2.16 Yard Structures and Equipment

2.16.1 Stack

No entry for this system.

2.16.2 Oil Storage and Transfer System

Design Description

The Oil Storage and Transfer (OST) System consists of three independent Emergency Diesel Generator (DG) fuel oil storage and transfer systems with their respective fuel storage tanks, transfer pumps, day tanks, and instrumentation and controls. Figure 2.16.2 shows the basic system configuration and scope.

The three divisions (Divisions I, II, and III) of the OST System provides fuel oil to their respective divisional DGs.

The OST System is classified as safety-related.

Each DG fuel oil storage tank provides a minimum seven (7) day fuel oil supply with its respective DG supplying its maximum lose-of-coolant accident (LOCA) load demand.

DG fuel oil is transferred automatically from the storage tanks to the day tanks by day tank low level signals. Manual control of DG fuel oil transfer is also provided. DG fuel oil is transferred from the storage tanks to the day tanks at a rate which exceeds the DG consumption rates while supplying their maximum LOCA load demand.

Each DG fuel oil day tank provides a minimum four (4) hour fuel oil supply with its respective DGs supplying its maximum LOCA load demand. Fuel oil is transferred from the day tanks to the engine fuel oil pumps by gravity flow.

The OST System, including the DG fuel oil storage and day tanks, is classified as Seismic Category I. Figure 2.16.2 shows the ASME Code class for the OST System.

Each of the three OST System Class 1E divisions is powered from its respective Class 1E division. In the OST System, independence is provided between Class 1E divisions, and also between the Class 1E divisions and non-Class 1E equipment.

The three DG fuel oil storage tanks are separately located underground outside of the Reactor Building. The oil storage tank external equipment is located above the maximum flood level and protected from missiles generated by the environment.

Within the Reactor Building, each mechanical division of the OST System is physically separated from the other divisions.

The OST System has the following displays and controls in the main control room (MCR):

(1) Parameter displays for DG fuel oil storage tank levels and day tank levels.

(2) Controls and status indication for DG fuel oil transfer pumps.

Inspections, Tests, Analyses and Acceptance Criteria

Table 2.16.2 provides the definition of the inspection, tests, and/or analyses, together with the associated acceptance criteria, which will be undertaken for the OST System.

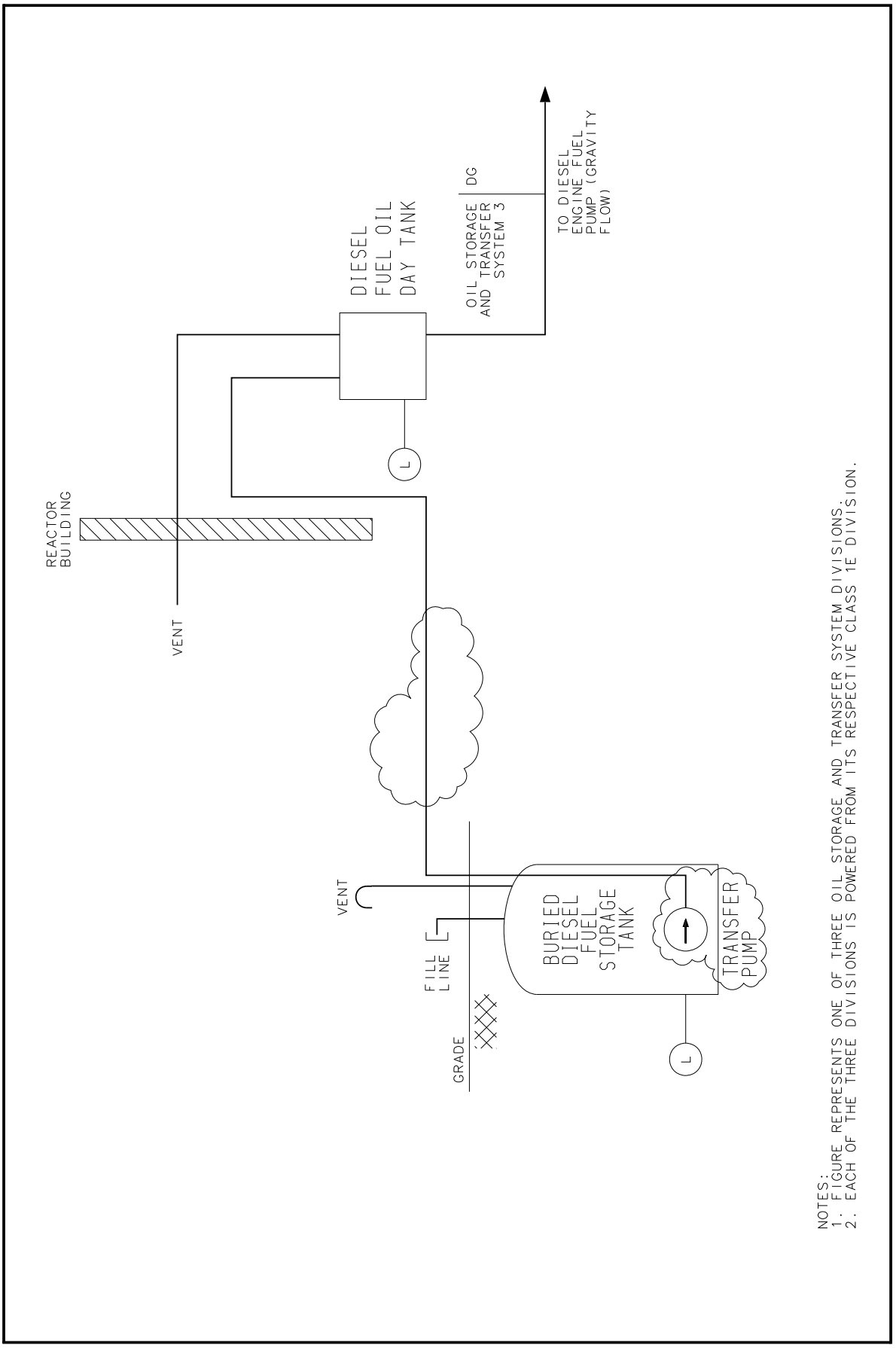

Figure 2.16.2 Oil Storage and Transfer System

Table 2.16.2 Oil Storage and Transfer System

Inspections, Tests, Analyses and Acceptance Criteria		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
1. The basic configuration of the OST System is as shown on Figure 2.16.2.	1. Inspections of the as-built system will be conducted.	1. The as-built OST system conforms with basic configuration shown on Figure 2.16.2.
2. The ASME Code components of the OST System retain their pressure boundary integrity under internal pressures that will be experienced during service.	2. A pressure test will be conducted on those code components of the OST System required to be pressure tested by the ASME Code.	2. The results of the pressure test of the ASME Code components of the OST System conform with the requirements in the ASME Code, Section III.
3. Each DG fuel oil storage tank provides a minimum seven (7) day fuel oil supply with its respective DG supplying its maximum LOCA load demand.	3. Analyses for the as-built DG fuel oil storage tanks to determine the required fuel oil storage volume based on DG fuel consumption data and LOCA load demand will be performed. Inspections of the as-built DG fuel oil storage tanks to determine usable fuel storage volume will be conducted.	3. Each as-built DG fuel oil storage tank provides a minimum seven (7) day fuel oil supply with its respective DG supplying its maximum LOCA load demand.
4. DG fuel oil is transferred automatically from the storage tanks to the day tanks by day tank low level signals. Manual control of DG fuel transfer is also provided.	4. Tests on the as-built DG fuel oil transfer systems will be conducted by simulating day tank low level signals, and by manual control.	4. The as-built DG fuel oil transfer system operation occurs automatically on the day tank low level signals, and when initiated manually.
5. DG fuel oil is transferred automatically from the storage tanks to the day tanks at a rate which exceeds the DG consumption rates while supplying their maximum LOCA load demand.	5. Tests on each division of the as-built DG fuel oil transfer systems will be conducted by transferring fuel oil while the DGs are supplying their maximum LOCA loads.	5. DG fuel oil is transferred automatically from the storage tanks to the day tanks at a rate which exceeds the DG consumption rates while supplying their maximum LOCA load demand.
6. Each DG fuel oil day tank provides a minimum four (4) hour fuel oil supply with its respective DG supplying its maximum LOCA load demand.	6. Analyses for the as-built DG oil day tanks to determine the required fuel oil volume using DG fuel consumption data and LOCA load demand will be performed. Inspections of the as-built DG fuel oil day tanks to determine usable fuel storage volume will be conducted.	6. Each DG fuel oil day tanks provides a minimum four (4) hour fuel oil supply with its respective DG supplying its maximum LOCA load demand.

Table 2.16.2 Oil Storage and Transfer System (Continued)

Inspections, Tests, Analyses and Acceptance Criteria		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
7. The DG fuel oil storage and day tanks are classified as Seismic Category I.	7. Seismic analyses on the fuel oil storage and day tanks will be performed.	7. Seismic analyses reports exist and conclude that the DG fuel oil and storage and day tanks are able to withstand Seismic loads.
8. Each of the three OST System divisions is powered from its respective Class 1E division. In the OST System, independence is provided between the Class 1E divisions, and between the Class 1E divisions and non-Class 1E equipment.	8. a. Tests will be conducted in the as-built OST System by providing a test signal in only one Class 1E division at a time. b. Inspections of the as-built Class 1E divisions in the OST System will be conducted.	8. a. The test signal exists only in the Class 1E division under test in the OST System. b. In the OST System, physical separation or electrical isolation exists between Class 1E divisions. Physical separation or electrical isolation exists between these Class 1E divisions and non-Class 1E equipment.
9. Within the Reactor Building, each mechanical division of the OST System is physically separated from the other divisions.	9. Inspections of the as-built OST System will be conducted.	9. Within the Reactor Building, each mechanical division of the OST System is physically separated from the other mechanical divisions by structural and/or fire barriers.
10. MCR displays and controls provided for the OST System are as defined in Section 2.16.2.	10. Inspections will be conducted on the MCR displays and controls for the OST System.	10. Displays and controls exist or can be retrieved in the MCR as defined in Section 2.16.2.