

## 2.10 Other Systems

### 2.10.1 Cranes

#### Design Description

#### 1.0 System Description

The containment polar crane and the Fuel Building auxiliary crane provide for the lifting of heavy loads. The cranes can be operated during shutdown and refueling conditions. Some components of the cranes may be operated during plant operation.

#### 2.0 Arrangement

2.1 The locations of the containment polar crane and the Fuel Building (FB) auxiliary crane are as listed in Table 2.10.1-1—Crane Equipment Mechanical Design.

2.2 Equipment identified in Table 2.10.1-1 is designed to prohibit unacceptable interaction or failure of Seismic Category I SSC.

#### 3.0 Mechanical Design Features

3.1 Deleted.

3.2 The containment polar crane main hoist is equipped with a dual load path reeving system from the hook to the hoist brakes and redundant holding brakes.

3.3 The FB auxiliary crane hoist is equipped with a dual load path reeving system from the hook to the hoist brakes and redundant holding brakes.

#### 4.0 Equipment and System Performance

4.1 Deleted.

4.2 Deleted.

4.3 The containment polar crane main hoist is load tested followed by NDE of critical welds.

4.4 The FB auxiliary crane hoist is load tested followed by NDE of critical welds.

4.5 Special lifting devices and slings used with the containment polar crane main hoist and the FB auxiliary crane hoist for critical lifts have dual load paths or double safety factors.

4.6 Deleted.

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

Table 2.10.1-2 lists the cranes ITAAC.

**Table 2.10.1-1—Cranes Equipment Mechanical Design**

<b>Description</b>	<b>Tag Number<sup>(1)</sup></b>	<b>Location</b>	<b>Function</b>	<b>Seismic Category</b>
Containment Polar Crane	SMJ-01	Containment Building	Avoid uncontrolled lowering of heavy load.	II
FB Auxiliary Crane	SMF-01	Fuel Building	Avoid uncontrolled lowering of heavy load.	II

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

**Table 2.10.1-2—Cranes ITAAC**  
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<b>Commitment Wording</b>		<b>Inspections, Tests, Analyses</b>	<b>Acceptance Criteria</b>
2.1	The locations of the containment polar crane and the FB auxiliary crane are as listed in Table 2.10.1-1.	An inspection of location of the as-built containment polar crane and the FB auxiliary crane will be performed.	The containment polar crane and the FB auxiliary crane are located as listed in Table 2.10.1-1.
2.2	Equipment identified in Table 2.10.1-1 is designed to prohibit unacceptable interaction or failure of Seismic Category I SSC.	<p>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 2.10.1-1 using analytical assumptions, or under conditions, which bound the Seismic Category I design requirements.</p> <p>b. An inspection will be performed of the as-built equipment identified as Seismic Category I in Table 2.10.1-1 to verify that the components, including anchorage, are installed per the approved design requirements.</p>	<p>a. Test/analysis reports conclude that the equipment identified as Seismic Category I in Table 2.10.1-1 can withstand seismic design basis loads without a loss of the function listed in Table 2.10.1-1, including the time required to perform the listed function.</p> <p>b. Inspection reports conclude that the equipment identified as Seismic Category I in Table 2.10.1-1, including anchorage, are installed per the approved design requirements.</p>
3.1	Deleted.	Deleted.	Deleted.
3.2	The containment polar crane main hoist is equipped with a dual load path reeving system from the hook to the hoist brakes and redundant holding brakes.	An inspection of the as-built containment polar crane will be performed to verify that the main hoist is equipped with a dual load path reeving system from the hook to the hoist brakes and redundant holding brakes.	The containment polar crane main hoist is equipped with a dual load path reeving system from the hook to the hoist brakes and redundant holding brakes.
3.3	The FB auxiliary crane hoist is equipped with a dual load path reeving system from the hook to the hoist brakes and redundant holding brakes.	An inspection of the as-built FB auxiliary crane will be performed to verify that the hoist is equipped with a dual load path reeving system from the hook to the hoist brakes and redundant holding brakes.	The FB auxiliary crane hoist is equipped with a dual load path from the hook to the hoist brakes and redundant holding brakes.

**Table 2.10.1-2—Cranes ITAAC**  
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Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
4.1	Deleted.	Deleted.	Deleted.
4.2	Deleted.	Deleted.	Deleted.
4.3	The containment polar crane main hoist is load tested followed by NDE of critical welds.	<ul style="list-style-type: none"> <li>a. A rated load test will be performed on the containment polar crane main hoist.</li> <li>b. A full load test will be performed on the containment polar crane main hoist.</li> <li>c. A no load test will be performed on the containment polar crane main hoist.</li> <li>d. An inspection will be performed on the as-built welded structural connections of the containment polar crane.</li> </ul>	<ul style="list-style-type: none"> <li>a. Containment polar crane main hoist passes rated load testing at a minimum of 125% of the rated load.</li> <li>b. Containment polar crane main hoist passes full-load testing at a minimum of 100% rated load.</li> <li>c. Containment polar crane main hoist passes no load testing to verify proper operation of limit switches, interlock and stop settings.</li> <li>d. A report concludes that non-destructive examination of welded structural connections of the containment polar crane comply with ASME NOG-1 requirements.</li> </ul>

**Table 2.10.1-2—Cranes ITAAC**  
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<b>Commitment Wording</b>		<b>Inspections, Tests, Analyses</b>	<b>Acceptance Criteria</b>
4.4	The FB auxiliary crane hoist is load tested followed by NDE of critical welds.	<ul style="list-style-type: none"> <li>a. A rated load test will be performed on the FB auxiliary crane hoist.</li> <li>b. A full load test will be performed on the FB auxiliary crane hoist.</li> <li>c. A no load test will be performed on the FB auxiliary crane hoist.</li> <li>d. An inspection will be performed on the as-built welded structural connections of the FB auxiliary crane.</li> </ul>	<ul style="list-style-type: none"> <li>a. FB auxiliary crane hoist has passed rated load testing at a minimum of 125% of the rated load.</li> <li>b. FB auxiliary crane hoist has passed full-load testing at a minimum of 100% rated load.</li> <li>c. FB auxiliary crane hoist has passed no load testing to verify proper operation of limit switches, interlock and stop settings.</li> <li>d. A report concludes that non-destructive examination of welded structural connections of the FB auxiliary crane comply with ASME NOG-1 requirements.</li> </ul>
4.5	Special lifting devices and slings used with the containment polar crane main hoist and the FB auxiliary crane hoist for critical lifts have dual load paths or double safety factors.	<ul style="list-style-type: none"> <li>a. An inspection will be performed on the on the as-built special lifting devices used with the containment polar crane main hoist and the FB auxiliary crane hoist to verify that they have dual load paths.</li> <li>b. An inspection will be performed on the on the as-built slings used with the containment polar crane main hoist and FB auxiliary crane hoist to verify that they have double safety factors.</li> </ul>	<ul style="list-style-type: none"> <li>a. The special lifting devices used with the containment polar crane main hoist and the FB auxiliary crane hoist for critical lifts have dual load paths.</li> <li>b. Slings used with used with the containment polar crane main hoist and the FB auxiliary crane hoist for critical lifts have double safety factors.</li> </ul>
4.6	Deleted.	Deleted.	Deleted.