Inter-Office Memorandum

GPU Service

Date: June 5, 1979

Subject: DESIGN CRITERIA FOR INTERIM SOLID WASTE STAGING FACILITY - WG-21

To: J. T. COLLINS
W. E. GRABER
J. B. LOGAN
B. RUSCHE
R. L. WILLIAMS

Location: Three Mile Island
Waste Management

Attached for your record is the final design criteria for the subject facility. Comments made by J. Collins have been incorporated into this revision and initialled by all addresses.

M K Pastor pcr
M. K. PASTOR

MKP:mb

cc: W. T. Gunn

Attachment

316221

7909060479

DESIGN CRITERIA APPROVAL

The attached design criteria for

WG-21	INTERIM SOLID WASTE STAGING FACILITY	1
Task Number	Title	Revision

is approved.

WASTE MANAGEMENT ACTIVITIES

5/29/79
Technical Support Date

5-29-79.
Cognizant Group Manager Date

5-29-79
Director Date

NRC

John T. Collins 5/30/79 w/ comments
Date

OTHER (TO BE SPECIFIED BY WMA TECH SUPPORT MANAGER)

5/30/79
ALARA Date

Date

5/29/79
NET-ED Date

Date

Date

Date

POOR ORIGINAL

318232

SYSTEM DESCRIPTION

INTERIM SOLID WASTE STAGING FACILITY

1.0 INTRODUCTION

Currently, there are several large metal containers of depleted, radioactive resin that have been generated by Epicor I and are being stored in concrete culvert pipes along the west side of the Unit 1 Auxiliary Building where the Epicor I system is located. It is expected that within the next two weeks, similar (although smaller) liners of depleted, radioactive resin will be generated by Epicor II. It is the intention of all concerned to ship these liners to approved burial sites as soon as possible. However, because of the long distances involved in trucking this waste to the western burial sites and the limited number of casks available for making these trips, it has become necessary to provide an on-site staging area to safely store these liners until they can be shipped. At present, a design is being finalized for a long term staging facility to handle these wastes as well as the waste from the system(s) selected to process the higher activity wastes still inside containment. Until this long term facility is operational, a quick, inexpensive and easy to construct, interim staging facility is needed to allow Epicor II to start up as soon as possible.

2.0 DESIGN CRITERIA

The safety, radiological, and functional design criteria for the interim staging facility are as follows:

1. The facility must be operational before Epicor II is started up.

2. The design shall be such that a construction duration of more than two weeks will not be necessary.

3. The bottom of the cells shall be above the normal water table. The design shall also preclude the possiblity of the maxium expected runoff from any one rainfall from pooling around the cell bottoms.

4. The radiation level at the surface of the cells shall be 5 mrem/hr or less.

5. Interior surfaces of cells shall be easily decontaminated.

2.0 DESIGN CRITERIA (cont.)

6. Outside the metal resin liners themselves, two additional barriers shall be provided against any leakage from the cells.

7. The cells shall be protected against in-leakage of ground water or rainwater.

8. The facility shall be sized to handle all solid waste generated by Epicor II in processing 120,000 gallons of waste water. The facility shall also be capable of staging ten liners produced by Epicor I. Based on these criteria, the total capacity of the staging area shall be:

   4-4' Ø x 68" charcoal filter liners - 2500 R/hr each
   12-4' Ø x 68" demineralizers - 400 R/hr each
   2-6' Ø x 72" polishing demineralizer - 25 R/hr each
   10-6' Ø x 72" Epicor I liners - 25 R/hr each

9. Area around the cells shall be graded and covered in such a manner that rainwater runoff drains away from the cells.

10. The movement of liners in and out of the cells shall be done using a shielded pick when required. Exposures to operating personnel shall be within administrative limits set by Met-Ed Health Physics Procedures.

11. The ground around each cell shall be protected against contamination during movement of disposable liners in and out of that cell.

12. Earth embankments used for shielding around cells shall be protected against erosion.

13. The area around interim staging facility shall be designated an RWP area, with appropriate security provided.

14. All movement of containers in and out of the cell shall be done in clear weather, with reasonable assurance that no precipitation will occur during the period of time that the transfer operation is planned for.

15. Prior to any construction work on the interim staging facility, a surface radiation survey shall be performed for the area.

16. The design life of the facility shall be four months, commencing with placement of first waste container into facility.* Following use, the facility shall be decontaminated (as required), dismantled, and the area restored as directed by the Waste Management Activity.

*OR JULY 31, 1979, WHICHEVER IS SOONER.

2.0 DESIGN CRITERIA (cont.)

17. The facility shall be designed to permit snow removal. However, freeze/thaw protection need not be considered if the design life of the facility does not extend past ~~December~~ November 1, 1979.

18. The facility shall be located in an area which allows easy access using a Manitowoc 4000 crane and 40 foot low-boy trailer.

19. The cells shall be reuseable to allow liners containing I-131 to be stored for decay and then reused.

20. All major construction activities must be done before any waste containers are placed in the facility, so that radiation from the first liners transferred to the facility does not hamper completion of construction. At any time up until the facility is completed, enough cell covers shall be onsite to cover both the filled cells, and the adjacent unfilled cell or cells.

21. As much as possible, the facility shall be designed to permit reuse of material (such as cell liners and shield plugs) in the long term on-site staging facility.