

**2.6 HVAC Systems**

**2.6.1 Main Control Room Air Conditioning System**

**1.0 Description**

The main control room air conditioning system (CRACS) supplies air to the control room envelope (CRE) area which includes the main control room (MCR) and associated rooms.

The CRACS controls the CRE area temperature, humidity and air change rate for personnel comfort, personnel safety, and equipment protection during normal plant operation. The CRACS provides cooling, heating, and ventilation for the CRE area to remove equipment heat, and heat generated from other sources. The CRACS also provides heat to maintain a minimum temperature in the CRE area. The CRACS provides a minimal air change rate for the CRE area and controls building pressurization to reduce spreading of contamination.

The CRACS maintains habitability of the CRE areas in case of radioactive or toxic gas contamination of the environment. The CRACS also maintains a positive pressure in the CRE area to prevent infiltration of contaminated outside air. The CRACS operates in recirculation mode with fresh air makeup.

The CRACS provides the following safety-related functions:

- Maintains ambient temperature conditions inside the CRE area during design basis conditions, including a radiological contamination event, or toxic gas contamination of the environment.
- Maintains a positive pressure in the CRE area relative to the adjacent areas to prevent unfiltered in-leakage.

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

- Maintains acceptable humidity conditions in the CRE area during normal plant operation and plant maintenance.

**2.0 Arrangement**

2.1 The functional arrangement of the CRACS is as shown in the following figures:

- Figure 2.6.1-1—Control Room Air Intake and Iodine Filtration Train Subsystem Functional Arrangement.
- Figure 2.6.1-2—Control Room Air Conditioning and Recirculation Air Subsystem Functional Arrangement.
- Figure 2.6.1-3—CRE Air Supply and Recirculation Air Subsystem Functional Arrangement.

2.2 The location of the CRACS equipment is as listed in Table 2.6.1-1—Main Control Room Air Conditioning System Equipment Mechanical Design.

2.3 Physical separation exists between the CRACS air intake, iodine filtration, air recirculation, and air conditioning trains.

### **3.0 Mechanical Design Features**

3.1 Equipment listed in Table 2.6.1-1 as ASME AG-1 is designed, inspected and tested per ASME AG-1.

3.2 Equipment listed in Table 2.6.1-1 performs the function listed in Table 2.6.1-1.

3.3 Equipment identified as Seismic Category I in Table 2.6.1-1 can withstand a design basis seismic load without loss of safety function as listed in Table 2.6.1-1.

### **4.0 Displays and Controls**

4.1 Displays listed in Table 2.6.1-2—Main Control Room Air Conditioning System Equipment I&C and Electrical Design, are retrievable in the main control room (MCR) and the remote shutdown station (RSS) as listed.

4.2 The CRACS equipment controls are provided in the MCR and RSS as listed in Table 2.6.1-2.

4.3 Actuators listed as being controlled by a priority actuator control system (PACS) module in Table 2.6.1-2 are controlled by a PACS module.

### **5.0 Electrical Power Design Features**

5.1 The equipment designated as Class 1E in Table 2.6.1-2 are powered from the Class 1E division as listed in Table 2.6.1-2 in a normal or alternate feed condition.

5.2 Motor operated dampers listed in Table 2.6.1-2 fail to the position as shown in Table 2.6.1-2 on loss of power.

### **6.0 Equipment and System Performance**

6.1 The CRACS maintains ambient conditions and a positive pressure in the CRE areas relative to the outside environment and adjacent areas.

6.2 Upon receipt of containment isolation signal, or high radiation alarm signal in the air intake duct, the iodine filtration train will start automatically, and outside air supply to the CRE area is diverted through the iodine filtration train.

6.3 Upon actuation of the plant toxic gas alarm signal, the outside air intake dampers close automatically and the CRE air is directed in recirculation mode without outside air.

6.4 The CRE area ventilation unfiltered air in-leakage is minimized in order to maintain the MCR habitability.

### **7.0 Inspections, Tests, Analyses and Acceptance Criteria**

The inspections, tests, analyses, and acceptance criteria (ITAAC) for the CRACS are specified in Table 2.6.1-3—Main Control Room Air Conditioning System ITAAC.

**Table 2.6.1-1—Main Control Room Air Conditioning System Equipment Mechanical Design  
(9 Sheets)**

<b>Equipment Description</b>	<b>Equipment Tag Number <sup>(1)</sup></b>	<b>Equipment Location</b>	<b>ASME AG-1 Code</b>	<b>Function</b>	<b>Seismic Category</b>
<b>Fresh Air Intake Trains 30SAB01 and 30SAB04</b>					
Motor Operated Dampers	30SAB01AA002 30SAB04AA002	Safeguard Building Division 2. Safeguard Building Division 3	Yes	Open / Close ("Open for high radiation signal, and "Close" for toxic gas signal)	I
Electric Heaters	30SAB01AH001 30SAB04AH001	Safeguard Building Division 2. Safeguard Building Division 3	Yes	On / Off (based on ambient conditions)	I
Motor Operated Dampers	30SAB01AA003 30SAB04AA003	Safeguard Building Division 2. Safeguard Building Division 3	Yes	Close	I
Prefilters	30SAB01AT001 30SAB04AT001	Safeguard Building Division 2. Safeguard Building Division 3	Yes	N/A	I
Manual Dampers	30SAB01AA006 30SAB04AA006	Safeguard Building Division 2. Safeguard Building Division 3	Yes	N/A	I

**Table 2.6.1-1—Main Control Room Air Conditioning System Equipment Mechanical Design  
(9 Sheets)**

<b>Equipment Description</b>	<b>Equipment Tag Number <sup>(1)</sup></b>	<b>Equipment Location</b>	<b>ASME AG-1 Code</b>	<b>Function</b>	<b>Seismic Category</b>
<b>Fresh Air Intake Trains 30SAB02 and 30SAB03</b>					
Motor Operated Dampers	30SAB02AA002 30SAB03AA002	Safeguard Building Division 2. Safeguard Building Division 3.	Yes	Close	I
Electric Heaters	30SAB02AH001 30SAB03AH001	Safeguard Building Division 2. Safeguard Building Division 3.	Yes	Off	I
Motor Operated Dampers	30SAB02AA003 30SAB03-AA003	Safeguard Building Division 2. Safeguard Building Division 3.	Yes	Close	I
Prefilters	30SAB02AT001 30SAB03AT001	Safeguard Building Division 2. Safeguard Building Division 3.	Yes	N/A	I
Manual Dampers	30SAB02AA006 30SAB03AA006	Safeguard Building Division 2. Safeguard Building Division 3	Yes	N/A	I
<b>Iodine Filtration Trains 30SAB11 and 30SAB14</b>					

**Table 2.6.1-1—Main Control Room Air Conditioning System Equipment Mechanical Design  
(9 Sheets)**

<b>Equipment Description</b>	<b>Equipment Tag Number <sup>(1)</sup></b>	<b>Equipment Location</b>	<b>ASME AG-1 Code</b>	<b>Function</b>	<b>Seismic Category</b>
Motor Operated Dampers (Recirculation from CRE)	30SAB11AA004	Safeguard Building Division 2.	Yes	Open	I
	30SAB14AA004	Safeguard Building Division 3			
Motor Operated Dampers	30SAB11AA001	Safeguard Building Division 2.	Yes	Open	I
	30SAB14AA001	Safeguard Building Division 3			
Electric Heaters	30SAB11AH001	Safeguard Building Division 2.	Yes	On / Off (based on ambient conditions)	I
	30SAB14AH001	Safeguard Building Division 3			
Prefilters	30SAB11AT001	Safeguard Building Division 2.	Yes	N/A	I
	30SAB14AT001	Safeguard Building Division 3			
Upstream HEPA Filters	30SAB11AT002	Safeguard Building Division 2.	Yes	N/A	I
	30SAB14AT002	Safeguard Building Division 3			
Carbon Adsorbers	30SAB11AT003	Safeguard Building Division 2.	Yes	N/A	I
	30SAB14AT003	Safeguard Building			

**Table 2.6.1-1—Main Control Room Air Conditioning System Equipment Mechanical Design  
(9 Sheets)**

<b>Equipment Description</b>	<b>Equipment Tag Number <sup>(1)</sup></b>	<b>Equipment Location</b>	<b>ASME AG-1 Code</b>	<b>Function</b>	<b>Seismic Category</b>
		Division 3			
Downstream HEPA Filters	30SAB11AT004 30SAB14AT004	Safeguard Building Division 2. Safeguard Building Division 3	Yes	N/A	I
Motor Operated Damper	30SAB11AA003 30SAB14AA003	Safeguard Building Division 2. Safeguard Building Division 3	Yes	Open	I
Supply Air Fans	30SAB11AN001 30SAB14AN001	Safeguard Building Division 2. Safeguard Building Division 3	Yes	Run	I
Back draft Dampers	30SAB11AA002 30SAB14AA002	Safeguard Building Division 2. Safeguard Building Division 3	Yes	N/A	I
<b>Recirculation and Air Conditioning Trains 30SAB01 and 30SAB04</b>					
Manual Dampers (recirculation from CRE)	30SAB01AA009 30SAB04AA009	Safeguard Building Division 2. Safeguard Building Division 3	Yes	N/A	I

**Table 2.6.1-1—Main Control Room Air Conditioning System Equipment Mechanical Design  
(9 Sheets)**

<b>Equipment Description</b>	<b>Equipment Tag Number <sup>(1)</sup></b>	<b>Equipment Location</b>	<b>ASME AG-1 Code</b>	<b>Function</b>	<b>Seismic Category</b>
Manual Dampers (recirculation from CRE)	30SAB01AA010	Safeguard Building Division 2.	Yes	N/A	I
	30SAB04AA010	Safeguard Building Division 3			
Air Cooling Coils	30SAB01AC001	Safeguard Building Division 2.	Yes	N/A	I
	30SAB04AC001	Safeguard Building Division 3			
Moisture Separators	30SAB01AT004	Safeguard Building Division 2.	Yes	N/A	I
	30SAB04AT004	Safeguard Building Division 3			
Supply Air Fans	30SAB01AN001	Safeguard Building Division 2.	Yes	Run	I
	30SAB04AN001	Safeguard Building Division 3			
HEPA Filters	30SAB01AT005	Safeguard Building Division 2.	Yes	N/A	I
	30SAB04AT005	Safeguard Building Division 3			
Humidifiers	30SAB01AH002	Safeguard Building Division 2.	Yes	N/A	I
	30SAB04AH002	Safeguard Building Division 3			

**Table 2.6.1-1—Main Control Room Air Conditioning System Equipment Mechanical Design  
(9 Sheets)**

<b>Equipment Description</b>	<b>Equipment Tag Number <sup>(1)</sup></b>	<b>Equipment Location</b>	<b>ASME AG-1 Code</b>	<b>Function</b>	<b>Seismic Category</b>
Back draft Dampers	30SAB01AA011 30SAB04AA011	Safeguard Building Division 2. Safeguard Building Division 3	Yes	N/A	I
Motor Operated Dampers	30SAB01AA012 30SAB04AA012	Safeguard Building Division 2. Safeguard Building Division 3	Yes	Open	I
<b>Recirculation and Air Conditioning Trains 30SAB02 and 30SAB03</b>					
Manual Dampers (recirculation from CRE)	30SAB02AA009 30SAB03AA009	Safeguard Building Division 2. Safeguard Building Division 3	Yes	N/A	I
Manual Dampers (recirculation from CRE)	30SAB02AA010 30SAB03AA010	Safeguard Building Division 2. Safeguard Building Division 3	Yes	N/A	I
Air Cooling Coils	30SAB02AC001 30SAB03AC001	Safeguard Building Division 2. Safeguard Building Division 3	Yes	N/A	I
Moisture Separators	30SAB02AT004	Safeguard Building	Yes	N/A	I



**Table 2.6.1-1—Main Control Room Air Conditioning System Equipment Mechanical Design  
(9 Sheets)**

<b>Equipment Description</b>	<b>Equipment Tag Number <sup>(1)</sup></b>	<b>Equipment Location</b>	<b>ASME AG-1 Code</b>	<b>Function</b>	<b>Seismic Category</b>
	30SAB03AT004	Division 2. Safeguard Building Division 3			
Supply Air Fans	30SAB02AN001 30SAB03AN001	Safeguard Building Division 2. Safeguard Building Division 3	Yes	Stop	I
HEPA Filters	30SAB02AT005 30SAB03AT005	Safeguard Building Division 2. Safeguard Building Division 3	Yes	N/A	I
Humidifiers	30SAB02AH002 30SAB03AH002	Safeguard Building Division 2. Safeguard Building Division 3	Yes	N/A	I
Backdraft Dampers	30SAB02AA011 30SAB03AA011	Safeguard Building Division 2. Safeguard Building Division 3	Yes	N/A	I
Motor Operated Dampers	30SAB02AA012 30SAB03AA012	Safeguard Building Division 2. Safeguard Building Division 3	Yes	Close	I
<b>Kitchen and Sanitary</b>					

**Table 2.6.1-1—Main Control Room Air Conditioning System Equipment Mechanical Design  
(9 Sheets)**

<b>Equipment Description</b>	<b>Equipment Tag Number <sup>(1)</sup></b>	<b>Equipment Location</b>	<b>ASME AG-1 Code</b>	<b>Function</b>	<b>Seismic Category</b>
<b>Exhaust 30SAB45</b>					
Motor Operated Damper	30SAB45AA003	Safeguard Building Division 2	Yes	Close	I
Silencer	30SAB45BS001	Safeguard Building Division 2	Yes	N/A	I
Manual damper	30SAB45AA005	Safeguard Building Division 2	Yes	N/A	I
Exhaust fan	30SAB45AN001	Safeguard Building Division 2	Yes	Stop	I
Motor Operated Damper	30SAB45AA004	Safeguard Building Division 2	Yes	Close	I
Backdraft damper	30SAB45AA006	Safeguard Building Division 2	Yes	N/A	I
<b>MCR Air Supply 30SAB32</b>					
Manual Dampers	30SAB32AA001 30SAB32AA002 30SAB32AA003 30SAB32AA006 30SAB32AA013 30SAB32AA015 30SAB32AA017	Safeguard Building Division 2	Yes	N/A	I
Heaters	30SAB32AH001 30SAB32AH002 30SAB32AH003	Safeguard Building Division 2	Yes	On / Off (based on ambient conditions)	I

**Table 2.6.1-1—Main Control Room Air Conditioning System Equipment Mechanical Design  
(9 Sheets)**

Equipment Description	Equipment Tag Number <sup>(1)</sup>	Equipment Location	ASME AG-1 Code	Function	Seismic Category
	30SAB32AH004 30SAB32AH005 30SAB32AH006 30SAB32AH007				
<b>MCR Air Exhaust 30SAB42</b>					
Motor Operated Dampers	30SAB42AA001 30SAB42AA002	Safeguard Building Division 2	Yes	Open	I
Manual Dampers	30SAB42AA006 30SAB42AA009 30SAB42AA011 30SAB42AA012 30SAB42AA014 30SAB42AA016	Safeguard Building Division 2	Yes	N/A	I

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

**Table 2.6.1-2—Main Control Room Air Conditioning System Equipment I&C and Electrical Design  
(7 Sheets)**

<b>Equipment Description</b>	<b>Equipment Tag Number <sup>(1)</sup></b>	<b>Equipment Location</b>	<b>IEEE Class 1E Source <sup>(2)</sup></b>	<b>Failure Position</b>	<b>PACS</b>	<b>MCR / RSS Displays</b>	<b>MCR / RSS Controls</b>
<b>Fresh Air Intake Train 30SAB01</b>							
Motor Operated Damper	30SAB01AA002	Safeguard Building Division 2	Division 1 <sup>N</sup> Division 2 <sup>A</sup>	Close	Yes	Position / Position	Open-Close / Open-Close
Electric Heater	30SAB01AH001	Safeguard Building Division 2	Division 1 <sup>N</sup>	N/A	Yes	On-Off / On-Off	Start-Stop / Start-Stop
Motor Operated Damper	30SAB01AA003	Safeguard Building Division 2	Division 2 <sup>N</sup> Division 1 <sup>A</sup>	Close	Yes	Position / Position	Open-Close / Open-Close
<b>Fresh Air Intake Train 30SAB02</b>							
Motor Operated Damper	30SAB02AA002	Safeguard Building Division 2	Division 2 <sup>N</sup> Division 1 <sup>A</sup>	Close	Yes	Position / Position	Open-Close / Open-Close
Electric Heater	30SAB02AH001	Safeguard Building Division 2	Division 2 <sup>N</sup>	N/A	Yes	On-Off / On-Off	Start-Stop / Start-Stop
Motor Operated Damper	30SAB02AA003	Safeguard Building Division 2	Division 1 <sup>N</sup> Division 2 <sup>A</sup>	Close	Yes	Position / Position	Open-Close / Open-Close
<b>Fresh Air Intake Train 30SAB03</b>							
Motor Operated Damper	30SAB03AA002	Safeguard Building Division 3	Division 3 <sup>N</sup> Division 4 <sup>A</sup>	Close	Yes	Position / Position	Open-Close / Open-Close
Electric Heater	30SAB03AH001	Safeguard Building Division 3	Division 3 <sup>N</sup>	N/A	Yes	On-Off / On-Off	Start-Stop / Start-Stop

**Table 2.6.1-2—Main Control Room Air Conditioning System Equipment I&C and Electrical Design  
(7 Sheets)**

<b>Equipment Description</b>	<b>Equipment Tag Number <sup>(1)</sup></b>	<b>Equipment Location</b>	<b>IEEE Class 1E Source <sup>(2)</sup></b>	<b>Failure Position</b>	<b>PACS</b>	<b>MCR / RSS Displays</b>	<b>MCR / RSS Controls</b>
Motor Operated Damper	30SAB03AA003	Safeguard Building Division 3	Division 4 <sup>N</sup> Division 3 <sup>A</sup>	Close	Yes	Position / Position	Open-Close / Open-Close
<b>Fresh Air Intake Train 30SAB04</b>							
Motor Operated Damper	30SAB04AA002	Safeguard Building Division 3	Division 4 <sup>N</sup> Division 3 <sup>A</sup>	Close	Yes	Position / Position	Open-Close / Open-Close
Electric Heater	30SAB04AH001	Safeguard Building Division 3	Division 4 <sup>N</sup>	N/A	Yes	On-Off / On-Off	Start-Stop / Start-Stop
Motor Operated Damper	30SAB04AA003	Safeguard Building Division 2	Division 3 <sup>N</sup> Division 4 <sup>A</sup>	Close	Yes	Position / Position	Open-Close / Open-Close
<b>Iodine Filtration Train 30SAB11</b>							
Motor Operated Damper (Recirculation from CRE)	30SAB11AA004	Safeguard Building Division 2	Division 1 <sup>N</sup> Division 2 <sup>A</sup>	Open	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Damper	30SAB11AA001	Safeguard Building Division 2	Division 1 <sup>N</sup> Division 2 <sup>A</sup>	Open	Yes	Position / Position	Open-Close / Open-Close
Electric Heater	30SAB11AH001	Safeguard Building Division 2	Division 1 <sup>N</sup> Division 2 <sup>A</sup>	N/A	Yes	On-Off / On-Off	Start-Stop / Start-Stop
Motor Operated Damper	30SAB11AA003	Safeguard Building Division 2	Division 1 <sup>N</sup> Division 2 <sup>A</sup>	Open	Yes	Position / Position	Open-Close / Open-Close
Supply Air Fan	30SAB11AN001	Safeguard Building Division 2	Division 1 <sup>N</sup> Division 2 <sup>A</sup>	N/A	Yes	On-Off / On-Off	Run-Stop / Run-Stop

**Table 2.6.1-2—Main Control Room Air Conditioning System Equipment I&C and Electrical Design  
(7 Sheets)**

<b>Equipment Description</b>	<b>Equipment Tag Number <sup>(1)</sup></b>	<b>Equipment Location</b>	<b>IEEE Class 1E Source <sup>(2)</sup></b>	<b>Failure Position</b>	<b>PACS</b>	<b>MCR / RSS Displays</b>	<b>MCR / RSS Controls</b>
<b>Iodine Filtration Train 30SAB14</b>							
Motor Operated Damper (Recirculation from CRE)	30SAB14AA004	Safeguard Building Division 3	Division 4 <sup>N</sup> Division 3 <sup>A</sup>	Open	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Damper	30SAB14AA001	Safeguard Building Division 3	Division 4 <sup>N</sup> Division 3 <sup>A</sup>	Open	Yes	Position / Position	Open-Close / Open-Close
Electric Heater	30SAB14AH001	Safeguard Building Division 3	Division 4 <sup>N</sup> Division 3 <sup>A</sup>	N/A	Yes	On-Off / On-Off	Start-Stop / Start-Stop
Motor Operated Damper	30SAB14AA003	Safeguard Building Division 2	Division 4 <sup>N</sup> Division 3 <sup>A</sup>	Open	Yes	Position / Position	Open-Close / Open-Close
Supply Air Fan	30SAB14AN001	Safeguard Building Division 3	Division 4 <sup>N</sup> Division 3 <sup>A</sup>	N/A	Yes	On-Off / On-Off	Run-Stop / Run-Stop
<b>Recirculation and Air Conditioning Train 30SAB01</b>							
Supply Air Fan	30SAB01AN001	Safeguard Building Division 2	Division 1 <sup>N</sup>	N/A	Yes	On-Off / On-Off	Run-Stop / Run-Stop
Motor Operated Damper	30SAB01AA012	Safeguard Building Division 2	Division 1 <sup>N</sup> Division 2 <sup>A</sup>	Open	Yes	Position / Position	Open-Close / Open-Close
<b>Recirculation and Air Conditioning</b>							

**Table 2.6.1-2—Main Control Room Air Conditioning System Equipment I&C and Electrical Design  
(7 Sheets)**

<b>Equipment Description</b>	<b>Equipment Tag Number <sup>(1)</sup></b>	<b>Equipment Location</b>	<b>IEEE Class 1E Source <sup>(2)</sup></b>	<b>Failure Position</b>	<b>PACS</b>	<b>MCR / RSS Displays</b>	<b>MCR / RSS Controls</b>
<b>Train 30SAB02</b>							
Supply Air Fan	30SAB02AN001	Safeguard Building Division 2	Division 2 <sup>N</sup>	N/A	Yes	On-Off / On-Off	Run-Stop / Run-Stop
Motor Operated Damper	30SAB02AA012	Safeguard Building Division 2	Division 2 <sup>N</sup> Division 1 <sup>A</sup>	Close	Yes	Position / Position	Open-Close / Open-Close
<b>Recirculation and Air Conditioning Train 30SAB03</b>							
Supply Air Fan	30SAB03AN001	Safeguard Building Division 3	Division 3 <sup>N</sup>	N/A	Yes	On-Off / On-Off	Run-Stop / Run-Stop
Motor Operated Damper	30SAB03AA012	Safeguard Building Division 3	Division 3 <sup>N</sup> Division 4 <sup>A</sup>	Close	Yes	Position / Position	Open-Close / Open-Close
<b>Recirculation and Air Conditioning Train 30SAB04</b>							
Supply Air Fan	30SAB04AN001	Safeguard Building Division 3	Division 4 <sup>N</sup>	N/A	Yes	On-Off / On-Off	Run-Stop / Run-Stop
Motor Operated Damper	30SAB04AA012	Safeguard Building Division 3	Division 4 <sup>N</sup> Division 3 <sup>A</sup>	Open	Yes	Position / Position	Open-Close / Open-Close
<b>Kitchen and Sanitary Exhaust 30SAB45</b>							
Motor Operated Damper	30SAB45AA003	Safeguard Building Division 2	Division 1 <sup>N</sup> Division 2 <sup>A</sup>	Close	Yes	Position / Position	Open-Close / Open-Close

**Table 2.6.1-2—Main Control Room Air Conditioning System Equipment I&C and Electrical Design  
(7 Sheets)**

<b>Equipment Description</b>	<b>Equipment Tag Number <sup>(1)</sup></b>	<b>Equipment Location</b>	<b>IEEE Class 1E Source <sup>(2)</sup></b>	<b>Failure Position</b>	<b>PACS</b>	<b>MCR / RSS Displays</b>	<b>MCR / RSS Controls</b>
Motor Operated Damper	30SAB45AA004	Safeguard Building Division 2	Division 2 <sup>N</sup> Division 1 <sup>A</sup>	Close	Yes	Position / Position	Open-Close / Open-Close
<b>MCR Air Exhaust 30SAB42</b>							
Motor Operated Damper	30SAB42AA001	Safeguard Building Division 2	Division 1 <sup>N</sup> Division 2 <sup>A</sup>	Open	Yes	Position / Position	Open-Close / Open-Close
Motor Operated Damper	30SAB42AA002	Safeguard Building Division 2	Division 2 <sup>N</sup> Division 1 <sup>A</sup>	Open	Yes	Position / Position	Open-Close / Open-Close
<b>Pressure Sensors</b>							
Differential pressure across 30SAB11 iodine train filters	30SAB11CP001	Safeguard Building Division 2	N/A	N/A	N/A	Press / Press	N/A
Differential pressure across 30SAB14 iodine train filters	30SAB14CP001	Safeguard Building Division 3	N/A	N/A	N/A	Press / Press	N/A
Differential pressure between Main Control Room and reference rooms	30SAB32CP001 30SAB32CP002 30SAB32CP003	Safeguard Building Division 2	N/A	N/A	N/A	Press / Press	N/A
<b>Temperature Sensors</b>							
Outside Air	30SAB01CT001	Safeguard Building	N/A	N/A	N/A	Temp /	N/A



**Table 2.6.1-2—Main Control Room Air Conditioning System Equipment I&C and Electrical Design  
(7 Sheets)**

<b>Equipment Description</b>	<b>Equipment Tag Number <sup>(1)</sup></b>	<b>Equipment Location</b>	<b>IEEE Class 1E Source <sup>(2)</sup></b>	<b>Failure Position</b>	<b>PACS</b>	<b>MCR / RSS Displays</b>	<b>MCR / RSS Controls</b>
temperature sensors for trains 30SAB01/02/03 /04	30SAB02CT001 30SAB03CT001 30SAB04CT001	Division 2 Safeguard Building Division 3				Temp	
Protective switch-off temperature for heaters	30SAB01CT002 30SAB02CT002 30SAB03CT002 30SAB04CT002	Safeguard Building Division 2 Safeguard Building Division 3	N/A	N/A	N/A	Temp / Temp	N/A
Temperature downstream of electric heaters	30SAB01CT003/004 30SAB02CT003/004 30SAB03CT003/004 30SAB04CT003/004	Safeguard Building Division 2  Safeguard Building Division 3	N/A	N/A	N/A	Temp / Temp	N/A
Supply air temperature	30SAB01CT005 30SAB02CT005 30SAB03CT005 30SAB04CT005	Safeguard Building Division 2 Safeguard Building Division 3	N/A	N/A	N/A	Temp / Temp	N/A
Main Control Room temperature	30SAB32CT002 30SAB32CT003	Safeguard Building Division 2	N/A	N/A	N/A	Temp / Temp	N/A

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

**Table 2.6.1-3—Main Control Room Air Conditioning System ITAAC (4 Sheets)**

<b>Reference Section Number</b>	<b>Commitment Wording</b>	<b>Inspection, Analysis or Test</b>	<b>Acceptance Criteria</b>
2.1	The functional arrangement of the CRACS is as shown on Figures 2.6.1-1 through 2.6.1-3.	Inspections of the as-built system will be conducted.	The as-built CRACS conforms to the functional arrangement as shown in Figures 2.6.1-1 through 2.6.1-3.
2.2	Equipment shown on Figures 2.6.1-1 through 2.6.1-3 is located as listed in Table 2.6.1-1.	An inspection will be performed of the location of the equipment listed in Table 2.6.1-1.	The equipment listed in Table 2.6.1-1 is located as listed in Table 2.6.1-1.
2.3	Physical separation exists between the CRACS air intake, iodine filtration, air recirculation, and air conditioning trains.	An inspection will be performed to verify that CRACS air intake, iodine filtration, air recirculation, air conditioning trains are located in separate buildings.	The CRACS air intake, iodine filtration, air recirculation, air conditioning trains are located in separate buildings..
3.1	The CRACS equipment listed as ASME AG-1 Code in Table 2.6.1-1 is designed, inspected and tested in accordance with ASME AG-1.	Analyses will be performed and inspections will be conducted of the as-built components as listed in Table 2.6.1-1.	The CRACS equipment listed in Table 2.6.1-1 is designed, inspected, and tested in accordance with ASME AG-1.
3.2	Equipment listed in Table 2.6.1-1 can perform the function listed in Table 2.6.1-1 under system design basis conditions.	Tests and analyses or a combination of tests and analyses will be performed.	The as-installed equipment changes position as listed Table 2.6.1-1 under system design basis conditions.
3.3	Equipment identified as Seismic Category I in Table 2.6.1-1 can withstand a design basis seismic load without loss of safety function as listed in Table 2.6.1-1.	a) Inspections will be performed of the equipment identified as Seismic Category I in Table 2.6.1-1. b) Type tests, tests, analyses or a	a) The equipment designated as Seismic Category I in Table 2.6.1-1 is installed as designed. b) The equipment designated as Seismic

**Table 2.6.1-3—Main Control Room Air Conditioning System ITAAC (4 Sheets)**

Reference Section Number	Commitment Wording	Inspection, Analysis or Test	Acceptance Criteria
		combination of tests and analyses will be performed on the equipment designated as Seismic Category I in Table 2.6.1-1.	Category I in Table 2.6.1-1 can withstand a design basis seismic load without loss of safety function.
4.1	Displays listed in Table 2.6.1-2 are retrievable in the MCR and the remote shutdown station (RSS) as listed.	Inspections will be performed for the existence or retrieve-ability of the displays in the MCR and the RSS as listed in Table 2.6.1-2.	a) The displays listed in Table 2.6.1-2 as being retrieved in the MCR can be retrieved in the MCR. b) The displays listed in Table 2.6.1-2 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 2.6.1-2.	Test will be performed for the existence of control signals from the MCR and the RSS to the equipment listed in Table 2.6.1-2.	a) The controls listed in Table 2.6.1-2 as being in the MCR exist in the MCR. b) The controls listed in Table 2.6.1-2 as being in the RSS exist in the RSS.
4.3	Actuators listed as being controlled by a Priority Actuator Control System (PACS) module in Table 2.6.1-2 are controlled by a PACS module.	An operational test will be performed using test signals. An inspection will be performed on the actuation of the actuator.	The actuators listed as being controlled by a PACS module in Table 2.6.1-2 actuate to the state requested by the test signal.
5.1	The components designated as Class 1E in Table 2.6.1-2 are powered from the Class 1E division as listed in Table 2.6.1-2 in a normal or alternate feed condition.	a) Testing will be performed for the components designated as Class 1E in Table 2.6.1-2 by providing a test signal in each normally aligned division. b) Testing will be performed for the components designated as Class 1E in Table 2.6.1-2 by providing a test signal in each division with the alternate feed aligned to the divisional pair.	a) The test signal provided in the normally aligned division is present at the respective Class 1E component identified in Table 2.6.1-2. 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 2.6.1-2.

**Table 2.6.1-3—Main Control Room Air Conditioning System ITAAC (4 Sheets)**

Reference Section Number	Commitment Wording	Inspection, Analysis or Test	Acceptance Criteria
5.2	Motor operated dampers listed in Table 2.6.1-2 fail to the position as shown in Table 2.6.1-2 on loss of power.	Testing will be performed for the motor operated dampers listed in Table 2.6.1-2 to verify the position of dampers on loss of power.	Following loss of power, the motor operated dampers listed in Table 2.6.1-2 fail to the position as shown in Table 2.6.1-2.
6.1	The CRACS maintains ambient conditions and a positive pressure in the CRE areas relative to the outside environment and adjacent areas.	Tests will be performed on the capability of the system to maintain a positive pressure in the CRE areas relative to the outside environment and adjacent areas.	The test conforms that a positive pressure of $\geq 1/8$ inches water gauge is maintained inside the CRE area relative to the outside environment and adjacent areas.
6.2	Upon receipt of a containment isolation signal (CIS), or high radiation alarm signal in the air intake duct, the iodine filtration train will start automatically, and outside air supply to the CRE area is diverted through the iodine filtration train.	<p>a) A test will be performed to verify that upon receipt of a CIS, the iodine filtration train will start automatically; and the outside air supply is diverted through the iodine filtration train. Test is performed separately for each iodine filtration train.</p> <p>b) A test will be performed to verify that upon receipt of high radiation alarm signal in the air intake duct, the iodine filtration train will start automatically; and the outside air supply is diverted through the iodine filtration train. Test is performed separately for each iodine filtration train.</p> <p>c) A test will be performed to verify that a minimum recirculation flowrate for each iodine filtration train is achieved.</p>	<p>a) A separate test for each iodine filtration train conforms that upon receipt of a CIS, the iodine filtration train will start automatically within 60 seconds; and the outside air supply is diverted through the iodine filtration train.</p> <p>b) A separate test for each iodine filtration train conforms that upon receipt of high radiation alarm signal in the air intake duct, the iodine filtration train will start automatically within 60 seconds; and the outside air supply is diverted through the iodine filtration train.</p> <p>c) A separate test for each iodine filtration train confirms a CRE recirculation flowrate of <math>\geq 3000</math> cfm.</p>

**Table 2.6.1-3—Main Control Room Air Conditioning System ITAAC (4 Sheets)**

Reference Section Number	Commitment Wording	Inspection, Analysis or Test	Acceptance Criteria
6.3	Upon actuation of the plant toxic gas alarm signal, the outside air intake dampers close automatically and the CRE air is in recirculation mode without outside air.	A test will be performed to verify that upon actuation of the plant toxic gas alarm signal, the outside air intake dampers close automatically and the CRE air is in recirculation mode without outside air. Test is performed separately for each air intake train.	A separate test for each air intake train conforms that upon actuation of the plant toxic gas alarm signal, the outside air intake dampers close automatically and the CRE air is in recirculation mode without outside air.
6.4	The CRE area ventilation unfiltered air in-leakage is minimized in order to maintain the MCR habitability.	Test will be performed to measure the unfiltered air in-leakage inside the CRE area boundary.	The test conforms that the unfiltered air in-leakage inside the CRE area boundary is less than or equal to 50 cfm.