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R10156142



Mechanical Systems Data Sheet: Ultrafilter

Plant Item Number:

24590-PTF-MK-UFP-FILT-00001A & 1B, 00002A & 2B, 00003A & 3B, 0000S1, 0000S2, 0000S3, 0000S4, 0000S5, 0000S6 SEE NOTE 1

Project:	RPP-WTP	24590-PTF-3YD-UFP-00001	System Description
Project No:	24590	Reference Documents	
Project Site:	DOE Hanford	24590-PTF-3PS-MLFP-TP001	Engineering Specification for Ultrafilters
System No:	UFP	CCN: 065607	Rheology Design Basis for Non-Newtonian
Building:	PTF	Associated Drawings	
Quality Level:	QL-2	24590-PTF-M6-UFP-P0002 & -P0003	P&ID PTF Ultrafiltration System Vessel UFP-VSL-00002A & 00002B
Seismic Criteria	SC-III		
Description: 200C			

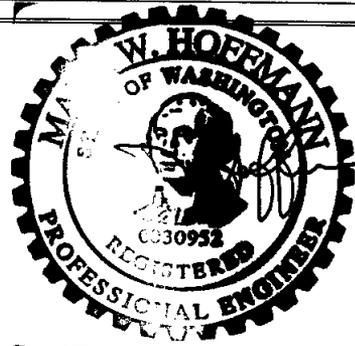
Units

DESIGN DATA		
Minimum Design Pressure	psig	0
Maximum Design Pressure	psig	200 Tubeside & Shellside
Design Delta Pressure	psi	50
Minimum Backpulse Overpressure	psig	40
Maximum Backpulse Overpressure	psig	180
Minimum Design Temperature	°F	59
Maximum Design Temperature	°F	200
Design Velocity	ft/sec	15
Maximum Design Flowrate	gpm	2400

PROCESS CONDITIONS		
Process Fluids		Slurry (Caustic Max pH of 14), 2M Nitric Acid
Fluid Temp Normal	°F	77
Flowrate Normal	gpm	2200
Solids Concentration Weight	%	0 - 25
SpG @ Normal Temp		1.00 - 1.42
Minimum Particle Size to be Removed	micron	0.2
Solids SpG		3.0
Fluid Viscosity @ Normal Temp	cP	1.0 (Newtonian) - 30 (NonNewtonian Consistency Viscosity)
Max Available Delta Pressure	psi	118

DESIGN SPECIFICATION		
Vessel Support	pads	
Vessel Corrosion Allowance	in	0.04
Design Delta Pressure Range	psi	30 - 70
Element Porous Length	in	96
Element Quantity		241 Note 2
Filter Area	in	252
Shell Outer Diameter	in	16.75 Note 2
Element OD	in	0.625 Note 2
Element ID	in	0.5 Note 2
Filter Media	micron	0.1
Nominal Flux Rate	gpm/sq-ft	0.03
Filter Cleaning Fluids		2M Nitric Acid/2M Caustic

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. 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.



12/10/03

EXPIRES 12/10/04

This Bound Document Contains a total of 2 pages

APPROVAL					
Revision	Description	PREPARER	CHECKER	APPROVER	Date
1	Issued for Permitting Use	M. Askar	P. Avignone	JJ	12/9/03
0	Issued for Permitting Use	MA	GB	JJ	11/13/2003

mm 12/11/03

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	Mechanical Systems Data Sheet: Ultrafilter	Plant Item Number: 24590-PTF-MK-UFP-FILT-00001A & 1B, 00002A & 2B, 00003A & 3B, 0000S1, 0000S2, 0000S3, 0000S4, 0000S5, 0000S6. SEE NOTE 1
MATERIALS OF CONSTRUCTION		
Porous Media	316L SS	
Element Seal	Welded	
Vessel Wetted	316L SS	
Tubesheet	316L SS	
Vessel Internals	316L SS	
Vessel Gaskets	Welded	
Element Hardware	316L SS	
NOTES		
NOTE 1: 24590-PTF-MK-UFP-FILT-0000S1 THROUGH 0000S6 ARE SPARES AND ARE INTERCHANGEABLE WITH ANY PLANT ITEM NO. Note 2: Seller shall inform the buyer for any deviation. Note 3: The non-Newtonian slurry is a Bingham plastic with a consistency viscosity of 30 cP and a yield stress of 30 Pa		

