B. 356-66 (Rev 67)

STONE & WEBSTER ENGINEERING LIMITED

STEAM TURBINE SPECIFICATION

Sheet 14 of

Client	B.P. CHEMICALS (U.K.) LTD.	P.O. No.	
Project or Plant	No. 2 ETHYLENE	Location BAGLAN BAY	Job No. 6631
Service	CRACKED GAS COMPRESSOR STAGES 1 AND 2 DRIVERS		~~Indoors~~/Outdoors
Size & Type	K-1100-2	Manufacturer SIEMENS	Duty CONTINUOUS
~~Gear~~/Direct Drive		Mounted By OTHERS	No. of Units TWO

STEAM (PRESSURES ARE GAUGE)

Inlet	NORMAL	MAXIMUM	DESIGN	Extraction	NORMAL	MAXIMUM	DESIGN
Pressure lbf/in²: ~~Kgf/cm²~~	190	210	300	Pressure lbf/in²: Kgf/cm²			
Temperature °F: ~~°C~~	480	480	480	Temperature °F: °C			
Flow ~~lb/h: Kg/h~~ t/hr	37.1	43.3		Flow lb/h: Kg/h			
Test Press lbf/in² G SECTION 1	632			Exhaust Press: lbf/in²: ~~Kgf/cm²~~	1.7 ABS.		
SECT 2-4	397			Exhaust Temp. °F : °C			
				Casing Dsn Press lbf/in²: Kgf/cm²			

COOLING WATER

	NORMAL	MAXIMUM	DESIGN		
Supply Press lbf/in²: ~~Kgf/cm²~~	65		150	Max. Allow Press Drop lbf/in²: ~~Kgf/cm²~~	20
Supply Temp °F : ~~°C~~	80			Design Press Water Jacket :	150
Return Temp °F : ~~°C~~	120			Test " " " " "	

DRIVEN EQUIPMENT

Description	CENTRIFUGAL COMPRESSOR	Rotation Facing Coupling	CCW
Speed rev/min: (MAX)	4560	Make & Type of Coupling	
Normal BHP AND SPEED	X 8110/4230	Starting Torque ftlb: Mkg	
Maximum BHP	X 9130	Critical Speed rev/min:	1st 2nd

TURBINE

No. of Stages	1 + 21	Rated BHP Hand Valves Shut	NO HAND VALVES
Casing Split	HORIZONTAL	Max. BHP Hand Valves Open	–
Shaft Arrangement	HORIZONTAL	No. of VALVES open at Full Load	5
Steam Chest Material	CS GSC 25	No. of Auxiliary Hand Valves	–
Exhaust Casing Material	CI	Rated Speed rev/min:	4560
Blades or Buckets Material	x22 Cr Mo V12.1	Speed Change :	3807-4560
Shaft Material	34 Cr Mo 4	Steam Consumption KG/KW/HR :-	6.13
Sole Plate	CARBON STEEL	At Rated BHP & rev/min:	8110/4230
Cooling Water Piping Material	C.S	At 75% BHP & Rated :	
Lube Oil Piping	S.S.	Rotation	Same as Line 23
Bearings, Type JOURNAL	MULTI WEDGE	Inlet Size & Rating	8"
Speed Governor, Type HYDRAULIC	SIEMENS	Exhaust Size & Rating	44" OVAL
Hand Speed Changer	YES.	Cooling Water In & Out	
Emergency Governor Type BOLT	YES/~~NO~~ SET	Lube Oil in & out TURB. BEARING	45/55°C
ATMOS. RELIEF Valve lbf/in² ~~Kgf/cm²~~	SET APPROX 15.6 Abs	Insulation Type	ASBESTOS MATS
Steam Strainer	YES	Steel Lagging	YES.
Inlet Valve	~~YES~~/NO	Recommended Grade of oil:-	TO DIN 51515
Outlet Valve	~~YES~~/NO	Bearings	3.0-4.5E AT
Type of Lubrication	FORCED	Governor System	50°C
Type of Oil Cooler	–	TOTAL Oil Quantities for Start up:	24.7 m³/hr
Operating Press Oil Cooler lbf/in² ~~Kgf/cm²~~	–	Quantity Cooling Water:-	
Design Press Oil Cooler " : "	–	Bearings gpm: m³/h	
Characteristic Curve No.		Oil Cooler gpm: m³/h	
Turbine Critical Speed rev/min:	1st 6800 2nd	Approx. Weight Unit ~~lb~~: Kg	12,100
Design Code Turbine	API 615 Sp. Purp.	Approx Weight Rotor : Kg	1550
Design Code Cooler		Weight of Top half casing ~~lb~~: Kg	55[illegible]

REMARKS X MAX. EFFIC. DUTY WITH STEAM AT 200PSIG ; X MCE WITH STEAM AT [illegible]

Ref. Drgs.				
Ref. Specs.				

CERTIFIED [signature] ACCOUNT R

EQUIPMENT No. H-CT-1A AND B

B.M. No. 6631 R-2

SPEC. No. 6631-RT-1

ISSUE	DATE	DESCRIPTION OF ISSUE	CH'K	APP.
IV	15/3/71	LINES 14 & 15 TEST PRESS ADDED	AHJ	[illegible]
III	14/7/70	AMENDED	[illegible]	[illegible]
II	[illegible]	CERTIFIED	JA	[illegible]
I	17 12 69	ENQUIRY		