2.6.6 Safeguard Building Controlled-Area Ventilation System

Design Description

1.0 System Description

The safeguard building controlled-area ventilation system (SBVS) provides cooling, heating, and ventilation for the hot areas of the four divisions of the Safeguard Buildings to remove equipment heat and heat generated from other sources. The SBVS also provides heat to maintain a minimum temperature in areas of the Safeguard Buildings. The SBVS provides a minimal air change rate for the buildings and controls the building pressurization to reduce spreading of contamination.

The SBVS provides the following safety-related functions:

- Isolates the volume of the hot mechanical area of the Safeguard Buildings and confines this volume by maintaining a negative pressure and removing the iodine that might be released due to post-accident operation of the safety injection system (SIS).
- Removes heat generated by equipment of the safety injection / residual heat removal systems in the hot mechanical rooms to maintain ambient temperatures during accident conditions.
- Removes heat generated by piping and equipment of the component cooling water and emergency feedwater systems in the valve rooms to maintain ambient temperatures during accident conditions.
- Removes heat generated by equipment of the hydrogen monitoring and post accident atmosphere sampling systems to maintain ambient temperatures during accident conditions.
- Maintains a negative pressure in the Fuel Building (FB) to direct the air from the FB to the SBVS iodine filtration trains when the FB is isolated from the nuclear auxiliary building ventilation system (NABVS) on receipt of a containment isolation signal.

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

- Ventilates the hot mechanical areas of the Safeguard Buildings and provides a minimum required air change rate during normal operation.
- Maintains acceptable ambient conditions in the hot mechanical areas of the Safeguard Buildings during normal operation.
- Maintains negative pressure and direction of flow with the supply air from the electrical division of safeguard building ventilation system (SBVSE), and exhaust air to the NABVS during normal operation.

- Confines the volume of the fuel pool hall by maintaining negative pressure and removing iodine released in the event of a fuel handling accident in the Fuel Building.

- Confines the volume of the containment by maintaining negative pressure and removing iodine released in the event of a fuel handling accident in the Reactor Building.

2.0 Arrangement

2.1 The functional arrangement of the SBVS is as described in the Design Description of Section 2.6.6, Tables 2.6.6-1—Safeguard Building Controlled-Area Ventilation System Equipment Mechanical Design and 2.6.6-2—Safeguard Building Controlled-Area Ventilation System Equipment I&C and Electrical Design, and as shown on Figures 2.6.6-1—Safeguard Building Controlled-Area Ventilation System Air Supply Functional Arrangement and 2.6.6-2—Safeguard Building Controlled-Area Ventilation System Exhaust Air Functional Arrangement.

2.2 Deleted.

2.3 Physical separation exists between the SBVS iodine filtration trains located in the Fuel Building as listed in Table 2.6.6-1.

3.0 Mechanical Design Features

3.1 Deleted.

3.2 Class 1E dampers listed in Table 2.6.6-2 will function to change position as listed in Table 2.6.6-1 under normal operating conditions.

3.3 Equipment identified as Seismic Category I in Table 2.6.6-1 can withstand seismic design basis loads without a loss of the function listed in Table 2.6.6-1.

3.4 Equipment listed in Table 2.6.6-1 as ASME AG-1 Code are designed in accordance with ASME AG-1 Code requirements.

3.5 Equipment listed in Table 2.6.6-1 as ASME AG-1 Code are fabricated in accordance with ASME AG-1 Code requirements, including welding requirements.

3.6 Equipment listed in Table 2.6.6-1 as ASME AG-1 Code are installed, inspected, and tested in accordance with ASME AG-1 Code requirements.

4.0 I&C Design Features, Displays, and Controls

4.1 Displays listed in Table 2.6.6-2 are indicated on the PICS operator workstations in the MCR and the RSS.

4.2 Controls on the PICS operator workstations in the MCR and the RSS perform the function listed in Table 2.6.6-2.

4.3 Equipment listed as being controlled by a priority and actuator control system (PACS) module in Table 2.6.6-2 responds to the state requested and provides drive monitoring signals back to the PACS module. The PACS module will protect the equipment by terminating the output command upon the equipment reaching the requested state.

5.0 Electrical Power Design Features

5.1 Equipment designated as Class 1E in Table 2.6.6-2 are powered from the Class 1E division as listed in Table 2.6.6-2 in a normal or alternate feed condition.

5.2 Deleted.

6.0 Environmental Qualifications

6.1 Equipment designated as harsh environment in Table 2.6.6-2 will perform the function listed in Table 2.6.6-1 under normal environmental conditions, containment test conditions, anticipated operational occurrences, and accident and post-accident environmental conditions.

6.2 Deleted.

7.0 Equipment and System Performance

7.1 Upon receipt of a containment isolation signal, the SBVS maintains a negative pressure in the hot mechanical rooms of the Safeguard Buildings relative to the adjacent areas.

7.2 Deleted.

7.3 Upon receipt of a high radiation signal in the Fuel Building or Reactor Building, both SBVS iodine filtration trains start automatically, the FB isolation dampers open, the SBVS isolation dampers close, iodine filtration banks isolation dampers open, and the accident air is directed through the SBVS iodine filtration trains.

7.4 Upon receipt of a containment isolation signal, the SBVS maintains a negative pressure in the FB and SB relative to the outside environment.

7.5 The SBVS provides cooling to maintain design temperatures in the hot mechanical rooms in the Safeguard Buildings, while operating in a design basis accident alignment.

Inspections, Tests, Analyses, and Acceptance Criteria

Table 2.6.6-3 lists the SBVS ITAAC.

Table 2.6.6-1—SBVS Equipment Mechanical Design
Sheet 1 of 5

Description	Tag Number(1)	Location	ASME AG-1 Code	Function	Seismic Category
Air Supply Safeguard Building Division 1					
Motor Operated Dampers	30KLC11AA003 30KLC11AA004 30KLC11AA005 30KLC11AA007	31UJH05025 31UJH05025 31UJH05025 31UJH05006	Yes	Close	I
Motor Operated Damper	30KLC11AA008	Safeguard Building 1	Yes	Close	I
Air Supply Safeguard Building Divisions 2 And 3					
Motor Operated Dampers	30KLC12AA003 30KLC12AA004 30KLC12AA005 30KLC13AA003 30KLC13AA004 30KLC13AA005	32UJH01020 32UJH01020 32UJH01020 33UJH01020 33UJH01020 33UJH01020	Yes	Close	I
Air Supply Safeguard Building Division 4					
Motor Operated Dampers	30KLC14AA003 30KLC14AA004 30KLC14AA005 30KLC14AA007	34UJH05025 34UJH05025 34UJH05025 34UJH05006	Yes	Close	I
Motor Operated Damper	30KLC24AA002 30KLC24AA003 30KLC24AA004	34UJH10004 34UJH05006 34UJH01011	Yes	Close	I

Table 2.6.6-1—SBVS Equipment Mechanical Design
Sheet 2 of 5

Description	Tag Number(1)	Location	ASME AG-1 Code	Function	Seismic Category
Operational Air Exhaust					
Motor Operated Dampers	30KLC21AA002 30KLC21AA006 30KLC21AA007 30KLC21AA008 30KLC22AA006 30KLC22AA007 30KLC22AA008 30KLC23AA006 30KLC23AA007 30KLC23AA008 30KLC24AA006 30KLC24AA007 30KLC24AA008	31UJH10010 31UJH10010 31UJH10010 31UJH10010 32UJH10002 32UJH10002 32UJH10002 33UJH10002 33UJH10002 33UJH10002 34UJH10010 34UJH10010 34UJH10010	Yes	Close	I
Motor Operated Dampers	30KLC21AA005 30KLC21AA010 30KLC24AA005 30KLC24AA010	31UJH10004 31UJH10004 34UJH10004 34UJH10004	Yes	Open/Close	I
Accident Air Exhaust					
Motor Operated Dampers	30KLC31AA001 30KLC31AA003 30KLC32AA001 30KLC32AA003 30KLC33AA001 30KLC33AA003 30KLC34AA001 30KLC34AA003	31UJH10004 31UJH10004 32UJH10002 32UJH10002 33UJH10002 33UJH10002 34UJH10004 34UJH10004	Yes	Open/Close	I

Table 2.6.6-1—SBVS Equipment Mechanical Design
Sheet 3 of 5

Description	Tag Number(1)	Location	ASME AG-1 Code	Function	Seismic Category
Motor Operated Dampers	30KLC45AA001 30KLC45AA002 30KLC45AA003 30KLC45AA004 30KLC45AA005 30KLC45AA006	30UFA 21095 30UFA 21095 30UFA 29045 30UFA 29045 30UFA 24045 30UFA 24045	Yes	Open	I
Personnel Air Lock Area					
Motor Operated Damper	30KLC12AA009 30KLC12AA010	32UJH10006 32UJH10006	Yes	Close	I
Motor Operated Damper	30KLC22AA010	32UJH10006	Yes	Close	I
Iodine Filtration Trains 30KLC41/42					
Motor Operated Dampers	30KLC41AA001 30KLC42AA001	30UFA 21082 30UFA 21084	Yes	Open	I
Electric Heaters (Two stage)	30KLC41AH001A/B 30KLC42AH001A/B	30UFA 21082 30UFA 21084	Yes	On / Off (based on ambient conditions)	I
Pre filter/Moisture Separators	30KLC41AT001 30KLC42AT001	30UFA 21082 30UFA 21084	Yes	N/A	I
Upstream HEPA Filters	30KLC41AT002 30KLC42AT002	30UFA 21082 30UFA 21084	Yes	N/A	I
Carbon Absorbers	30KLC41AT003 30KLC42AT003	30UFA 21082 30UFA 21084	Yes	N/A	I
Downstream HEPA Filters	30KLC41AT004 30KLC42AT004	30UFA 21082 30UFA 21084	Yes	N/A	I
Motor Operated dampers	30KLC41AA002 30KLC42AA002	30UFA 21082 30UFA 21084	Yes	N/A	I

Table 2.6.6-1—SBVS Equipment Mechanical Design
Sheet 4 of 5

Description	Tag Number(1)	Location	ASME AG-1 Code	Function	Seismic Category
Exhaust Fans	30KLC41AN001 30KLC42AN001	30UFA 21083 30UFA 21081	Yes	Run	I
Backdraft dampers	30KLC41AA003 30KLC42AA003	30UFA 21083 30UFA 21081	Yes	N/A	I
Recirculation Cooling Units Safeguard Building Divisions 1 and 4					
Air Cooling Coils	30KLC51AC001 30KLC51AC002 30KLC51AC003 30KLC54AC001 30KLC54AC002 30KLC54AC003	31UJH05004 31UJH10004 31UJH10010 34UJH05004 34UJH10004 34UJH10010	Yes	N/A	I
Moisture Separators	30KLC51AT001 30KLC51AT002 30KLC51AT003 30KLC54AT001 30KLC54AT002 30KLC54AT003	31UJH05004 31UJH10004 31UJH10010 34UJH05004 34UJH10004 34UJH10010	Yes	N/A	I
Recirculation Fans	30KLC51AN001 30KLC51AN002 30KLC51AN003 30KLC54AN001 30KLC54AN002 30KLC54AN003	31UJH05004 31UJH10004 31UJH10010 34UJH05004 34UJH10004 34UJH10010	Yes	Run	I
Recirculation Cooling Units Safeguard Building Divisions 2 and 3					
Air Cooling Coils	30KLC52AC001 30KLC52AC002 30KLC53AC001 30KLC53AC002	32UJH05002 32UJH10002 33UJH05002 33UJH10002	Yes	N/A	I

Table 2.6.6-1—SBVS Equipment Mechanical Design
Sheet 5 of 5

Description	Tag Number(1)	Location	ASME AG-1 Code	Function	Seismic Category
Moisture Separators	30KLC52AT001 30KLC52AT002 30KLC53AT001 30KLC53AT002	32UJH05002 32UJH10002 33UJH05002 33UJH10002	Yes	N/A	I
Recirculation Fans	30KLC52AN001 30KLC52AN002 30KLC53AN001 30KLC53AN002	32UJH05002 32UJH10002 33UJH05002 33UJH10002	Yes	Run	I

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

Table 2.6.6-2—SBVS Equipment I&C and Electrical Design
Sheet 1 of 8

Description	Tag Number(1)	Location	IEEE Class 1E (2)	EQ – Harsh Env.	PACS	MCR / RSS Displays	MCR / RSS Controls
Air Supply Safeguard Building Division 1							
Motor Operated Dampers	30KLC11AA003 30KLC11AA004	Safeguard Building 1 Safeguard Building 1	Division 1^{N} Division 2^{A}	Yes	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Damper	30KLC11AA005	Safeguard Building 1	Division 4^{N} Division 3^{A}	Yes	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Dampers	30KLC11AA007 30KLC11AA008	Safeguard Building 1 Safeguard Building 1	Division 1^{N} Division 2^{A}	Yes	Yes	Position / Position	Open-Close / Open-Close
Air Supply Safeguard Building Division 2							
Motor Operated Dampers	30KLC12AA003 30KLC12AA004	Safeguard Building 2 Safeguard Building 2	Division 2^{N} Division 1^{A}	Yes	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Damper	30KLC12AA005	Safeguard Building 2	Division 3^{N} Division 4^{A}	Yes	Yes	Position / Position	Open-Close / Open-Close
Air Supply Safeguard Building Division 3							
Motor Operated Damper	30KLC13AA003 30KLC13AA004	Safeguard Building 3 Safeguard Building 3	Division 3^{N} Division 4^{A}	Yes	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Dampers	30KLC13AA005	Safeguard Building 3	Division 2^{N} Division 1^{A}	Yes	Yes	Position / Position	Open-Close / Open-Close
Air Supply Safeguard Building Division 4							
Motor Operated Dampers	30KLC14AA003 30KLC14AA004	Safeguard Building 4 Safeguard Building 4	Division 4^{N} Division 3^{A}	Yes	Yes	Position / Position	Open-Close / Open-Close

Table 2.6.6-2—SBVS Equipment I&C and Electrical Design
Sheet 2 of 8

Description	Tag Number(1)	Location	IEEE Class 1E (2)	EQ – Harsh Env.	PACS	MCR / RSS Displays	MCR / RSS Controls
Motor Operated Damper	30KLC14AA005	Safeguard Building 4	Division 1^N Division 2^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Damper	30KLC14AA007	Safeguard Building 4	Division 4^N Division 3^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Dampers	30KLC24AA002 30KLC24AA003 30KLC24AA004	Safeguard Building 4 Safeguard Building 4 Safeguard Building 4	Division 4^N Division 3^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Operational Air Exhaust							
Motor Operated Dampers	30KLC21AA005 30KLC21AA006 30KLC21AA007	Safeguard Building 1 Safeguard Building 1 Safeguard Building 1	Division 1^N Division 2^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Damper	30KLC21AA008	Safeguard Building 1	Division 4^N Division 3^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Damper	30KLC21AA010	Safeguard Building 1	Division 2^N Division 1^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Dampers	30KLC22AA006 30KLC22AA007	Safeguard Building 2 Safeguard Building 2	Division 2^N Division 1^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Damper	30KLC22AA008	Safeguard Building 2	Division 3^N Division 4^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Dampers	30KLC23AA006 30KLC23AA007	Safeguard Building 3 Safeguard Building 3	Division 3^N Division 4^A	Yes	Yes	Position / Position	Open-Close / Open-Close

Table 2.6.6-2—SBVS Equipment I&C and Electrical Design
Sheet 3 of 8

Description	Tag Number(1)	Location	IEEE Class 1E (2)	EQ – Harsh Env.	PACS	MCR / RSS Displays	MCR / RSS Controls
Motor Operated Damper	30KLC23AA008	Safeguard Building 3	Division 2^N Division 1^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Dampers	30KLC24AA005 30KLC24AA006 30KLC24AA007	Safeguard Building 4 Safeguard Building 4 Safeguard Building 4	Division 4^N Division 3^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Damper	30KLC24AA008	Safeguard Building 4	Division 1^N Division 2^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Damper	30KLC24AA010	Safeguard Building 1	Division 2^N Division 1^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Accident Air Exhaust							
Motor Operated Damper	30KLC31AA001	Safeguard Building 1	Division 1^N Division 2^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Damper	30KLC31AA003	Safeguard Building 1	Division 2^N Division 1^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Damper	30KLC32AA001	Safeguard Building 2	Division 2^N Division 1^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Damper	30KLC32AA003	Safeguard Building 2	Division 1^N Division 2^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Damper	30KLC33AA001	Safeguard Building 3	Division 3^N Division 4^A	Yes	Yes	Position / Position	Open-Close / Open-Close

Table 2.6.6-2—SBVS Equipment I&C and Electrical Design
Sheet 4 of 8

Description	Tag Number[1]	Location	IEEE Class 1E [2]	EQ – Harsh Env.	PACS	MCR / RSS Displays	MCR / RSS Controls
Motor Operated Damper	30KLC33AA003	Safeguard Building 3	Division 4^N Division 3^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Damper	30KLC34AA001	Safeguard Building 4	Division 4^N Division 3^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Damper	30KLC34AA003	Safeguard Building 4	Division 3^N Division 4^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Damper	30KLC45AA001	Fuel Building	Division 1^N Division 2^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Damper	30KLC45AA002	Fuel Building	Division 4^N Division 3^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Damper	30KLC45AA003	Fuel Building	Division 1^N Division 2^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Damper	30KLC45AA004	Fuel Building	Division 4^N Division 3^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Damper	30KLC45AA005	Fuel Building	Division 1^N Division 2^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Damper	30KLC45AA006	Fuel Building	Division 4^N Division 3^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Personnel Air Lock Area							
Motor Operated Damper	30KLC12AA009	Safeguard Building 2	Division 2^N Division 1^A	Yes	Yes	Position / Position	Open-Close / Open-Close

Table 2.6.6-2—SBVS Equipment I&C and Electrical Design
Sheet 5 of 8

Description	Tag Number(1)	Location	IEEE Class 1E (2)	EQ – Harsh Env.	PACS	MCR / RSS Displays	MCR / RSS Controls
Motor Operated Damper	30KLC12AA010	Safeguard Building 2	Division 1^N Division 2^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Damper	30KLC22AA010	Safeguard Building 2	Division 2^N Division 1^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Iodine Filtration Train 30KLC41							
Motor Operated Damper	30KLC41AA001	Fuel Building	Division 1^N Division 2^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Electric Heater (two stage)	30KLC41AH001A/B	Fuel Building	Division 1^N Division 2^A	Yes	Yes	On-Off / On-Off	Start-Stop / Start-Stop
Motor Operated Damper	30KLC41AA002	Fuel Building	Division 1^N Division 2^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Exhaust Fan	30KLC41AN001	Fuel Building	Division 1^N Division 2^A	Yes	Yes	On-Off / On-Off	Run-Stop / Run-Stop
Iodine Filtration Train 30KLC42							
Motor Operated Damper	30KLC42AA001	Fuel Building	Division 4^N Division 3^A	Yes	Yes	Position / Position	Open-Close / Open-Close
Electric Heater (two stage)	30KLC42AH001A/B	Fuel Building	Division 4^N Division 3^A	Yes	Yes	On-Off / On-Off	Start-Stop / Start-Stop
Motor Operated Damper	30KLC42AA002	Fuel Building	Division 4^N Division 3^A	Yes	Yes	Position / Position	Open-Close / Open-Close

Table 2.6.6-2—SBVS Equipment I&C and Electrical Design
Sheet 6 of 8

Description	Tag Number(1)	Location	IEEE Class 1E (2)	EQ – Harsh Env.	PACS	MCR / RSS Displays	MCR / RSS Controls
Exhaust Fan	30KLC42AN001	Fuel Building	Division 4^N Division 3^A	Yes	Yes	On-Off / On-Off	Run-Stop / Run-Stop
Recirculation Cooling Units							
Recirculation Fans	30KLC51AN001 30KLC51AN002 30KLC51AN003	Safeguard Building 1 Safeguard Building 1 Safeguard Building 1	Division 1^N	Yes	Yes	On-Off / On-Off	Run-Stop / Run-Stop
Recirculation Fans	30KLC52AN001 30KLC52AN002	Safeguard Building 2 Safeguard Building 2	Division 2^N	Yes	Yes	On-Off / On-Off	Run-Stop / Run-Stop
Recirculation Fans	30KLC53AN001 30KLC53AN002	Safeguard Building 3 Safeguard Building 3	Division 3^N	Yes	Yes	On-Off / On-Off	Run-Stop / Run-Stop
Recirculation Fans	30KLC54AN001 30KLC54AN002 30KLC54AN003	Safeguard Building 4 Safeguard Building 4 Safeguard Building 4	Division 4^N	Yes	Yes	On-Off / On-Off	Run-Stop / Run-Stop
Instruments							
Exhaust Air Flow	30KLC45CF001 30KLC45CF002	Fuel Building	N/A	Yes	N/A	Flow / Flow	N/A
Medium Head SIS Pump Room Temperature	30KLC51CT001 30KLC51CT002 30KLC52CT001 30KLC52CT002 30KLC53CT001 30KLC53CT002 30KLC54CT001 30KLC54CT002	Safeguard Building 1 Safeguard Building 1 Safeguard Building 2 Safeguard Building 2 Safeguard Building 3 Safeguard Building 3 Safeguard Building 4 Safeguard Building 4	N/A	Yes	N/A	Temp / Temp	N/A

Table 2.6.6-2—SBVS Equipment I&C and Electrical Design
Sheet 7 of 8

Description	Tag Number(1)	Location	IEEE Class 1E (2)	EQ – Harsh Env.	PACS	MCR / RSS Displays	MCR / RSS Controls
Low Head SIS Pump Room Temperature	30KLC51CT003 30KLC51CT004 30KLC52CT003 30KLC52CT004 30KLC53CT003 30KLC53CT004 30KLC54CT003 30KLC54CT004	Safeguard Building 1 Safeguard Building 1 Safeguard Building 2 Safeguard Building 2 Safeguard Building 3 Safeguard Building 3 Safeguard Building 4 Safeguard Building 4	N/A	Yes	N/A	Temp / Temp	N/A
CCW & EFW Valve Room Temperature	30KLC51CT005 30KLC51CT006 30KLC52CT005 30KLC52CT006 30KLC53CT005 30KLC53CT006 30KLC54CT005 30KLC54CT006	Safeguard Building 1 Safeguard Building 1 Safeguard Building 2 Safeguard Building 2 Safeguard Building 3 Safeguard Building 3 Safeguard Building 4 Safeguard Building 4	N/A	Yes	N/A	Temp / Temp	N/A
Sampling System Room Temperature	30KLC51CT007 30KLC51CT008 30KLC54CT007 30KLC54CT008	Safeguard Building 1 Safeguard Building 1 Safeguard Building 4 Safeguard Building 4	N/A	Yes	N/A	Temp / Temp	N/A
Temperature Downstream of Iodine Filtration Heater	30KLC41CT001/002 30KLC42CT001/002	Fuel Building	N/A	Yes	N/A	Temp / Temp	N/A
Temperature Downstream of Carbon Adsorbers	30KLC41CT003 30KLC42CT003	Fuel Building	N/A	Yes	N/A	Temp / Temp	N/A

Table 2.6.6-2—SBVS Equipment I&C and Electrical Design
Sheet 8 of 8

Description	Tag Number(1)	Location	IEEE Class 1E (2)	EQ – Harsh Env.	PACS	MCR / RSS Displays	MCR / RSS Controls
Differential Pressure across Iodine Filtration Trains	30KLC41CP001 30KLC42CP001	Fuel Building	N/A	Yes	N/A	Press / Press	N/A
Temperature Upstream of Iodine Filtration Trains	30KLC41CT004 30KLC42CT004	Fuel Building	N/A	Yes	N/A	Temp / Temp	N/A

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

2. ^{N} denotes division the equipment is normally powered from, while ^{A} denotes division the equipment is powered from when alternate feed is implemented.

Table 2.6.6-3—Safeguard Building Controlled-Area Ventilation System
ITAAC
Sheet 1 of 5

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	The functional arrangement of the SBVS is as described in the Design Description of Section 2.6.6, Tables 2.6.6-1 and 2.6.6-2, and as shown on Figures 2.6.6-1 and 2.6.6-2.	An inspection of the as-built SBVS functional arrangement will be performed.	The SBVS conforms to the functional arrangement as described in the Design Description of Section 2.6.6, Tables 2.6.6-1 and 2.6.6-2, and as shown on Figures 2.6.6-1 and 2.6.6-2.
2.2	Deleted.	Deleted.	Deleted.
2.3	Physical separation exists between the SBVS iodine filtration trains located in the Fuel Building as listed in Table 2.6.3-1.	An inspection will be performed to verify that the as-built SBVS iodine filtration trains are located in separate rooms in the Fuel Building.	The SBVS iodine filtration trains are located in separate rooms of the Fuel Building as listed in Table 2.6.6-1.
3.1	Deleted.	Deleted.	Deleted.
3.2	Class 1E dampers listed in Table 2.6.6-2 will function to change position as listed in Table 2.6.6-1 under normal operating conditions.	Tests will be performed to verify the ability of Class 1E dampers to change position under normal operating conditions.	Class 1E dampers listed in Table 2.6.6-2 change position as listed in Table 2.6.6-1 under normal operating conditions.
3.3	Equipment identified as Seismic Category I in Table 2.6.6-1 can withstand seismic design basis loads without a loss of the function listed in Table 2.6.6-1.	a. Type tests, analyses, or a combination of type tests and analyses will be performed on the equipment identified as Seismic Category I in Table 2.6.6-1 using analytical assumptions, or under conditions, which bound the Seismic Category I design requirements. b. An inspection will be performed of the as-built equipment identified as Seismic Category I in Table 2.6.6-1 to verify that the equipment, including anchorage, are installed per the approved design requirements.	a. Test/analysis reports conclude that the equipment identified as Seismic Category I in Table 2.6.6-1 can withstand seismic design basis loads without a loss of the function listed in Table 2.6.6-1 including the time required to perform the listed function. b. Inspection reports conclude that the equipment identified as Seismic Category I in Table 2.6.6-1, including anchorage, are installed per the approved design requirements.

Table 2.6.6-3—Safeguard Building Controlled-Area Ventilation System ITAAC
Sheet 2 of 5

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
3.4	Equipment listed in Table 2.6.6-1 as ASME AG-1 Code are designed in accordance with ASME AG-1 Code requirements.	An analysis will be performed of ASME AG-1 Code Design Verification Reports.	ASME AG-1 Code Design Verification Reports (AA-4400) conclude that the design of equipment listed as ASME AG-1 Code in Table 2.6.6-1 complies with ASME AG-1 Code requirements.
3.5	Equipment listed in Table 2.6.6-1 as ASME AG-1 Code are fabricated in accordance with ASME AG-1 Code requirements, including welding requirements.	An inspection of the as-built fabrication activities and documentation for ASME AG-1 Code equipment will be conducted.	A report concludes that ASME AG-1 Code equipment listed in Table 2.6.6-1 are fabricated in accordance with ASME AG-1 Code requirements.
3.6	Equipment listed in Table 2.6.6-1 as ASME AG-1 Code are installed, inspected, and tested in accordance with ASME AG-1 Code requirements.	An inspection of the as-built construction activities and documentation for ASME AG-1 Code equipment will be conducted.	A report concludes that ASME AG-1 Code equipment listed in Table 2.6.6-1 are installed, inspected, and tested in accordance with ASME AG-1 Code requirements.
4.1	Displays listed in Table 2.6.6-2 are indicated on the PICS operator workstations in the MCR and the RSS.	a. Tests will be performed to verify that the displays listed in Table 2.6.6-2 are indicated on the PICS operator workstations in the MCR by using test input signals to PICS. b. Tests will be performed to verify that the displays listed in Table 2.6.6-2 are indicated on the PICS operator workstations in the RSS by using test input signals inputs to PICS.	a. Displays listed in Table 2.6.6-2 are indicated on the PICS operator workstations in the MCR. b. Displays listed in Table 2.6.6-2 are indicated on the PICS operator workstations in the RSS.

Table 2.6.6-3—Safeguard Building Controlled-Area Ventilation System ITAAC
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Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
4.2	Controls on the PICS operator workstations in the MCR and the RSS perform the function listed in Table 2.6.6-2.	a. Tests will be performed using controls on the PICS operator workstations in the MCR. b. Tests will be performed using controls on the PICS operator workstations in the RSS.	a. Controls on the PICS operator workstations in the MCR perform the function listed in Table 2.6.6-2. b. Controls on the PICS operator workstations in the RSS perform the function listed in Table 2.6.6-2.
4.3	Equipment listed as being controlled by a PACS module in Table 2.6.6-2 responds to the state requested and provides drive monitoring signals back to the PACS module. The PACS module will protect the equipment by terminating the output command upon the equipment reaching the requested state.	A test will be performed using test input signals to verify equipment controlled by a PACS module responds to the state requested and provides drive monitoring signals back to the PACS module.	Equipment listed as being controlled by a PACS module in Table 2.6.6-2 responds to the state requested and provides drive monitoring signals back to the PACS module. The PACS module will protect the equipment by terminating the output command upon the equipment reaching the requested state.
5.1	Equipment designated as Class 1E in Table 2.6.6-2 are powered from the Class 1E division as listed in Table 2.6.6-2 in a normal or alternate feed condition.	a. Testing will be performed by providing a test input signal in each normally aligned division. b. Testing will be performed by providing a test input signal in each division with the alternate feed aligned to the divisional pair.	a. The test input signal provided in the normally aligned division is present at the respective Class 1E equipment identified in Table 2.6.6-2. b. The test input signal provided in each division with the alternate feed aligned to the divisional pair is present at the respective Class 1E equipment identified in Table 2.6.6-2.
5.2	Deleted.	Deleted.	Deleted.

Table 2.6.6-3—Safeguard Building Controlled-Area Ventilation System
ITAAC
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Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
6.1	Equipment designated as harsh environment in Table 2.6.6-2 will perform the function listed in Table 2.6.6-1 under normal environmental conditions, containment test conditions, anticipated operational occurrences, and accident and post-accident environmental conditions.	a. Type tests or type tests and analysis will be performed to demonstrate the ability of the equipment designated as harsh environment in Table 2.6.6-2 to perform the function listed in Table 2.6.6-1 under normal environmental conditions, containment test conditions, anticipated operational occurrences, and accident and post-accident environmental conditions. b. An inspection will be performed of the as-built equipment designated as harsh environment in Table 2.6.6-2 to verify that the equipment, including anchorage, are installed per the approved design requirements.	a. EQDPs conclude that the equipment designated as harsh environment in Table 2.6.6-2 can perform the function listed in Table 2.6.6-1 under normal environmental conditions, containment test conditions, anticipated operational occurrences, and accident and post-accident environmental conditions, including the time required to perform the listed function. b. Inspection reports conclude that the equipment designated as harsh environment in Table 2.6.6-2, including anchorage, are installed per the approved design requirements.
6.2	Deleted.	Deleted.	Deleted.
7.1	Upon receipt of a containment isolation signal, the SBVS maintains a negative pressure in the hot mechanical rooms of the Safeguard Buildings relative to the adjacent areas.	A test will be performed to verify that upon receipt of a containment isolation test input signal, the SBVS maintains a negative pressure in the hot mechanical rooms of the Safeguard Buildings relative to the adjacent areas.	Upon receipt of a containment isolation test input signal from the PACS module, the SBVS maintains a negative pressure of less than or equal to -0.25 inches water gauge in the hot mechanical rooms of the Safeguard Buildings relative to the adjacent areas.
7.2	Deleted.	Deleted.	Deleted.

Table 2.6.6-3—Safeguard Building Controlled-Area Ventilation System
ITAAC
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Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
7.3	Upon receipt of a high radiation signal in the Fuel Building or Reactor Building, both SBVS iodine filtration trains start automatically, the FB isolation dampers open, the SBVS isolation dampers close, iodine filtration banks isolation dampers open, and the accident air is directed through the SBVS iodine filtration trains.	A test will be performed separately for each iodine filtration train to verify that upon receipt of a high radiation test input signal in the Fuel Building or Reactor Building, both SBVS iodine filtration trains start automatically, the FB isolation dampers, the SBVS isolation dampers close, iodine filtration banks isolation dampers open, and the accident air is directed through the SBVS iodine filtration trains.	Upon receipt of a high radiation test input signal from the PACS module, both SBVS iodine filtration trains start automatically, the FB isolation dampers open, the SBVS isolation dampers close, iodine filtration banks isolation dampers open, and the accident air is directed through the SBVS iodine filtration trains. The isolation dampers close or open within 60 seconds after receipt of a test input signal from the PACS module.
7.4	Upon receipt of a containment isolation signal, the SBVS maintains a negative pressure in the FB and SB relative to the outside environment.	A test will be performed to verify that upon receipt of a containment isolation test input signal, the SBVS maintains a negative pressure inside the FB and SB relative to the outside environment.	Upon receipt of a containment isolation test input signal from the PACS module, the SBVS maintains a negative pressure of less than or equal to -0.25 inches water gauge in the FB and SB relative to the outside environment.
7.5	The SBVS provides cooling to maintain design temperatures in the hot mechanical rooms in the Safeguard Buildings, while operating in a design basis accident alignment.	a. Tests and analysis will be performed to verify the SBVS provides cooling to maintain design temperatures in the hot mechanical rooms in the Safeguard Buildings, while operating in a design basis accident alignment. b. A test of the SBVS fans will be performed to verify that the design air flow is greater than the approved design requirement.	a. Each SBVS cooling coil is capable of providing design cooling capacity, while operating in a design basis accident alignment. b. Each SBVS fan is capable of meeting the design air flow requirements, while operating in a design basis accident alignment.