

				SHELL-AND-TUBE HEAT EXCHANGER			
				CLIENT Newport News Shipbuilding		EQUIP. NO	
						PAGE 1	
REV	PREPARED BY	DATE	APPROVAL	W.O.		REQUISITION NO.	
0	Robert Hoke	12/12/18				SPECIFICATION NO.	
1	and Khanh Le			UNIT AREA		PROCURED BY	
2						INSTALLED BY	
1	Size		TEMA Type	AEL		Connected in (series/parallel) parallel	
2	Surface per Unit		ft ²	Shells per Unit 1		Surface per Shell ft ²	
3	Performance of One Unit						
4	Fluid Allocation			Shell Side		Tube Side	
6	Fluid Name			Water		Ammonia	
7	Flow Total lb/h			624888		320000	
8	Vapor lb/h (in/out)						
9	Liquid lb/h (in/out)						
10	Steam lb/h (in/out)						
11	Water lb/h (in/out)						
12	Noncondensable lb/h (in/out)						
13	Temperature (In/Out) °F (in/out)			50 72		122 86	
14	Density lb/ft ³			62.476 62.476		36.269 36.269	
15	Viscosity cP						
16	Molecular Weight, vapor						
17	Specific Heat Btu/lb-°F			1.0005 1.0005		1.1939 1.1939	
18	Thermal Conductivity Btu/h-ft-°F			.339 .339		.285 .285	
19	Latent Heat Btu/lb						
20	Inlet Pressure psigg (inlet)						
21	Velocity ft/s			.019		3.65	
22	Press Drop Allow/Calc psig			10 7.72		10 3.33	
23	Fouling Factor ft ² -h-°F/Btu			.002		.001	
24	Heat Exchanged Btu/hr			13662636.08		LMTD (corrected) °F 35.417	
25	Service Coeff. Btu/h-ft ² -°F			Dirty		Clean	
26	Construction Data for One Shell						
27				Shell Side		Tube Side	
28	Design/Test Press psigg					Sketch 	
29	Design Temperature °F						
30	No. Passes per Shell			2			
31	Corrosion Allowance in						
32	Connections Size In inches						
33	Out						
34	& Rating Intermediate						
35	Tubes No.		OD, in 0.75	Gauge 16	Length, ft. 18	Pitch layout, deg. Square Pitch	
36	Type		Material Copper nickel alloy			Pitch ratio	
37	Shell		OD, in 31.375	ID, in 31	Material Galvanized Steel		
38	Channel or Bonnet		OD, in 31.375	Thick .375 in	Channel Cover		
39	Tubesheet Type						
40	Floating Heat Cover				Impingement Protection		
41	Baffles Cross (number) 13			% Cut (d) 25%	Spacing C/C, in 15.5		
42	Baffles Long				Seal Type No		
43	Supports Tube				U-Bend		Type
44	Bypass Seal Arrangement				Tube-Tubesheet Joint		
45	Expansion Joint No.				Type		
46	Rho-V2-Inlet Nozzle			Bundle Entrance		Bundle Exit	
47	Gaskets - Shell Side				Tube Side		
48	Floating Heat Cover				Supports		
49	Code Requirements Follow all applicable codes/standards				TEMA Class		
50	Weight per shell lb			Filled w/water		Bundle	
51							
52	Notes						
53							
54							