2.2.6 Chemical and Volume Control System

1.0 Description

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

- Reactivity control.
- Reactor coolant pressure boundary integrity.
- Containment isolation.
- Charging flow isolation.

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

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

2.0 Arrangement

2.1 The functional arrangement of the CVCS is as shown in Figure 2.2.6-1—Chemical and Volume Control System Functional Arrangement.

2.2 The location of the CVCS equipment is as listed in Table 2.2.6-1—CVCS Equipment Mechanical Design.

3.0 Mechanical Design Features

3.1 Equipment listed in Table 2.2.6-1 as ASME Code Section III is designed and tested in accordance with ASME Code Section III.

3.2 Check valves listed in Table 2.2.6-1 will function as listed in Table 2.2.6-1.

3.3 Piping indicated in Figure 2.2.6-1 as ASME Code Section III is designed, welded, and tested in accordance with ASME Code Section III.

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

3.5 Supports for piping shown as ASME Section III on figure 2.2.6-1 will be designed in accordance with ASME Section III.

3.6 Components listed as ASME Code Class I in Table 2.2.6-1 will be analyzed for fatigue in accordance with ASME Section III Class 1.

3.7 Specifications exist for components listed as ASME Section III in Table 2.2.6-1.

3.8 Specifications exist for piping shown as ASME Section III on Figure 2.2.6-1.

3.9 Specifications exist for supports for piping shown as ASME Section III on Figure 2.2.6-1.

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

4.1 Displays listed in Table 2.2.6-2—CVCS Equipment I&C and Electrical Design are retrievable in the main control room (MCR) and the remote shutdown station (RSS) as listed in Table 2.2.6-2.

4.2 The CVCS equipment controls are provided in the MCR and the RSS as listed in Table 2.2.6-2.

4.3 Actuators listed as being controlled by a priority actuation and control system (PACS) module in Table 2.2.6-2 are controlled by a PACS module.

4.4 The CVCS has the following system interlocks:

- Isolation of the charging pump suction from the volume control tank and normal letdown path during a boron dilution event by closure of valves 30KBA21AA001, 30KBA21AA009, and 30KBA25AA017.
- Isolation of the charging line by closure of valves 30KBA34AA002, 30KBA34AA012, and 30KBA35AA001.
- Isolation of the letdown line on a safety injection actuation signal by closure of valves 30KBA10AA001 and 30KBA10AA002.

5.0 Electrical Power Design Features

5.1 The components designated as Class 1E in Table 2.2.6-2 are powered from the Class 1E division as listed in Table 2.2.6-2 in a normal or alternate feed condition.

5.2 Valves listed in Table 2.2.6-2 fail as-is on loss of power.

6.0 Environmental Qualifications

6.1 Equipment listed in Table 2.2.6-2 for harsh environment can perform the function in Table 2.2.6-1 following exposure to the design basis environments for the time required.

7.0 Equipment and System Performance

7.1 The CVCS heat exchangers as listed in Table 2.2.6-1 have the capacity to transfer the design heat load to the component cooling water system.

7.2 Class 1E valves listed in Table 2.2.6-2 can perform the function listed in Table 2.2.6-1 under system design conditions.

7.3 Containment isolation valves listed in Table 2.2.6-1 close within the containment isolation response time following initiation of a containment isolation signal.

7.4 The CVCS maximum flow rate required in the design basis analysis is less than the total combined maximum run-out flow of both CVCS pumps listed in Table 2.2.6-1.

7.5 The CVCS charging pumps listed in Table 2.2.6-1 provide the required seal water flow for operation of the reactor coolant pumps.

8.0 Inspections, Tests, Analyses, and Acceptance Criteria

Table 2.2.6-3—CVCS Inspections, Tests, Analyses, and Acceptance Criteria specifies the inspections, tests, analyses, and acceptance criteria for the CVCS.

Table 2.2.6-1—CVCS Equipment Mechanical Design (3 Sheets)					
Equipment Description	Equipment Tag Number(1)	Equipment Location	ASME Code Section III	Function	Seismic Category
RC Pressure Boundary Valve	30KBA10AA001	Reactor Building	yes (Class 1)	open, close	I
RC Pressure Boundary Valve	30KBA10AA002	Reactor Building	yes (Class 1)	open, close	I
Regenerative Heat Exchanger	30KBA10AC001	Reactor Building	yes	heat transfer device	I
#1 HP Cooler Inlet Valve	30KBA11AA001	Reactor Building	yes	open	I
#2 HP Cooler Inlet Valve	30KBA12AA001	Reactor Building	yes	open	I
#1 HP Cooler	30KBA11AC001	Reactor Building	yes	heat transfer device	I
#2 HP Cooler	30KBA12AC001	Reactor Building	yes	heat transfer device	I
#1 HP Reducing Station	30KBA11AA102	Reactor Building	yes	open, close	I
#2 HP Reducing Station	30KBA12AA102	Reactor Building	yes	open, close	I
#1 HP Cooler Outlet Valve	30KBA11AA003	Reactor Building	yes	open, close	I
#2 HP Cooler Outlet Valve	30KBA12AA003	Reactor Building	yes	open, close	I
Isolation valve to KTA	30KBA14AA009	Reactor Building	yes	close	I
Isolation valve to KTA	30KBA14AA011	Reactor Building	yes	close	I
Containment Isolation Valve	30KBA14AA002	Reactor Building	yes	open, close (Cont. Isol.)	I
Containment Isolation Valve	30KBA14AA003	Fuel Building	yes	open, close (Cont. Isol.)	I
LP Reducing Station	30KBA14AA106	Fuel Building	yes	open, close	I
LP Reducing Station Isolation Valve	30KBA14AA004	Fuel Building	yes	open, close	I

Table 2.2.6-1—CVCS Equipment Mechanical Design (3 Sheets)					
Equipment Description	Equipment Tag Number(1)	Equipment Location	ASME Code Section III	Function	Seismic Category
Volume Control Tank	30KBA20BB001	Fuel Building	N/A	storage volume	N/A
Boron Dilution Valve	30KBA25AA017	Fuel Building	yes	open, close	I
Boron Dilution Valve	30KBA21AA001	Fuel Building	yes	open, close	I
Boron Dilution Valve	30KBA21AA009	Fuel Building	yes	open, close	I
#1 Charging Pump	30KBA31AP001	Fuel Building	N/A	run	N/A
#2 Charging Pump	30KBA32AP001	Fuel Building	N/A	run	N/A
Charging Line Containment Isolation Valve	30KBA34AA002	Fuel Building	yes	open, close (Cont. Isol.)	I
Charging Line Containment Isolation Check Valve	30KBA34AA003	Reactor Building	yes	open, close (Cont. Isol.)	I
Regenerative Heater 3-Way Bypass Valve	30KBA34AA007	Reactor Building	yes	open	I
3-Way valve to Pressurizer Spray	30KBA35AA101	Reactor Building	yes	open	I
Pressurizer Spray Isolation Valve	30KBA35AA001	Reactor Building	yes	open, close	I
Pressurizer Spray Check Valve	30KBA35AA002	Reactor Building	yes (Class 1)	open, close	I
Charging Line Isolation Valve	30KBA34AA012	Reactor Building	yes	open, close	I
RC Pressure Boundary Check Valve	30KBA34AA018	Reactor Building	yes (Class 1)	open, close	I
RC Pressure Boundary Check Valve	30KBA34AA019	Reactor Building	yes (Class 1)	open, close	I
RC Pressure Boundary	30KBA34AA020	Reactor Building	yes (Class 1)	open, close	I

Table 2.2.6-1—CVCS Equipment Mechanical Design (3 Sheets)

Equipment Description	Equipment Tag Number[(1)]	Equipment Location	ASME Code Section III	Function	Seismic Category
Check Valve					
RC Pressure Boundary Check Valve	30KBA34AA021	Reactor Building	yes (Class 1)	open, close	I
Seal Injection Containment Isolation Valve	30JEW01AA005	Fuel Building	yes	open, close (Cont. Isol.)	I
Seal Injection Containment Isolation Check Valve	30JEW01AA006	Reactor Building	yes	open, close (Cont. Isol.)	I
#1 RCP Seal Injection Flow Control Valve	30JEW11AA111	Reactor building	yes	open	I
#2 RCP Seal Injection Flow Control Valve	30JEW21AA111	Reactor Building	yes	open	I
#3 RCP Seal Injection Flow Control Valve	30JEW31AA111	Reactor Building	yes	open	I
#4 RCP Seal Injection Flow Control Valve	30JEW41AA111	Reactor Building	yes	open	I
RCP Seal Leak-off to KTA	30JEW50AA021	Reactor Building	yes	open, close	I
RCP Seal Leak-off Containment Isolation Valve	30JEW50AA001	Reactor Building	yes	open, close (Cont. Isol.)	I
RCP Seal Leak-off Containment Isolation Valve	30JEW50AA002	Fuel Building	yes	open, close (Cont. Isol.)	I

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

Table 2.2.6-2 – CVCS Equipment I&C and Electrical Design (3 Sheets)							
Equipment Description	**Equipment Tag Number (1)**	**Equipment Location**	**IEEE Class 1E (2)**	**EQ – Harsh Env.**	**PACS**	**MCR/RSS Displays**	**MCR/RSS Controls**
RC Pressure Boundary Valve	30KBA10AA001	Reactor Building	1^N 2^A	yes	yes	Position / N/A	Open-Close / N/A
RC Pressure Boundary Valve	30KBA10AA002	Reactor Building	4^N 3^A	yes	yes	Position / N/A	Open-Close / N/A
#1 HP Cooler Inlet Valve	30KBA11AA001	Reactor Building	N/A	N/A	N/A	Position / N/A	Open-Close / N/A
#2 HP Cooler Inlet Valve	30KBA12AA001	Reactor Building	N/A	N/A	N/A	Position / N/A	Open-Close / N/A
#1 HP Reducing Station	30KBA11AA102	Reactor Building	N/A	N/A	N/A	Position / N/A	Open-Close / N/A
#2 HP Reducing Station	30KBA12AA102	Reactor Building	N/A	N/A	N/A	Position / N/A	Open-Close / N/A
#1 HP Cooler Outlet Valve	30KBA11AA003	Reactor Building	N/A	N/A	N/A	Position / N/A	Open-Close / N/A
#2 HP Cooler Outlet Valve	30KBA12AA003	Reactor Building	N/A	N/A	N/A	Position / N/A	Open-Close / N/A
Isolation valve to KTA	30KBA14AA009	Reactor Building	N/A	N/A	N/A	Position / N/A	Open-Close / N/A
Isolation valve to KTA	30KBA14AA011	Reactor Building	N/A	N/A	N/A	Position / N/A	Open-Close / N/A
Containment Isolation Valve	30KBA14AA002	Reactor Building	1^N 2^A	yes	yes	Position / N/A	Open-Close / N/A
Containment Isolation Valve	30KBA14AA003	Fuel Building	4^N 3^A	N/A	yes	Position / N/A	Open-Close / N/A
LP Reducing Station	30KBA14AA106	Fuel Building	N/A	N/A	N/A	Position / N/A	Open-Close / N/A

Table 2.2.6-2 – CVCS Equipment I&C and Electrical Design (3 Sheets)							
Equipment Description	**Equipment Tag Number (1)**	**Equipment Location**	**IEEE Class 1E (2)**	**EQ – Harsh Env.**	**PACS**	**MCR/RSS Displays**	**MCR/RSS Controls**
LP Reducing Station Isolation Valve	30KBA14AA004	Fuel Building	N/A	N/A	N/A	Position / N/A	Open-Close / N/A
Boron Dilution Valve	30KBA25AA017	Fuel Building	4^N 3^A	N/A	yes	Position / N/A	Open-Close / N/A
Boron Dilution Valve	30KBA21AA001	Fuel Building	4^N 3^A	N/A	yes	Position / N/A	Open-Close / N/A
Boron Dilution Valve	30KBA21AA009	Fuel Building	1^N 2^A	N/A	yes	Position / N/A	Open-Close / N/A
#1 Charging Pump	30KBA31AP001	Fuel Building	N/A	N/A	N/A	On-Off / N/A	Start-Stop / N/A
#2 Charging Pump	30KBA32AP001	Fuel Building	N/A	N/A	N/A	On-Off / N/A	Start-Stop / N/A
Charging Line Containment Isolation Valve	30KBA34AA002	Fuel Building	1^N 2^A	N/A	yes	Position / N/A	Open-Close / N/A
Regenerative Heater 3-Way Bypass Valve	30KBA34AA007	Reactor Building	N/A	N/A	N/A	Position / N/A	Open-Close (Bypass) / N/A
3-Way valve to Pressurizer Spray	30KBA35AA101	Reactor Building	N/A	N/A	N/A	Position / N/A	Open-Close (Bypass) / N/A
Pressurizer Spray Isolation Valve	30KBA35AA001	Reactor Building	4^N 3^A	yes	yes	Position / N/A	Open-Close / N/A
Charging Line Isolation Valve	30KBA34AA012	Reactor Building	4^N 3^A	yes	yes	Position / N/A	Open-Close / N/A
Seal Injection Containment Isolation Valve	30JEW01AA005	Fuel Building	1^N 2^A	N/A	yes	Position / N/A	Open-Close / N/A

Table 2.2.6-2 – CVCS Equipment I&C and Electrical Design (3 Sheets)							
Equipment Description	**Equipment Tag Number (1)**	**Equipment Location**	**IEEE Class 1E (2)**	**EQ – Harsh Env.**	**PACS**	**MCR/RSS Displays**	**MCR/RSS Controls**
#1 RCP Seal Injection Flow Control Valve	30JEW11AA111	Reactor Building	N/A	N/A	N/A	Position / N/A	Open-Close / N/A
#2 RCP Seal Injection Flow Control Valve	30JEW21AA111	Reactor Building	N/A	N/A	N/A	Position / N/A	Open-Close / N/A
#3 RCP Seal Injection Flow Control Valve	30JEW31AA111	Reactor Building	N/A	N/A	N/A	Position / N/A	Open-Close / N/A
#4 RCP Seal Injection Flow Control Valve	30JEW41AA111	Reactor Building	N/A	N/A	N/A	Position / N/A	Open-Close / N/A
RCP Seal Leak-off to KTA	30JEW50AA021	Reactor Building	N/A	N/A	N/A	Position / N/A	Open-Close / N/A
RCP Seal Leak-off Containment Isolation Valve	30JEW50AA001	Reactor Building	4^N 3^A	yes	yes	Position / N/A	Open-Close / N/A
RCP Seal Leak-off Containment Isolation Valve	30JEW50AA002	Fuel Building	1^N 2^A	N/A	yes	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) ^{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 2.2.6-3—CVCS Inspections, Tests, Analyses, and Acceptance Criteria (6 Sheets)

	Commitment Wording	Inspection, Test, or Analysis	Acceptance Criteria
2.1	The functional arrangement of the CVCS is as shown on Figure 2.2.6-1.	Inspections of the as-built system as shown on Figure 2.2.6-1 will be conducted	The as-built CVCS conforms with the functional arrangement as shown in Figure 2.2.6-1.
2.2	The location of the CVCS equipment is as listed in Table 2.2.6-1.	An inspection will be performed of the location of the equipment listed in Table 2.2.6-1.	The equipment listed in Table 2.2.6-1 is located as listed in Table 2.2.6-1.
3.1	The components designated as ASME Code Section III in Table 2.2.6-1 are designed to ASME Code Section III requirements.	Inspections will be conducted of ASME design, NDE, and hydrostatic test reports for the components listed as ASME Code Section III in Table 2.2.6-1.	The components listed as ASME Code Section III in Table 2.2.6-1 have been designed and hydrostatically tested in accordance with ASME Code Section III requirements.
3.2	Check valves listed in Table 2.2.6-1 will function as listed in Table 2.2.6-1.	Tests will be performed for the operation of the check valves listed in Table 2.2.6-1.	The check valves listed in Table 2.2.6-1 perform the functions listed in Table 2.2.6-1.
3.3a	The piping identified as being within the ASME Code Section III boundary as indicated in Figure 2.2.6-1 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 indicated in Figure 2.2.6-1.	The as-designed piping identified as ASME Code Section III in Figure 2.2.6-1 meets ASME Code Section III design requirements.
3.3b	The piping identified as being within the ASME Code Section III boundary as indicated in Figure 2.2.6-1 has been welded and hydrostatically tested in accordance with ASME Code Section III.	Inspections will be conducted of the as-built piping as indicated in Figure 2.2.6-1 for the following: Welding has been performed per ASME Code Section III. Hydrostatic testing per ASME Code Section III was performed.	The piping as indicated in Figure 2.2.6-1 as ASME Code Section III has been welded in accordance with ASME Code Section III welding requirements. The piping as indicated in Figure 2.2.6-1 as ASME Code Section III has been hydrostatically tested in accordance with ASME Code Section III requirements.

Table 2.2.6-3—CVCS Inspections, Tests, Analyses, and Acceptance Criteria (6 Sheets)

	Commitment Wording	Inspection, Test, or Analysis	Acceptance Criteria
3.4	Equipment identified as Seismic Category I in Table 2.2.6-1 can withstand a design basis seismic load without loss of function as listed in Table 2.2.6-1.	a. Inspection will be performed of the equipment identified as Seismic Category I in Table 2.2.6-1. b. Type tests, tests, analyses, or a combination of tests and analyses will be performed on the equipment designated as Seismic Category I in Table 2.2.6-1.	a. The equipment designated as Seismic Category I in Table 2.2.6-1 is installed as designed. b. The equipment designated as Seismic Category I in Table 2.2.6-1 can withstand a design basis seismic load without loss of function.
3.5	Supports for piping shown as ASME Section III on figure 2.2.6-1 will be designed per ASME Section III.	An analysis will be performed.	a. Supports for piping shown as ASME Section III on figure 2.2.6-1 are designed to ASME Section III. b. Snubbers have been identified, including those analyzed for fatigue for piping shown as ASME Section III on figure 2.2.6-1 . c. Support mass is less than ten percent of the adjacent pipe span for piping shown as ASME Section III on figure 2.2.6-1.
3.6	Components listed as ASME Code Class I in Table 2.2.6-1 will be analyzed for fatigue per ASME Section III Class 1.	An analysis will be performed.	a. Fatigue analysis has been performed for components listed as ASME Code Class I in Table 2.2.6-1. b. For components listed as ASME Code Class I in Table 2.2.6-1 operating modes where peak stresses are within 10 % of allowable have been identified.

Table 2.2.6-3—CVCS Inspections, Tests, Analyses, and Acceptance Criteria (6 Sheets)

	Commitment Wording	Inspection, Test, or Analysis	Acceptance Criteria
3.7	Specifications exist for components listed as ASME Section III in Table 2.2.6-1.	An inspection will be performed.	Specifications exist for components listed as ASME Section III in Table 2.2.6-1.
3.8	Specifications exist for piping shown as ASME Section III on figure 2.2.6-1.	An inspection will be performed.	Specifications exist for piping identified as ASME Section III on figure 2.2.6-1.
3.9	Specifications exist for supports for piping shown as ASME Section III on figure 2.2.6-1.	An inspection will be performed.	Specifications exist for supports for piping shown as ASME Section III on figure 2.2.6-1.
4.1	Displays exist or can be retrieved in the MCR and the RSS as identified in Table 2.2.6-2.	Inspections will be performed for the existence or retrievability of the displays in the MCR or the RSS as listed in Table 2.2.6-2.	The displays listed in Table 2.2.6-2 as being retrieved in the MCR can be retrieved in the MCR. The displays listed in Table 2.2.6-2 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 2.2.6-2.	Tests will be performed for the existence of control signals from the MCR and the RSS to the equipment listed in Table 2.2.6-2.	The controls listed in Table 2.2.6-2 as being in the MCR exist in the MCR. The controls listed in Table 2.2.6-2 as being in the RSS exist in the RSS.
4.3	Actuators listed as being controlled by a PACS module in Table 2.2.6-2 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 2.2.6-2. An inspection will be performed on the actuation of the actuator.	The actuators listed as being controlled by a PACS module in Table 2.2.6-2 actuate to the state requested by the signal.

Table 2.2.6-3—CVCS Inspections, Tests, Analyses, and Acceptance Criteria (6 Sheets)

	Commitment Wording	Inspection, Test, or Analysis	Acceptance Criteria
4.4	The CVCS has the following interlocks: Isolation of the charging pump suction from the volume control tank and normal letdown path during a boron dilution event by closure of valves: 30KBA21AA001, 30KBA21AA009, and 30KBA25AA017 Isolation of the charging line by closure of valves 30KBA34AA002, 30KBA34AA012, and 30KBA35AA001 Isolation of the letdown line on a Safety Injection actuation signal by closure of valves 30KBA10AA001 and 30KBA10AA002.	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 2.2.6-2 are powered from the Class 1E division as listed in Table 2.2.6-2 in a normal or alternate feed condition.	Testing will be performed for components designated as Class 1E in Table 2.2.6-2 by providing a test signal in each normally aligned division. Testing will be performed for components designated as Class 1E in Table 2.2.6-2 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 2.2.6-2. 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 2.2.6-2.
5.2	Valves listed in Table 2.2.6-2 fail as-is on loss of power.	Testing will be performed for the valves listed in Table 2.2.6-2 to fail as-is on loss of power.	Following loss of power, the valves listed in Table 2.2.6-2 fail as-is.

Table 2.2.6-3—CVCS Inspections, Tests, Analyses, and Acceptance Criteria (6 Sheets)

	Commitment Wording	Inspection, Test, or Analysis	Acceptance Criteria
6.1	Components listed as Class 1E in Table 2.2.6-2 that are designated as harsh environment will perform the function listed in Table 2.2.6-1 in the environments that exist before and during the time required to perform their function.	6.1a. 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 2.2.6-2 to perform the function listed in Table 2.2.6-1 for the environmental conditions that could occur before and during a design basis accident. 6.1b For equipment listed for harsh environment in Table 2.2.6-2, an inspection will be performed of the as-installed Class 1E equipment and the associated wiring, cables and terminations.	6.1a. The Class 1E equipment listed for harsh environment in Table 2.2.6-2 can perform the function listed in Table 2.2.6-1 before and during design basis accidents for the time required to perform the listed function. 6.1b Inspection concludes the as-installed Class 1E equipment and associated wiring, cables, and terminations as listed in Table 2.2.6-2 for harsh environment conform with the design.
7.1	The CVCS heat exchanger as listed in Table 2.2.6-1 has the capacity to transfer the design heat load to the component cooling water system.	Tests and analyses will be performed to demonstrate the capability of the CVCS heat exchanger as listed in Table 2.2.6-1 to transfer the heat load to the component cooling water system.	The CVCS has the capacity to remove the design heat load via the heat exchanger listed in Table 2.2.6-1. The heat load for the HP cooler is: $30.71 \times 10^{6}\ ^{BTU}/_{hr}$
7.2	Class 1E valves listed in Table 2.2.6-2 perform the function listed in Table 2.2.6-1 under system conditions.	Tests and analyses or a combination of tests and analyses will be performed to demonstrate the ability of the valves listed in Table 2.2.6-2 to change position as listed in Table 2.2.6-1 under system design conditions.	The as-installed valve changes position as listed Table 2.2.6-1 under system design conditions.

Table 2.2.6-3—CVCS Inspections, Tests, Analyses, and Acceptance Criteria (6 Sheets)

	Commitment Wording	Inspection, Test, or Analysis	Acceptance Criteria
7.3	Containment isolation valves listed in Table 2.2.6-1 close within the containment isolation response time following initiation of a containment isolation signal.	Tests will be performed to demonstrate the ability of the containment isolation valves listed in Table 2.2.6-1 to close within the containment isolation response time following initiation of a containment isolation signal.	The containment isolation valves listed in Table 2.2.6-1 close within the required times following initiation of a containment isolation signal: 30KBA14AA002 ≤ 30 s 30KBA14AA003 ≤ 30 s 30KBA34AA002 ≤ 20 s 30JEW01AA005 ≤ 15 s 30JEW50AA001 ≤ 15 s 30JEW50AA002 ≤ 15 s
7.4	The CVCS maximum flow rate required in the design basis analysis is less than the total combined maximum run-out flow of both CVCS pumps listed in Table 2.2.6-1.	An analysis will be performed to verify the CVCS maximum flow rate required by design basis analysis is less than the total combined maximum run-out flow of both charging pumps.	The CVCS maximum flow rate required by design basis analysis is less than the following maximum run-out flow (delivered to the cold legs): 112.66 lbm/s (total for both CVCS pumps).
7.5	The CVCS charging pumps listed in Table 2.2.6-1 provide the required seal water flow for operation of the reactor coolant pumps.	Inspection and testing will be performed to verify the CVCS charging pumps provide the required seal water flow to the reactor coolant pumps.	The chemical and volume control charging pumps provide a minimum seal water flow rate of 8 gpm to each operating reactor coolant pump.