2.7.8 Spray Deluge System

There are no Tier 1 entries for this system.

2.7.9 Demineralized Water Distribution System

There are no Tier 1 entries for this system.

2.7.10 Potable and Sanitary System

There are no Tier 1 entries for this system.

2.7.11 Essential Service Water System

1.0 Description

The essential service water system (ESWS) is a safety-related system that provides cooling water to the component cooling water system (CCWS) heat exchangers, the emergency diesel generator (EDG) heat exchangers, and the essential service water pump building ventilation system (ESWPBVS) room coolers under normal operating, shutdown/cooldown, design basis events. The Ultimate Heat Sink (UHS) dissipates heat rejected from the ESW during normal operation and post accident shutdown.

The ESWS and UHS provide the following safety-related functions:

- The ESWS provides the capability to transfer heat from CCWS and EDG to the environment following an anticipated operational occurrence (AOO) or postulated accident.
- The ESWS provides continued heat transfer from the fuel pool cooling system (FPCPS) via the CCWS as long as any fuel assemblies are in the spent fuel storage pool located outside containment.
- The UHS provides heat removal from the ESWS during normal operation and accident conditions, and transfers that energy to the environment.
- Isolation valves in the ESW emergency makeup, the normal makeup, and the blowdown system flow paths provide automatic isolation of the tower basins under DBA conditions to prevent loss of tower water inventory.
- Each UHS cooling tower basin is sized to contain sufficient water to allow for 72 hours of ESW train operation under DBE conditions without addition of makeup water. The water level in the basin at the end of the 72 hour period is sufficient to meet pump minimum suction head (NPSH) requirements.
- After 72 hours have elapsed since the initiation of design basis event, the ESW emergency makeup water system provides water to the ESW system to replenish cooling water lost to evaporation, drift, blowdown and other losses in order to ensure cooling tower basin water levels remain within established limits under DBE conditions.
- The site specific ESW emergency makeup water system will provide this makeup water for at least 27 days following the initial 72 hour post-accident period (balance of 30 day scenario).

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

- The ESWS provides the cooling of the system users during all normal plant operating conditions.
- 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 and UHS is as shown in Figure 2.7.11-1—Essential Service Water System Functional Arrangement.

2.2 The location of the ESWS equipment is as listed in Table 2.7.11-1—Essential Service Water System Equipment Mechanical Design.

2.3 Physical separation exists between divisions of the ESWS.

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 conditions ranging from normal operating to design-basis accident conditions.

3.2 Check valves listed in Table 2.7.11-1 will function as listed in Table 2.7.11-1.

3.3 Deleted.

3.4 Components identified as Seismic Category I in Table 2.7.11-1 can withstand seismic design basis loads without a loss of the function listed in Table 2.7.11-1.

3.5 Components listed in Table 2.7.11-1 as ASME Code Section III are designed in accordance with ASME Code Section III requirements.

3.6 Components listed in Table 2.7.11-1 as ASME Code Section III are fabricated in accordance with ASME Code Section III requirements.

3.7 Pressure boundary welds on components listed in Table 2.7.11-1 as ASME Code Section III are in accordance with ASME Code Section III requirements.

3.8 Components listed in Table 2.7.11-1 as ASME Code Section III retain pressure boundary integrity at design pressure.

3.9 Deleted.

3.10 Deleted.

3.11 Deleted.

3.12 ESWS piping shown as ASME Code Section III on Figure 2.7.11-1 is designed in accordance with ASME Code Section III requirements.

3.13 ESWS piping shown as ASME Code Section III on Figure 2.7.11-1 is installed in accordance with an ASME Code Section III Design Report.

3.14 Pressure boundary welds in ESWS piping shown as ASME Code Section III on Figure 2.7.11-1 are in accordance with ASME Code Section III.

3.15 ESWS piping shown as ASME Code Section III on Figure 2.7.11-1 retains pressure boundary integrity at design pressure.

3.16 ESWS piping shown as ASME Code Section III on Figure 2.7.11-1 is installed and inspected in accordance with ASME Code Section III requirements.

3.17 Components listed in Table 2.7.11-1 as ASME Code Section III are installed in accordance with ASME Code Section III requirements.

3.18 The UHS fans are capable of withstanding the effects of tornado including differential pressure effects, overspeed, and the impact of differential pressure effects on other equipment located within the cooling tower structure (e.g., capability to function, potential to become missile/debris hazard).

4.0 I&C Design Features, Displays and Controls

4.1 Displays listed in Table 2.7.11-2— Essential Service Water System Equipment I&C and Electrical Design are retrievable in the main control room (MCR) and the remote shutdown station (RSS) as listed in Table 2.7.11-2.

4.2 The ESWS equipment controls are provided in the MCR and the RSS as listed in Table 2.7.11-2.

4.3 Equipment listed as being controlled by a priority and actuator control system (PACS) module in Table 2.7.11-2 responds to the state requested by a test signal.

4.4 If one ESWS pump (30PEB10/20/30/40 AP001) fails during normal operation, a switchover to the other ESWS train is carried out automatically for the entire cooling train and is initiated by the CCWS Switchover sequence.

4.5 A spurious closure of the ESWS pump discharge valve (30PEB10/20/30/40 AA005) results in a switchover to the other ESWS train automatically for the entire cooling train and is initiated by the CCWS Switchover sequence.

4.6 Deleted.

4.7 Deleted.

5.0 Electrical Power Design Features

5.1 The components designated as Class 1E in Table 2.7.11-2 are powered from the Class 1E division as listed in Table 2.7.11-2 in a normal or alternate feed condition.

5.2 Valves listed in Table 2.7.11-2 fail as-is on loss of power.

5.3 Deleted.

5.4 Items identified in Table 2.7.11-2 as "Dedicated" ESWS motor-operated components (including Division 4 cooling tower fans) are capable of being supplied by a SBODG.

6.0 Environmental Qualifications

6.1 Deleted.

7.0 Equipment and System Performance

7.1 The ESWS UHS as listed in Table 2.7.11-1 has the capacity to remove the total Max Heat Load from the CCWS and EDG heat exchangers, and the ESWPBVS room cooler, and the ESW pump mechanical work.

7.2 The pumps listed in Table 2.7.11-1 have sufficient net positive suction head available (NPSHA).

7.3 Class 1E valves listed in Table 2.7.11-2 can perform the function listed in Table 2.7.11-1 under system operating conditions.

7.4 The ESWS provides for flow testing of the ESWS pumps during plant operation.

7.5 Deleted.

7.6 The ESWS delivers water to the CCWS and EDG heat exchangers and the ESWPBVS room cooler.

7.7 The ESWS debris filters listed in Table 2.7.11-1 function to backwash upon high differential pressure.

7.8 The inlet between the cooling tower basin and pump intake structure has a coarse and a fine debris screen for each ESW pump.

7.9 The UHS cooling towers are capable of removing the design basis heat load without exceeding the maximum specified temperature limit for ESWS.

7.10 The UHS cooling towers are capable of removing the design basis heat load without water level dropping below the minimum required level in the cooling towers.

7.11 The cooling tower basin is sized for the minimum basin water volume.

8.0 Interface Requirements

8.1 The site specific emergency makeup water system provides ≥300 gpm makeup water to each ESW cooling tower basin to maintain the minimum basin water level.

8.2 The site-specific emergency makeup water system provides water to each ESW cooling tower basin at a temperature below the maximum ESWS supply temperature of 95°F.

8.3 The site-specific emergency makeup water system is designed in accordance with ASME Section III, Class 3 safety-related SSC and Seismic Category I requirements.

8.4 The site-specific emergency makeup water system provides a means to limit corrosion, scaling, and biological contaminants in order to minimize component fouling for a minimum of 30 days post-DBA.

9.0 Inspections, Tests, Analyses, and Acceptance Criteria

Table 2.7.11-3 lists the ESWS ITAAC.

Table 2.7.11-1—Essential Service Water System Equipment Mechanical Design (9 Sheets)

Description	Tag Number (1)	Location	ASME Code Section III	Function	Seismic Category
ESWS Pump Division 1	30PEB10AP001	ESW Pump Structure Division 1	Yes	Run	I
Recirc Isolation Valve Division 1	30PEB10AA002	ESW Pump Structure Division 1	Yes	Close	I
Emer. Blowdown Isolation Valve Division 1	30PEB10AA003	ESW Pump Structure Division 1	Yes	Close	I
Filter Emergency Blowdown Isolation Valve Division 1	30 PEB10 AA004	ESW Pump Structure Division 1	Yes	Open	I
Filter Emergency Blowdown Isolation Valve Division 2	30 PEB20 AA004	ESW Pump Structure Division 2	Yes	Open	I
Filter Emergency Blowdown Isolation Valve Division 3	30 PEB30 AA004	ESW Pump Structure Division 3	Yes	Open	I
Filter Emergency Blowdown Isolation Valve Division 4	30 PEB40 AA004	ESW Pump Structure Division 4	Yes	Open	I
Pump Discharge Isolation Valve Division 1	30PEB10AA005	ESW Pump Structure Division 1	Yes	Open	I
Filter Blowdown Isolation Valve Division 1	30PEB10AA015	ESW Pump Structure Division 1	Yes	Close	I
Blowdown Isolation Valve Division 1	30PEB10AA016	ESW Pump Structure Division 1	Yes	Close	I

Table 2.7.11-1—Essential Service Water System Equipment Mechanical Design (9 Sheets)

Description	Tag Number (1)	Location	ASME Code Section III	Function	Seismic Category
Pump Discharge Check Valve Division 1	30PEB10AA204	ESW Pump Structure Division 1	Yes	Open	I
ESW Debris Filter Division 1	30PEB10AT002	ESW Pump Structure Division 1	Yes	Backwash	I
Tower Isolation Valve Division 1	30PED10AA010	ESW Pump Structure Division 1	Yes	Open	I
Tower Bypass Isolation Valve Division 1	30PED10AA011	ESW Pump Structure Division 1	Yes	Close	I
Makeup Water Isolation Valve Division 1	30PED10AA019	ESW Pump Structure Division 1	Yes	Close	I
Emer. Makeup Water Isolation Valve Division 1	30PED10AA021	ESW Pump Structure Division 1	Yes	Open	I
Tower Keep-Fill Isolation Valve Division 1	30PED10AA024	ESW Pump Structure Division 1	Yes	Close	I
Tower Keep-Fill Check Valve Division 1	30PED10AA025	ESW Pump Structure Division 1	Yes	Close	I
Makeup Water Check Valve Division 1	30PED10AA220	ESW Pump Structure Division 1	Yes	Close	I
ESWS Pump Division 2	30PEB20AP001	ESW Pump Structure Division 2	Yes	Run	I
Recirc Isolation Valve Division 2	30PEB20AA002	ESW Pump Structure Division 2	Yes	Close	I

Table 2.7.11-1—Essential Service Water System Equipment Mechanical Design (9 Sheets)

Description	Tag Number (1)	Location	ASME Code Section III	Function	Seismic Category
Emer. Blowdown Isolation Valve Division 2	30PEB20AA003	ESW Pump Structure Division 2	Yes	Close	I
Pump Discharge Isolation Valve Division 2	30PEB20AA005	ESW Pump Structure Division 2	Yes	Open	I
Filter Blowdown Isolation Valve Division 2	30PEB20AA015	ESW Pump Structure Division 2	Yes	Close	I
Blowdown Isolation Valve Division 2	30PEB20AA016	ESW Pump Structure Division 2	Yes	Close	I
Pump Discharge Check Valve Division 2	30PEB20AA204	ESW Pump Structure Division 2	Yes	Open	I
ESW Debris Filter Division 2	30PEB20AT002	ESW Pump Structure Division 2	Yes	Backwash	I
Tower Isolation Valve Division 2	30PED20AA010	ESW Pump Structure Division 2	Yes	Open	I
Tower Bypass Isolation Valve Division 2	30PED20AA011	ESW Pump Structure Division 2	Yes	Close	I
Makeup Water Isolation Valve Division 2	30PED20AA019	ESW Pump Structure Division 2	Yes	Close	I
Emer. Makeup Water Isolation Valve Division 2	30PED20AA021	ESW Pump Structure Division 2	Yes	Open	I

Table 2.7.11-1—Essential Service Water System Equipment Mechanical Design (9 Sheets)

Description	Tag Number (1)	Location	ASME Code Section III	Function	Seismic Category
Tower Keep-Fill Isolation Valve Division 2	30PED20AA024	ESW Pump Structure Division 2	Yes	Close	I
Tower Keep-Fill Check Valve Division 2	30PED20AA025	ESW Pump Structure Division 2	Yes	Close	I
Makeup Water Check Valve Division 2	30PED20AA220	ESW Pump Structure Division 2	Yes	Close	I
ESWS Pump Division 3	30PEB30AP001	ESW Pump Structure Division 3	Yes	Run	I
Recirc Isolation Valve Division 3	30PEB30AA002	ESW Pump Structure Division 3	Yes	Close	I
Emer. Blowdown Isolation Valve Division 3	30PEB30AA003	ESW Pump Structure Division 3	Yes	Close	I
Pump Discharge Isolation Valve Division 3	30PEB30AA005	ESW Pump Structure Division 3	Yes	Open	I
Filter Blowdown Isolation Valve Division 3	30PEB30AA015	ESW Pump Structure Division 3	Yes	Close	I
Blowdown Isolation Valve Division 3	30PEB30AA016	ESW Pump Structure Division 3	Yes	Close	I
Pump Discharge Check Valve Division 3	30PEB30AA204	ESW Pump Structure Division 3	Yes	Open	I

Table 2.7.11-1—Essential Service Water System Equipment Mechanical Design (9 Sheets)

Description	Tag Number (1)	Location	ASME Code Section III	Function	Seismic Category
ESW Debris Filter Division 3	30PEB30AT002	ESW Pump Structure Division 3	Yes	Backwash	I
Tower Isolation Valve Division 3	30PED30AA010	ESW Pump Structure Division 3	Yes	Open	I
Tower Bypass Isolation Valve Division 3	30PED30AA011	ESW Pump Structure Division 3	Yes	Close	I
Makeup Water Isolation Valve Division 3	30PED30AA019	ESW Pump Structure Division 3	Yes	Close	I
Emer. Makeup Water Isolation Valve Division 3	30PED30AA021	ESW Pump Structure Division 3	Yes	Open	I
Tower Keep-Fill Isolation Valve Division 3	30PED30AA024	ESW Pump Structure Division 3	Yes	Close	I
Tower Keep-Fill Check Valve Division 3	30PED30AA025	ESW Pump Structure Division 3	Yes	Close	I
Makeup Water Check Valve Division 3	30PED30AA220	ESW Pump Structure Division 3	Yes	Close	I
ESWS Pump Division 4	30PEB40AP001	ESW Pump Structure Division 4	Yes	Run	I
Recirc Isolation Valve Division 4	30PEB40AA002	ESW Pump Structure Division 4	Yes	Close	I

Table 2.7.11-1—Essential Service Water System Equipment Mechanical Design (9 Sheets)

Description	Tag Number (1)	Location	ASME Code Section III	Function	Seismic Category
Emer. Blowdown Isolation Valve Division 4	30PEB40AA003	ESW Pump Structure Division 4	Yes	Close	I
Pump Discharge Isolation Valve Division 4	30PEB40AA005	ESW Pump Structure Division 4	Yes	Open	I
Filter Blowdown Isolation Valve Division 4	30PEB40AA015	ESW Pump Structure Division 4	Yes	Close	I
Blowdown Isolation Valve Division 4	30PEB40AA016	ESW Pump Structure Division 4	Yes	Close	I
Pump Discharge Check Valve Division 4	30PEB40AA204	ESW Pump Structure Division 4	Yes	Open	I
Dedicated System Check Valve Upstr 30saq40 Ac001 Division 4	30PEB41AA011	ESW Pump Structure Division 4	Yes	Open	I
ESW Debris Filter Division 4	30PEB40AT002	ESW Pump Structure Division 4	Yes	Backwash	I
Tower Isolation Valve Division 4	30PED40AA010	ESW Pump Structure Division 4	Yes	Open	I
Tower Bypass Isolation Valve Division 4	30PED40AA011	ESW Pump Structure Division 4	Yes	Close	I

Table 2.7.11-1—Essential Service Water System Equipment Mechanical Design (9 Sheets)

Description	Tag Number (1)	Location	ASME Code Section III	Function	Seismic Category
Makeup Water Isolation Valve Division 4	30PED40AA019	ESW Pump Structure Division 4	Yes	Close	I
Emer. Makeup Water Isolation Valve Division 4	30PED40AA021	ESW Pump Structure Division 4	Yes	Open	I
Tower Keep-Fill Isolation Valve Division 4	30PED40AA024	ESW Pump Structure Division 4	Yes	Close	I
Tower Keep-Fill Check Valve Division 4	30PED40AA025	ESW Pump Structure Division 4	Yes	Close	I
Makeup Water Check Valve Division 4	30PED40AA220	ESW Pump Structure Division 4	Yes	Close	I
Dedicated Isolation Valve Upstr KAA80AC001	30PEB80AA003	ESW Dedicated Division Safeguard Building 4	No	Open	N/A
Dedicated Isolation Valve Dnstr KAA80AC001	30PEB80AA004	ESW Dedicated Division Safeguard Building 4	Yes	Open	I
Dedicated ESW Pump	30PEB80AP001	ESW Pump Structure Division 4	No	Run	N/A
Dedicated Filter Blowdown Isolation Valve	30PEB80AA009	ESW Pump Structure Division 4	No	Close	N/A
Dedicated Blowdown Isolation Valve	30PEB80AA016	ESW Pump Structure Division 4	No	Close	N/A

Table 2.7.11-1—Essential Service Water System Equipment Mechanical Design (9 Sheets)

Description	Tag Number (1)	Location	ASME Code Section III	Function	Seismic Category
Dedicated Recirc Isolation Valve	30PEB80AA015	ESW Pump Structure Division 4	No	Close	N/A
Dedicated Filter Blowdown Isolation Check Valve	30PEB80AA211	ESW Pump Structure Division 4	No	Close	N/A
Dedicated Pump Isolation Check Valve	30PEB80AA002	ESW Pump Structure Division 4	No	Open	N/A
Dedicated ESW Debris Filter	30PEB80AT001	ESW Pump Structure Division 4	No	Backwash	N/A
Cooling Tower Fan	30PED10AN001	ESW Cooling Tower Division 1	No	Run	I
Cooling Tower Fan	30PED10AN002	ESW Cooling Tower Division 1	No	Run	I
Cooling Tower Fan	30PED20AN001	ESW Cooling Tower Division 2	No	Run	I
Cooling Tower Fan	30PED20AN002	ESW Cooling Tower Division 2	No	Run	I
Cooling Tower Fan	30PED30AN001	ESW Cooling Tower Division 3	No	Run	I
Cooling Tower Fan	30PED30AN002	ESW Cooling Tower Division 3	No	Run	I
Cooling Tower Fan	30PED40AN001	ESW Cooling Tower Division 4	No	Run	I
Cooling Tower Fan	30PED40AN002	ESW Cooling Tower Division 4	No	Run	I

Table 2.7.11-1—Essential Service Water System Equipment Mechanical Design (9 Sheets)

Description	Tag Number (1)	Location	ASME Code Section III	Function	Seismic Category
Mechanical Draft Cooling Tower Train 1 (excluding fans)	30PED10AC001	ESW Cooling Tower Structure 1	Yes	Heat Transfer Device	I
Mechanical Draft Cooling Tower Train 2 (excluding fans)	30PED20AC001	ESW Cooling Tower Structure 2	Yes	Heat Transfer Device	I
Mechanical Draft Cooling Tower Train 3 (excluding fans)	30PED30AC001	ESW Cooling Tower Structure 3	Yes	Heat Transfer Device	I
Mechanical Draft Cooling Tower Train 4 (excluding fans)	30PED40AC001	ESW Cooling Tower Structure 4	Yes	Heat Transfer Device	I

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

Table 2.7.11-2—Essential Service Water System Equipment I&C and Electrical Design
(7 Sheets)

Description	Tag Number (1)	Location	IEEE Class 1E (2)(3)	PACS	MCR/RSS Displays	MCR/RSS Controls
ESWS Pump Division 1	30PEB10AP001	ESW Pump Structure Division 1	Division 1	Yes	On-Off/ On-Off	Start-Stop/ Start-Stop
Recirc Isolation Valve Division 1	30PEB10AA002	ESW Pump Structure Division 1	Division 1	Yes	Pos/N/A	Open-Close/N/A
Emer. Blowdown Isolation Valve Division 1	30PEB10AA003	ESW Pump Structure Division 1	Division 1	Yes	Pos/N/A	Open-Close/N/A
Filter Emergency Blowdown Isolation Valve Division 1	30 PEB10 AA004	ESW Pump Structure Division 1	Division 1	Yes	Pos/NA	Open-Close/N/A
Filter Emergency Blowdown Isolation Valve Division 2	30 PEB20 AA004	ESW Pump Structure Division 2	Division 2	Yes	Pos/NA	Open-Close/N/A
Filter Emergency Blowdown Isolation Valve Division 3	30 PEB30 AA004	ESW Pump Structure Division 3	Division 3	Yes	Pos/NA	Open-Close/N/A
Filter Emergency Blowdown Isolation Valve Division 4	30 PEB40 AA004	ESW Pump Structure Division 4	Division 4	Yes	Pos/NA	Open-Close/N/A
Pump Discharge Isolation Valve Division 1	30PEB10AA005	ESW Pump Structure Division 1	Division 1	Yes	Pos/Pos	Open-Close/Open-Close
Filter Blowdown Isolation Valve Division 1	30PEB10AA015	ESW Pump Structure Division 1	Division 1	Yes	Pos/N/A	Open-Close/N/A

Table 2.7.11-2—Essential Service Water System Equipment I&C and Electrical Design
(7 Sheets)

Description	Tag Number (1)	Location	IEEE Class 1E (2)(3)	PACS	MCR/RSS Displays	MCR/RSS Controls
Blowdown Isolation Valve Division 1	30PEB10AA016	ESW Pump Structure Division 1	Division 1	Yes	Pos/N/A	Open-Close/N/A
ESW Debris Filter Division 1	30PEB10AT002	ESW Pump Structure Division 1	Division 1	Yes	On-Off/ On-Off	Start-Stop/ Start-Stop
Tower Isolation Valve Division 1	30PED10AA010	ESW Pump Structure Division 1	Division 1	Yes	Pos/N/A	Open-Close/N/A
Tower Bypass Isolation Valve Division 1	30PED10AA011	ESW Pump Structure Division 1	Division 1	Yes	Pos/N/A	Open-Close/N/A
Makeup Water Isolation Valve Division 1	30PED10AA019	ESW Pump Structure Division 1	Division 1	Yes	Pos/N/A	Open-Close/N/A
Emer. Makeup Water Isolation Valve Division 1	30PED10AA021	ESW Pump Structure Division 1	Division 1	Yes	Pos/N/A	Open-Close/N/A
ESWS Pump Division 2	30PEB20AP001	ESW Pump Structure Division 2	Division 2	Yes	On-Off/ On-Off	Start-Stop/ Start-Stop
Recirc Isolation Valve Division 2	30PEB20AA002	ESW Pump Structure Division 2	Division 2	Yes	Pos/N/A	Open-Close/N/A
Emer. Blowdown Isolation Valve Division 2	30PEB20AA003	ESW Pump Structure Division 2	Division 2	Yes	Pos/N/A	Open-Close/N/A
Pump Discharge Isolation Valve Division 2	30PEB20AA005	ESW Pump Structure Division 2	Division 2	Yes	Pos/Pos	Open-Close/Open-Close

Table 2.7.11-2—Essential Service Water System Equipment I&C and Electrical Design
(7 Sheets)

Description	Tag Number (1)	Location	IEEE Class 1E (2)(3)	PACS	MCR/RSS Displays	MCR/RSS Controls
Filter Blowdown Isolation Valve Division 2	30PEB20AA015	ESW Pump Structure Division 2	Division 2	Yes	Pos/N/A	Open-Close/N/A
Blowdown Isolation Valve Division 2	30PEB20AA016	ESW Pump Structure Division 2	Division 2	Yes	Pos/N/A	Open-Close/N/A
ESW Debris Filter Division 2	30PEB20AT002	ESW Pump Structure Division 2	Division 2	Yes	On-Off/ On-Off	Start-Stop/ Start-Stop
Tower Isolation Valve Division 2	30PED20AA010	ESW Pump Structure Division 2	Division 2	Yes	Pos/N/A	Open-Close/N/A
Tower Bypass Isolation Valve Division 2	30PED20AA011	ESW Pump Structure Division 2	Division 2	Yes	Pos/N/A	Open-Close/N/A
Makeup Water Isolation Valve Division 2	30PED20AA019	ESW Pump Structure Division 2	Division 2	Yes	Pos/N/A	Open-Close/N/A
Emer. Makeup Water Isolation Valve Division 2	30PED20AA021	ESW Pump Structure Division 2	Division 2	Yes	Pos/N/A	Open-Close/N/A
ESWS Pump Division 3	30PEB30AP001	ESW Pump Structure Division 3	Division 3	Yes	On-Off/ On-Off	Start-Stop/ Start-Stop
Recirc Isolation Valve Division 3	30PEB30AA002	ESW Pump Structure Division 3	Division 3	Yes	Pos/N/A	Open-Close/N/A
Emer. Blowdown Isolation Valve Division 3	30PEB30AA003	ESW Pump Structure Division 3	Division 3	Yes	Pos/N/A	Open-Close/N/A

Table 2.7.11-2—Essential Service Water System Equipment I&C and Electrical Design
(7 Sheets)

Description	Tag Number (1)	Location	IEEE Class 1E (2)(3)	PACS	MCR/RSS Displays	MCR/RSS Controls
Pump Discharge Isolation Valve Division 3	30PEB30AA005	ESW Pump Structure Division 3	Division 3	Yes	Pos/Pos	Open-Close/Open-Close
Filter Blowdown Isolation Valve Division 3	30PEB30AA015	ESW Pump Structure Division 3	Division 3	Yes	Pos/N/A	Open-Close/N/A
Blowdown Isolation Valve Division 3	30PEB30AA016	ESW Pump Structure Division 3	Division 3	Yes	Pos/N/A	Open-Close/N/A
ESW Debris Filter Division 3	30PEB30AT002	ESW Pump Structure Division 3	Division 3	Yes	On-Off/ On-Off	Start-Stop/ Start-Stop
Tower Isolation Valve Division 3	30PED30AA010	ESW Pump Structure Division 3	Division 3	Yes	Pos/N/A	Open-Close/N/A
Tower Bypass Isolation Valve Division 3	30PED30AA011	ESW Pump Structure Division 3	Division 3	Yes	Pos/N/A	Open-Close/N/A
Makeup Water Isolation Valve Division 3	30PED30AA019	ESW Pump Structure Division 3	Division 3	Yes	Pos/N/A	Open-Close/N/A
Emer. Makeup Water Isolation Valve Division 3	30PED30AA021	ESW Pump Structure Division 3	Division 3	Yes	Pos/N/A	Open-Close/N/A
ESWS Pump Division 4	30PEB40AP001	ESW Pump Structure Division 4	Division 4	Yes	On-Off/ On-Off	Start-Stop/ Start-Stop
Recirc Isolation Valve Division 4	30PEB40AA002	ESW Pump Structure Division 4	Division 4	Yes	Pos/N/A	Open-Close/N/A

Table 2.7.11-2—Essential Service Water System Equipment I&C and Electrical Design
(7 Sheets)

Description	Tag Number (1)	Location	IEEE Class 1E (2)(3)	PACS	MCR/RSS Displays	MCR/RSS Controls
Emer. Blowdown Isolation Valve Division 4	30PEB40AA003	ESW Pump Structure Division 4	Division 4	Yes	Pos/N/A	Open-Close/N/A
Pump Discharge Isolation Valve Division 4	30PEB40AA005	ESW Pump Structure Division 4	Division 4	Yes	Pos/Pos	Open-Close/Open-Close
Filter Blowdown Isolation Valve Division 4	30PEB40AA015	ESW Pump Structure Division 4	Division 4	Yes	Pos/N/A	Open-Close/N/A
Blowdown Isolation Valve Division 4	30PEB40AA016	ESW Pump Structure Division 4	Division 4	Yes	Pos/N/A	Open-Close/N/A
ESW Debris Filter Division 4	30PEB40AT002	ESW Pump Structure Division 4	Division 4	Yes	On-Off/ On-Off	Start-Stop/ Start-Stop
Tower Isolation Valve Division 4	30PED40AA010	ESW Pump Structure Division 4	Division 4	Yes	Pos/N/A	Open-Close/N/A
Tower Bypass Isolation Valve Division 4	30PED40AA011	ESW Pump Structure Division 4	Division 4	Yes	Pos/N/A	Open-Close/N/A
Makeup Water Isolation Valve Division 4	30PED40AA019	ESW Pump Structure Division 4	Division 4	Yes	Pos/N/A	Open-Close/N/A
Emer. Makeup Water Isolation Valve Division 4	30PED40AA021	ESW Pump Structure Division 4	Division 4	Yes	Pos/N/A	Open-Close/N/A

Table 2.7.11-2—Essential Service Water System Equipment I&C and Electrical Design
(7 Sheets)

Description	Tag Number (1)	Location	IEEE Class 1E (2)(3)	PACS	MCR/RSS Displays	MCR/RSS Controls
Dedicated ESW Pump	30PEB80AP001	ESW Pump Structure Division 4	Division 4	Yes	On-Off/ On-Off	Start-Stop/ Start-Stop
Dedicated Blowdown Isolation Valve	30PEB80AA009	ESW Pump Structure Division 4	Division 4	Yes	Pos/N/A	Open-Close/N/A
Dedicated Filter Blowdown Isolation Valve	30PEB80AA016	ESW Pump Structure Division 4	Division 4	Yes	Pos/N/A	Open-Close/N/A
Dedicated Recirc Isolation Valve	30PEB80AA015	ESW Pump Structure Division 4	Division 4	Yes	Pos/N/A	Open-Close/N/A
Dedicated ESW Debris Filter	30PEB80AT001	ESW Pump Structure Division 4	Division 4	Yes	On-Off/ On-Off	Start-Stop/ Start-Stop
Cooling Tower Fan	30PED10AN001	ESW Cooling Tower, Division 1	Division 1	Yes	On-Off/ On-Off	Start-Stop/ Start-Stop
Cooling Tower Fan	30PED10AN002	ESW Cooling Tower, Division 1	Division 1	Yes	On-Off/ On-Off	Start-Stop/ Start-Stop
Cooling Tower Fan	30PED20AN001	ESW Cooling Tower, Division 2	Division 2	Yes	On-Off/ On-Off	Start-Stop/ Start-Stop
Cooling Tower Fan	30PED20AN002	ESW Cooling Tower, Division 2	Division 2	Yes	On-Off/ On-Off	Start-Stop/ Start-Stop
Cooling Tower Fan	30PED30AN001	ESW Cooling Tower, Division 3	Division 3	Yes	On-Off/ On-Off	Start-Stop/ Start-Stop
Cooling Tower Fan	30PED30AN002	ESW Cooling Tower, Division 3	Division 3	Yes	On-Off/ On-Off	Start-Stop/ Start-Stop

Table 2.7.11-2—Essential Service Water System Equipment I&C and Electrical Design
(7 Sheets)

Description	Tag Number (1)	Location	IEEE Class 1E (2)(3)	PACS	MCR/RSS Displays	MCR/RSS Controls
Cooling Tower Fan	30PED40AN001	ESW Cooling Tower, Division 4	Division 4	Yes	On-Off/ On-Off	Start-Stop/ Start-Stop
Cooling Tower Fan	30PED40AN002	ESW Cooling Tower, Division 4	Division 4	Yes	On-Off/ On-Off	Start-Stop/ Start-Stop

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.

3) "Dedicated" components are non-Class 1E components but are powered from the Class 1E Division as shown.

Table 2.7.11-3—Essential Service Water System ITAAC
(10 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	The functional arrangement of the ESWS is as shown on Figure 2.7.11-1.	Inspections of the as-built system as shown on Figure 2.7.11-1 will be conducted	The as-built ESWS conforms to the functional arrangement as shown on Figure 2.7.11-1.
2.2	The location of the ESWS equipment is as listed in Table 2.7.11-1.	An inspection will be performed of the location of the equipment listed in Table 2.7.11-1.	The equipment listed in Table 2.7.11-1 is located as listed in Table 2.7.11-1.
2.3	Physical separation exists between divisions of the ESWS.	An inspection will be performed to verify that the divisions of the ESWS are located in separate ESW and SB buildings.	The divisions of the ESWS system are located in separate ESW and SB 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 conditions ranging from normal operating to design-basis accident conditions.	Tests or type tests of the pumps and valves listed in Table 2.7.11-1 will be conducted to demonstrate that the pumps and valves function under conditions ranging from normal operating to design-basis accident conditions.	A test report exists and concludes that the pumps and valves listed in Table 2.7.11-1 function under conditions ranging from normal operating to design-basis accident conditions.
3.2	Check valves listed in Table 2.7.11-1 will function as listed in Table 2.7.11-1.	Tests will be performed for the operation of the check valves listed in Table 2.7.11-1.	The check valves listed in Table 2.7.11-1 perform the functions listed in Table 2.7.11-1.
3.3	Deleted.	Deleted.	Deleted.

Table 2.7.11-3—Essential Service Water System ITAAC
(10 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
3.4	Components identified as Seismic Category I in Table 2.7.11-1 can withstand seismic design basis loads without a loss of the function listed in Table 2.7.11-1.	a. Type tests, analyses, or a combination of type tests and analyses will be performed on the components identified as Seismic Category I in Table 2.7.11-1 using analytical assumptions, or under conditions, which bound the Seismic Category I design requirements. b. Inspections will be performed of the Seismic Category I components identified in Table 2.7.11-1 to verify that the components, including anchorage, are installed as specified on the construction drawings and deviations have been reconciled to the seismic qualification reports (SQDP, EQDP, or analyses).	a. Seismic qualification reports (SQDP, EQDP, or analyses) exist and conclude that the Seismic Category I components identified in Table 2.7.11-1 can withstand seismic design basis loads without a loss of the function listed in Table 2.7.11-1 including the time required to perform the listed function. b. Inspection reports exist and conclude that the Seismic Category I components identified in Table 2.7.11-1, including anchorage, are installed as specified on the construction drawings and deviations have been reconciled to the seismic qualification reports (SQDP, EQDP, or analyses).
3.5	Components listed in Table 2.7.11-1 as ASME Code Section III are designed in accordance with ASME Code Section III requirements.	Inspections of ASME Code Section III Design Reports and associated reference documents will be performed.	ASME Code Section III Design Reports (NCA-3550) exist and conclude that components listed as ASME Code Section III in Table 2.7.11-1 comply with ASME Code Section III requirements.
3.6	Components listed in Table 2.7.11-1 as ASME Code Section III are fabricated in accordance with ASME Code Section III requirements.	An analysis will be performed to verify that deviations to the component design reports (NCA-3550) have been reconciled.	ASME Code Section III Design Reports (NCA-3550) exist and conclude that components listed as ASME Code Section III in Table 2.7.11-1 comply with ASME Code Section III requirements and any deviations to the design report have been reconciled.

Table 2.7.11-3—Essential Service Water System ITAAC
(10 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
3.7	Pressure boundary welds on components listed in Table 2.7.11-1 as ASME Code Section III are in accordance with ASME Code Section III requirements.	Inspections of pressure boundary welds will be performed to verify that welding is performed in accordance with ASME Code Section III requirements.	For components listed as ASME Code Section III in Table 2.7.11-1, ASME Code Section III Data Reports (NCA-8000) exist and conclude that pressure boundary welding has been performed in accordance with ASME Code Section III.
3.8	Components listed in Table 2.7.11-1 as ASME Code Section III retain pressure boundary integrity at design pressure.	Hydrostatic tests will be performed on the components.	For components listed as ASME Code Section III in Table 2.7.11-1, ASME Code Section III Data Reports exist and conclude that hydrostatic test results comply with ASME Code Section III requirements.
3.9	Deleted.	Deleted.	Deleted.
3.10	Deleted.	Deleted.	Deleted.
3.11	Deleted.	Deleted.	Deleted.
3.12	ESWS piping shown as ASME Code Section III on Figure 2.7.11-1 is designed in accordance with ASME Code Section III requirements.	Inspections of the ASME Code Section III Design Reports (NCA-3550) and associated reference documents will be performed. **{{DAC}}**	ASME Code Section III Design Reports (NCA-3550) exist and conclude that ESWS piping shown as ASME Code Section III on Figure 2.7.11-1 complies with ASME Code Section III requirements. **{{DAC}}**
3.13	ESWS piping shown as ASME Code Section III on Figure 2.7.11-1 is installed in accordance with an ASME Code Section III Design Report.	Analyses to reconcile as-built deviations to the ASME Code Design Reports (NCA-3550) will be performed.	For ESWS piping shown as ASME Code Section III on Figure 2.7.11-1, ASME Code Data Reports (N-5) exist and conclude that design reconciliation (NCA-3554) has been completed in accordance with the ASME Code Section III for the as-built system. The report(s) document the as-built condition.

Table 2.7.11-3—Essential Service Water System ITAAC
(10 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
3.14	Pressure boundary welds in ESWS piping shown as ASME Code Section III on Figure 2.7.11-1 are in accordance with ASME Code Section III.	Inspections of pressure boundary welds verify that welding is performed in accordance with ASME Code Section III requirements.	ASME Code Section III Data Reports exist and conclude that pressure boundary welding for ESWS piping shown as ASME Code Section III on Figure 2.7.11-1 has been performed in accordance with ASME Code Section III.
3.15	ESWS piping shown as ASME Code Section III on Figure 2.7.11-1 retains pressure boundary integrity at design pressure.	Hydrostatic tests will be performed on the as-built system.	For ESWS piping shown as ASME Code Section III on Figure 2.7.11-1, ASME Code Section III Data Reports exist and conclude that hydrostatic test results comply with ASME Code Section III requirements.
3.16	ESWS piping shown as ASME Code Section III on Figure 2.7.11-1 is installed and inspected in accordance with ASME Code Section III requirements.	An inspection of the as-built piping will be performed.	For ESWS piping shown as ASME Code Section III on Figure 2.7.11-1, N–5 Data Reports exist and conclude that installation and inspection are in accordance with ASME Code Section III requirements.
3.17	Components listed in Table 2.7.11-1 as ASME Code Section III are installed in accordance with ASME Code Section III requirements.	An inspection of ASME Code Data Reports will be performed.	ASME Code Section III N-5 Data Reports exist and conclude that components listed as ASME Code Section III in Table 2.7.11-1 have been installed in accordance with ASME Code Section III requirements.

Table 2.7.11-3—Essential Service Water System ITAAC
(10 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
3.18	The UHS fans are capable of withstanding the effects of tornado including differential pressure effects, overspeed, and the impact of differential pressure effects on other equipment located within the cooling tower structure (e.g., capability to function, potential to become missile/debris hazard).	a. Analyses will be performed to demonstrate that the UHS fans are capable of withstanding the effects of tornado including differential pressure effects, overspeed, and the impact of differential pressure effects on other equipment located within the cooling tower structure (e.g., capability to function, potential to become missile/debris hazard). b. Inspections will be performed of the UHS fans and other equipment located within the structure to verify that the components are installed as specified on the construction drawings, and deviations have been reconciled to the tornado analysis report.	a. A report exists and concludes that the UHS fans are capable of withstanding the effects of tornado including differential pressure effects, overspeed, and the impact of differential pressure effects on other equipment located within the cooling tower structure (e.g., capability to function, potential to become missile/debris hazard).. b. Inspection reports exist and conclude that the UHS fans and other equipment located within the cooling tower structure are installed as specified on the construction drawings, and deviations have been reconciled to the tornado analysis report.
4.1	Displays exist or can be retrieved in the MCR and the RSS as identified in Table 2.7.11-2.	Tests will be performed for the retrievability of the displays in the MCR or the RSS as listed in Table 2.7.11-2.	a. The displays listed in Table 2.7.11-2 as being retrieved in the MCR can be retrieved in the MCR. b. The displays listed in Table 2.7.11-2 as being retrieved in the RSS can be retrieved in the RSS.
4.2	Controls exist in the MCR and the RSS as identified in Table 2.7.11-2.	Tests will be performed for the existence of control signals from the MCR and the RSS to the equipment listed in Table 2.7.11-2.	a. The controls listed in Table 2.7.11-2 as being in the MCR exist in the MCR. b. The controls listed in Table 2.7.11-2 as being in the RSS exist in the RSS.

Table 2.7.11-3—Essential Service Water System ITAAC
(10 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
4.3	Equipment listed as being controlled by a PACS module in Table 2.7.11-2 responds to the state requested by a test signal.	A test will be performed using test signals.	Equipment listed as being controlled by a PACS module in Table 2.7.11-2 responds to the state requested by the test signal.
4.4	If one ESWS pump (30PEB10/20/30/40 AP001) fails during normal operation, a switchover to the other ESWS train is carried out automatically for the entire cooling train and is initiated by the CCWS Switchover sequence.	Tests will be performed using test signals to verify the interlock.	The following interlock responds as specified below when activated by a test signal: If one ESWS pump (30PEB10/20/30/40 AP001) fails during normal operation, a switchover to the other ESWS train is carried out automatically for the entire cooling train and is initiated by the CCWS Switchover sequence.
4.5	A spurious closure of the ESWS pump discharge valve (30PEB10/20/30/40 AA005) results in a switchover to the other ESWS train automatically for the entire cooling train and is initiated by the CCWS switchover sequence.	Tests will be performed using test signals to verify the interlock.	The following interlock responds as specified below when activated by a test signal: A spurious closure of the ESWS pump discharge valve (30PEB10/20/30/40 AA005) results in a switchover to the other ESWS train automatically for the entire cooling train and is initiated by the CCWS Switchover sequence.
4.6	Deleted.	Deleted.	Deleted.
4.7	Deleted.	Deleted.	Deleted.
5.1	The components designated as Class 1E in Table 2.7.11-2 are powered from the Class 1E division as listed in Table 2.7.11-2 in a normal or alternate feed condition.	a. Testing will be performed for components designated as Class 1E in Table 2.7.11-2 by providing a test signal in each normally aligned division.	a. The test signal provided in the normally aligned division is present at the respective Class 1E component identified in Table 2.7.11-2.

Table 2.7.11-3—Essential Service Water System ITAAC
(10 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
		b. Testing will be performed for components designated as Class 1E in Table 2.7.11-2 by providing a test signal in each division with the alternate feed aligned to the divisional pair.	b. 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 2.7.11-2.
5.2	Valves listed in Table 2.7.11-2 fail as-is on loss of power.	Testing will be performed for the valves listed in Table 2.7.11-2 to fail as-is on loss of power.	Following loss of power, the valves listed in Table 2.7.11-2 fail as-is.
5.3	Deleted.	Deleted.	Deleted.
5.4	Items identified in Table 2.7.11-2 as "Dedicated" ESWS motor-operated components (including Division 4 cooling tower fans) are capable of being supplied by a SBODG.	Testing will be performed for motor-operated components designated as "Dedicated" in Table 2.7.11-2 (including Division 4 cooling tower fans) by supplying electrical power from an SBODG.	"Dedicated" components identified in Table 2.7.11-2 (including Division 4 cooling tower fans) are capable of being supplied by an SBODG..
6.1	Deleted.	Deleted.	Deleted.
7.1	The ESWS UHS as listed in Table 2.7.11-1 has the capacity to remove the total Max Heat Load from the CCWS and EDG heat exchangers, the ESWPBVS room cooler, and the ESW pump mechanical work.	Initial tests of the UHS and inspection of a heat exchanger/cooler data report will be performed to demonstrate the capability of the ESWS UHS as listed in Table 2.7.11-1 to remove the total Max Heat Load from CCWS and EDG heat exchangers, the ESWPBVS room cooler, and the ESW pump mechanical work.	A report exists and concludes that the ESWS UHS has the capacity to remove the total Max Heat Load from the CCWS and EDG heat exchangers, the ESWPBVS room cooler, and the ESW pump mechanical work.
7.2	The pumps listed in Table 2.7.11-1 have sufficient NPSHA.	Testing and analyses will be performed to verify NPSHA for pumps listed in Table 2.7.11-1.	A report exists and concludes that the pumps listed in Table 2.7.11-1 have NPSHA that is greater than NPSHR at the maximum ESWS flow rate with consideration for minimum allowable cooling tower basin water level (as corrected to account for vortex effects and actual temperature and atmospheric conditions).

Table 2.7.11-3—Essential Service Water System ITAAC
(10 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
7.3	Class 1E valves listed in Table 2.7.11-2 perform the function listed in Table 2.7.11-1 under system operating conditions.	Tests and analyses or a combination of tests and analyses will be performed to demonstrate the ability of the valves listed in Table 2.7.11-2 to change position as listed in Table 2.7.11-1 under system operating conditions.	The valve changes position as listed Table 2.7.11-1 under system operating conditions.
7.4	The ESWS has provisions to allow flow testing of the ESWS pumps during plant operation.	Testing for flow of the ESWS pumps back to the ESW cooling tower basin will be performed.	The closed loop allows ESWS pump flow back to the ESW cooling tower basin.
7.5	Deleted.	Deleted.	Deleted.
7.6	The ESWS delivers water to the CCWS and EDG heat exchangers and the ESWPBVS room cooler.	a. Tests and inspection of a pump data report will be performed to verify the ESWS delivery rate to the CCWS and EDG heat exchangers and the ESWPBVS room cooler.	a. A report exists and concludes that the ESWS delivers water at ≥ the Normal Flow Rate for the ESW pump to the CCWS and EDG heat exchangers and the ESWPBVS room cooler.
		b. An integrated system test will be performed to verify the startup time of the ESWS.	b. The ESWS starts and delivers water to the CCWS and EDG heat exchangers at ≥ the Total Required ESW Flow for the heat exchangers within 120 seconds. A report exists and concludes that the ESWS delivers water to the ESWPBVS room cooler at ≥ the Total Required ESW Flow for the room cooler within 120 seconds.
7.7	The ESWS debris filters listed in Table 2.7.11-1 function to backwash upon high differential pressure.	Tests will be performed to verify the ESWS debris filters function to backwash on high differential pressure under system operating conditions.	The filters initiate backwash flow to filter blowdown.

Table 2.7.11-3—Essential Service Water System ITAAC
(10 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
7.8	The inlet between the cooling tower basin and pump intake structure has a coarse and a fine debris screen for each ESW pump.	a. An inspection will be performed for the existence of a coarse and a fine debris screen at the inlet between the cooling tower basin and pump intake structure for each ESW pump. b. An inspection will be performed to verify the maximum mesh grid opening of the debris screens.	a. A coarse and a fine debris screen exists at the inlet between the cooling tower basin and pump intake structure for each ESW pump. b. The coarse debris screen mesh is a maximum grid opening of 2.x 2 inches. The fine debris screen mesh is a maximum grid opening of 0.5 x 0.5 inches.
7.9	The UHS cooling towers are capable of removing the design basis heat load without exceeding the maximum specified temperature limit for ESWS.	Tests and analyses, or a combination of tests and analyses, will be performed to demonstrate that the UHS cooling towers, for a minimum of 30 days following a design basis accident, are capable of removing the design basis heat load, assuming the most limiting design conditions of heat removal (including the effects of concentrating impurities on the ESWS), without exceeding the maximum specified temperature limit for ESWS.	A report (Cooling Tower Design Report) exists and concludes that the UHS cooling towers are capable of removing the design basis heat load for a minimum of 30 days following a design basis accident, assuming the most-limited design conditions (including the effects of concentrating impurities on the ESWS), without exceeding the maximum specified temperature limit for ESWS.

Table 2.7.11-3—Essential Service Water System ITAAC
(10 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
7.10	The UHS cooling towers are capable of removing the design basis heat load without water level dropping below the minimum required level in the cooling tower.	Tests and analyses, or a combination of tests and analyses, will be performed to demonstrate that the UHS cooling towers, for a minimum of 30 days following a design basis accident, are capable of removing the design basis heat load, assuming the most limiting design conditions for water usage (including the effects of concentrating impurities on the ESWS), without water level dropping below the minimum required level in the cooling tower basin.	A report (Cooling Tower Design Report) exists and concludes that the UHS cooling towers are capable of removing the design basis heat load for a minimum of 30 days, assuming the most-limited design conditions (including the effects of concentrating impurities on the ESWS), following a design basis accident without water level dropping below the minimum required level in the cooling tower.
7.11	The cooling tower basin is sized for the minimum basin water volume.	An inspection and analysis will be performed to demonstrate the size of the cooling tower basin is capable of holding the minimum basin water volume.	A report exists and concludes that the cooling tower basin size is capable to hold the minimum basin water volume.

Next File