

(ALL DIMENSIONS ARE IN mm)



INVENTORY NO	SIGN. AND DATE	REF. DRG. NO.	COMPUTER FILE NAME

GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261

2X100% FILTER CUM SEPARATOR SKID FOR GAS TURBINE (BY SKID VENDOR)

PROJECT:

# IOCL PARADIP FUEL CONVERSION PROJECT

## FOR 3XFr.9E GTGs

OWNER:

# INDIAN OIL CORPORATION LTD.

## NEW DELHI

### BHARAT HEAVY ELECTRICALS LTD.

#### HYDERABAD

DATE	ITEM NO.	SIGN.	DATE	NO. OF VAR.
28.12.20	5D		28.12.20	
CHD. K.N.B.R.			28.12.20	- N-A
APPD. M.S.S.K.			28.12.20	

DEPT. / PLANT CODE	UNIT, DIMS. / UNIT		SCALE	WEIGHT (KG)	REF. TO ASSY. DRG.	ITEM NO.	NO. OF ITEMS
			- N-A	- N-A	- N-A	- N-A	- N-A

<b>TITLE</b> <b>P&amp;ID FOR RLNG GAS CONDITIONING SYSTEM</b> <b>FOR GT#1, GT#2 &amp; GT#3</b>	<b>CARD CODE</b>	<b>DRG. NO.</b> <b>PY-DZ-1-MIO-0014-01</b> <b>DRG. REV</b> <b>00</b>	<b>REV.</b> <b>00</b>
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SHT. No 05

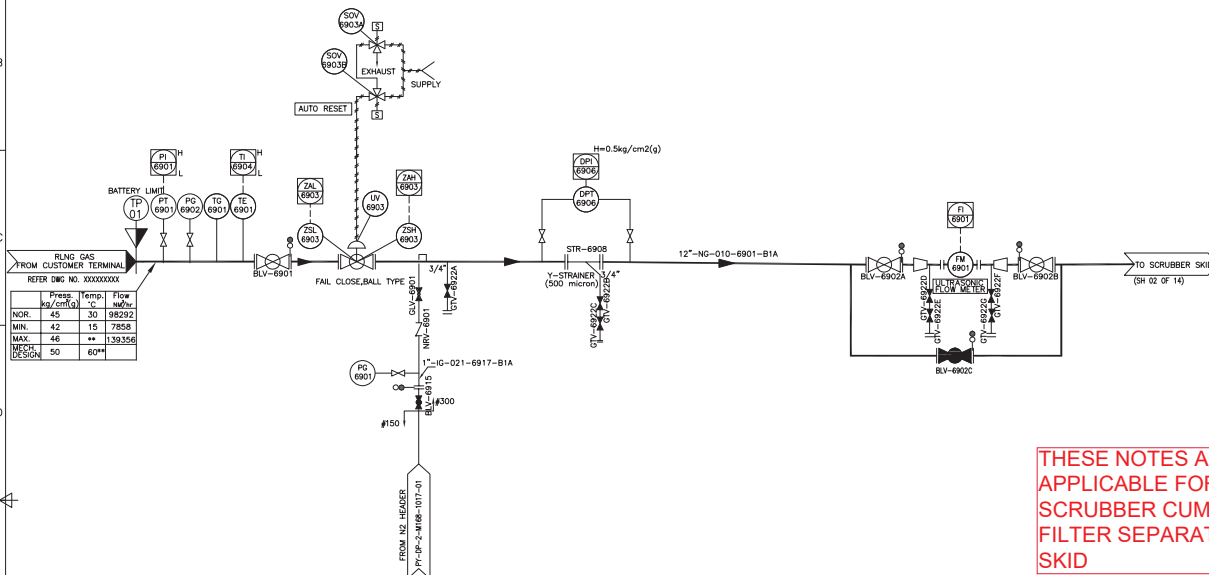
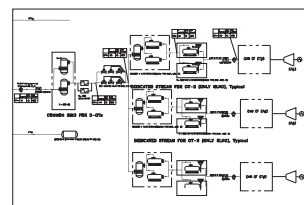
No. of Sht. 14

INVENTORY NO	SIGN. AND DATE	REF. ORG. NO.	COMPUTER FILE NAME
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GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261

	Press. kg/cm <sup>2</sup> (g)	Temp. °C	Flow ml/hr
NOR.	45	30	98292
MIN.	42	15	7858
MAX.	46	**	139356
MECH. DESIGN	50	60**	

TAG NO. INDEX	TAGS USED	RANGE	SPARE TAGS
EQUIPMENT TAG	---	6901-99	---
LINE NUMBERS	6901-6948	6901-99	---
VALVE TAG.	6901-6965 6909A-6965C	6901-99	---
INST. TAG	6901-6944	6901-99	---
INTERLOCK TAG.	6901-04	6901-99	---



THESE NOTES ARE  
APPLICABLE FOR  
SCRUBBER CUM  
FILTER SEPARATOR  
SKID

1.1 VENTS/DRAINS ARE SHOWN ONLY TO MEET SYSTEM REQUIREMENTS; ADDITIONAL HIGH POINT VENT AND LOW POINT DRAINS SHALL BE PROVIDED ACCORDING TO FINAL LAYOUT.

1.2 ALL INSTRUMENT ISOLATION VALVES, VENT & DRAIN VALVES ARE OF GATE TYPE AS PER BHEL PIPING MATERIAL SPECIFICATION.

1.3 OPERATOR SHALL DISRUPT INSTRUMENT AIR SUPPLY BEFORE COMMISSIONING OF VARIOUS SKIDS FOR OPERATION OF THE INSTRUMENTS/LEVEL CONTROL VALVES (SHOOTDOWN/BLOWDOWN/SOLENOID VALVES).

1.4 STRAINER OF 500 MICRON ARE PROVIDED AT THE BATTERY UNIT FOR ARRESTING PIPE RUST, SCALES ETC., FOLLOWING COMMISSIONING. AFTER COMMISSIONING OF THE SYSTEM, FILTER ELEMENTS IN THE STRAINER SHALL BE REMOVED.

1.5 NIL.

1.6 SCRUBBER, FILTER SEPARATOR AND ELECTRIC HEATER SKIDS VESSELS SHALL BE DESIGNED AS ASME SEC. VIII, DIV. 1

1.7 (i) OUTLET ISOLATION VALVE OF SAFETY VALVE SHALL BE ALWAYS KEPT OPEN.

(ii) OUTLET ISOLATION VALVE OF SAFETY VALVE SHALL BE CLOSED ONLY WHEN THE INLET ISOLATION VALVE OF SAFETY VALVE IS CLOSED AND THE SPACE BETWEEN THE SAFETY VALVE AND INLET ISOLATION VALVE IS ADEQUATELY DEPRESSURIZED THROUGH BLEED VALVE.

(iii) SAFETY VALVE SHALL BE TAKEN FOR MAINTENANCE ONLY AFTER THE SPACE BETWEEN THE INLET VALVE AND SAFETY VALVE AND SPACE BETWEEN SAFETY VALVE AND OUTLET ISOLATION VALVE ARE SAFELY VENTED/DISCHARGED THROUGH RESPECTIVE BLEED VALVES.

(iv) VALVES IN ALL FLARE/VENT LINES SHALL BE INSTALLED IN HORIZONTAL DIRECTION WITH STEM DOWNWARDS TO AVOID BLOCKAGE OF GATE VALVE.

1.7.1 ALL PSVs ARE OF FIRE SAFE CONDITION VALVES AS PER API-520.

1.8 FSVs ARE LINE DOWNSTREAM OF FILTER SEPARATOR SKID AND IS OF STAINLESS STEEL MATERIAL.

1.9 ALL VENTS AND DRAINS UP TO FIRST ISOLATION VALVE (NON LOW POINT) SHALL BE OF STAINLESS STEEL MATERIAL FOR LOW SINES.

1.10 FOR MATERIAL SPECIFICATION OF PIPES, FITTINGS ETC., REFER APPLICABLE PIPING MATERIAL SPECIFICATION.

1.11 FOR SAFETY VALVE ALONG WITH SPECIFICATIONS HEREIN ARE NOT COVERED AFTER ENSURING THAT THE NRVs IN THE N2 SYSTEM ARE NOT PASSING ANY READING IN THE PRESSURE GAUGE IS RESULT OF PASSING THROUGH THE PRESSURE GAUGE.

1.12 ALL BALL VALVES IN FLUE GAS SYSTEM ARE OF FULL BORE FIRE SAFE DESIGN ONLY.

1.13 THE SCRUBBER SHALL BE OF VERTICAL TYPE. FILTER SEPARATOR SHALL BE HORIZONTAL TYPE.

1.14 NIL.

1.15 NIL.

1.16 NECESSARY ROOT VALVES, INLET ISOLATION VALVES, VENT/DRAIN VALVES WILL BE PROVIDED FOR PR., DP, FLOW, & LEVEL MEASURING INSTRUMENTS AS PER APPROVED INSTRUMENT HOOK UP DRAWING.

1.17 FOR MATERIAL SPECIFICATION OF PIPES, FITTINGS ETC., PLEASE REFER TO APPLICABLE PROJECT PIPING MATERIAL SPECIFICATION.

1.18. EL DIL GAUGE SHALL BE FOLLOWED.

1.19 NIL.

1.20. ALL VENTS & DRAINS SHALL BE MINIMUM 3/4" SIZE.

1.21. END CONNECTIONS SHOWN IN THIS P&ID IS INDICATED ONLY. HOWEVER THE SAME SHALL BE AS PER PMS. END CONNECTIONS OF CONTROL VALVES SHALL BE AS PER MANUFACTURER'S STANDARD.

1.22. COPPER JUMPERS SHALL BE PROVIDED ACROSS ALL THE FLANGES FOR ELECTRICAL CONDUCTIVITY.

1.25. ALL THE CONTROL/DRA-ON VALVES/FLOWMETERS SHALL BE MINIMUM OF 300# RATING.

1.26 ALL THE INSTRUMENT AND VALVE TAG NUMBERS SHALL BE PREFIXED WITH UNIT NO. 910 AS PER PROJECT TAG NUMBERS PHILOSOPHY.

1.27 THE GATE VALVE ALONG WITH THE SPECIAL BLEND SHALL BE OPENED AFTER ENSURING THAT NRv IN THE N2 SYSTEM IS NOT PASSING . ANY READING IN THE PG WILL RESULT THE PASSING THROUGH THE BLEND.

1.28 NIL.

1.29 DRAIN PROVIDED IS FOR MAINTENANCE PURPOSE ONLY. THE DRAIN FROM GAS IS NOT EXPECTED AS THE GAS IS IN HEATED CONDITION.

1.30 THE STOP OF GATE VALVE IN FLARE LINE SHALL BE LOCATED IN HORIZONTAL POSITION.

2.1 VOLTAGE RATING SOLENOID VALVE = 24 V D.C. TYPE OF SOLENOID VALVE = UNIVERSAL TYPE

2.2 VOLTAGE TRANSMITTERS ON SCRUBBER VESSELS/FILTER SEPARATOR ARE OF CONTACT RADAR TYPE AND THESE TRANSMITTERS ARE MOUNTED AT SAME ELEVATION.

2.3 ALL ELECTRICAL EQUIPMENT AND RELEVANT INSTRUMENTS IN FUEL GAS SYSTEM ARE DESIGNED TO EXPLOSION PROOF TO ZONE-1 + 2 & GAS GROUP IIA AND IIB TEMPERATURE CLASS 13 MINIMUM. FURTHER HAZARDOUS AREA CLASSIFICATION TO BE CARRIED OUT FOR GAS GROUPING IALIB AS PER IS 5572.

2.4 SET POINTS FOR SCRUBBER ARE AS FOLLOWS:

(A) LAL = 75 MMH, (C) LAH = 125 MMH, (C) LAH = 225 MMH, (D) LAHH = 275 MMH, (E) RANGE = 350 MMH

2.5 SET POINTS FOR FILTER SEPARATOR ARE AS FOLLOWS:

(A) LAL = 125 MMH, (B) LIC = 175 MMH, (C) LAH = 225 MMH, (D) RANGE = 350 MMH

2.6 THE PSV INDICATION REPRESENTS "INLET" x 2"(OUTLET) VALVE WITH "D" TYPE ORifice AND SET PRESSURE OF 28 KG/CM<sup>2</sup>(G).

2.7 ALL FIRE SAFE SAFETY VALVES SHALL BE DESIGNED AS PER API-520.

2.8 NIL

2.9 NIL

2.10. THE FLOW INSTRUMENT MINIMUM STRAIGHT PIPE DISTANCE (UPSTREAM AND DOWNSTREAM) TO BE FOLLOWED AS PER MANUFACTURER STANDARD.

2.11 END CONNECTIONS FOR TAP OFFS TO BE PROVIDED ON PIPING FOR INSTRUMENTS SHALL BE AS FOLLOWS:

i) ROOT VALVE ENDING WITH 3/4" SW FOR PRESSURE < 60kg/cg and 1" SW FOR PRESSURE > 60 kg/cg(g).

ii) 11/2" FLANGED CONNECTION FOR TEMPERATURE





2.12 NECESSARY ROOT VALVES, INST. ISOLATION VALVES, VENT/DRAIN VALVES WILL BE PROVIDED FOR PR., DP, FLOW, & LEVEL MEASURING INSTRUMENTS AS PER APPROVED INSTALLATION HOOK UP DRAWING.

2.13 FIRE IN ANY OF THE ABOVE DEFINED AREAS BEING COMMUNICATED BY CO2 GTC FIRE FIGHTING PANEL/DCS TO BOP-PLC AND ACCORDINGLY, CLOSURE/OPENING OF ON/OFF VALVE AT GT INLET IS BEING IMPLEMENTED BY BOP-PLC.

2.14 NIL

2.15. THE INSTRUMENTS IN THIS PROJECT SHALL BE INTRINSICALLY SAFE AND CERTIFIED TO EC ZONE-1 GAS GROUP IIC, TEMPERATURE CLASS 13 MINIMUM.

2.16. ALL ELECTRICAL MOTORS INSTALLED SHALL BE FLAME PROOF TYPE.

PROJECT:		IOCL PARADIP FUEL CONVERSION PROJECT FOR 3XFr. 9E GTGs															
OWNER:				INDIAN OIL CORPORATION LTD. NEW DELHI													
PE&SD INTERNAL REVIEW				BHARAT HEAVY ELECTRICALS LTD. HYDERABAD		NAME		SIGN.		DATE		NO. OF VAP.					
REV		C&I		SIGN		DRN.		JTECHMAR		-SD-		28.12.20		-NLA-			
						K.N.B.R.						28.12.20					
						APPD.		M.S.S.N.				28.12.20					
ALTERED CHD/APPD		DEPTH PE&SD OR C&I 450		UNTIL DIMS. OR S/M/T				SCALE		WEIGHT		REF. TO ASSY. DRG.		ITEM NO.		NO. OF ITEMS	
						-NLA-		-NLA-				-NLA-				-NLA-	
		TITLE GAS CONDITIONING SYSTEM FOR GT#1, GT#2 & GT#3						CARD CODE		DRG. NO. PV-DX-1-MH9-2014-01		REV. 00					
								SHT. NO. 01				NO. OF SHT. 14					