

Three Mile Island Unit 2 Waste Management Summary

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Waste Management: Waste Streams

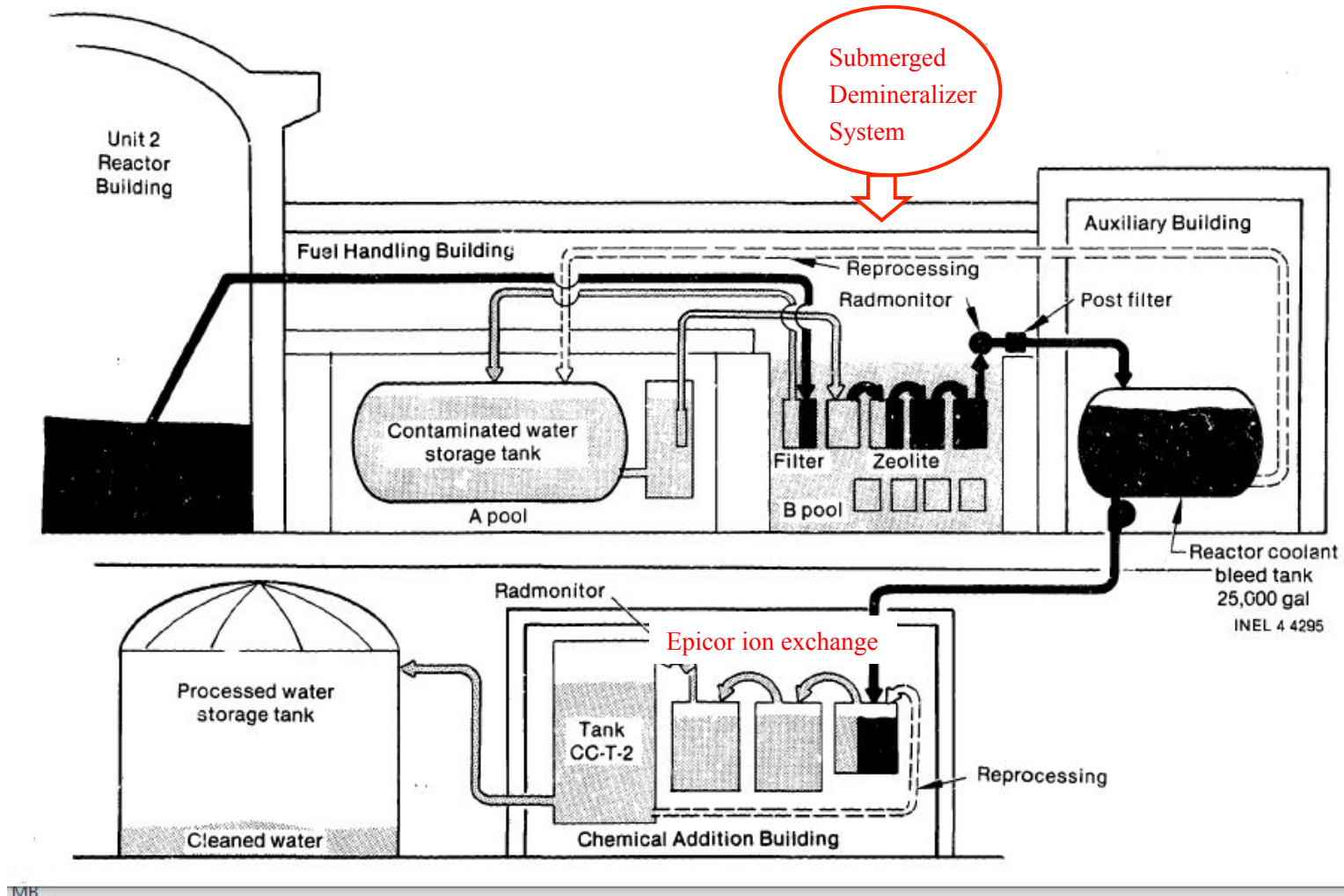
❑ TMI-2 accident absorption media

- Zeolite for Cesium-134, -137 and other radionuclides from failed fuel
- Ion Exchange Resins for radionuclides

❑ Normal types of waste

- Dry Active Waste (low level)
- Decontamination debris
- Evaporator Concentrates (from tritiated water evaporation)

Epicor and SDS



SDS and Epicor Containers

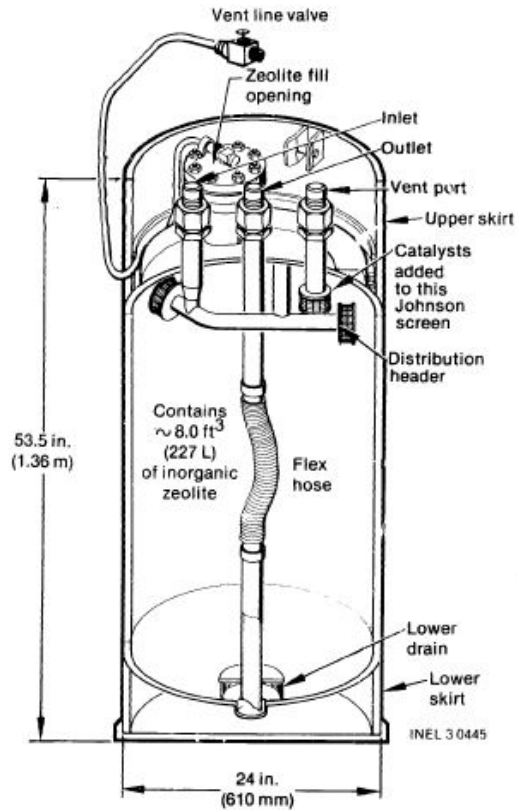
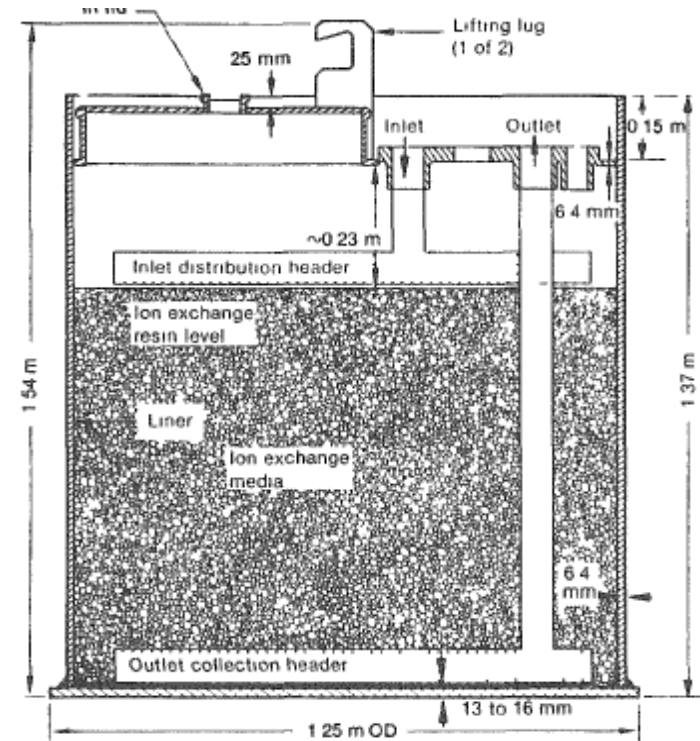


Figure 3. SDS vessel.

SDS Container



Epicor Container

Waste Quantities

❑ Total Volume

- Commercial Disposal: 5100 m³
- Department of Energy (DOE) : 200 m³

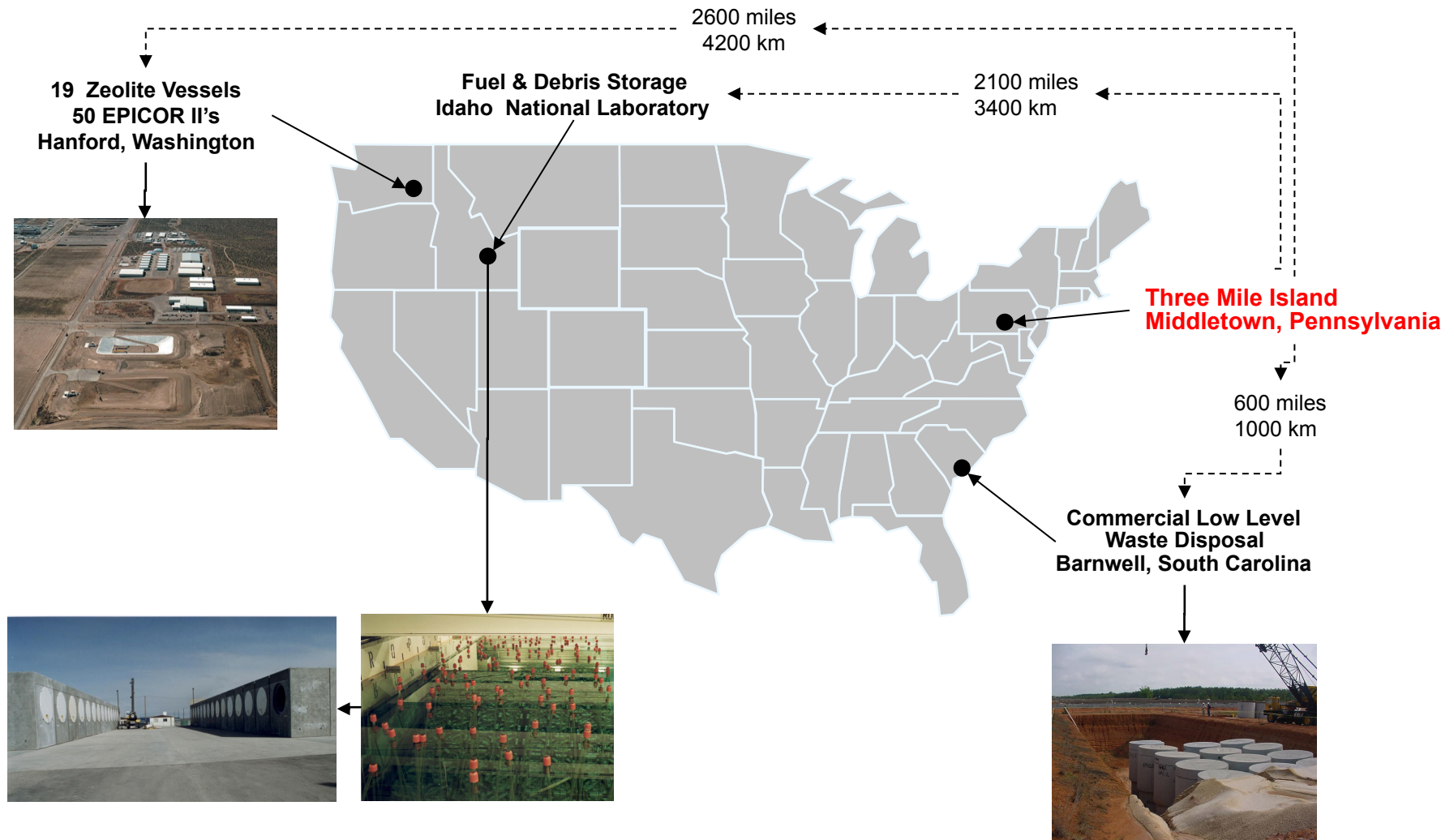
❑ Commercial Waste by Type: 98% of total

- Dry Activated Waste: 75% of total
- Wet Solid Waste: 23% of total

❑ Department of Energy 2% of total

- 50 EPICOR resin containers because of Sr-90
- 19 SDS processing vessels; mainly Cs-134, Cs-137
- Variety of filters

Waste Disposal and Fuel Debris to Storage

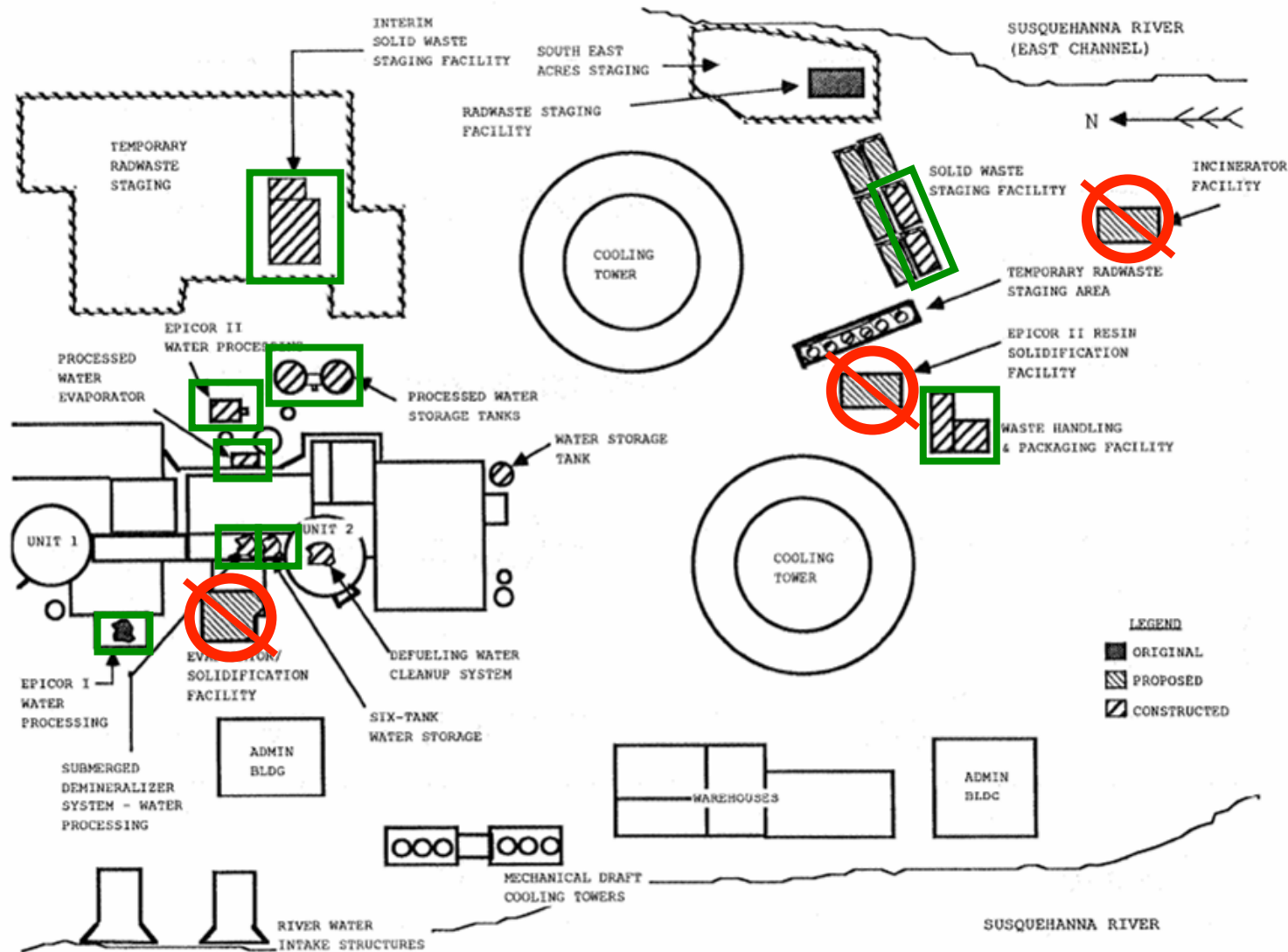


Waste* Volumes 1979 to 1990

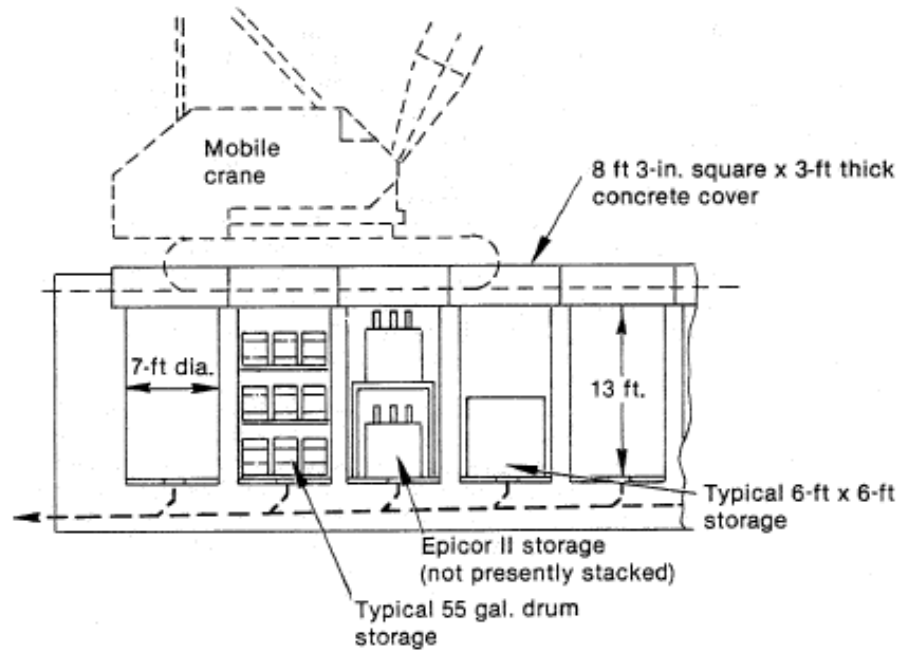
Disposal pathway	Cubic Meters
Wet waste to Barnwell	1,196
Dry Waste to Barnwell	3,906
Total	5,102
Waste to DOE	87

*not fuel debris

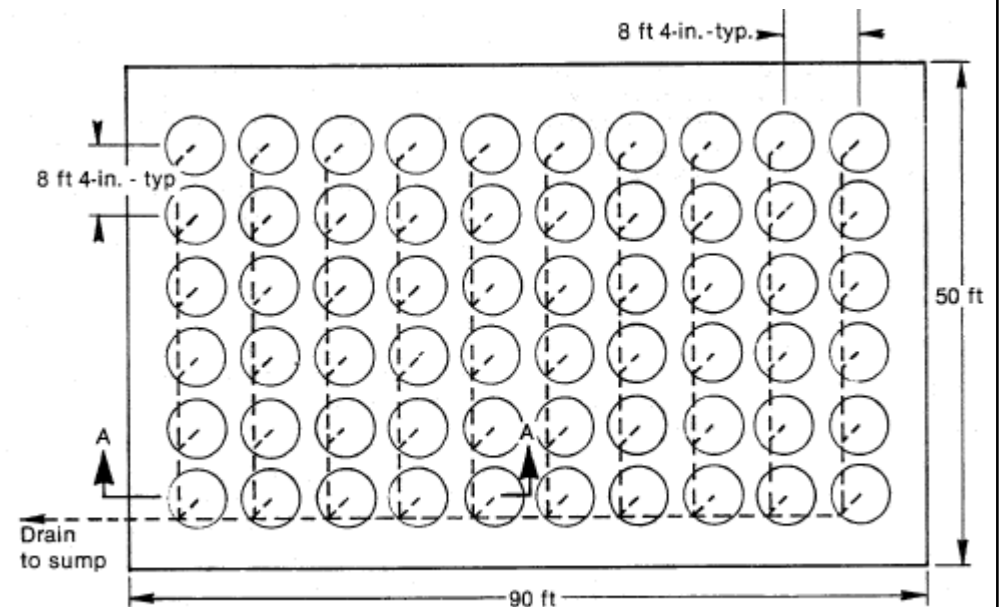
On-Site Waste Management Facilities



Solid Waste Staging Facility



Elevation View



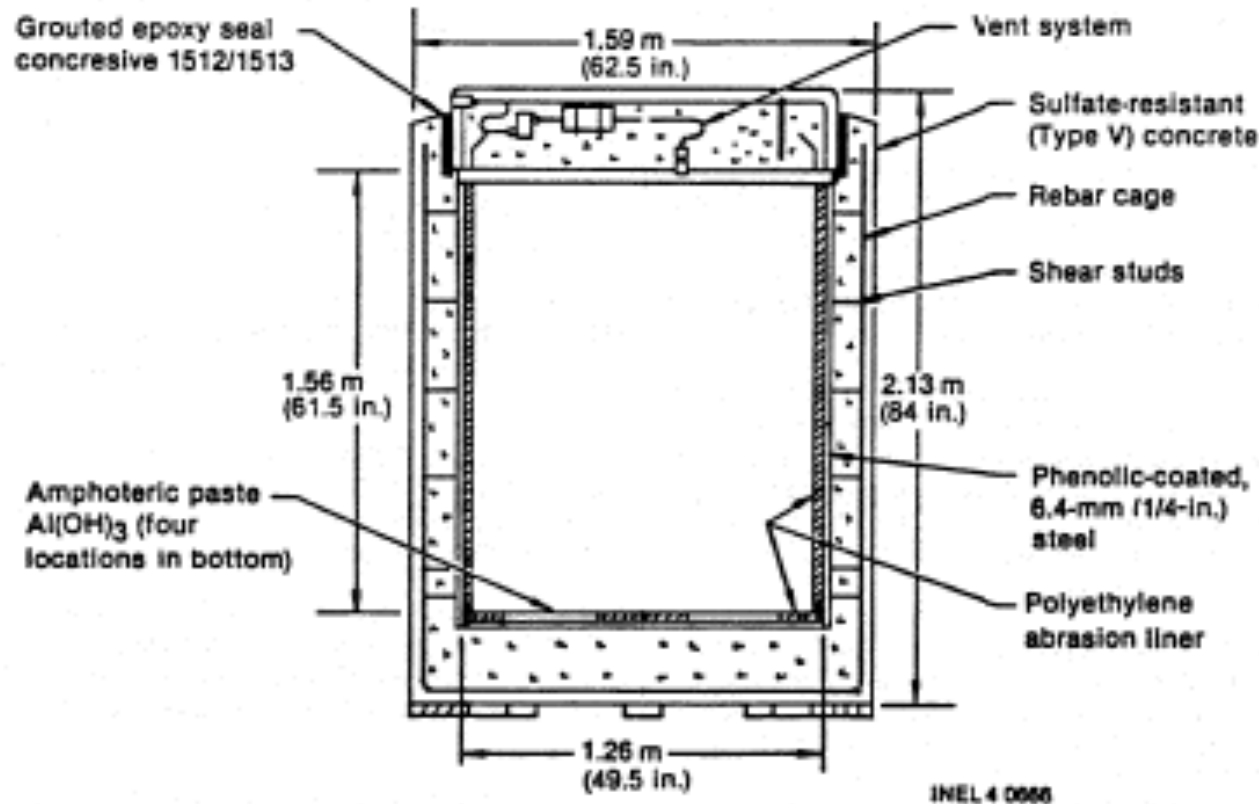
Plan View Module A

INEL 2 0811

Elevation View

Space for 6 modules, only 2 were needed

High Integrity Containers (HICs)



- ❑ HIC for high activity EPICOR II Vessels buried at Hanford shown above
- ❑ Steel alloy (Ferralium) for SDS Vessels and high-density polyethylene HICs for lower activity EPICOR II at Barnwell, South Carolina

Some Important Waste Management Events

Events/Decisions	Significance
Resin concreting; no precedent for such a facility; instead, used custom and commercial high integrity containers ("HICs")	Conceptual design, then rejected – high cost, high operational uncertainty, 2 years to commission, requiring complex maintenance and radiation exposure to personnel
Studied and rejected a controlled air incinerator for low level waste	Cost of construction and operation too high for the amount of waste expected
DOE accepted high activity SDS and EPICOR II vessels	There were no NRC licensed facilities that would accept this waste
DOE accepted fuel & debris canisters	Solved problem of no normal disposition pathway
New cask design and license; ship fuel/debris by rail and not truck	<ol style="list-style-type: none"> 1. Necessary because handling and shipping design and fabrication could not take place until destination was determined 2. New cask could be designed for the TMI canisters 3. Fewer shipments
On-site storage and staging facilities	Available without waiting when needed