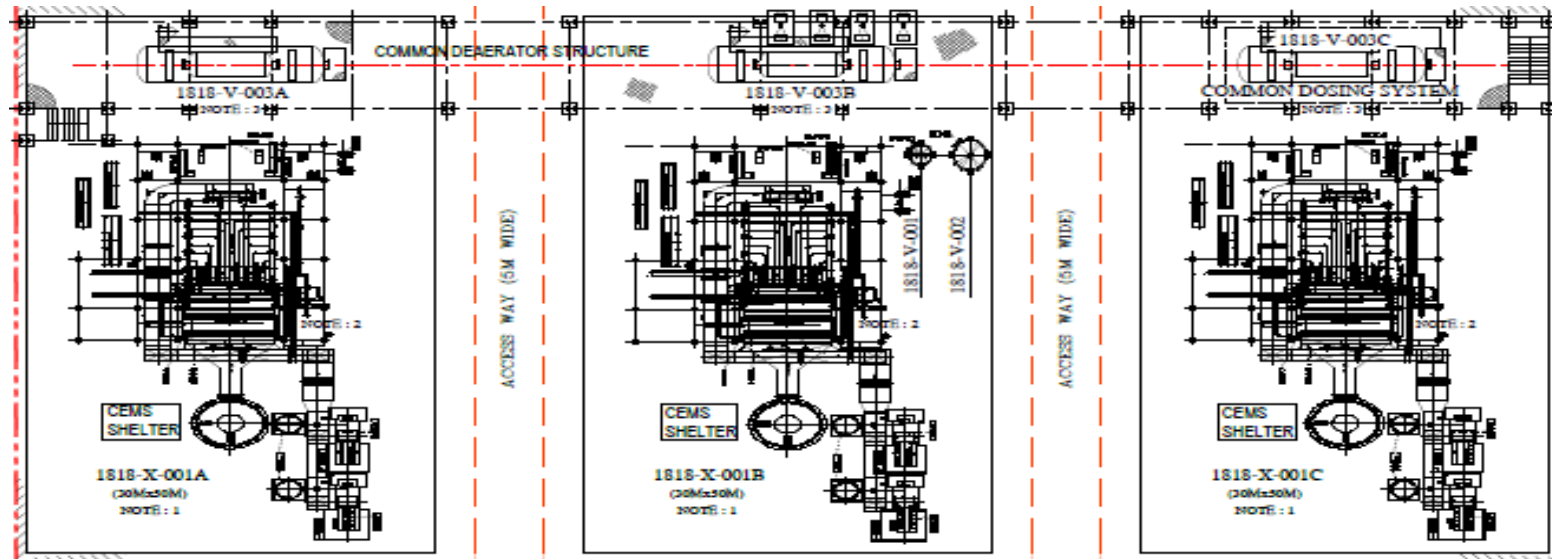


Validation of Petcoke Drum Discharge Chute Sizing Calculation

Client: Fulcrum Engineering Consultancy, Trichy

Project: IOCL, Barauni, Bihar

Scope Of Work: Validation of the discharge chute sizing with back up calculations to get approval from Engineers India Limited (EIL)



Validation of Petcoke Drum Discharge Chute Sizing Calculation

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S/N	Technip DS Pag	Technip DS Row #	Description	Unit	OEM BOILER										OEM BOILER										OEM BOILER									
1	2	1	PURCHASER / OWNER		IOCL, Gujarat										IOCL, Gujarat										IOCL, Gujarat									
2	2	2	MANUFACTURER - REFERENCE		Vadodra, Gujarat, India										Vadodra, Gujarat, India										Vadodra, Gujarat, India									
3	2	3	LOCATION Site & Elevation ASL		Refer Process Design Basic										Refer Process Design Basic										Refer Process Design Basic									
4	2	4	UNIT		1518										1518										1518									
5	2	5	ITEM N°		1518-X-001 A/B/C										1518-X-001 A/B/C										1518-X-001 A/B/C									
6	2	6	TYPE		Water tube boilers (Natural circulation)										Water tube boilers (Natural circulation)										Water tube boilers (Natural circulation)									
7	2	7	NUMBER REQUIRED		3 Working / 0 standby										3 Working / 0 standby										3 Working / 0 standby									
8	2	8	DESIGN CODE		ASME I & IBR										ASME I & IBR										ASME I & IBR									
9	2	9	STEAM PRODUCTION	t/h	150 (MCR) Note 1										150 (MCR) Note 1										150 (MCR) Note 1									
10	2	10	STEAM TEMPERATURE AT B.L. (min/normal/max/design)	°C	450 / 455 / 460 / 465										450 / 455 / 460 / 465										450 / 455 / 460 / 465									
11	2	11	STEAM PRESSURE AT B.L. (min/normal/max/design)	kg/cm2(g)	36 / 37 / 38 / 40 MPa										36 / 37 / 38 / 40 MPa										36 / 37 / 38 / 40 MPa									
12	2	12	HEAT ABSORBED AT MCR	MMBtu/hr	will be given later										Later										Later									
OPERATING CONDITIONS					Feed Oil			Feed Gas			Feed Oil			Feed Gas			Feed Oil			Feed Gas			Feed Oil			Feed Gas			Feed Oil			Feed Gas		
					MCR	Peak	Terndown	MCR	Peak	Terndown	MCR	Peak	Terndown	MCR	Peak	Terndown	MCR	Peak	Terndown	MCR	Peak	Terndown	MCR	Peak	Terndown	MCR	Peak	Terndown	MCR	Peak	Terndown	MCR	Peak	Terndown
13	2	13	STEAM FLOW	t/h	150	165	30	150	165	30	150	165	30	150	165	30	150	165	30	150	165	30	150	165	30	150	165	30	150	165	30	150	165	30
14	2	14	STEAM OUTLET TEMPERATURE (at B.L.)	°C	455	455	455	455	455	455	455	455	455	455	455	455	455	455	455	455	455	455	455	455	455	455	455	455	455	455	455	455	455	
15	2	15	FEED WATER TEMPERATURE	°C			190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	
16	2	16	STEAM OUTLET PRESSURE (at B.L.)	kg/cm2(g)																														
17	2	17	STEAM PRESSURE AT DRUM	kg/cm2(g)			ODE	43.5	ODE	ODE	43.5	ODE	ODE	33.6	46	47.5	33.6	46	47.5	33.6	46	47.5	33.6	46	47.5	33.6	46	47.5	33.6	46	47.5	33.6	46	
18	2	18	FEED WATER PRESSURE AT B.L.	kg/cm2(g)			ODE	56	ODE	ODE	56	ODE	ODE	71.27	66.3	65.76	71.27	66.3	65.76	71.27	66.3	65.76	71.27	66.3	65.76	71.27	66.3	65.76	71.27	66.3	65.76	71.27	66.3	
19	2	22	FEED WATER FLOW (including desuperheater flow)	kg/hr			ODE	137500	ODE	ODE	137500	ODE	ODE	Correspo ading to 30 TPH Not Steam	Correspo ading to 150 TPH Not Steam	Correspo ading to 165 TPH Not Steam	Correspo ading to 30 TPH Not Steam	Correspo ading to 150 TPH Not Steam	Correspo ading to 165 TPH Not Steam	Correspo ading to 30 TPH Not Steam	Correspo ading to 150 TPH Not Steam	Correspo ading to 165 TPH Not Steam	Correspo ading to 30 TPH Not Steam	Correspo ading to 150 TPH Not Steam	Correspo ading to 165 TPH Not Steam	Correspo ading to 30 TPH Not Steam	Correspo ading to 150 TPH Not Steam	Correspo ading to 165 TPH Not Steam	Correspo ading to 30 TPH Not Steam	Correspo ading to 150 TPH Not Steam	Correspo ading to 165 TPH Not Steam			
20	2	23	DESUPERHEATER WATER FLOW	kg/hr			ODE	3050	ODE	ODE	3050	ODE	ODE	Later	Later	Later	Later	Later	Later	Later	Later	Later	Later	Later	Later	Later	Later	Later	Later	Later	Later	Later	Later	
21	2	24	CONTINUOUS BLOW DOWN				ODE	5700	ODE	ODE	5700	ODE	ODE	0.3 % of steam flow	0.3 % of steam flow	0.3 % of steam flow	0.3 % of steam flow	0.3 % of steam flow	0.3 % of steam flow	0.3 % of steam flow	0.3 % of steam flow	0.3 % of steam flow	0.3 % of steam flow	0.3 % of steam flow	0.3 % of steam flow	0.3 % of steam flow	0.3 % of steam flow	0.3 % of steam flow	0.3 % of steam flow	0.3 % of steam flow	0.3 % of steam flow	0.3 % of steam flow		
22	2	25	TYPE OF FUEL		Feed Oil			RLNG / RFG			Feed Oil			RLNG / RFG			Feed Oil			RLNG / RFG			Feed Oil			RLNG / RFG			Feed Oil			RLNG / RFG		
23	2	26	FUEL FLOW (BASED ON AVERAGE LHV)	kg/h			ODE	REFER PG	ODE	ODE	REFER PG	ODE	ODE	Refer Utility list	Refer Utility list	Later	Refer Utility list	12553	Later	Refer Utility list	12553	Later	Refer Utility list	12553	Later	Refer Utility list	12553	Later	Refer Utility list	12553	Later	Refer Utility list	12553	Later
24	2	27	FUEL TEMPERATURE	°C			ODE	40	ODE	ODE	40	ODE	ODE	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	
25	2	28	FUEL AVERAGE LHV	kcal/kg			ODE	10311	ODE	ODE	10311	ODE	ODE	10311	10311	10311	10311	10311	10311	10311	10311	10311	10311	10311	10311	10311	10311	10311	10311	10311	10311	10311	10311	
26	2	29	EXCESS AIR	%	15			10			15			15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	
27	2	30	COMBUSTION AIR FLOW RATE	kg/h			ODE	133762	ODE	ODE	133762	ODE	ODE	Correspo ading to 30 TPH Not Steam	Correspo ading to 150 TPH Not Steam	Correspo ading to 165 TPH Not Steam	Correspo ading to 30 TPH Not Steam	Correspo ading to 150 TPH Not Steam	Correspo ading to 165 TPH Not Steam	Correspo ading to 30 TPH Not Steam	Correspo ading to 150 TPH Not Steam	Correspo ading to 165 TPH Not Steam	Correspo ading to 30 TPH Not Steam	Correspo ading to 150 TPH Not Steam	Correspo ading to 165 TPH Not Steam	Correspo ading to 30 TPH Not Steam	Correspo ading to 150 TPH Not Steam	Correspo ading to 165 TPH Not Steam	Correspo ading to 30 TPH Not Steam	Correspo ading to 150 TPH Not Steam	Correspo ading to 165 TPH Not Steam			
28	2	31	COMBUSTION AIR TEMPERATURE (°)	°C			ODE	80 - 90	ODE	ODE	80 - 90	ODE	ODE	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	
														Correspo ading to 30 TPH Not Steam	Correspo ading to 150 TPH Not Steam	Correspo ading to 165 TPH Not Steam	Correspo ading to 30 TPH Not Steam	Correspo ading to 150 TPH Not Steam	Correspo ading to 165 TPH Not Steam	Correspo ading to 30 TPH Not Steam	Correspo ading to 150 TPH Not Steam	Correspo ading to 165 TPH Not Steam	Correspo ading to 30 TPH Not Steam	Correspo ading to 150 TPH Not Steam	Correspo ading to 165 TPH Not Steam	Correspo ading to 30 TPH Not Steam	Correspo ading to 150 TPH Not Steam	Correspo ading to 165 TPH Not Steam	Correspo ading to 30 TPH Not Steam	Correspo ading to 150 TPH Not Steam	Correspo ading to 165 TPH Not Steam			