

 **Nuclear**

GPU Nuclear Corporation
Post Office Box 480
Route 441 South
Middletown, Pennsylvania 17057-0191
717 944-7621
TELEX 84-2388
Writer's Direct Dial Number:
(717) 948-8461

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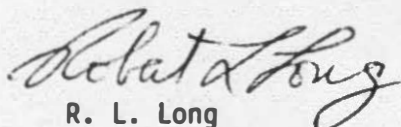
US Nuclear Regulatory Commission
Washington, DC 20555
Attention: Document Control Desk

Three Mile Island Nuclear Station, Unit 2 (TMI-2)
Operating License No. DPR-73
Docket No. 50-320
Solid Waste Staging Facility System Description

Dear Sir:

Pursuant to your letter dated February 4, 1982, attached for your information is the annual update of the Solid Waste Staging Facility (SWSF) System Description. This update includes minor changes to Pages 6, 8, 9 and 13.

Sincerely,



R. L. Long
Director, Corporate Services/
Director, TMI-2

EDS/mkk

Attachment

cc: T. T. Martin - Regional Administrator, Region I
J. F. Stolz - Director, Plant Directorate IV
L. H. Thonus - Project Manager, TMI Site
F. I. Young - Senior Resident Inspector, TMI

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DIVISION SYSTEM DESCRIPTION FOR

Solid Waste Staging Facility

COG ENG	<u><i>M. Conway</i></u>	DATE	<u><i>8/22/90</i></u>
RTR	<u><i>Perry & Curren</i></u>	DATE	<u><i>8/22/90</i></u>
COG ENG MGR.	<u><i>D. Buchanan</i></u>	DATE	<u><i>8/23/90</i></u>

Solid Waste Staging Facility System Description

Rev.	SUMMARY OF CHANGE	Approval	Date
0	Initial issue per GPU Nuclear letter 4400-82-L-0059.		4/82
1	Reissued per GPU Nuclear letter 4410-83-L-0078.		3/83
2	Annual update.		7/85
3	Annual update.		7/87
4	Annual update. Revised Sections 2.1.2, 2.1.3.2, 2.4.9, and 2.4.3.1.		8/89
5	Annual update. Minor changes to Sections 2.4.1, 2.4.7, 2.4.8, and Table 3.		8/90

- 2.3.4 Quality Assurance requirements for the design, construction, and operation of the SWSF are consistent with those specified in Regulatory Guide 1.143.

2.4 Summary System Description

- 2.4.1 The concrete structure and individual cell covers provide the necessary shielding from the radioactive waste housed in the SWSF Module Storage Cells.

The cell covers with gaskets protect the waste containers from the elements and the ingress of precipitation. Slots and weep holes in the upper module structure are provided to direct rainwater to the module sides. A drainage piping system prevents any spillage/leakage of fluids from accumulating in the cells (i.e., floor drain hub in each cell); the system manifold discharges into a common sump.

- 2.4.2 The sump compartment, a radwaste seismic concrete structure, houses the pump, valves, piping, instrumentation, etc., necessary to perform the intended functions and control the disposal of any effluent which may collect in the sump. The compartment is divided into two (2) levels, with the upper operator level shielded by a thick concrete floor from the sump. Access to the upper compartment is via a manhole in the concrete slab roof. Access to the sump is via a removable ladder at the sump plug opening and a permanently installed ladder into the sump.

- 2.4.3 The flow diagram (Figure 3) shows the pumping system for the sump effluent. All operations are local/manual. The local alarms and sump level indication are housed in a weatherproof instrumentation panel mounted outside the Module "A" structure adjacent to the sump compartment.

The sump pump, Solenoid Valve #WS-5 and three-way valve #WS-1 (extension spindle) are located in the lower sump while the electrical distribution and control panels, valves, etc. are mounted in the operators compartment.

Sump level is measured by a variable capacitance sensor (SWS-LE-01) which transmits the signal to local and remote (Unit 2 Control Room) alarms. Sump influent flow alarms are provided. The sensing elements (conductivity) Nos. SWS-CE-07 and SWS-CE-08 are mounted in the Module "A" and "B" drain system manifold.

- 2.4.3.1 Sump Pumping Operations (See Figure 3)

The SWSF sump is controlled and disposal of the effluent is in accordance with the Unit 2 Procedures 4210-QPS-3011.01 and 4215-QPS-3232.14. The sump compartment is posted as a radiological controlled area and surveillance is required prior to entry to ensure operator exposure will be as low as is reasonably achievable (ALARA).

2.4.4 Major Equipment

A. Sump Pump (1): Gould Model 3171 1 x 1-1/2-6

Capacity:	50 gpm
TDH:	100 ft
Fluid:	Radioactive waste water/resin slurry pH approx. 7
Materials:	Cast iron/bronze fittings
Impeller:	Open type
Discharge Conn.:	Flanged above mtg. plate
Service:	Intermittent 5 yr. life

B. Solenoid Valve (1):

1/2" nom. bore. 120 volt AC

C. Instrumentation: See Table 1.

2.4.5 Facility General Arrangement: See typical layout Figure 2. The general arrangement, layout, and details of the SWSF systems are shown in the drawings in Section 2.2.3.

2.4.6 Instrumentation and Controls

2.4.6.1 The SWSF has three (3) instrument loops as follows:

- A. A level instrument string provides the alarm and level indication both local and remote. In addition, this loop provides a sump pump permissive at greater than 10% level.
- B. The other two (2) instrument strings are conductivity flow loops providing local alarms. One (1) loop senses input from the drain discharge manifold from Module "A" and the other from Module "B".

2.4.6.2 Instrument Setpoint Index (see Table 2).

2.4.7 System Interfaces

There are five (5) interfaces associated with this facility:

1. Processing Systems: Access road to and from waste and fluid processing facilities for transportation of materials and equipment.
2. Material Handling System: Facility will accept radioactive waste containers from the processing systems and are compatible with the transportation and lifting equipment (i.e., transfer shield and site crane) (Manitowoc 4000 W mobile crane or other appropriate crane).

3. Cooling Water Pump (CHP) House: 480 V, 3 0 200 A feeder cable from Bus 2-61 shall provide power for the following:
 - A. 460 volts to the sump pump;
 - B. 480 volt welding receptable; and
 - C. 25 KVA, 240-120V power center to energize lighting, convenience receptacles, instrumentation, and control devices.

NOTE: No permanent heat tracing required for sump compartments.

4. Control Room: Sump level alarm.
5. Chemistry Laboratories: Sump effluent samples for chemistry and radiological analysis prior to distribution.

NOTE: The sump pump discharge is not directly connected to any plant systems; a local hose station is provided.

2.4.8 Operations-Radwaste Handling

The major operation performed at the SWSF is handling the radioactive waste containers while loading/unloading the individual cells in accordance with the types of containers specified in Section 2.1.3. Handling of these containers is performed in accordance with Unit 2 procedures. The Manitowoc Mobile Crane, or other appropriate crane(s), is utilized for handling activities along with appropriately shielded equipment.

Each cell has an individual concrete cover 8'3" square x 3'0" deep (Dwg. #B-430-015) weighing approximately 14 tons. Normally only one (1) cell containing radioactive waste containers within a module system will be uncovered at any given time. If more than one (1) cover is to be removed at any one time, additional safety procedures will be exercised.

2.4.9 Maintenance

Most operations including maintenance requires a RWP. Inner surfaces of the sump are epoxy coated to ease decontamination of the facility.

2.4.10 Acceptance Testing

2.4.10.1 Mechanical. Owgs. #E-311-873 and E-311-874

- A. Module "A" and "A" Drain Piping Systems.

TABLE 3
OPERATING PROCEOURES

<u>Procedure Number</u>	<u>Description</u>
4215-OPS-3232.14	SWSF Sump Pump Operation
4231-OPS-4440.01	Transfer of EPICOR 4'x4' Liners
4231-OPS-4450.08	On-site Transfer of Radioactive Liners to SWSF/Ship Cask
4231-OPS-4450.09	On-site Transfer of Radioactive Liner from SWSF
4231-OPS-4450.20	Transfer of 4'x4' Liner/HIC from SWSF