p>	<p>Inspections will be conducted of the as-built piping as indicated in Figure 2.7.2-1 for the following: Welding has been performed per ASME Code Section III. Hydrostatic testing per ASME Code Section III was performed.</p>	<p>A report exists and concludes that the piping as indicated in Figure 2.7.2-1 as ASME Code Section III has been welded in accordance with ASME Code Section III welding requirements. A report exists and concludes that the piping as indicated in Figure 2.7.2-1 as ASME Code Section III has been hydrostatically tested in accordance with ASME Code Section III requirements.</p>
<p>3.4 Equipment identified as Seismic Category 1 in Table 2.7.2-1 can withstand a design basis seismic load without loss of safety function as listed in Table 2.7.2-1.</p>	<p>Inspection will be performed of the equipment identified as Seismic Category 1 in Table 2.7.2-1. Type tests, test, analyses or a combination of tests and analyses will be performed on the equipment designated as Seismic Category 1 in Table 2.7.2-1.</p>	<p>A report exists and concludes that the equipment designated as Seismic Category 1 in Table 2.7.2-1 is installed as designed. A report exist and concludes that the equipment designated as Seismic Category I can with stand a design basis seismic load without loss of safety function.</p>

**Table 2.7.2-3—Safety Chilled Water System
Inspections, Tests, Analyses, and Acceptance
Criteria (6 Sheets)**

Commitment Wording	Inspection, Analysis or Test	Acceptance Criteria
<p>3.5 Supports for piping shown as ASME Section III in Figure 2.7.2-1 will be designed per ASME Section III.</p>	<p>An analysis will be performed.</p>	<p>a. Supports for piping shown as ASME Section III in Figure 2.7.2-1 are designed to ASME Section III.</p> <p>b. Snubbers have been identified, including those analyzed for fatigue for piping shown as ASME Section III in Figure 2.7.2-1.</p> <p>Support mass is less than 10 percent of the adjacent pipe span for piping shown as ASME Section III in Figure 2.7.2-1 .</p>
<p>3.6 Specifications exist for components listed as ASME Section III in Table 2.7.2-1.</p>	<p>An analysis will be performed.</p>	<p>Specifications exist for components listed as ASME Section III in Table 2.7.2-1.</p>
<p>3.7 Specifications exist for piping shown as ASME Section III in Figure 2.7.2-1.</p>	<p>An analysis will be performed.</p>	<p>Specifications exist for piping identified as ASME Section III in Figure 2.7.2-1.</p>
<p>3.8 Specifications exist for supports for piping shown as ASME Section III in Figure 2.2.7-2.</p>	<p>An analysis will be performed.</p>	<p>Specifications exist for supports for piping shown as ASME Section III in Figure 2.7.2-1.</p>
<p>4.1 Displays exist or can be retrieved in the MCR and RSS as identified in Table 2.7.2-2.</p>	<p>Inspections will be performed for the existence or retrieveability of the displays in the MCR or the RSS as listed in Table 2.7.2-2.</p>	<p>The displays listed in Table 2.7.2-2 as being retrieved in the MCR can be retrieved in the MCR.</p> <p>The displays listed in Table 2.7.2-2 as being retrieved in the RSS can be retrieved in the RSS.</p>

**Table 2.7.2-3—Safety Chilled Water System
Inspections, Tests, Analyses, and Acceptance
Criteria (6 Sheets)**

Commitment Wording	Inspection, Analysis or Test	Acceptance Criteria
4.2 Controls exist in the MCR and the RSS as identified in Table 2.7.2-2.	Test will be performed for the existence of control signals from the MCR and the RSS to the equipment listed in Table 2.7.2-2.	The controls listed in Table 2.7.2-2 as being in the MCR exist in the MCR. The controls listed in Table 2.7.2-2 as being in the RSS exist in the RSS.
4.3 Actuators listed as being controlled by a PACS module in Table 2.7.2-2 are controlled by a PACS module.	An operational test will be performed using test signals for the actuators being controlled by a PACS module as listed in Table 2.7.2-2. An inspection will be performed on the actuation of the actuator.	The actuators listed as being controlled by a PACS module in Table 2.7.2-2 actuate to the state requested by the signal.
4.4 The SCWS has the following interlocks: The standby recirculation pump automatically starts if the running pump trips.	Tests will be performed using simulated signals to verify the interlock.	The interlock functions in response to a simulated signal.
5.1 The components designated as Class 1E in Table 2.7.2-2 are powered from the Class 1E division as listed in Table 2.7.2-2 in a normal or alternate feed condition.	Testing will be performed for components designated as Class 1E in Table 2.7.2-2 by providing a test signal in each normally aligned division. Testing will be performed for components designated as Class 1E in Table 2.7.2-2 by providing a test signal in each division with the alternate feed aligned to the divisional pair.	The test signal provided in the normally aligned division is present at the respective Class 1E component identified in Table 2.7.2-2. The test signal provided in each division with the alternate feed aligned to the divisional pair is present at the respective Class 1E component identified in Table 2.7.2-2.
5.2 Valves listed in Table 2.7.2-2 fail as-is on loss of power.	Testing will be performed for the valves listed in Table 2.7.2-2 to fail as-is on loss of power.	Following loss of power, the valves listed in Table 2.7.2-2 fail as-is.

Table 2.7.2-3—Safety Chilled Water System Inspections, Tests, Analyses, and Acceptance Criteria (6 Sheets)

Commitment Wording	Inspection, Analysis or Test	Acceptance Criteria
<p>6.1 Components listed as Class 1E in Table 2.7.2-2 that are designated as harsh environment will perform the function listed in Table 2.7.2-1 in the environments that exist before and during the time required to perform their safety function.</p>	<p>Type tests, tests, analyses or a combination of tests and analyses will be performed to demonstrate the ability of the equipment listed for harsh environment in Table 2.7.2-2 to perform the function listed in Table 2.7.2-1 for the environmental conditions that could occur before and during a design basis accident.</p> <p>For equipment listed as qualified for harsh environment in Table 2.7.2-2 an inspection will be performed of the as-installed Class 1E equipment and the associated wiring, cables and terminations.</p>	<p>A report exists and concludes that the Class 1E equipment listed for harsh environment in Table 2.7.2-2 can perform the function listed in Table 2.7.2-1 before and during design basis accidents for the time required to perform the listed function.</p> <p>Inspection concludes the as-installed Class 1E equipment and the associated wiring, cables, and terminations as listed in Table 2.7.2-2 for harsh environment conform to the design.</p>
<p>7.1 The SCWS chiller refrigerating units shown on Figure 2.7.2-1, have the capacity to provide chilled water at the temperature to support the heat removal requirements of each user</p>	<p>Tests and analyses will be performed to demonstrate the capability of the SCWS chiller refrigerating units to provide chilled water at a temperature to support the heat removal requirements of all users.</p>	<p>A report exists and concludes that the SCWS chiller refrigerating units have the capacity to provide chilled water at the required temperature.</p>
<p>7.2 The pumps listed in Table 2.7.2-1 have sufficient NPSHA.</p>	<p>Testing and analyses will be performed to verify adequate NPSHA for pumps listed in Table 2.7.2-1.</p>	<p>A report exists and concludes that the pumps listed in Table 2.7.2-1 have sufficient NPSHA.</p>

**Table 2.7.2-3—Safety Chilled Water System
Inspections, Tests, Analyses, and Acceptance
Criteria (6 Sheets)**

Commitment Wording	Inspection, Analysis or Test	Acceptance Criteria
<p>7.3 The SCWS delivers water to required safety-related HVAC system cooling coils of the MCR (CRACS), the electrical division rooms (SBVSE) in the Safeguard Buildings, safeguard building controlled-area ventilation system (SBVS), fuel building ventilation system (FBVS), and cooling of the LHSI (SIS/RHRS) pump seals and motors in divisions 1 and 4 and within the required time for safety-related room and equipment cooling due to design basis events.</p>	<p>Tests and analyses will be performed to determine the SCWS delivery rate under design conditions.</p> <p>An integrated system test will be performed using a simulated SCWS actuation signal to verify the startup time of the SCWS.</p>	<p>A report exists and concludes that the SCWS delivers the design flowrate to the HVAC system cooling coils of the MCR (CRACS), the electrical division rooms (SBVSE) in the Safeguard Buildings, safeguard building controlled-area ventilation system (SBVS), fuel building ventilation system (FBVS), and cooling of the LHSI (SIS/RHRS) pump seals and motors in divisions 1 and 4.</p> <p>A report exists and concludes that the SCWS starts within the required time in response to a simulated SCWS actuation signal.</p>
<p>7.4 Class 1E valves listed in Table 2.7.2-2 perform the function listed in Table 2.7.2-1 under system design conditions.</p>	<p>Tests and analyses or a combination of tests and analyses will be performed to demonstrate the ability of the valves listed in Table 2.7.2-2 to change position as listed in Table 2.7.2-1 under system design conditions.</p>	<p>The as-installed valve changes position as listed in Table 2.7.2-1 under system design conditions.</p>
<p>7.5 The SCWS has provisions to allow full flow testing during plant operation.</p>	<p>Testing of flow of the SCWS through the recirculation loop back to the pump suction will be performed.</p>	<p>A report exists and concludes that the flow test line allows full system flow back to the recirculation loop back to the pump suction.</p>