

		HOT WATER SYSTEM			
		B. TECHNICAL OFFER WITH BOM			
		B1. TECHNICAL DETAILS			
1	TECHNICAL DETAILS	HWS Tag No	HWS-2869-401-2026		
2		Quantity (No's)	1		
3		Hot Water Max Temperature.(°C)	95 (Editable)		
4		Hot Water Min Temperature.(°C)	50		
5		ΔT(°C) Across the Heat Exchanger	5		
6		Heat Load:(Kcals/hr)	45,000		
7		B2. UTILITIES REQUIRED	TEMPERATURE(°C)	PRESSURE (kg/cm2)	FLOW RATE
8		Steam	140	3.49	87 kg/hr
9		Instrument Air	RT	4 to 6	-
10		Electricity Supply	415 V AC, 50 Hz, 3 Phase		
		B3. DESIGN CODES & STANDARDS:			
12	DESIGN CODES	Vessel	ASME Sec-VIII Div-I Latest		
13		Pipes	ASME B31.3		
14		Flanges	ANSI B16.5- Class150# - SORF Serrated		
15		X-Ray Radiography	NIL		
		B4. SKID AND PIPE LINE SIZES			
17	SKID DATA	Skid Frame MOC	IS 2062 Grade C		
18		Skid size (L X W X H)MM	1800 (L)X2000(W)X1950(H) without tank -May vary during detailed Engineering		
19		Pipes MOC	As per ASTM A 106 Gr B SMLS Sch 40		
20		Hot Water Suction & Discharge Pipe Line Size	40 NB		
21		Steam Pipe Line Size	25 NB		
22	Condensate Pipe Line Size	15 NB			
		B5. HEATING PHE DATA			
24	HEATING PHE DATA	Heat Exchanger Type	Plate and Plate - Gasketed- EPDM		
25		Heat Exchanger Make	Kelvion-NT50TV-6plates		
26		Heat Transfer Area (m2)	0.27m2		
27		MOC	Plate	Plate	
28			SS316	SS316	
29		Connection Details	Flanged , ANSI B 16.5 RF	Flanged , ANSI B 16.5 RF	
30		HTF & Utility	Water	Steam	
31		Utility Side Inlet Pressure / Pressure Drop	NA	3.49/ ≤0.5 kg/cm2	
32		Utility Side Design Pressure/Design Temperature	NA	6.0 kg/cm ² / 0 to140°C	
33		HTF Side Inlet Pressure/ Pressure Drop	2.0 to 2.5/≤0.5 kg/cm ²	NA	
34		HTF Side Design Pressure/ Temperature	6.0 kg/cm ² / 0 to140°C	NA	
			B6. CIRCULATION PUMP DETAILS		
36		CIRCULATION PUMP	Make	KSB/Johnson/Investa	
37			Quantity (nos)	2 (1Working + 1Standby)	
38	Type		Centrifugal Pump -Horizontal		
39	Material Of Construction		Casing : CI & Impeller :CI		
40	Fluid Pumped		Water		
41	Flow Rate (m ³ /hr)		9		
42	Head Developed (m)		30		
43	Motor Rating (KW)		~2.2 may vary during detailed engineering		
44	Mechanical Seal		Single Mechanical seal		
45	Mechanical Seal make		Reliability		
46	Motor Class / Zone		IE3 /NFLP		
47	Motor make		CG/BB		
48	Operating Temperature (°C)		50 to 95		
49	Operating Temperature (°C)		0 to100		
50	Electrical Supply		415V,50Hz,3phase		

		HOT WATER SYSTEM				
51	BOQ FOR ONE 45,000 Kcal/hr HWS	B7.BOQ FOR ONE 45,000 Kcal/hr HWS				
52		DESCRIPTION	MAKE	MOC	SIZE (NB)	Qty (No's)
53		2-Way Proportionate Control Valve	Dembia/Pneucn/Tecnik	WCB	25	1
54		2-Way Angle Seated Piston type ON/OFF Valve	Aira/Avcon	SS304	25	1
55		3-Way ON/OFF Valve	Aira/Avcon	SS304	15	1
56		RTD PT100 Sensor	Polmon	-	300mm	1
57		Moisture Separator	Uniklinger	WCB	25	1
58		Thermodynamic Steam trap	Uniklinger	WCB	15	1
59		Globe valves-Flanged ends	Chemoil/GM	WCB	25	5
60		Pressure Gauge Glycerine Filled	Baumer/FM	SS304	4"Dial	2
61		Ball Valves - Flanged End	Asten/X2/Excel/GM	WCB	25	1
62		Ball Valves - Flanged End	Asten/X2/Excel/GM	WCB	40	4
63		Float Steam Trap	Uniklinger	CI	15	1
64		Pressure Safety Valve	Fainger Laser	SS316	15 X 25	1
65		Bucket-Strainer	Hawa/Prime	CS	40	2
66		Y-type Strainer	Axegic	WCB	25	1
67		Non Return Valve - Swing check	Axegic	WCB	40	2
68		Non Return Valve - Swing check	Axegic	WCB	25	2
69		Emergency Push Button	SCG/Pluto	-	-	1
70		Guided Float Type Level switches	Pune Techtrol/Radix	CS	40	1
71		Condensate Pumping Vessel	Polmon	CS	20Ltrs	1
72		Auto Air Vent	Polmon	Brass	25	1
73	BOQ FOR MAKEUP TANK	B8.BOQ FOR MAKEUP TANK				
74		Capacity (Ltrs)	500 - Vertical Tank			
75		Qty (No's)	1			
76		MOC	CS			
77		Thickness (mm)	6 & 6			
78		Insulation Cleats	Will be provided			
79		Design Pressure(bar)/ Temperature (°C)	4(bar)/ 0 to 100(°C)			
80		ACCESSORIES	MAKE	MOC	SIZE (NB)	Qty (No's)
81		Ball Valves - Flanged	X2/Excel/GM	WCB	25	4
82		Ball Valves - Flanged	X2/Excel/GM	WCB	40	1
83		2-Way Angle Seated Piston type ON/OFF Valve	Avcon/Aira	SS304	25	1
84		Guided Float Type Level switches	Pune Techtrol/Radix	CS	40	1
85		Tubular Level Gauge	Pune Techtrol/Radix	CS	25	1
86	NFLP MCC PANEL	B9.LOOSE SUPPLY COMPONENTS				
87		DESCRIPTION	MAKE	MOC	SIZE (NB)	Qty (No's)
88		Mechanical Pressure Reducing valve	Forbes	-	25	1
89		B10.MULTI LOOP CONTROLLER (MLC41)				
90	DESCRIPTION	MAKE			QUANTITY(NO'S)	
91	Multi Loop Controller (MLC 41) Analog Input - 3 No's (RTD/4-20mA), Analog Output - 1 No's Digital Input - 10 No's, Digital Output - 5 No's Modbus (RS485) Communication.				1	
92	NFLP MCC PANEL	B11.NFLP MCC PANEL				
93		DESCRIPTION	MAKE			QUANTITY(NO'S)
94	NFLP MCC PANEL Start,Stop,Automanual.				1	
95	NOTE : ALL COMPONENTS ARE CONSIDERED FOR NFLP ZONE INSTALLATION					
96	00					
97	REV	DATE				