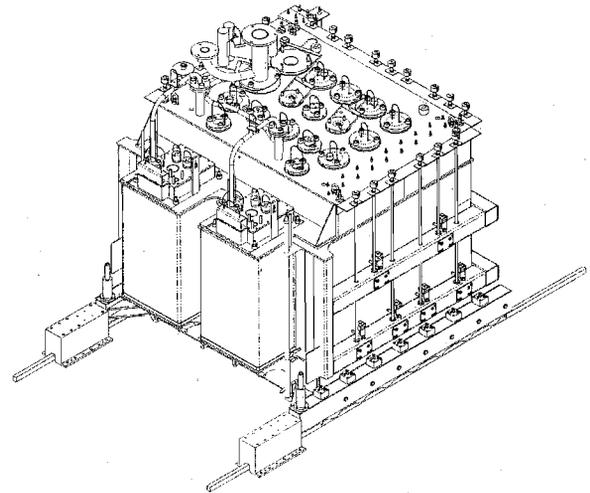


Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.



RPP-WTP	DATA SHEET HIGH LEVEL WASTE MELTER 1	Data Sheet Number:	24590-HLW-MOD-HMP-00001
		Plant Item Number:	24590-HLW-ME-HMP-MLTR-00001
		Page:	1 of 1

System: HMP  
 Project: RPP-WTP  
 Project No: 24590  
 Site: Hanford  
 Function: Convert blended HLW slurry and glass formers into glass and deliver the glass to canisters  
 Quality Level: Q (see note 1)  
 Seismic Class: SCII  
 Environmental Qualification: *N/A Yes - See Note 3  
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- Reference Documents:
- 24590-HLW-3PS-AE00-T0001 Rev 4, Engineering Specification for High Level Waste Melters
  - 24590-101-TSA-W000-0010-407-582, HLW Refractory Validation Model, CAL-WTP-21112 Rev 0
  - 24590-QL-HC4-W000-00011-04-00005 Rev 00A, HLW Melter Center of Gravity Calculation (CAL-WTP-2100 Rev 3)
  - 24590-HLW-RPT-E-03-001 Rev 0, Electrode Power Requirements for HLW Melter
  - 24590-HLW-RPT-E-03-002 Rev 1, Electrical Requirements for Startup and Discharge Heaters
  - 24590-HLW-RPT-PE-07-001 Rev 0, High Level Waste Vitrification Plant Capacity Enhancement Study
  - 24590-HLW-M6C-HMP-00017 Rev 0, Temperature Rise and Final Temperature for HLW melter Cooling Water Loops

MECHANICAL					
Units			Units		
Melter Design Life	years	5	Melter Base, Rail Center to Center Distance	inches	148.00
Maximum Outside Dimensions (L x W x H)	inches	172 x 164 x 146	Maximum Assembled Weight, Empty	pounds	174,000
Plant Elevation, top of rail	ft-in	2 - 11	Maximum Assembled Weight with Glass	pounds	198,000

PROCESS					
Units			Units		
Design Glass Production	MT/D	3.75	Thermal load to cave from melter (idle and feed modes)	kW	35 max
Glass Tank Volume	ft <sup>3</sup>	144	Melter Cooling Water	GPM	45 (nominal)
Glass Tank Surface Dimensions (L x W)	inches	60 x 96	Melter Cooling Water	Delta T (°F)	25 (nominal)
Max Operating Glass Depth	inches	44			
Design Glass Operating Temperature (max)	°F	2200			

ELECTRICAL					
Units			Units		
Electrode Power	kW	800 max			
Start-up Heater Power	kW	183 total max			
Discharge Chamber Heater Power	kW	56 max per chamber			

CONTROLS AND INSTRUMENTATION  
 Engineering Specification for Melter Systems C&I Work Specification, 24590-WTP-3PS-J000-T0001, Rev 1  
 Software Functional Specification for HLW Melter Process (HMP) System, 24590-HLW-3PS-HMP-T0001, Rev A

MAJOR COMPONENTS - Materials			
Melter Shell and Base	A500, A36, 304L, C276	Cooling Panels	C276, 316L
Melter and Discharge Chamber Lids	304L, Alloy 690	Discharge Chamber Trough and Dam	Alloy 690
Electrodes	Alloy 690	Film Cooler	Alloy 690

REPLACEABLE COMPONENTS					
Quantity			Design Life (months)		
Feed Nozzle	2	60	Discharge Chamber Lid Assembly	2	30
Film Cooler	1	60	Discharge Chamber Vent Line	2	60
Air Lift Lance	2	60	Discharge Chamber Vent Insert	2	60
Level Probe	1	12	Discharge Chamber Thermowell	4	60
Plenum/Glass Pool Thermocouple	2	4	Discharge Chamber Thermocouple	4	12
Plenum/Glass Pool Thermowell	2	9	Electrode Thermocouple Assembly	3	12
Refractory Thermocouple Assembly	2	12	Plenum View Camera	1	12
Bubblers	7	2	Start-up Heaters	5	3

NOTES  
 1. Replaceable components with the exception of the film cooler are CM.  
 2. The contents of this document are Dangerous Waste Permit Affecting.  
*3. See Equipment Qualification Data Sheet.  
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Date	Rev	Reason for Revision	Originator	Checker	E&NS	Reviewer	Approver
3/9/09	2	Added "Environmental Qualification" and "Quality Level/Seismic Classification" blocks, re-formatted data sheet, corrected process data Implemented Melter's scope of work for the HLW Capacity Enhancement Trend (BCP-24590-06-02470) and contract modification M083 (4/2007), incorporated 24590-WTP-H&N-M80T-00005	K. Clarke	L. Donovan	M. Kulp	J. Juyk <i>KFC 315109</i> Aaron Bronner	Jeanet Roth <i>KFC 315109</i> John Juyk
10/13/2004	1	Design Evolution	M. Hall	L. Curtis	n/a	n/a	Will Eaton
10/9/2002	0	Issued for Design	M. Hall	M. Seed	n/a	n/a	Will Eaton