UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

May 5, 1979

MEMORANDUM FOR: Ben Rusche, Met-Ed

FROM: J. T. Collins, NRR/NRC

THRU: V. Stello, NRR/NRC

SUBJECT: DESIGN CRITERIA FOR TEMPORARY ON-SITE STAGING AREA FOR SOLID RADIOACTIVE WASTE

A. Structure

1) The structure for temporary on-site storage shall be an above grade pad.

2) The pad shall be designed to accommodate the maximum loading of the storage cells (casks) and filled liners.

3) The pad shall be sloped to collect spillage and decon water or contaminated rain water in a sump or tank for subsequent disposition.

4) The sump or tank shall be adequately sized to handle expected rainfall and decon rinses or otherwise suitably protected.

5) The pad material shall be sealed for contamination control and subsequent decon.

6) The pad shall be sized to accommodate the expected generation of solid waste, including the need for on-site decay prior to shipment, and be consistent with the capabilities to package and transport waste on a continual basis.

7) The storage pad shall be designed for the design flood of 1.1×10^6 cfs. A pad elevation of approximately 304' above MSL shall provide adequate protection against the design flood.

8) An alternative design consisting of a dike protected pad (dike elevation of 304') shall also be considered.

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B. Components Storage Pad Sump or Tank

1) The sump shall be lined (steel) for long term integrity. The tank shall be designed and fabricated in accordance with Regulatory Guide 1.143.

2) The sump or tank shall be provided with a discharge pump for ultimate disposition.

3) The tank shall be provided with a recirculation line.

C. Crane or Hoist

1) The storage pad shall be equipped with the means (crain or hoist) for off-loading by remote methods, the filled liner from its transport cask.

2) The control station for the crane or hoist shall be adequately shielded and permit remote viewing of the transfer operation.

D. Storage Cells

1) The storage cells shall be designed to adequately shield (≤ 5 mrem per hour on contact) the maximum expected liner exposure rates (R/hr).

2) The cells shall be designed to shed rain water (i.e., adequate plug or cap).

3) The cells shall be sealed (painted) for potential decontamination.

E. Filter and Resin Liners

1) The liners shall be designed and fabricated for a lifetime well in excess of expected temporary onsite storage. The liners shall be protected for corrosion (i.e., painted).

F. Monitoring

1) Any water collected in the pad sump or tank shall be analyzed from a representative sample prior to disposition.

2) If the water is adequate for discharge it may be discharged via a monitored line with audible alarm.

3) If the water is not adequate for discharge, it shall be transferred to a system for subsequent processing.

4) When no liner transfers are being made, the storage pad and cells shall be covered with a plastic tarp.

5) An air sample from under the sump shall be taken daily.

C. General

1) The processing of liquid wastes and subsequent transfer and packaging operations shall be planned in accordance with the requirements of 40 CFR 190 (25 mrem/yr including direct radiation). It should be noted that there will be 3 unshielded picks per liner for transfer operations and later packaging.

2) All evaporator bottoms shall be solidified prior to packaging. Filter sludges and resins shall be dewatered prior to packaging, consistent with current waste practices.

3) In order to minimize the potential for liner leakage or failure, liners shall be shipped on a "first" in "first" out basis. This practice will minimize the liner residence time on the pad.

4) Consideration shall be given for the means to decon. externally contaminated liners, cells or pad surfaces.

This system for temporary on-site staging, should be operational before startup of the EPICORE II unit. If this is not possible, an equivalent form of protection for a temporary staging area must be available before operating the EPICORE II unit, subject to our approval.

John T. Collins

John T. Collins, NRR/NRC

cc: R. Vollmer

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