

1	GENERAL										
2	Project:	INSTALLATION OF GTC AT GANDHAR				Job no. :	B240				
3	Owner:	GAIL (INDIA) LIMITED				Site:	GPU GANDHAR				
4	Purchaser:					Unit:	NEW COMPR. AREA		Unit No.:901		
5	Eqpt. Item No. for which oil system is reqd.: 910-K-901					Service:	Oil System for Comp., Gear unit & GT				
6	Oil System Item No.: 910-OS-901					Duty :	Continuous / Intermittent				
7	No. of units:	ONE	Working:	ONE	Standby:	NONE					
8	Applicable to:	☒ Proposal ☐ Purchase ☐ As Built									
9	☒ Scope, Option & Information specified by Purchaser. ☐ Information required from and options left to vendor. Vendor to cross (X) the selected option.										
10	Oil system(s) for: Centrifugal Compressor, Gear Unit and Gas Turbine										
11	Supplier:					Manufacturer:					
12	Overall System Typical Schematics					Fig. No.	Option No.	Comments			
13	☐ Combined lube, seal & control oil system										
14	☐ Separate seal-oil system										
15	☐ Seal Module at Equipment										
16	☒ Lube / Control System					2A-8					
17	☒ Basic Oil supply module					2A-10					
18	☒ Lube Module at Equipment					2A-11					
19	☐ Drawing requirements						☐ Component Review				
20	☒ Relief Valves to protect low pressure systems					☐ NO	☒ YES,	For:			
21	SUPPLY ARRANGEMENT	Lube Oil	Seal Oil	Combined	BASIC SYSTEM DETAILS						
22	☒ Separate Console	☒	☐	☐	☐ Compressor Block-In time:		Minutes				
23	☐ Multiple Package	☐	☐	☐	☐ Equipment Coast-Down time:		Minutes				
24	☐ Package No. 1				☐ Equipment Cool-Off time: Driver:		Minutes				
25	☐ Package No. 2				☐ Equipment Cool-Off time: Others:		Minutes				
26	☐ Package No. 3				☐ Minimum Start-up oil temperature		°C				
27	☐				☒ Settling Out Pressures		Ref. Comp. DS	kg/cm ² g			
28	BASEPLATES:				☐ Process Relief Valve settings		kg/cm ² g				
29	☐ Point Support	☐ Grout Hole/Vent Holes			☐ Shop Test Conditions						
30	☐ Epoxy Grout/ Precoat				☐ Field Start-up/Run-In Conditions						
31	COMPONENTS:				☐ Other Special Conditions						
32	Piping & Tubing:				☒ Welding & Special Fabrication Requirements						
33	☒ Material	SS304/SS316			☐ 100% Radiography						
34	☐ Double Block & Bleds				☐ Magnetic Particle						
35	☐ Tight Shut off				☒ Liquid Penetrant						
36	☐ Tube Fittings	Mfr.:	Model:		OIL CONDITIONERS						
37	☒ Slip-on Flanges				☐ Purchaser's Item No.		910-OC-901				
38	☐ Through Studs required				☒ Service Used in		Lube Oil System				
39	☐ Heat Tracing Req'd. by:	☐ Purchaser		☐ Vendor	☒ Type		Centrifuge				
40	☐ Special Requirements				☒ Portable, Or Mounted on		Portable				
41	☒ Utilities manifolded to common connections				☐ Rated flow (m ³ /hr) of Oil						
42	☒ Air				☒ Manufacturer		ALFA LAVAL or eqv.				
43	☐ Cooling Water				☐ Model						
44	☐ Other				☒ Driver (Electric Moto) for:		Main & Standby LOP	EOP			
45	☐ Instrument Test Valves required				☐ kW & Enclosure						
46	☐ Valve heads vented to Reservoir				☐ V / Ph. / Hz.						
47					☐ Water Removal Rate						
48					☒ Material of Construction		SS				
49	DEGASSING DRUM NOT APPLICABLE										
50	☐ Purchaser's Item No.				☐ Service Used in						
51	☐ As per Fig. No's or Other Specs.				☐ Flow Control		☐ Thermostat Control				
52	☐ Operating Temperature (°C)				☐ Material						
53	☐ Flow Rate: Normal Max. (m ³ /hr)				☐ Interior Coating		☐ Oversize Vent				
54	☐ Normal Retention Time (minutes)				☐ Vent Relief Device						
55	☐ Capacity: Normal Max. (m ³)				☐ Omit Breather						
56	☐ Purge Gas: Type				☐ Code: Constrn. Stamp						
57	☐ Required Flow (Nm ³ /hr)				☐ Other						
58	☐ Type Heating Device				☐ Other						
59	☐ Corrosion Allowance				☐ Other						
60	☐ Design / Test Pressure (kg/cm ² g)										
61	☐ Other:				☐ Other:						

62	RESERVOIR									
63	Service Application	☒ Separate Lube/Ctrl			☐ Lube/Seal Combined			☐ Separate Seal		
64	☐ Purchaser's Item No.									
65	☒ Figure No.	2A-21								
66	☒ Include Options No.	a, b, c, d, f								
67	☒ Heater: Steam / Electric (S / E)	Electric								
68	☐ Heater in Sealed Tube									
69	☒ Material	SS 304								
70	☐ Normal Flow	m ³ /hr								
71	☐ Free Surface	m ²								
72	☒ Working Capacity	Minutes/Liters	5							
73	☒ Retention Capacity	Minutes/Liters	8							
74	☐ Rundown Capacity	Liters								
75	☐ Normal Operating Range	Liters								
76	☐ Charge Capacity	Liters								
77	☐ Insulation Clips		☐		☐			☐		
78	☒ Ladder with Hand-rail		☒		☐			☐		
79	☐ Hand-Rails on Top		☐		☐			☐		
80	☒ Non-skid Decking		☒		☐			☐		
81	☐ Flanged Vent									
82	☒ Oversize Flanged Vent		☒		☐					
83	☐ Pressure Relief Device: Type & Mtrl.									
84	☒ Siphon Breaker		☒		☐			☐		
85	☐ Top Mounted Components permitted		☐		☐			☐		
86	☐ Top Mounted Components are									
87	☒ Submerged Components and Materials	None								
88	Approx. Dimensions (Tank Only): L x W X H (m)									
89										
90	PUMPS AND DRIVERS									
91	Service Application	☒ Lube Oil/Ctrl			☐ Lube/Seal Oil			☐ Separate Seal Oil		☐ Boost Seal Oil
92										
93	☒ Figure No's:	2A-19								
94	☒ Including Option No's.	a, b, c								
95	☐ Emergency Pump System									
96	Pump Service	Main	Stdby	Emerg. (\$)	Main	Stdby	Emerg	Main	Stdby	Emerg.
97										
98	☐ Pump Item No.									
99	☒ Pump Type (Centrifugal/Rotary)									
100	☐ Pump Data Sheet									
101	☒ Horiz. or Vertical (H / V)									
102	☐ Driver Item No.									
103	☐ Turbine Driver for									
104	☐ Turbine Data Sheet									
105	☒ Electric Motor Driver for	Yes	Yes	Yes						
106	☐ Electric Motor Data Sheet									
107	☐ Other Driver: Emergency AC Motor for									
108	☐ Other Driver: Data Sheet									
109	☒ Coupling Type (Flexible Metallic)	Yes	Yes	Yes						
110	☐ Booster Pumps Required									
111	☒ Autostart	Yes	Yes	Yes						
112	☐ Solenoid Trip Valve									
113	☒ Rotary Pump Relief Valve by Purchaser/Vendor (P /V)	V	V	V						
114										
115	(\$) If recommended by GT manufacturer.									
116										
117										
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123	COOLERS:									
124	Service Application		☒ Lube/Ctrl		☐ Lube / Seal		☐ Sep. Seal Oil			
125	☐ Purchaser's Item No.									
126	☒ Twin Units/Air cooled Oil Cooler with Twin 100% Capacity fans		2A-17						☐	
127	☒ Include Option No's.		a, b, c							
128	☐ Water Side for Steam Heating		☐						☐	
129	☐ Details on Data Sheet									
130	☐ Water Side Corrosion Allowance									
131	☐ Manufacturer									
132	☐ Model									
133	☒ Applicable Code/Standard		API Std. 661 & Job Specs							
134	☐ Fouling Factor: Water Side Oil Side (hr m ² °C/kCal)									
135	☐ Heat Duty kcal/hr									
136	☐ Tube: L x OD x BWG.									
137	☐ Design Test Pressure: Shell Side kg/cm ² g									
138	☐ Design Test Pressure: Tube Side kg/cm ² g									
139	☐ Code: Construction Stamp		☐ ☐		☐ ☐		☐ ☐		☐ ☐	
140	☐ Tube Water velocity Capacity: m/s m ³ /hr									
141	☐ Material: Shell									
142	☐ Material: Channel & Covers									
143	☐ Material: Tube Sheets Tubes									
144	☐ Removable Tube Bundle		☐						☐	
145	☐ U – Bend Tubes permitted		☐		☐		☐		☐	
146	☐ Oil Temperature Control Valve		☐		☐		☐		☐	
147	FILTERS									
148	Service Application		☒ Lube & Control Oil		☐ Separate Control Oil		☐ Separate Seal Oil		☐ Booster Pump Disch. Oil	
149									☐ Separate Coupling Oil	
150	☐ Purchaser's Item No.									
151	☒ Twin		☒		☐		☐		☐	
152	☐ Second filter for Control Oil		☐		☐		☐		☐	
153	☒ Include Option No's.		2A-17, a							
154	☒ Filtration Level Microns (Nominal)		10							
155	☐ Manufacturer									
156	☐ Model									
157	☐ Design Test Pressure kg/cm ² g									
158	☒ Code: Construction Stamp		☒ ☐		☐ ☐		☐ ☐		☐ ☐	
159	☐ Clean / Fail ΔP kg/cm ²									
160	☒ Material: Case & Top		CS							
161	☐ Material: Cartridges									
162	☐ Furnish 4 Sets of Extra Cartridges:		☐ Per Service		☐ Per Filter (Extra over other spares)					
163	CONTINUOUS FLOW TRANSFER VALVES									
164	Service Application		☒ Lube & Control Oil		☐ Separate Control Oil		☐ Separate Seal Oil		☐ Booster Pump Disch. Oil	
165									☐ Separate Coupling Oil	
166	☒ Separate or Common for Coolers & Filters		Separate		☐		☐		☐	
167	☒ Tight Shut-off Req'd.		☒		☐		☐		☐	
168	☒ Type		Two way-6 Ported							
169	☐ Manufacturer									
170	☐ Model									
171	☐ With Lifting Jack		☐		☐		☐		☐	
172	☐ Rating: kg/cm ² g									
173	☒ Materials: Body		CS							
174	☒ Materials: Plug or Ball		SS							
175	☒ Materials: Trim		SS							
176										
177										
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184	ACCUMULATORS				
185	Service Application	Lube Oil	Control Oil	Seal Oil	Seal Oil Booster
186	☐ Purchaser's Item No.				
187	☒ Required: Yes or No & Quantity	Yes	Yes		
188	☒ Service combined with	Pump Switch Over			
189	☐ Direct contact type	☐		☐	☐
190	☒ Bladder Type	2 A-15		☐	☐
191	☐ Include Option No's.				
192	☐ Run-down minutes				
193	☐ Oil Temperature Control	☐		☐	☐
194	☐ Constant Pressure Regulator	☐		☐	☐
195	☐ Manufacturer				
196	☐ Model				
197	☐ Nominal Usable Capacity Liters				
198	☒ Material: Shell	SS	SS		
199	☐ Material: Bladder				
200	☐ Design Test Pressure kg/cm ² g				
201	☒ Code: Construction Stamp	☒ ☐	☒ ☐	☐ ☐	☐ ☐
202	☒ Include: Charge Pressure Gauge plus	☒	☒	☐	☐
203	☒ Manual Charge Valve or	☒	☒	☐	☐
204	☒ Gas Supply Regulator	☒	☒	☐	☐
205	OVERHEAD TANKS				
206	Service Application	Rundown Lube	Low Press. Seal	Med. Press. Seal	High Press. Seal
207	☒ Figure No.	2A-13 A			
208	☒ Required: Yes or No	Yes			
209	☐ Service combined with				
210	☐ Direct Contact Tank	☐	☐	☐	☐
211	☐ Bladder Type	☐	☐	☐	☐
212	☐ Include Option No's.				
213	☐ Capacity minutes / Liters				
214	☐ Blowdown Connection				
215	Rundown tanks (Fig. No.)	2A-13 A			
216	Overhead tanks (Fig. No.)				
217	☐ Corrosion Allowance				
218	☒ Material	SS			
219	☐ Total Capacity Liters				
220	☐ Design Test Pressure kg/cm ² g				
221	☒ Code: Construction Stamp	☒ ☐	☐ ☐	☐ ☐	☐ ☐
222	ACCUMULATOR UNITS				
223	☐ Purchaser's Item No.	Rundown Lube	Low Press. Seal	Med. Press. Seal	High Press. Seal
224	☐ Corrosion Allowance				
225	☐ Manufacturer & Quantity				
226	☐ Model				
227	☐ Material: Shell				
228	☐ Material: Bladder				
229	☐ Nominal Usable Capacity Litres				
230	☐ Design Test Pressure kg/cm ² g				
231	☐ Code: Construction Stamp	☐ ☐	☐ ☐	☐ ☐	☐ ☐
232	TRAPS FOR INNER SEAL OIL (Oil Seals) NOT APPLICABLE				
233	☐ Service Application	Low Pressure Seal Oil	Med. Pressure Seal Oil	High Press. Seal Oil	
234	☐ Purchaser's Item No.				
235	☐ Seal - Gas Vent Piping Arrangement				
236	☐ Float Controlled	☐	☐	☐	
237	☐ Transmitter Controlled	☐	☐	☐	
238	☐ Pots only, For Manual Drain	☐	☐	☐	
239	☐ With: Valving	☐	☐	☐	
240	☐ Flush Level Glass	☐	☐	☐	
241	☐ High Level Switch	☐	☐	☐	
242	☐ Include Option No's.				
243	☐ Retention: Hours & Liters				
244					

245	FLOAT TRAP	Low Pressure Seal Oil		Med. Pressure Seal Oil		High Press. Seal Oil	
246	☐ Manufacturer Model						
247	☐ Pressure Rating kg/cm ² g						
248	☐ Material: Body						
249	☐ Material: Float Trim						
250	☐ Drain Line piped to:						
251	DRAIN POT						
252	☐ Corrosion Allowance						
253	☐ Material						
254	☐ Design Test Pressure Kg/cm ² g						
255	☐ Code: Construction Stamp	☐	☐	☐	☐	☐	☐
256	☐ Drain Line piped to:						
257	MIST ELIMINATOR						
258	☐ Corrosion Allowance						
259	☐ Material: Shell						
260	☐ Material: Demister Mesh						
261	☐ Design Test Pressure kg/cm ² g						
262	☐ Code: Construction Stamp	☐	☐	☐	☐	☐	☐
263	INSPECTION & TESTING						
264	SHOP TESTS:	Requir	Witnessed	SHOP INSPECTION:			
265	☒ Cleanliness	☒	☒	☐ Compliance with Inspector's Checklist			
266	☒ Four Hour Run	☒	☒	☒ Required for System Assemblies			
267	☒ Check Controls	☒	☒	☒ Cleanliness prior to closure			
268	☒ Changeovers: Coolers / Filters	☒	☒	☐ Required for Major Components			
269	☒ One & Two Pump Operations	☒	☒	☒ Material Certifications to be furnished			
270	☒ Sound Level	☒	☒	☐ Special Examinations			
271	☒ Hydrotest Assembled System	☒	☒	☒ Code Construction / Stamp ASME			
272	☒ Use for Complete Unit System Test	☒	☒	☒ Supply Certified copies of all Test Logs and Data			
273	☒ Certf. copies of all test logs & data	☒	☐	☐			
274	☐	☐	☐	☐			
275	☐	☐	☐	☐			
276	☐	☐	☐	☐			
277	☐	☐	☐	☐			
278	☐	☐	☐	☐			
279	REMARKS:						
280	1. The drivers for Main , Standby and Emergency Lube Oil Pump shall be suitable for auto-start.						
281	2. For instrumentation requirements also refer Datasheet No. B240-910-80-42-DS-1004.						
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16.04.19	A	AS	NK
DATE	REV	JOB ENGINEER	REVIEWED & APPROVED BY