

ANNEXURE 3

DEAERATOR DESIGN, SIZING & CALCULATION

Input Cell
Result

Unit Conversions: Conventinal Unit to SI Unit and Visa Versa	
TEMPERATURE	
Enter °F	Conversion to °C
329	165.000
Enter °C	Conversion to °F
156.70	314.060
Enter °F	Conversion to °R
200.00	659.670
Enter °C	Conversion to °K
482.20	755.350

Unit Conversions Conventinal Unit to SI Unit and Visa Versa	
PRESSURE	
Enter psig	Conversion to Bar
2.00	0.138
Enter Bar	Conversion to psig
5.00	72.520
Enter Bar	Conversion to MPa
5.00	0.500
Enter MPa	Conversion to psig
6.00	870.000

Unit Conversions. Conventinal Unit to SI Unit and Visa Versa	
ENERGY	
Enter kJ/kg	Conversion to btu/lb
125.74	54.058
Enter btu/lb	Conversion to kj/kg
299.1	2625.100
Enter MMBtu/hr	Conversion to GJ/hr
44.55	47.003
Enter kJ/kg.K	Conversion to btu/lb.°R
5.71	1.364

Input Data

Input Cell	Result
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Inlet (External Connection)

Inlet Properties

Deaerator Pressure*	0.1	MPa
Combustion Efficiency*		%
Blowdown Rate*		%

Steam Inlet

Steam Properties

Pressure	0.6	MPa
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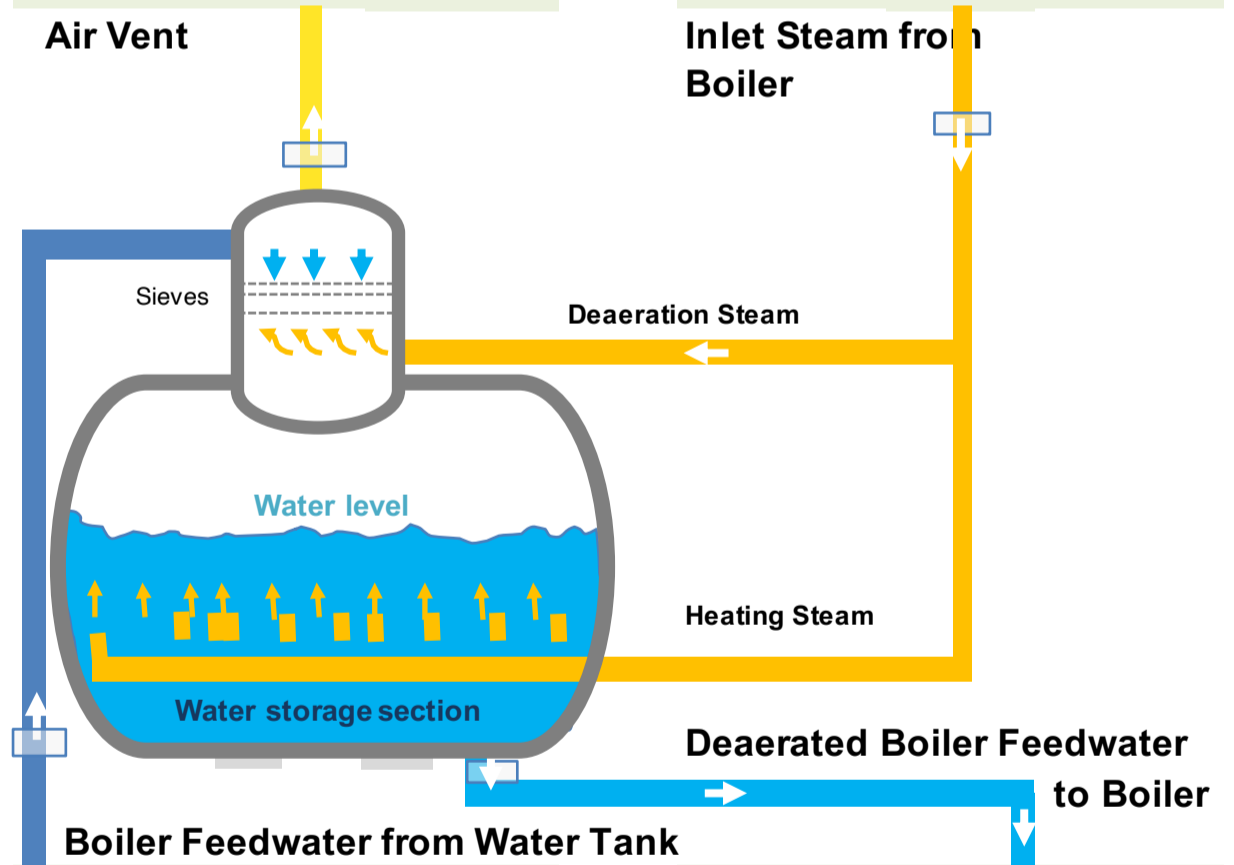
Temperature *	482.00	°C
Specific Enthalpy *		kJ/kg
Specific Entropy *		kJ/kg.K
Saturated Quality *		

Steam Mass Flow	5.5	kg/hr
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Calculated Data

Phase / Quality	1	
Pressure	6.3	MPa
Temperature	482	°C
Mass Flow	1.04	kg/hr
Sp. Enthalpy	2,800.0	J/kg
Sp. Entropy	7.8	J/kg/K
Energy Flow	12.60	GJ/hr

Phase / Quality	1	
Pressure	63.0	MPa
Temperature	482.22	°C
Mass Flow	10.82	kg/hr
Sp. Enthalpy	3,378.80	J/kg
Sp. Entropy	6.8240	J/kg/K
Energy Flow	131.65	GJ/hr



Phase	0.00	
Temperature	30.00	°C
Pressure	4.25	MPa
Mass Flow	11.15	kg/s
Sp. Enthalpy	125.74	kJ/kg
Sp. Entropy	4.25	J/kg/K
Energy Flow	28.30	GJ/hr

Saturated/Quali	0.00	
Temperature	164.70	°C
Pressure	0.60	MPa
Mass Flow	11.39	kg/s
Sp. Enthalpy	695.9	kJ/kg
Sp. Entropy	1.9396	J/kg/K
Energy Flow	27.1	GJ/hr