



MECHANICAL DATA SHEET

SHELL AND TUBE HEAT EXCHANGER

Plant Item No.
24590-PTF-MB-CNP-HX-00001

Data Sheet No.
24590-PTF-MED-CNP-P0005

Project:	RPP-WTP	Description:	Cesium Evaporator Concentrate Reboiler
Project No:	24590	P&ID:	24590-PTF-M6-CNP-P0008
Site:	Hanford	Process Data Sht:	24590-PTF-M5D-CNP-00001
Process flow diagram:	24590-PTF-M5-V17T-P0014	Manufacturer Name:	•



General Data

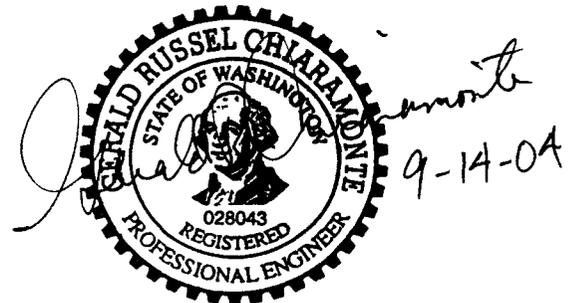
Quality Level	QL-1	TEMA (Class/Type)	B*	* ISSUED BY RPP-WTP-PDC
Seismic Category	SC-1	Flow Type (Counter current, etc)	•	
Design Code	ASME VIII, Div 1	Heat Exchanger Duty Btu/hr	•	
Code Stamp	Yes	Heat Exchanger Area ft ²	*	
NB Registration	Yes	ΔT (LMTD/Corrected LMTD) °F	*	*

Thermal/Hydraulic Data

	Shell Side	Tube Side
	Steam	Waste Feed Recirculation
Fluid Name		
Fluid Quantities: Total lbm/hr	•	•
Condensable Vapor (In/Out)	*	*
Liquid	*	*
Noncondensable	*	*
Temperature (In/Out) °F	*	*
Specific Gravity	*	*
Viscosity cP	*	*
Molecular Weight, Vapor	*	*
Molecular Weight, Noncondensable	*	*
Specific Heat Btu/lbm-°F	*	*
Thermal Conductivity Btu/hr-ft-°F	*	*
Latent Heat Btu/lbm @ °F	*	*
Inlet pressure psia	*	*
Tube side Velocity ft/s	*	*
Pressure Drop (Actual) psi	*	10*
Fouling Resistance (Min) hr-ft ² -°F/Btu	*	*

Contents of this document are Dangerous Waste Permit Affecting.

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 the 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.



EXPIRES. 11/9/ 2004

This bound document contains a total of 2 sheets

0	9/14/04	Issued for Permitting Use	<i>John M...</i>	K.R.Sadler Jr.	K.Crow	<i>R. De...</i>
REV	DATE	REASON FOR REVISION	PREPARER	CHECKER	REVIEWER	APPROVER



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Mechanical Data

		Shell Side		Tube Side	
Design Pressure (Max/Min)	psig	50*	Full vacuum*	50*	Full vacuum*
Design Temperature (Max/Min)	°F	325*	40*	250*	40*
Corrosion Allowance	inch	0.04		0.04	
Erosion Allowance	inch	*		*	
Shell OD/ID	inch	*		Overall Dimensions (H x W x L) inch	*
Total No. of Tubes		*		Tube OD inch	* inch

Material Data

Shell	SA 240 316***	Shell Cover	SB575 (Hastelloy) UNS N06022**
Channel/Bonnet	SB575 (Hastelloy) UNS N06022**	Channel Cover	NIA
Tube	SB622 (Hastelloy) UNS N06022**	Floating Head Cover	NIA
Stationary Tube Sheet	SB575 (Hastelloy) UNS N06022**	Floating Tube Sheet	NIA
Shell Side Gaskets	NIA	Tube Side Gaskets	NIA
Partition	SB575 (Hastelloy) UNS N06022**	Baffles/Supports	SA 240 316***
Insulation	Heat Conservation	Forgings (Shell side)	SA 240 316***
Bolting	NIA	Forgings (Channel)	SB564 (Hastelloy) UNS N06022**

Construction Data (To be determined by the supplier when not specified by the buyer)

Cross Baffle Type	*	% Baffle Cut (Dia.)	*	Spacing (c/c) inch	*
Bypass Seal Arrangement	*	Longitudinal Seal Type	*	Expansion Joint Type	*
Inlet Nozzle ρV^2	*	Bundle Entrance ρV^2	*	Bundle Exit ρV^2	*
Tube Support Type	*	U-bend Support Type	*	Weight of Bundle lbf	*
Operating Weight lbf	*	Full of Water lbf	*	Weight of Shell lbf	*

Notes

* To be determined by Seller

** To be verified by Seller

***Maximum carbon content of 0.030% for all welded components

Notes: (1) All welds are continuous to avoid crevices, weld surface finish is descaled as laid.

(2) All welded construction on both tube and shell sides

(3) Tubes welded to the tubesheets with full strength welds.