

2.6.6 Safeguard Building Controlled-Area Ventilation System

1.0 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 shown on the following figures:

- Figure 2.6.6-1—Safeguard Building Controlled-Area Ventilation System Air Supply Functional Arrangement.
- Figure 2.6.6-2—Safeguard Building Controlled-Area Ventilation System Exhaust Air Functional Arrangement.

2.2 The location of the SBVS equipment is as listed in Table 2.6.6-1—Safeguard Building Controlled-Area Ventilation System Equipment Mechanical Design.

2.3 Physical separation exists between the SBVS iodine filtration trains located in the Fuel Building.

3.0 Mechanical Design Features

3.1 Deleted.

3.2 Equipment listed in Table 2.6.6-1 can perform the function listed in Table 2.6.6-1 under system operating conditions.

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

3.5 Components 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 Components listed in Table 2.6.6-1 as ASME AG-1 Code are inspected and tested in accordance with ASME AG-1 Code requirements.

4.0 Displays and Controls

4.1 Displays listed in Table 2.6.6-2—Safeguard Building Controlled-Area Ventilation 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 2.6.6-2.

4.2 The SBVS equipment controls that are provided in the MCR and RSS are as 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 by a test signal.

5.0 Electrical Power Design Features

5.1 The 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 Components in Table 2.6.6-2, that are designated as harsh environment, will perform the function listed in Table 2.6.6-1 in the environments that exist during and following design basis events.

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 FB, both SBVS iodine filtration trains start automatically, the 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 is isolated from the SBVSE and NAVBS by automatically closing the air supply and exhaust isolation dampers, both SBVS iodine filtration trains start automatically, and the FB and SB exhaust air is directed through the iodine filtration trains to maintain a negative pressure inside the FB and hot mechanical area of the SB.

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

8.0 Inspections, Tests, Analyses and Acceptance Criteria

Table 2.6.6-3 lists the SBVS ITAAC.

Table 2.6.6-1—Safeguard Building Controlled-Area Ventilation System Equipment Mechanical Design (6 Sheets)

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

Table 2.6.6-1—Safeguard Building Controlled-Area Ventilation System Equipment Mechanical Design (6 Sheets)

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

Table 2.6.6-1—Safeguard Building Controlled-Area Ventilation System Equipment Mechanical Design (6 Sheets)

Description	Tag Number ⁽¹⁾	Location	ASME AG-1 Code	Function	Seismic Category
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
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

Table 2.6.6-1—Safeguard Building Controlled-Area Ventilation System Equipment Mechanical Design (6 Sheets)

Description	Tag Number ⁽¹⁾	Location	ASME AG-1 Code	Function	Seismic Category
Electric Heaters	30KLC41AH001 30KLC42AH001	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
Exhaust Fans	30KLC41AN001 30KLC42AN001	30UFA 21083 30UFA 21081	Yes	Run	I
Backdraft dampers	30KLC41AA003 30KLC42AA003	30UFA 21083 30UFA 21081	Yes	N/A	I

Table 2.6.6-1—Safeguard Building Controlled-Area Ventilation System Equipment Mechanical Design (6 Sheets)

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

Table 2.6.6-1—Safeguard Building Controlled-Area Ventilation System Equipment Mechanical Design (6 Sheets)

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

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

Table 2.6.6-2—Safeguard Building Controlled-Area Ventilation System Equipment I&C and Electrical Design (7 Sheets)

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
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

Table 2.6.6-2—Safeguard Building Controlled-Area Ventilation System Equipment I&C and Electrical Design (7 Sheets)

Description	Tag Number ⁽¹⁾	Location	IEEE Class 1E ⁽²⁾	EQ – Harsh Env.	PACS	MCR / RSS Displays	MCR / RSS Controls
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
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

Table 2.6.6-2—Safeguard Building Controlled-Area Ventilation System Equipment I&C and Electrical Design (7 Sheets)

Description	Tag Number ⁽¹⁾	Location	IEEE Class 1E ⁽²⁾	EQ – Harsh Env.	PACS	MCR / RSS Displays	MCR / RSS Controls
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
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

Table 2.6.6-2—Safeguard Building Controlled-Area Ventilation System Equipment I&C and Electrical Design (7 Sheets)

Description	Tag Number ⁽¹⁾	Location	IEEE Class 1E ⁽²⁾	EQ – Harsh Env.	PACS	MCR / RSS Displays	MCR / RSS Controls
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
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	30KLC41AH001	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

Table 2.6.6-2—Safeguard Building Controlled-Area Ventilation System Equipment I&C and Electrical Design (7 Sheets)

Description	Tag Number ⁽¹⁾	Location	IEEE Class 1E ⁽²⁾	EQ – Harsh Env.	PACS	MCR / RSS Displays	MCR / RSS Controls
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	30KLC42AH001	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
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

Table 2.6.6-2—Safeguard Building Controlled-Area Ventilation System Equipment I&C and Electrical Design (7 Sheets)

Description	Tag Number ⁽¹⁾	Location	IEEE Class 1E ⁽²⁾	EQ – Harsh Env.	PACS	MCR / RSS Displays	MCR / RSS Controls
Medium Head SIS Pump Room Temperature	30KLC51CT001	Safeguard Building 1	N/A	Yes	N/A	Temp / Temp	N/A
	30KLC51CT002	Safeguard Building 1					
	30KLC52CT001	Safeguard Building 2					
	30KLC52CT002	Safeguard Building 2					
	30KLC53CT001	Safeguard Building 3					
	30KLC53CT002	Safeguard Building 3					
	30KLC54CT001	Safeguard Building 4					
	30KLC54CT002	Safeguard Building 4					
Low Head SIS Pump Room Temperature	30KLC51CT003	Safeguard Building 1	N/A	Yes	N/A	Temp / Temp	N/A
	30KLC51CT004	Safeguard Building 1					
	30KLC52CT003	Safeguard Building 2					
	30KLC52CT004	Safeguard Building 2					
	30KLC53CT003	Safeguard Building 3					
	30KLC53CT004	Safeguard Building 3					
	30KLC54CT003	Safeguard Building 4					
	30KLC54CT004	Safeguard Building 4					
CCW & EFW Valve Room Temperature	30KLC51CT005	Safeguard Building 1	N/A	Yes	N/A	Temp / Temp	N/A
	30KLC51CT006	Safeguard Building 1					
	30KLC52CT005	Safeguard Building 2					
	30KLC52CT006	Safeguard Building 2					
	30KLC53CT005	Safeguard Building 3					
	30KLC53CT006	Safeguard Building 3					
	30KLC54CT005	Safeguard Building 4					
	30KLC54CT006	Safeguard Building 4					

Table 2.6.6-2—Safeguard Building Controlled-Area Ventilation System Equipment I&C and Electrical Design (7 Sheets)

Description	Tag Number ⁽¹⁾	Location	IEEE Class 1E ⁽²⁾	EQ – Harsh Env.	PACS	MCR / RSS Displays	MCR / RSS Controls
Sampling System Room Temperature	30KLC51CT007	Safeguard Building 1	N/A	Yes	N/A	Temp / Temp	N/A
	30KLC51CT008	Safeguard Building 1					
	30KLC54CT007	Safeguard Building 4					
	30KLC54CT008	Safeguard Building 4					
Temperature Downstream of Iodine Filtration Heater	30KLB41CT001	Fuel Building	N/A	Yes	N/A	Temp / Temp	N/A
	30KLB42CT001						
Temperature Downstream of Carbon Adsorbers	30KLB41CT003	Fuel Building	N/A	Yes	N/A	Temp / Temp	N/A
	30KLB42CT003						
Differential Pressure across Iodine Filtration Trains	30KLB41CP001	Fuel Building	N/A	Yes	N/A	Temp / Temp	N/A
	30KLB42CP001						

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

2) ^N denotes division the component is normally powered from, while ^A denotes division the component is powered from when alternate feed is implemented.

Table 2.6.6-3—Safeguard Building Controlled-Area Ventilation System ITAAC (7 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	The functional arrangement of the SBVS is as shown on Figures 2.6.6-1 and 2.6.6-2.	Inspections of the as-built system will be conducted.	The as-built SBVS conforms to the functional arrangement as shown on Figures 2.6.6-1 and 2.6.6-2.
2.2	The location of the SBVS equipment is as listed in Table 2.6.6-1.	An inspection will be performed of the location of the equipment listed in Table 2.6.6-1.	The equipment listed in Table 2.6.6-1 is located as listed in Table 2.6.6-1.
2.3	Physical separation exists between the SBVS iodine filtration trains located in the Fuel Building.	An inspection will be performed to verify that SBVS iodine filtration trains are located in separate rooms.	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	Equipment listed in Table 2.6.6-1 can perform the function listed in Table 2.6.6-1 under system operating conditions.	Tests will be performed.	Equipment listed in Table 2.6.6-1 performs the function listed in the table under system operating conditions.

Table 2.6.6-3—Safeguard Building Controlled-Area Ventilation System ITAAC (7 Sheets)

	Commitment Wording	Inspections, Tests, Analyses	Acceptance Criteria
3.3	Components 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.	<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 2.6.6-1 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 2.6.6-1 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 2.6.6-1 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.</p> <p>b. Inspection reports exist and conclude that the Seismic Category I components identified in Table 2.6.6-1, 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>
3.4	Components listed in Table 2.6.6-1 as ASME AG-1 Code are designed in accordance with ASME AG-1 Code requirements.	Inspections will be performed for the existence of ASME AG-1 Code Design Verification Reports.	ASME AG-1 Code Design Verification Reports (AA-4400) exist for components listed as ASME AG-1 Code in Table 2.6.6-1.
3.5	Components 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.	Inspections will be performed to verify components are fabricated in accordance with ASME AG-1 Code requirements.	For components listed as ASME AG-1 Code in Table 2.6.6-1, reports exist and conclude that the component meets ASME AG-1 Code requirements, including welding requirements.

Table 2.6.6-3—Safeguard Building Controlled-Area Ventilation System ITAAC (7 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
3.6	Components listed in Table 2.6.6-1 as ASME AG-1 Code are inspected and tested in accordance with ASME AG-1 Code requirements.	Inspections and tests will be performed on the components.	For components listed as ASME AG-1 Code in Table 2.6.6-1, reports exist and conclude that the component meets ASME AG-1 Code inspection and testing requirements.
4.1	Displays listed in Table 2.6.6-2 are retrievable in the MCR and the remote shutdown station (RSS) as listed in Table 2.6.6-2.	<ul style="list-style-type: none"> a. Tests will be performed for the retrieve-ability of the displays in the MCR as listed in Table 2.6.6-2. b. Tests will be performed for the retrieve-ability of the displays in the RSS as listed in Table 2.6.6-2. 	<ul style="list-style-type: none"> a. The displays listed in Table 2.6.6-2 as being retrieved in the MCR can be retrieved in the MCR. b. The displays listed in Table 2.6.6-2 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 2.6.6-2.	<ul style="list-style-type: none"> a. Tests will be performed for the existence of control signals from the MCR to the equipment listed in Table 2.6.6-2. b. Tests will be performed for the existence of control signals from the RSS to the equipment listed in Table 2.6.6-2. 	<ul style="list-style-type: none"> a. The controls listed in Table 2.6.6-2 as being in the MCR exist in the MCR. b. The controls listed in Table 2.6.6-2 as being in the RSS exist in the RSS.
4.3	Equipment listed as being controlled by a PACS module in Table 2.6.6-2 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 2.6.6-2 responds to the state requested by the test signal.

Table 2.6.6-3—Safeguard Building Controlled-Area Ventilation System ITAAC (7 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
5.1	The components 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.	<ul style="list-style-type: none"> a. Testing will be performed for the components designated as Class 1E in Table 2.6.6-2 by providing a test signal in each normally aligned division. b. Testing will be performed for the components designated as Class 1E in Table 2.6.6-2 by providing a test signal in each division with the alternate feed aligned to the divisional pair. 	<ul style="list-style-type: none"> a. The test signal provided in the normally aligned division is present at the respective Class 1E component identified in Table 2.6.6-2. 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 2.6.6-2.
5.2	Deleted.	Deleted.	Deleted.
6.1	Components in Table 2.6.6-2, that are designated as harsh environment, will perform the function listed in Table 2.6.6-1 in the environments that exist during and following design basis events.	<ul style="list-style-type: none"> a. Type tests or type tests and analysis will be performed to demonstrate the ability of the components listed as harsh environment in Table 2.6.6-2 to perform the function listed in Table 2.6.6-1 for the environmental conditions that could occur during and following design basis events.. b. Components listed as harsh environment in Table 2.6.6-2 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. 	<ul style="list-style-type: none"> a. Environmental Qualification Data Packages (EQDP) exist and conclude that the components listed as harsh environment in Table 2.6.6-2 can perform the function listed in Table 2.6.6-1 during and following design basis events including the time required to perform the listed function. b. Inspection reports exists and conclude that the components listed in Table 2.6.6-2 as harsh environment has been installed per the construction drawings and any deviations have been reconciled to the EQDP.
6.2	Deleted.	Deleted.	Deleted.

Table 2.6.6-3—Safeguard Building Controlled-Area Ventilation System ITAAC (7 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
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 upon receipt of a containment isolation test signal, that the SBVS maintains a negative pressure in the hot mechanical rooms of the Safeguard Buildings relative to the adjacent areas.	The test confirms, upon receipt of a containment isolation test signal, that the SBVS maintains the pressure 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.
7.3	Upon receipt of a high radiation signal in the Fuel Building, both SBVS iodine filtration trains start automatically, the isolation dampers open, and the accident air is directed through the SBVS iodine filtration trains.	A test will be performed to verify that upon receipt of a high radiation signal in the Fuel Building, both SBVS iodine filtration trains start automatically, the isolation dampers (the Fuel Building dampers KLC45 AA003/AA004), the SBVS isolation dampers (KLC45 AA001/AA002) close, and the accident air is directed through the SBVS iodine filtration trains by aligning the iodine filtration banks isolation dampers (KLC41/42 AA001/AA002) to the open position (see Figure 2.6.6-2 for the above components). A test is performed using a simulated high radiation signal from the Fuel Building.	A separate test for a radiation signal in the Fuel Building (KLC38CR001/002) confirms that upon receipt of a high radiation signal in the Fuel Building or Reactor Building, both SBVS iodine filtration trains start automatically, the isolation dampers open (the Fuel Building dampers KLC45 AA003/AA004), the SBVS isolation dampers (KLC45 AA001/AA002) close, and the accident air is directed through the SBVS iodine filtration trains by aligning the iodine filtration banks isolation dampers (30KLC41/42 AA001/AA002) to the open position (see Figure 2.6.6-2 for the above components). Above dampers close or open within 60 seconds.

Table 2.6.6-3—Safeguard Building Controlled-Area Ventilation System ITAAC (7 Sheets)

	Commitment Wording	Inspections, Tests, Analyses	Acceptance Criteria
7.4	<p>Upon receipt of a containment isolation signal, the SBVS is isolated from the SBVSE and NABVS by automatically closing the air supply and exhaust isolation dampers, both SBVS iodine filtration trains start automatically, and the FB and SB exhaust air is directed through the iodine filtration trains to maintain a negative pressure inside the FB and SB.</p>	<p>A test will be performed to verify that upon receipt of a containment isolation signal, the SBVS is isolated automatically by closing the SBVSE air supply isolation dampers (30KLC11/12/13/14 AA004/AA005 on Figure 2.6.6-1) and the NABVS exhaust air isolation dampers (30KLC21/22/23/24 AA007/AA008 on Figure 2.6.6-2). Both SBVS trains (shown on Figure 2.6.6-2) start automatically aligning the filter bank isolation dampers (30KLC41/42 AA001/AA002), the SB Division 1-4 exhaust trains isolation dampers (30KLC31/32/33/34AA 001), and the isolation dampers from the SB (30KLC45 AA001/AA002) and the FB (30KLC45 AA003/AA004) to the open position, and maintaining a negative pressure inside the FB and SB.</p>	<p>A test confirms that upon receipt of a containment isolation signal (JYK15CR101, JYK15CR102, JYK15CR103, JYK28CR101), the SBVS is isolated automatically within 60 seconds by closing the SBVSE air supply isolation dampers (30KLC11/12/13/14 AA004/AA005 on Figure 2.6.6-1) and the NABVS exhaust air isolation dampers (30KLC21/22/23/24 AA007/AA008 on Figure 2.6.6-2). Both SBVS trains (shown on Figure 2.6.6-2) start automatically aligning the filter bank isolation dampers (30KLC41/42 AA001/AA002) (30KLC21/24 AA010) (30KLC31/32/33/34 AA003) to the open position, aligning the SB Division 1-4 exhaust trains isolation dampers (30KLC31/32/33/34AA 001) to the open position, and aligning the isolation dampers from the SB (30KLC45 AA001/AA002) and the FB (30KLC45 AA003/AA004) to the open position, and maintaining a minimum negative pressure of 0.25 inches water gauge inside the FB and SB. Above dampers close or open within 60 seconds.</p>

Table 2.6.6-3—Safeguard Building Controlled-Area Ventilation System ITAAC (7 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
7.5	The SBVS provides recirculation cooling to maintain design temperatures in the hot mechanical rooms in the Safeguard Buildings, while operating in a design basis accident alignment.	<ul style="list-style-type: none"> a. An inspection of the manufacturer's documentation of the SBVS cooling coils will be performed. b. Tests and analysis of the SBVS cooling units will be performed to verify that design temperatures in the hot mechanical rooms in the Safeguard Buildings, while operating in a design basis accident alignment. 	<ul style="list-style-type: none"> a. A report confirms that each SBVS cooling coil is capable of providing design cooling requirements. b. A report confirms that the SBVS is capable of providing cooling to maintain design temperatures in the hot mechanical rooms in the Safeguard Buildings, while operating in a design basis accident alignment. A report confirms that each SBVS fan is capable of meeting the design air flow requirements, while operating in a design basis accident alignment.

Next File