

 **Nuclear**

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August 21, 1989  
4410-89-L-0094/0051P

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 Sirs:

GPU Nuclear letter 4410-89-L-0084, dated August 8, 1989, submitted the annual update to the Solid Waste Staging Facility System Description. Attached is a correction to a typographical error in Sections 2.3.1 and 2.3.4 (i.e., changed Regulatory Guide 1.43 to 1.143).

Sincerely,

  
M. B. Roche  
Director, TMI-2

RDW/emf

cc: W. T. Russell - Regional Administrator, Region 1  
J. F. Stolz - Director, Plant Directorate IV  
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- 2.1.3.4 A floor drainage system is incorporated into the module design which discharges into a common sump located between Modules "A" and "B". The total capacity of the sump is approximately 2750 gallons.

## 2.2 References

- 2.2.1 U.S. Nuclear Regulatory Guide 1.143, July 1978, Design Guidance for Radioactive Management Systems, Structures, and Components Installed in Light-Water-Cooled Nuclear Power Plants.

- 2.2.2 Design Criteria/Input Record. GAI W.O. #04-4283-070.

- 2.2.3 Gilbert Associates, Inc. (GAI) Drawings:

- 2.2.3.1 Excavation and Grading Plan. E-774-151.

- 2.2.3.2 Plant Layout. E-012-006  
E-014-004.

- 2.2.3.3 Structural. E-430-006  
E-430-007  
E-430-008  
E-430-011  
E-430-012  
E-430-013  
E-430-014  
E-430-015.

- 2.2.3.4 Building Services-Piping. E-311-873  
E-311-874.

- 2.2.3.5 Electrical. SS-308-417  
B-256-031  
E-266-011.

## 2.3 Design Basis

- 2.3.1 The SWSF is designed to comply with the requirements of Regulatory Guide 1.143, July 1978. The facility is designed to provide a controlled but ready access for material handling operations and to ensure that the operator exposures are as low as is reasonably achievable (ALARA).
- 2.3.2 The facility is designed to maintain the dose rates in accordance with 10 CFR Part 20 and to meet the requirements of 40 CFR Part 190 at the site boundary and beyond.
- 2.3.3 The shielding thickness was calculated to limit the contact dose rates at the outer surfaces of the module walls and the top of the cell covers to within 0.5 mr/hr and 2.5 mr/hr, respectively. The analysis was based on the types of waste defined in Attachment 1. No credit was taken for the structure being partially underground.



- 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 external drainage ditches. 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-OPS-3011.01 and 4215-OPS-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).