

**2.2.4 Emergency Feedwater System**

**1.0 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.
- Containment isolation.

**2.0 Arrangement**

2.1 The functional arrangement of the EFWS is as shown on Figure 2.2.4-1—Emergency Feedwater System Functional Arrangement.

2.2 The location of the EFWS equipment is as listed in Table 2.2.4-1—EFWS Equipment Mechanical Design.

2.3 Physical separation exists between divisions of the EFWS located in the Safeguard Buildings.

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

3.2 Check valves listed in Table 2.2.4-1 will function as listed in Table 2.2.4-1.

3.3 Deleted.

3.4 Components 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.

3.8 Deleted.

- 3.9 EFWS piping shown as ASME Code Section III on Figure 2.2.4-1 is designed in accordance with ASME Code Section III requirements.
- 3.10 EFWS piping shown as ASME Code Section III on Figure 2.2.4-1 is installed in accordance with an ASME Code Section III Design Report.
- 3.11 Pressure boundary welds in EFWS piping shown as ASME Code Section III on Figure 2.2.4-1 are in accordance with ASME Code Section III.
- 3.12 EFWS piping shown as ASME Code Section III on Figure 2.2.4-1 retains pressure boundary integrity at design pressure.
- 3.13 EFWS piping shown as ASME Code Section III on Figure 2.2.4-1 is installed and inspected in accordance with ASME Code Section III requirements.
- 3.14 Components listed in Table 2.2.4-1 as ASME Code Section III are designed in accordance with ASME Code Section III requirements.
- 3.15 Components listed in Table 2.2.4-1 as ASME Code Section III are fabricated in accordance with ASME Code Section III requirements.
- 3.16 Pressure boundary welds on components listed in Table 2.2.4-1 as ASME Code Section III are in accordance with ASME Code Section III requirements.
- 3.17 Components listed in Table 2.2.4-1 as ASME Code Section III retain pressure boundary integrity at design pressure.
- 3.18 Components listed in Table 2.2.4-1 as ASME Code Section III are installed in accordance with ASME Code Section III requirements.

**4.0 Instrumentation and Controls (I&C) Design Features, Displays, and Controls**

- 4.1 Displays listed in Table 2.2.4-2—EFWS Equipment I&C and Electrical Design are retrievable in the main control room (MCR) and the remote shutdown station (RSS) as listed in Table 2.2.4-2.
- 4.2 The EFWS equipment controls are provided in the MCR and the RSS as listed in Table 2.2.4-2.
- 4.3 Equipment listed as being controlled by a priority and actuator control system (PACS) module in Table 2.2.4-2 responds to the state requested by a test signal.

**5.0 Electrical Power Design Features**

- 5.1 The components designated as Class 1E in Table 2.2.4-2 are powered from the Class 1E division as listed in Table 2.2.4-2 in a normal or alternate feed condition.
- 5.2 Deleted.

**6.0 Environmental Qualifications**

- 6.1 Components in Table 2.2.4-2, that are designated as harsh environment, will perform the function listed in Table 2.2.4-1 in the environments that exist during and following design basis events.

**7.0 Equipment and System Performance**

- 7.1 The pumps listed in Table 2.2.4-1 have net positive suction head available (NPSHA) that is greater than net positive suction head required (NPSHR) at system run-out flow.
- 7.2 The EFWS delivers water to the SG at the required flow rate to restore and maintain SG water level and remove decay heat following the loss of normal feedwater supply.
- 7.3 The EFWS combined storage pool available volume supports cooldown.
- 7.4 The EFWS limits the maximum flow rate to a depressurized steam generator.
- 7.5 EFWS cross-connections allow alignment of EFWS pump suction on all EFWS storage pools and pump discharge alignment with any SG.
- 7.6 Deleted.
- 7.7 Class 1E valves listed in Table 2.2.4-2 perform the functions listed in Table 2.2.4-1 under system operating conditions.
- 7.8 The EFWS provides for flow testing of the EFW pumps during plant operation.

**8.0 Inspections, Tests, Analyses, and Acceptance Criteria**

Table 2.2.4-3 lists the EFWS ITAAC.

**Table 2.2.4-1—EFWS Equipment Mechanical Design (2 Sheets)**

<b>Description</b>	<b>Tag Number<sup>(1)</sup></b>	<b>Location</b>	<b>ASME Code Section III</b>	<b>Function</b>	<b>Seismic Category</b>
EFW Storage Pool Division 1 (Division 2, Division 3, Division 4)	30LAR10BB001 (30LAR20BB001) (30LAR30BB001) (30LAR40BB001)	Safeguard Building 1 (Safeguard Building 2) (Safeguard Building 3) (Safeguard Building 4)	N/A	storage volume	I
EFW Pump Division 1 (Division 2, Division 3, Division 4)	30LAS11AP001 (30LAS21AP001) (30LAS31AP001) (30LAS41AP001)	Safeguard Building 1 (Safeguard Building 2) (Safeguard Building 3) (Safeguard Building 4)	Yes	run	I
EFW Minimum Flow Check Valve Division 1 (Division 2, Division 3, Division 4)	30LAR11AA002 (30LAR21AA002) (30LAR31AA002) (30LAR41AA002)	Safeguard Building 1 (Safeguard Building 2) (Safeguard Building 3) (Safeguard Building 4)	Yes	open	I
EFW Flow Control Valve Division 1 (Division 2, Division 3, Division 4)	30LAR11AA103 (30LAR21AA103) (30LAR31AA103) (30LAR41AA103)	Safeguard Building 1 (Safeguard Building 2) (Safeguard Building 3) (Safeguard Building 4)	Yes	open	I
EFW Steam Generator Level Control Valve Division 1 (Division 2, Division 3, Division 4)	30LAR11AA105 (30LAR21AA105) (30LAR31AA105) (30LAR41AA105)	Safeguard Building 1 (Safeguard Building 2) (Safeguard Building 3) (Safeguard Building 4)	Yes	open , close	I
EFW Steam Generator Isolation Valve Division 1 (Division 2, Division 3, Division 4)	30LAR11AA006 (30LAR21AA006) (30LAR31AA006) (30LAR41AA006)	Safeguard Building 1 (Safeguard Building 2) (Safeguard Building 3) (Safeguard Building 4)	Yes	open , close (Containment Isolation)	I
EFW Containment Isolation Check Valve Division 1 (Division 2, Division 3, Division 4)	30LAR11AA007 (30LAR21AA007) (30LAR31AA007) (30LAR41AA007)	Reactor Building	Yes	open , close (Containment Isolation)	I

**Table 2.2.4-1—EFWS Equipment Mechanical Design (2 Sheets)**

<b>Description</b>	<b>Tag Number<sup>(1)</sup></b>	<b>Location</b>	<b>ASME Code Section III</b>	<b>Function</b>	<b>Seismic Category</b>
EFW Supply Header Isolation Valve Division 1 (Division 2, Division 3, Division 4)	30LAR13AA001 (30LAR23AA001) (30LAR33AA001) (30LAR43AA001)	Safeguard Building 1 (Safeguard Building 2) (Safeguard Building 3) (Safeguard Building 4)	Yes	open , close	I
EFW Discharge Header Isolation Valve Division 1 (Division 2, Division 3, Division 4)	30LAR14AA001 (30LAR24AA001) (30LAR34AA001) (30LAR44AA001)	Safeguard Building 1 (Safeguard Building 2) (Safeguard Building 3) (Safeguard Building 4)	Yes	open , close	I
EFW Pump Flow Division 1 (Division 2, Division 3, Division 4)	30LAR11CF801 (30LAR21CF801) (30LAR31CF801) (30LAR41CF801)	Safeguard Building 1 (Safeguard Building 2) (Safeguard Building 3) (Safeguard Building 4)	Yes	indication , control	I
EFW Flow to SG Division 1 (Division 2, Division 3, Division 4)	30LAR11CF002 (30LAR21CF002) (30LAR31CF002) (30LAR41CF002)	Safeguard Building 1 (Safeguard Building 2) (Safeguard Building 3) (Safeguard Building 4)	Yes	indication	I
Demineralized Water Distribution System Isolation Valve	30LAR04AA001	Safeguard Building 4	Yes	close	I

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

**Table 2.2.4-2—EFWS Equipment I&C and Electrical Design (3 Sheets)**

Description	Tag Number <sup>(1)</sup>	Location	IEEE Class 1E <sup>(2)</sup>	EQ – Harsh Env.	PACS	MCR/RSS Displays	MCR/RSS Controls
EFW Pump Division 1 (Division 2, Division 3, Division 4)	30LAS11AP001	Safeguard Building 1	1			On-Off / On-Off	Start-Stop / Start-Stop
	(30LAS21AP001)	(Safeguard Building 2)	2				
	(30LAS31AP001)	(Safeguard Building 3)	3				
	(30LAS41AP001)	(Safeguard Building 4)	4				
EFW Flow Control Valve Division 1 (Division 2, Division 3, Division 4)	30LAR11AA103	Safeguard Building 1	1 <sup>N</sup>			Position / Position	Open-Close / Open-Close
	(30LAR21AA103)	(Safeguard Building 2)	2 <sup>A</sup> (2 <sup>N</sup> )				
	(30LAR31AA103)	(Safeguard Building 3)	(1 <sup>A</sup> ) (3 <sup>N</sup> )				
	(30LAR41AA103)	(Safeguard Building 4)	(4 <sup>A</sup> ) (4 <sup>N</sup> ) (3 <sup>A</sup> )				
EFW Steam Generator Level Control Valve Division 1 (Division 2, Division 3, Division 4)	30LAR11AA105	Safeguard Building 1	1 <sup>N</sup>			Position / Position	Open-Close / Open-Close
	(30LAR21AA105)	(Safeguard Building 2)	2 <sup>A</sup> (2 <sup>N</sup> )				
	(30LAR31AA105)	(Safeguard Building 3)	(1 <sup>A</sup> ) (3 <sup>N</sup> )				
	(30LAR41AA105)	(Safeguard Building 4)	(4 <sup>A</sup> ) (4 <sup>N</sup> ) (3 <sup>A</sup> )				

**Table 2.2.4-2—EFWS Equipment I&C and Electrical Design (3 Sheets)**

Description	Tag Number <sup>(1)</sup>	Location	IEEE Class 1E <sup>(2)</sup>	EQ – Harsh Env.	PACS	MCR/RSS Displays	MCR/RSS Controls
EFW Steam Generator Isolation Valve Division 1 (Division 2, Division 3, Division 4)	30LAR11AA006	Safeguard Building 1	1 <sup>N</sup>			Position / Position	Open-Close / Open-Close
	(30LAR21AA006)	(Safeguard Building 2)	2 <sup>A</sup>				
	(30LAR31AA006)	(Safeguard Building 3)	(2 <sup>N</sup> )				
	(30LAR41AA006)	(Safeguard Building 4)	(1 <sup>A</sup> ) (3 <sup>N</sup> ) (4 <sup>A</sup> ) (4 <sup>N</sup> ) (3 <sup>A</sup> )				
EFW Discharge Header Isolation Valve Division 1 (Division 2, Division 3, Division 4)	30LAR14AA001	Safeguard Building 1	1 <sup>N</sup>			Position / Position	Open-Close / Open-Close
	(30LAR24AA001)	(Safeguard Building 2)	2 <sup>A</sup>				
	(30LAR34AA001)	(Safeguard Building 3)	(2 <sup>N</sup> )				
	(30LAR44AA001)	(Safeguard Building 4)	(1 <sup>A</sup> ) (3 <sup>N</sup> ) (4 <sup>A</sup> ) (4 <sup>N</sup> ) (3 <sup>A</sup> )				
EFW Pump Flow Division 1 (Division 2, Division 3, Division 4)	30LAR11CF801	Safeguard Building 1	1 <sup>N</sup>		N/A	Flow / Flow	NA / NA
	(30LAR21CF801)	(Safeguard Building 2)	2 <sup>A</sup>				
	(30LAR31CF801)	(Safeguard Building 3)	(2 <sup>N</sup> )				
	(30LAR41CF801)	(Safeguard Building 4)	(1 <sup>A</sup> ) (3 <sup>N</sup> ) (4 <sup>A</sup> ) (4 <sup>N</sup> ) (3 <sup>A</sup> )				

**Table 2.2.4-2—EFWS Equipment I&C and Electrical Design (3 Sheets)**

Description	Tag Number <sup>(1)</sup>	Location	IEEE Class 1E <sup>(2)</sup>	EQ – Harsh Env.	PACS	MCR/RSS Displays	MCR/RSS Controls
EFW Flow to SG Division 1 (Division 2, Division 3, Division 4)	30LAR11CF002	Safeguard Building 1	1 <sup>N</sup>		N/A	Flow / Flow	NA / NA
	(30LAR21CF002)	(Safeguard Building 2)	2 <sup>A</sup>				
	(30LAR31CF002)	(Safeguard Building 3)	(2 <sup>N</sup> )				
	(30LAR41CF002)	(Safeguard Building 4)	(1 <sup>A</sup> )				
Demineralized Water Distribution System Isolation Valve	30LAR04AA001	Safeguard Building 4	N/A	N/A	N/A	Position / N/A	Open-Close/ N/A

- 1) Equipment tag numbers are provided for information only and are not part of the certified design.
- 2) <sup>N</sup> denotes the division the component is normally powered from; <sup>A</sup> denotes the division the component is powered from when alternate feed is implemented.



**Table 2.2.4-3—Emergency Feedwater System ITAAC  
(7 Sheets)**

<b>Commitment Wording</b>		<b>Inspections, Tests, Analyses</b>	<b>Acceptance Criteria</b>
2.1	The functional arrangement of the EFWS is as shown on Figure 2.2.4-1.	Inspections of the as-built system as shown on Figure 2.2.4-1 will be conducted.	The as-built EFWS conforms with the functional arrangement as shown on Figure 2.2.4-1.
2.2	The location of the EFWS equipment is as listed in Table 2.2.4-1.	An inspection will be performed of the location of the equipment listed in Table 2.2.4-1.	The equipment listed in Table 2.2.4-1 is located as listed in Table 2.2.4-1.
2.3	Physical separation exists between divisions of the EFWS located in the Safeguard Buildings.	An inspection will be performed to verify that the 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 conditions ranging from normal operating to design-basis accident conditions.	Tests or type tests of the pumps and valves listed in Table 2.2.4-1 will be conducted to demonstrate that the pumps and valves will function under design operating conditions.	A test report exists and concludes that the pumps and valves listed in Table 2.2.4-1 function under conditions ranging from normal operating to design-basis accident conditions.
3.2	Check valves listed in Table 2.2.4-1 will function as listed in Table 2.2.4-1.	Tests will be performed for the operation of the check valves listed in Table 2.2.4-1.	The check valves listed in Table 2.2.4-1 perform the functions listed in Table 2.2.4-1.
3.3	Deleted.	Deleted.	Deleted.

**Table 2.2.4-3—Emergency Feedwater System ITAAC  
(7 Sheets)**

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
3.4	Components 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.	<p>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 2.2.4-1 using analytical assumptions, or under conditions, which bound the Seismic Category I design requirements.</p> <p>b. Inspections will be performed of the Seismic Category I components identified in Table 2.2.4-1 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).</p>	<p>a. Seismic qualification reports (SQDP, EQDP, or analyses) exist and conclude that the Seismic Category I components identified 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 including the time required to perform the listed function.</p> <p>b. Inspection reports exist and conclude that the Seismic Category I components identified in Table 2.2.4-1, including anchorage, are installed as specified on the construction drawings and deviations have been reconciled to the seismic qualification reports (SQDP, EQDP, or analyses).</p>
3.5	Deleted.	Deleted.	Deleted.
3.6	Deleted.	Deleted.	Deleted.
3.7	Deleted.	Deleted.	Deleted.
3.8	Deleted.	Deleted.	Deleted.
3.9	EFWS piping shown as ASME Code Section III on Figure 2.2.4-1 is designed in accordance with ASME Code Section III requirements.	<p>Inspections of the ASME Code Section III Design Reports (NCA-3550) and associated reference documents will be performed.</p> <p><b>{{DAC}}</b></p>	<p>ASME Code Section III Design Reports (NCA-3550) exist and conclude that EFWS piping shown as ASME Code Section III on Figure 2.2.4-1 complies with ASME Code Section III requirements.</p> <p><b>{{DAC}}</b></p>

**Table 2.2.4-3—Emergency Feedwater System ITAAC  
(7 Sheets)**

<b>Commitment Wording</b>		<b>Inspections, Tests, Analyses</b>	<b>Acceptance Criteria</b>
3.10	EFWS piping shown as ASME Code Section III on Figure 2.2.4-1 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 EFWS piping shown as ASME Code Section III on Figure 2.2.4-1, 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.
3.11	Pressure boundary welds in EFWS piping shown as ASME Code Section III on Figure 2.2.4-1 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 EFWS piping shown as ASME Code Section III on Figure 2.2.4-1 has been performed in accordance with ASME Code Section III.
3.12	EFWS piping shown as ASME Code Section III on Figure 2.2.4-1 retains pressure boundary integrity at design pressure.	Hydrostatic tests will be performed on the as-built system.	For EFWS piping shown as ASME Code Section III on Figure 2.2.4-1, ASME Code Section III Data Reports exist and conclude that hydrostatic test results comply with ASME Code Section III requirements.
3.13	EFWS piping shown as ASME Code Section III on Figure 2.2.4-1 is installed and inspected in accordance with ASME Code Section III requirements.	An inspection of the as-built piping will be performed.	For EFWS piping shown as ASME Code Section III on Figure 2.2.4-1, N-5 Data Reports exist and conclude that installation and inspection are in accordance with ASME Code Section III requirements.
3.14	Components listed in Table 2.2.4-1 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 2.2.4-1 comply with ASME Code Section III requirements..

**Table 2.2.4-3—Emergency Feedwater System ITAAC  
(7 Sheets)**

<b>Commitment Wording</b>		<b>Inspections, Tests, Analyses</b>	<b>Acceptance Criteria</b>
3.15	Components listed in Table 2.2.4-1 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 2.2.4-1 comply with ASME Code Section III requirements and any deviations to the design report have been reconciled.
3.16	Pressure boundary welds on components listed in Table 2.2.4-1 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 2.2.4-1, 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.
3.17	Components listed in Table 2.2.4-1 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 2.2.4-1, ASME Code Section III Data Reports exist and conclude that hydrostatic test results comply with ASME Code Section III requirements.
3.18	Components listed in Table 2.2.4-1 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 2.2.4-1 have been installed in accordance with ASME Code Section III requirements.
4.1	Displays exist or can be retrieved in the MCR and the RSS as identified in Table 2.2.4-2.	Tests will be performed for the retrievability of the displays in the MCR or the RSS as listed in Table 2.2.4-2.	<ul style="list-style-type: none"> <li>a. The displays listed in Table 2.2.4-2 as being retrieved in the MCR can be retrieved in the MCR.</li> <li>b. The displays listed in Table 2.2.4-2 as being retrieved in the RSS can be retrieved in the RSS.</li> </ul>

**Table 2.2.4-3—Emergency Feedwater System ITAAC  
(7 Sheets)**

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
4.2	Controls exist in the MCR and the RSS as identified in Table 2.2.4-2.	Tests will be performed for the existence of control signals from the MCR and the RSS to the equipment listed in Table 2.2.4-2.	<ul style="list-style-type: none"> <li>a. The controls listed in Table 2.2.4-2 as being in the MCR exist in the MCR.</li> <li>b. The controls listed in Table 2.2.4-2 as being in the RSS exist in the RSS.</li> </ul>
4.3	Equipment listed as being controlled by a PACS module in Table 2.2.4-2 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 2.2.4-2 responds to the state requested by the test signal.
5.1	The components designated as Class 1E in Table 2.2.4-2 are powered from the Class 1E division as listed in Table 2.2.4-2 in a normal or alternate feed condition.	a. Testing will be performed for components designated as Class 1E in Table 2.2.4-2 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 2.2.4-2.
		b. Testing will be performed for components designated as Class 1E in Table 2.2.4-2 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 2.2.4-2.
5.2	Deleted.	Deleted.	Deleted.
6.1	Components in Table 2.2.4-2, that are designated as harsh environment, will perform the function listed in Table 2.2.4-1 in the environments that exist during and following design basis events.	a. Type tests or type tests and analysis will be performed to demonstrate the ability of the components listed as harsh environment in Table 2.2.4-2 to perform the function listed in Table 2.2.4-1 for the environmental conditions that could occur during and following design basis events.	a. Environmental Qualification Data Packages (EQDP) exist and conclude that the components listed as harsh environment in Table 2.2.4-2 can perform the function listed in Table 2.2.4-1 during and following design basis events including the time required to perform the listed function.

**Table 2.2.4-3—Emergency Feedwater System ITAAC  
(7 Sheets)**

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
		b. Components listed as harsh environment in Table 2.2.4-2 will be inspected to verify installation in accordance with the construction drawings including the associated wiring, cables and terminations. Deviations to the construction drawings will be reconciled to the EQDP.	b. Inspection reports exists and conclude that the components listed in Table 2.2.4-2 as harsh environment has been installed per the construction drawings and any deviations have been reconciled to the EQDP.
7.1	The pumps listed in Table 2.2.4-1 have NPSHA that is greater than NPSHR at system run-out flow.	Testing will be performed to verify NPSHA for pumps listed in Table 2.2.4-1.	The pumps listed in Table 2.2.4-1 have NPSHA that is greater than NPSHR at system run-out flow.
7.2	The EFWS delivers water to the steam generators at the required flowrate to restore and maintain SG water level and remove decay heat following the loss of normal feedwater supply.	Tests and analysis will be performed to verify the EFWS delivery flowrate to the steam generators.	The EFWS delivers the following flowrate: Minimum flow of 198,416 lb <sub>m</sub> /hr (or 399.4 gpm at 122°F) at pressures up to 1426.1 psia.
7.3	The EFWS combined storage pool available volume supports cooldown.	Inspection and analysis will be performed to verify the EFWS storage pool volume.	The following EFWS combined storage pool available volume is provided: Minimum 365,000 gallons (total for 4 pools).
7.4	The EFWS limits the maximum flow rate to a depressurized steam generator.	Tests will be performed to verify the maximum EFWS flow rate to a depressurized steam generator.	The EFWS limits the following maximum flow rate to a depressurized steam generator: Maximum 490 gpm.
7.5	EFWS cross-connections allow alignment of EFWS pump suction on all EFWS storage pools and pump discharge alignment with any SG.	Inspections to confirm configuration per Figure 2.2.4-1 will be performed to demonstrate the EFWS cross-connections allow alignment of EFWS pump suction on all EFWS storage pools and pump discharge alignment with any SG.	The EFWS cross-connections allow the following system alignments: 1. EFWS pump suction to all EFWS storage pools. 2. EFWS pump discharge with any SG.

**Table 2.2.4-3—Emergency Feedwater System ITAAC  
(7 Sheets)**

<b>Commitment Wording</b>		<b>Inspections, Tests, Analyses</b>	<b>Acceptance Criteria</b>
7.6	Deleted.	Deleted.	Deleted.
7.7	Class 1E valves listed in Table 2.2.4-2 perform the function listed in Table 2.2.4-1 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 2.2.4-2 to change position as listed in Table 2.2.4-1 under system operating conditions.	The valve changes position as listed in Table 2.2.4-1 under system operating conditions.
7.8	The EFWS has provisions to allow flow testing of the EFW pumps during plant operation.	Testing for flow of the EFW pumps back to the EFW Storage Pool will be performed.	The flow test line allows EFW pump flow of at least 360 gpm back to the EFW storage pool.

Next File