

2.10 Other Systems

2.10.1 Cranes

1.0 Description

The containment polar crane and the 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 component locations of the cranes is as listed in Table 2.10.1-1—Crane Equipment Mechanical Design.

2.2 The 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 and redundant holding brakes.

3.3 The auxiliary crane is equipped with a dual load path reeving system 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 designed in such a way that a single failure will not result in the loss of the capability of the crane to safely retain the load.

4.4 The auxiliary crane is designed in such a way that a single failure will not result in the loss of the capability of the crane to safely retain the load.

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

4.6 Special lifting devices used with the auxiliary crane and the main hoist of the polar crane for critical lifts are to be load tested followed by non-destructive examination (NDE) of critical welds.

5.0 Inspections, Tests, Analyses and Acceptance Criteria

Table 2.10.1-2 lists the cranes ITAAC.

Table 2.10.1-1—Crane Equipment Mechanical Design

Description	Tag Number⁽¹⁾	Location	Function	Seismic Category
Containment Polar Crane	SMJ-01	Containment Building	Avoid uncontrolled lowering of heavy load.	II
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 (2 Sheets)

	Commitment Wording	Inspections, Tests, Analyses	Acceptance Criteria
2.1	The component location of the cranes is listed in Table 2.10.1-1.	Inspection of the as-built system will be performed.	The components of the cranes are located as listed in Table 2.10.1-1.
2.2	The equipment identified in Table 2.10.1-1 is designed to prohibit unacceptable interaction or failure of Seismic Category I SSC.	Inspections, tests and analyses of the as-built Seismic Category II equipment will be performed.	A report exists and confirms the equipment’s ability to prevent unacceptable interaction with Seismic Category I SSC.
3.1	Deleted.	Deleted.	Deleted.
3.2	The containment polar crane main hoist is equipped with a dual load path reeving system and redundant holding brakes.	An inspection of the as-built polar crane load train assembly will be performed.	The polar crane is equipped with a dual load path from the hook to the hoist brakes with each reeving system capable of holding the load independently.
3.3	The auxiliary crane hoist is equipped with a dual load path reeving system and redundant holding brakes.	An inspection of the as-built auxiliary crane load train assembly will be performed.	The auxiliary crane is equipped with a dual load path from the hook to the hoist brakes with each reeving system capable of holding the load independently.
4.1	Deleted.	Deleted.	Deleted.
4.2	Deleted.	Deleted.	Deleted.

Table 2.10.1-2—Cranes ITAAC (2 Sheets)

	Commitment Wording	Inspections, Tests, Analyses	Acceptance Criteria
4.3	<p>The containment polar crane main hoist is designed in such a way that a single failure will not result in the loss of the capability of the crane to safely retain the load.</p>	<p>Tests, inspections and analyses will be performed on the as-built polar cranes to confirm:</p> <ul style="list-style-type: none"> a. The receiving system is designed to preclude a load drop in the event of a rope failure. b. Is equipped with two holding brakes. c. Has been rated load tested at a minimum of 125% of the rated load. d. Has been full-load tested at a minimum of 100% rated load. e. Has been no load tested to verify proper operation of limit switches, interlock and stop settings. f. Critical welds have been non-destructively tested. 	<p>The following tests, inspections and analyses have been successfully completed for the as-built containment polar crane so that a single failure will not result in the loss of the capability of the crane to safely retain the load:</p> <ul style="list-style-type: none"> a. A report exists and confirms that the receiving system is designed to preclude a load drop in the event of a rope failure. b. Containment polar crane is equipped with two holding brakes. c. Containment polar crane has passed rated load testing at a minimum of 125% of the rated load. d. Containment polar crane has passed full-load testing at a minimum of 100% rated load. e. Containment polar crane has passed no load testing to verify proper operation of limit switches, interlock and stop settings. f. Critical welds have passed non-destructive testing.

Table 2.10.1-2—Cranes ITAAC (2 Sheets)

	Commitment Wording	Inspections, Tests, Analyses	Acceptance Criteria
4.4	The auxiliary crane is designed in such a way that a single failure will not result in the loss of the capability of the crane to safely retain the load.	Tests, inspections and analyses will be performed on the as-built auxiliary cranes to confirm: <ul style="list-style-type: none"> a. The receiving system is designed to preclude a load drop in the event of a rope failure. b. Is equipped with two holding brakes. c. Has been rated load tested at a minimum of 125% of the rated load. d. Has been full-load tested at a minimum of 100% rated load. e. Has been no load tested to verify proper operation of limit switches, interlock and stop settings. f. Critical welds have been non-destructively tested. 	The following tests, inspections and analyses have been successfully completed for the as-built auxiliary crane so that a single failure will not result in the loss of the capability of the crane to safely retain the load: <ul style="list-style-type: none"> a. A report exists and confirms that the receiving system is designed to preclude a load drop in the event of a rope failure. b. Auxiliary crane is equipped with two holding brakes. c. Auxiliary crane has passed rated load testing at a minimum of 125% of the rated load. d. Auxiliary crane has passed full-load testing at a minimum of 100% rated load. e. Auxiliary crane has passed no load testing to verify proper operation of limit switches, interlock and stop settings. f. Critical welds have passed non-destructive testing.
4.5	Special lifting devices and slings used with the auxiliary crane and the main hoist of the polar crane for critical lifts have dual load paths or double safety factors.	Tests, inspections and analyses will be performed on the lifting components.	The as-built special lifting devices and slings have dual load paths or double safety factors.
4.6	Special lifting devices used with the auxiliary crane and the main hoist of the polar crane for critical lifts are to be load tested followed by NDE of critical welds.	Load testing and post test inspection of the as-built special lifting devices will be performed.	A report exists and confirms load testing and NDE of the as-built special lifting devices used for critical lifts.