

2.2.8 Fuel Handling System

1.0 Description

The fuel handling system (FHS) provides for handling of fuel assemblies from the time new fuel assemblies are received at the plant site until the spent fuel assemblies are removed from the spent fuel pool. The FHS handles and transfers fuel assemblies across the containment. The system provides a means of receiving, inspecting, and storing new fuel assemblies. The spent fuel assemblies are stored in the underwater storage racks in the spent fuel pool. The spent fuel assemblies are removed from the fuel storage pool through the use of the spent fuel cask transfer facility. The main pieces of equipment used for fuel handling operations are the refueling machine, fuel transfer tube facility, new fuel elevator, spent fuel machine, auxiliary crane, and fuel storage racks.

The FHS provides the following safety related functions:

- Maintains fuel assemblies in a subcritical array.
- Facilitates cooling of the irradiated fuel assemblies to avoid overheating.
- Provides for safe handling of heavy loads (i.e., loads weighing more than one fuel assembly and its handling device) to prevent a load drop in a critical area.
- Maintains its portion of the containment isolation.

2.0 Arrangement

2.1 The location of the FHS equipment and components is as listed in Table 2.2.8-1—FHS Equipment Mechanical Design.

3.0 Mechanical Design Features

3.1 Equipment listed in Table 2.2.8-1 as ASME Code Section III is designed, welded, and hydrostatically tested in accordance with ASME Code Section III.

3.2 Equipment identified as Seismic Category I in Table 2.2.8-1 can withstand seismic design basis loads without loss of safety function as listed in Table 2.2.8-1.

3.3 Deleted.

4.0 System Inspections, Tests, Analyses, and Acceptance Criteria

Table 2.2.8-2 lists the FHS ITAAC.

Table 2.2.8-1—FHS Equipment Mechanical Design

Equipment Description	Equipment Tag Number⁽¹⁾	Equipment Location	ASME Code Section III	Seismic Category
New Fuel Elevator	FCD10	Fuel Building (UFA)	N/A	N/A
Spent Fuel Machine	FCD01	Fuel Building (UFA)	N/A	N/A
Transfer Tube (Fuel Transfer Tube Facility)	FCJ05	Fuel Building (UFA) and Reactor Building (UJA)	yes [Division 1, Subsection NC]	I
Mechanism (Fuel Transfer Tube Facility)	FCJ01	Fuel Building (UFA) and Reactor Building (UJA)	N/A	N/A
Refueling Machine	FCB01	Reactor Building (UJA)	N/A	N/A

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

Table 2.2.8-2—FHS ITAAC (2 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	Equipment is located as listed in Table 2.2.8-1.	An inspection will be performed of the location of the equipment listed in Table 2.2.8-1.	The equipment listed in Table 2.2.8-1 is located as listed in Table 2.2.8-1.
3.1	Equipment listed in Table 2.2.8-1 as ASME Code Section III in Table 2.2.8-1 is designed, welded, and hydrostatically tested in accordance with ASME Code Section III.	<ul style="list-style-type: none"> a. Analysis of the equipment identified in Table 2.2.8-1 as ASME Code Section III will be performed per ASME Code Section III design requirements. b. Inspections will be conducted on the equipment identified in Table 2.2.8-1 as ASME Code Section III to verify welding has been performed per ASME Code Section III welding requirements. c. Hydrostatic testing of the equipment identified in Table 2.2.8-1 as ASME Code Section III will be performed per ASME Code Section III hydrostatic testing requirements. 	<ul style="list-style-type: none"> a. ASME Code Section III Design Reports (NCA-3550) exist and conclude that the equipment identified in Table 2.2.8-1 as ASME Code Section III meets ASME Code Section III design requirements. b. Equipment identified in Table 2.2.8-1 as ASME Code Section III has been welded per ASME Code Section III welding requirements. c. Equipment identified in Table 2.2.8-1 as ASME Code Section III has been hydrostatically tested per ASME Code Section III hydrostatic testing requirements.

Table 2.2.8-2—FHS ITAAC (2 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
3.2	Equipment identified as Seismic Category I in Table 2.2.8-1 can withstand seismic design basis loads without loss of safety function as listed in Table 2.2.8-1.	<ul style="list-style-type: none"> a. Type tests, analyses, or a combination of type tests and analyses will be performed on the equipment listed as Seismic Category I in Table 2.2.8-1 using analytical assumptions, or under conditions, which bound the Seismic Category I design requirements. b. Inspections will be performed of the as-installed Seismic Category I equipment listed in Table 2.2.8-1 to verify that the equipment including anchorage is installed as specified on the construction drawings. 	<ul style="list-style-type: none"> a. Tests/analysis reports exists and conclude that the Seismic Category I equipment listed in Table 2.2.8-1 can withstand seismic design basis loads without loss of safety function. b. Inspection reports exist and conclude that the as-installed Seismic Category I equipment listed in Table 2.2.8-1 including anchorage is installed as specified on the construction drawings
3.3	Deleted.	Deleted.	Deleted.