



Mechanical Data Sheet: Vessel

Plant Item No. 24590-PTF-MV-FEP-SEP-00001A
Data Sheet No. 24590-PTF-MVD-FEP-P0008



Table with project details: Project: RPP-WTP, Project No: 24590, Project Site: DOE Hanford, System No: FEP, Building: PTF, Description: Waste Feed Evaporator Separator Vessel FEP-SEP-00001A

ISSUED BY RPP-WTP PDC

Reference Data

Table with reference data: Charge Vessels (Tag Numbers) N/A, Pulse Jet Mixers / Agitators (Tag Numbers) N/A, RFDs/Pumps (Tag Numbers) N/A

Table with quality and design specifications: Quality Level QL-1, Seismic Category SC-1, Service/Contents Radioactive Slurry, Design Specific Gravity 1.50, Max Operating Volume 3,341 gal, Total Volume 13,359 gal, Postweld Heat Treat Not Required, Seismic Design 24590-WTP-3PS-MV00-TP002

Design Data

Table with design data: Inside Diameter** 7'6" (Upper), 11'5" (Lower), Length/Height** 406 3/4, Corrosion Allowance 0.04, Internal Pressure PSIG -13.4, External Pressure PSIG 0, Temperature °F 129, Min Design Metal Temp °F 49, Hydrostatic Test Pressure PSIG 65

Materials of Construction

Table with materials of construction: Component, Material, Containment, Notes. Includes Top Head, Shell, Bottom Head, Vessel Support, Jacket/Coils, Internals, Pipe, Forgings/ Bar stock, Gaskets, Bolting, Other (Fittings).

Note: Please note that source, special nuclear and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA), are regulated at the U.S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority.



This Bound Document Contains a total of 2 sheets

Table with revision history: Issue for Permitting Use, Reason for Revision, Preparer, Checker, Reviewer, Approver, Date. Includes handwritten signatures and dates.



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Miscellaneous Data

Orientation	Vertical
Support Type	Stainless steel legs
Insulation Function	None
Insulation Thickness	inch None
Insulation Material	None
External Finish	Welds descaled as laid
Internal Finish	Welds ground smooth; lower 16'-3 7/16" shell and cone to be #4 polished finish.

Notes

- (1) Nozzles located below the top of the overflow nozzle are primary containment. See 24590-WTP-3PS-MV00-T0001 for NDE requirements.
- (2) Nozzle tolerance +/- 1/4"
- (3) Material for demister pad is Inconel 625 fine mesh
- (4) Non-replaceable 40 years design life (except demister pads section)
- (5) NDE for this vessel must meet requirements per para. 6.1, 6.2 and 7.2 of specification 24590-WTP-3PS-MV00-TP001
- (6) All welds forming part of the primary and auxiliary containments, including the nozzle attachment welds shall be subjected to 100% volumetric examination.
- (7) This vessel is located in a Black Cell.
- (8) Vendor to specify all metal thicknesses
- (9) Contents of this document are Dangerous Waste Permit affecting 
- (10) All vessel nozzle loads due to thermal expansion are estimated based on the maximum operating temperature of 150 degree F. 
- (11) This vessel is Important-To-Safety (ITS) and must maintain containment post Design Basis Event (DBE). 
- However, Environmental Qualification is not applicable for this vessel since all the materials of construction are metallic (24590-WTP-GPG-ENG-086, Rev. 0) 