

MECHANICAL EQUIPMENT LIST
ESTIMATED QUANTITY FOR 320MW STEAM TURBINE (EXCLUDING DESALINATION)
BASED ON SIDI KRIR & AYOUN MOUSSA

NO	EQUIPMENT DESCRIPTION	PERFORMANCE SPECIFICATION	PER UNI	20 YRS. QTY	LOCALIZATION			POTENTIAL LOCAL MANUFACTURER
					ACT	ECA	NA	
	TURBINE & GENERATOR							
1	HP TURBINE	320 MW (HP + IP + LP)	1	62			N	Not Applicable
2	IP TURBINE	320 MW (HP + IP + LP)	1	62			N	
3	LP TURBINE	320 MW (HP + IP + LP)	1	62			N	
4	GENERATOR	320 MW HYDROGEN COOLED	1	62			N	

Legend:

A: Actual

F: Forecast

N: NA, Not Applicable

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NO	EQUIPMENT DESCRIPTION	PERFORMANCE SPECIFICATION	PER UNI	20 YRS. QTY	LOCALIZATION			POTENTIAL LOCAL MANUFACTURER
					ACT	FOR ECA	NA	
	PUMPS							
5	CONDENSER VACUUM PUMP	150 HP, 706LPM ,1INCH HG	2	124		F		<i>Al weiller - Farid Sugar & Integrated Industries</i> <i>Note: Technical Capabilities for pump manufacturing is available in the Arab Organization for Industrialization (A. O. I.) & National Organization for Military Production (NOMP)</i>
6	SEAL OIL PUMP 1	7.5 KW, 7 BAR	1	62		F		
7	SEAL OIL PUMP 2	7.5 KW, 7 BAR	1	62		F		
8	SEAL OIL PUMP 3	8.5 KW, 9 BAR	1	62		F		
9	MAIN OIL PUMP	55 KW, 8 BAR	2	124		F		
10	EMERGENCY OIL PUMP	11 KW, 6 BAR	1	62		F		
11	LIFTING OIL PUMP	55 KW,6000PSI	2	124		F		
12	OIL RETURN PUMP	0.55 KW, 1.5 BAR	1	62		F		
13	OIL CIRCULATING PUMP	0.55 KW, 1.5 BAR	1	62		F		
14	WATER BOX PRIMING PUMP	30 HP , 1470 RPM , 4,7 INCH HG	2	124		F		
15	CIRCULATING WATER PUMP	355,000 LPM , TDH = 18.5 m , 1877HP	2	124		F		
16	SERVICE WATER PUMP	54,126 LPM , TDH 37 M , 460HP	2	124		F		
17	CLOSED COOLING WATER PUMP	21,225 LPM TDH=45.7m , 282 HP	2	124		F		
18	BOILER FEED PUMP	2189M TDH , 12200 LPM	3	186			N	
19	RAW WATER SUPPLY PUMP	1366LPM, 46M TDH	1	62		F		
20	DEMINERALIZER FEED PUMP	1600LPM, 3 bar , 18.5 KW	3	186		F		
21	REGENERATION PUMP	666LPM , 3 bar , 7.5 KW	2	124		F		
22	SULPHURIC ACID 98% TRANSFER PUMP	66.6LPM, 1.5 bar, 2.2 KW	2	124		F		
23	CAUSTIC SODA 50% TRANSFER PUMP	83.3LPM, 1.5 bar , 1.5 KW	2	124		F		
24	CONDENSATE POLISHER SUPPLY PUMP	833LPM , 2 bar, 5.5 KW	2	124		F		
25	ACID TRANSFER PUMP	66.6LPM, 1.5 bar , 2.2 KW	2	124		F		
26	CAUSTIC TRANSFER PUMP	66.6LPM, 1.5 bar , 1.5 KW	2	124		F		
27	CONTINUOUS CHLORINATION PUMP	833LPM , 2.5 bar , 15 KW	3	186		F		
28	SHOCK CHLORINATION PUMP	3183LPM , 2.5 bar , 37 KW	3	186		F		
29	HCl RECIRCULATING PUMP	10 M3/hr, 1 bar , 1.5 KW	2	124		F		
30	NEUTRALIZED WASTE WATER PUMP	1800 LPM , 2 bar , 22 KW	2	124		F		
31	EQUALIZED EFFLUENT TRANSFER PUMP	1000LPM , 0.8 bar , 22 KW	2	124		F		
32	OIL WATER SEPARATOR EFFLUENT PUMP	1700LPM , 1 bar , 5.5 KW	2	124		F		
33	FILTER BACK WASHING PUMP	2333LPM, 1.5 bar , 11 KW	2	124		F		
34	FROTH TRANSFER PUMP	66.6LPM, 0.5 bar , 1.1 KW	2	124		F		
35	WASTE SLUDGE PUMP	83.3LPM, 0.5 bar , 1.1 KW	2	124		F		
36	AMMONIUM HYDROXIDE 30% TRANSFER PUMP	66.6LPM, 1 bar , 1.1 KW	2	124		F		
37	IFA RECIRCULATION PUMP	1166LPM, 5.5 bar, 22 KW	2	124		F		

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NO	EQUIPMENT DESCRIPTION	PERFORMANCE SPECIFICATION	PER UNI	20 YRS. QTY	LOCALIZATION			POTENTIAL LOCAL MANUFACTURER
					ACT	FOR ECA	NA	
	DOSING PUMPS							Al weiller - Farid
38	H2SO4 98% FEED FOR M.B. REGENERATION. DOSING PUMP	2.8LPM , 5 bar , 0.75 KW	2	124		F		Sugar & Integrated Industries
39	NaOh 50% FEED FOR M.B. REGENERATION. DOSING PUMP	21.5LPM , 5 bar , 1.5 KW	2	124		F		
40	H2SO4 98% FOR REGENERATION. UNIT DOSING PUMP	21.5LPM , 5 bar , 1.5 KW	2	124		F		Note: Technical Capabilities for pump
41	NaOh 50 % FOR REGENERATION. UNIT DOSING PUMP	21.5LPM , 5 bar , 1.5 KW	2	124		F		manufacturing is available in the Arab Organization for Industrialization (A. O. I.) & National Organization for Military Production (NOMP)
42	ACID FEED TO PREMIX. DOSING PUMP	0.53LPM , 5 bar , 0.55KW	2	124		F		
43	CAUSTIC FEED TO PREMIX. DOSING PUMP	0.53LPM , 5 bar , 0.55KW	2	124		F		
44	ALUM. FEED TO PREMIX. DOSING PUMP	0.53LPM , 5 bar , 0.55KW	2	124		F		
45	COAGULANT AID FEED TO PREMIX DOSING PUMP	3.58LPM , 5 bar , 0.55 KW	2	124		F		
46	ALUM FEED TO OIL/WATER SEPARATE DOSING PUMP	0.833LPM , 5 bar , 0.55 KW	2	124		F		
47	COAGULANT FEED TO OIL/WATER SE DOSING PUMP	9.5LPM , 5 bar , 0.75 KW	2	124		F		
48	H2SO4 98% FEED TO NEUTRAL DOSING PUMP	2.5LPM , 5 bar , 0.55 KW	2	124		F		
49	NaOh 50% FEED TO NEUTRAL DOSING PUMP	2.5LPM , 5 bar , 0.55 KW	2	124		F		
50	HYDRAZINE 5% FEED UNIT DOSING PUMP	0.2LPM , 40 bar , 0.55 KW	2	124		F		
51	AMMONIUM SOL. 5% FEED UNIT DOSING PUMP	1.33LPM , 40 bar , 1.1 KW	2	124		F		
52	PHOSPHATE 5% FEED UNIT DOSING PUMP	0.083LPM , 193 bar , 0.55 KW	2	124		F		
53	CONDENSATE TRANSFER PUMP	210 LPM, 50 M TDH	2	124		F		
54	BOILER FILL PUMP	1836 LPM, 70 M TDH	1	62		F		
55	LUBE OIL TRANSFER PUMP	327 LPM, 30,6 M TDH	1	62		F		
56	MAIN TURBINE LUBE OIL TRANSFER PUMP	164,7 LPM, 30,6 M TDH	1	62		F		
57	B.F.P.T. LUBE OIL TRANSFER PUMP	72,9 LPM, 30,6 M TDH	1	62		F		
58	TRANSFER PUMP FOR ANALYZERS	0,15-0,8 LPM, 100MTDH	1	62		F		
59	STEAM AIR HEATER DRAIN PUMP	282 LPM,60 M TDH	1	62		F		
60	STEAM AIR HEATER DRAIN PUMP	282 LPM,60 M TDH	1	62		F		
61	FUEL OIL BURNER PUMP	852 LPM, 295,8 M TDH	3	186		F		
62	FUEL OIL ADDITIVE METERING PUMP	1.3 LPM, 400 M TDH	2	124		F		

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NO	EQUIPMENT DESCRIPTION	PERFORMANCE SPECIFICATION	PER UNI	20 YRS. QTY	LOCALIZATION			POTENTIAL LOCAL MANUFACTURER
					ACT	FOR ECA	NA	
63	FUEL OIL ADDITIVE RECIRC. PUMP	156LPM, 30,6 M TDH	1	62		F		Al weiller - Farid Sugar & Integrated Industries
64	TURBINE AREA SUMP PUMP	408 LPM, 35,1 M TDH	2	124	A			
65	BOILER AREA SUMP PUMP	606 LPM, 33,5 M TDH	2	124	A			
66	CONDENSATE POLISHER AREA SUMP PUMP	950 LPM, 30 M TDH	2	124	A			Note: Technical Capabilities for pump manufacturing is available in the Arab Organization for Industrialization (A. O. I.) & National Organization for Military Production (NOMP)
67	BOILER BLOW DOWN SUMP PUMP	507 LPM, 34,5 M TDH	2	124	A			
68	CONDENSER PIT SUMP PUMP	203 LPM, 32,2 M TDH	2	124	A			
69	BOILER WASH DOWN SUMP PUMP	2507 LPM, 33 M TDH	2	124	A			
70	DEMINERALIZED WATER TRANSFER PUMP	3360 LPM, 30 M TDH	2	124	A			
71	SCREEN WASH PUMP	2640LPM, 79 M TDH ,53 KW	4	248		F		
72	REBOILER FEED PUMP	402 LPM. 70 M TDH	2	124		F		
73	COND. COLL. PUMP	336LPM, 30 m TDH	2	124		F		
74	FUEL OIL (MAZOUT) UNLOADING PUMP	945 LPM, 30,6 M TDH757 LPM	2	124		F		
75	SOLAR BURNER FUEL OIL PUMP	300 LPM, 140 M TDH	2	124		F		
76	SOLAR FUEL OIL UNLOADING PUMP	852 LPM, 20 M TDH	2	124		F		
77	JOCKEY FIRE PUMP	6.5 LPM , 480 feet , 15 HP ,2900 R.P.M	2	124		F		
78	MOTOR DRIVEN FIRE PUMP	8000LPM , 293 HP ,415 ft	1	62		F		
79	DIESEL ENGINE DRIVEN FIRE PUMP	8000LPM , 293 HP ,415 ft	2	124		F		
80	FOAM TRANSFER PUMP	ACCORDING TO SYSTM REQUIRMENTS	1	62		F		
81	POTABLE WATER PUMP	828 LPM, 35 M TDH	3	186		F		
82	AUTOMATIC METERING PUMP	20-200 LPH, 1 MPa	6	372		F		
83	AUTOMATIC METERING PUMP	48-480 LPM, 60 M TDH	2	124		F		
84	VERTICAL BARREL PUMP	170 LPM, 20 M TDH	1	62		F		
85	FIRE WATER PUMP HOUSE AREA SUMP PUMP	607 LPM, 33,5 M TDH	2	124		F		
86	WAREHOUSE AREA SUMP PUMP	607 LPM, 33,5 M TDH	2	124		F		
87	FUEL PUMP HOUSE AREA SUMP PUMP	607 LPM, 33,5 M TDH	2	124		F		
88	FUEL OIL STORAGE DIKE SUMP PUMP	956 LPM, 33,5 M TDH	2	124		F		
89	SOLAR TANK SUMP PUMP	953 LPM, 31,7 M TDH	2	124		F		
90	COALESCE DISCHARGE PUMP	60 LPM, 15 M TDH	1	62		F		
91	GEAR SEPARATED OIL TANK PUMP	9 LPM. 20 M TDH	1	62		F		
92	DEMINERALIZER SYSTEM WASTE SUMP PUMP	950 LPM, 30 M TDH	2	124		F		
93	CLEAR WELL EFFLUENT TRANSFER PUMP	1607 LPM, 32,9 M TDH	2	124		F		
94	WATER TREATMENT BLDG. SUMP PUMP	957 LPM, 33,5 M TDH	2	124		F		
95	AUX. BOILER BLOW DOWN SUMP PUMP	607 LPM, 33,5 M TDH	2	124		F		

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NO	EQUIPMENT DESCRIPTION	PERFORMANCE SPECIFICATION	PER UNI	20 YRS. QTY	LOCALIZATION			POTENTIAL LOCAL MANUFACTURER
					ACT	FOR ECA	NA	
96	HYPOCHLORITE SYSTEM WASTE SUMP PUMP	957 LPM, 33,5 M TDH	2	124		F		<i>Al weiller - Farid</i> <i>Sugar & Integrated Industries</i> <i>Note: Technical Capabilities for pump manufacturing is available in the</i> <i>Arab Organization for Industrialization (A. O. I.) & National Organization for Military Production (NOMP)</i>
97	DESALINATION PLANT WASTE SUMP PUMP	957 LPM, 33,5 M TDH	2	124		F		
98	HYDROGEN GENERATOR WASTE SUMP PUMP	657 LPM, 33,7 M TDH	2	124		F		
99	CIRCULATING WATER PUMP HOUSE AREA SUMP P	207 LPM, 11 M TDH	2	124		F		
100	DESALINATION PLANT B SUBMERSIBLE PUMP	166,7 LPM, 6 M TDH	2	124		F		

Total estimated pumps per unit: 185 --- Total estimated pumps (20 years plan): 11,470 of all types

B.F.P.TURBINE

101	B.F.P.TURBINE	5MW,5500RPM	2	124			N	A. O.I. Engine factory may be considered to manufacture it under license
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NO	EQUIPMENT DESCRIPTION	PERFORMANCE SPECIFICATION	PER UNI	20 YRS. QTY	LOCALIZATION			POTENTIAL LOCAL MANUFACTURER
					ACT	FOR ECA	NA	
	TANKS							
102	CONTINUOUS BLOW DOWN FLASH TANK	180C,10bar,A285-C Material	1	62	A			I) Manufacturer surveyed: DSD Ferrometalco II) Manufacturer prequalified (not visited): Port Said Engineering Works (PSEW) Petrojet Metalco ARESCO Sugar and Integrated Industries Co. Nile Contracting and Tech. Consul (NILCON) Shotmed
103	ATMOSPHERIC BLOW DOWN TANK	115C,7bar,A285-C Material	1	62	A			
104	DIRTY OIL TANK	TURBINE SUPPLIER SPECIFICATION	1	62	A			
105	OIL LEAKAGE TANK	TURBINE SUPPLIER SPECIFICATION	1	62		F		
106	SEAL OIL INTERMEDIATE TANK	TURBINE SUPPLIER SPECIFICATION	1	62		F		
107	SEAL OIL STORAGE TANK	1M3 CARBON STEEL	1	62		F		
108	SEAL OIL STORAGE TANK	TURBINE SUPPLIER SPECIFICATION	1	62		F		
109	SEAL OIL TANK	TURBINE SUPPLIER SPECIFICATION	1	62		F		
110	FLASH TANK	0.3 bar ,500C	1	62	A			
111	DEMINERALIZED WATER STORAGE TANK	1460 M3 , ST. STEEL A 240-304	1	62	A			
112	MAZOUT STORAGE TANK	29500 M3 , C. S. A633-C	1	62	A			
113	WASTE WATER NEUTRALIZATION TANK	590 M3 , C.S.ASTM A283-C	1	62	A			
114	SOLAR OIL STORAGE TANK	1460 M3 , C. S. ASTM A483-C	1	62	A			
115	CONDENSATE WATER STORAGE TANK	662 M3 , ST. STEEL A 240-304	1	62	A			
116	BFPT LUBE. OIL. TANK	BOILER FEED PUMP SUPPLIER SPECIFICATION	2	124		F		
117	MIXED BED EXCHANGER	1990MM DIA. X 4090 HIGH, C.S. , RUB. LINED	3	186	A			
118	ACID STORAGE TANK	2000 MM DIA. X 1600 MM HIGH, C.S.	1	62	A			
119	ACID DAY TANK	600 MM DIA. X 1300 HIGH.,C.S.	1	62	A			
120	CAUSTIC STORAGE TANK	2000 MM DIA. X 600 MM HIGH., C.S.	1	62	A			
121	CAUSTIC DAY TANK	900 MM DIA. X 1150 MM HIGH., C.S.	1	62	A			
122	CATION SERVICE VESSEL	2390 MM DIA. X 2100 MM HIGH, C.S. , RUB. LINED	3	186	A			
123	MIXED BED SERVICE VESSEL	2390 MM DIA. X 2600 MM HIGH., C.S. , RUB. LINED	3	186	A			
124	CATION RESIN REGENERATION VESSEL	1990 MM DIA. X 3560 MM HIGH, C.S. , RUB. LINED	1	62	A			
125	ANION RESIN REGENERATION VESSEL	1990MM DIA. X 3560 MM HIGH,C.S. , RUB. LINED	1	62	A			
126	CATION RESIN STORAGE VESSEL	1990 MM DIA. X 3060 MM HIGH, C.S., RUB. LINED	1	62	A			
127	MIXED BED RESIN STORAGE VESSEL	1990 MM DIA. X 3810 MM HIGH, C.S., RUB. LINED	1	62	A			
128	ACID STORAGE TANK	1300 MM DIA.X 2750 MM HIGH,C.S.	1	62	A			
129	ACID DAY TANK	900 MM DIA. X 1450 MM HIGH, SS	1	62	A			
130	CAUSTIC STORAGE TANK	1300 MM DIA. X 2750 MM HIGH, C.S. ,	1	62	A			
131	CAUSTIC DAY TANK	900 MM DIA. X 1450 MM HIGH., SS	1	62	A			
132	AMMONIUM HYDROXIDE STORAGE TANK	1300 MM DIA. X , 2880 MM HIGH.,SS	1	62	A			
133	HYDRAULIC SEAL FOR AMMO. HYDROXIDE STORAGE TANK	500 MM DIA. X 615MM HIGH., SS	1	62	A			
134	AMMONIUM HYDROXIDE FEED TANK	1600 MM DIA. X 1500 MM HIGH., SS	1	62	A			

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NO	EQUIPMENT DESCRIPTION	PERFORMANCE SPECIFICATION	PER UNI	20 YRS. QTY	LOCALIZATION			POTENTIAL LOCAL MANUFACTURER
					ACT	FOR ECA	NA	
135	AMMONIUM HYDROXIDE MEASURING TANK	1030 MM DIA. X 930 MM HIGH., SS	1	62	A			I) Manufacturer surveyed: DSD Ferrometalco II) Manufacturer prequalified (not visited): Port Said Engineering Works (PSEW) Petrojet Metalco ARESCO Sugar and Integrated Industries Co. Nile Contracting and Tech. Consul (NILCON) Shotmed
136	HYDRAULIC SEAL FOR AMMO. HYDROXIDE FEED TANK	320 MM DIA. X 602 MM HIGH., SS	1	62	A			
137	PHOSPHATE FEED TANK	1100 MM DIA. X 1140 MM HIGH., SS	1	62	A			
138	HYDRAZINE FEED TANK	700 MM DIA. X 1090 MM HIGH., SS	1	62	A			
139	HYDRAZINE MEASURING TANK	400 MM DIA. X 750 MM HIGH., SS	1	62	A			
140	SODIUM HYPOCHLORITE STORAGE TANK	5800 MM DIA. X 8000 MM HIGH., SS	1	62	A			
141	HYDROCHLORIC ACID STORAGE TANK	USEFUL VOLUME 4 M3, FIBERGLASS	1	62	A			
142	ACID DAY TANK	600MM DIA. X 1300 MM HIGH., SS	1	62	A			
143	CAUSTIC DAY TANK	900MM DIA. X 1150MM HIGH., SS	1	62	A			
144	ACID DAY TANK	600MM DIA. X 1100 MM HIGH., SS	1	62	A			
145	CAUSTIC DAY TANK	600 MM DIA. X 1100 MM HIGH., SS	1	62	A			
146	COAGULANT MIXING TANK	2220 MM DIA. X 1520 MM HIGH., SS	1	62	A			
147	COAGULANT AID MIXING TANK	USEFUL VOLUME 1.4 M3, SS 304	1	62	A			
148	WASTE WATER SAND FILTER	2400 MM DIA. X 3225 MM HIGH., C.S.	2	124	A			
149	OIL / WATER FLOATATOR	1060X2100X2000mm Vertical cuboid, SS	1	62	A			
150	PARALLEL PLATE OIL WATER SEPARATOR	600X2100X2000mm Vertical cuboid, SS	1	62	A			
151	FEED WATER HEATER RELIEF BLOW OFF TANK	16CU.MET., DIA. 2,8x3,24M	1	62	A			
152	CLEAN LUBE OIL TANK	40 CU. METER., DIA. 3,8x4,5 M, CARBON STEEL	1	62	A			
153	DIRTY LUBE OIL TANK	40 CU. METER., DIA. 3,8x4,5 M, CARBON STEEL	1	62	A			
154	MAIN TURBINE LUBE OIL RESERVOIR	12.11M3 CARBON STEEL	1	62	A			
155	CLOSED COOLING WATER HEAD TANK	10 CU.M., 1.8 M DIA X 4,77 M	1	62	A			
156	CLOSED COOLING WATER CHEMICAL FEED TANK	0.6 CU.M., 580MM DIA X 2,26 M	1	62	A			
157	STEAM AIR HEATER DRAIN TANK	4000 L	1	62	A			
158	FUEL OIL ADDITIVE TANK	11,5 M, DIA 2,84	1	62	A			
159	COLLECTION OIL TANK	10CU.MET., DIA 1,8x4,77 M	1	62	A			
160	REBOILER FEED TANK	10CU.MET., DIA 1,8x4,77 M	1	62	A			
161	REBOILER DRAIN TANK	10CU.MET., DIA 1,8x4,96 M	1	62	A			
162	REBOILER CONDENSATE COLLECTION TANK	10CU.MET., DIA 1,8x4,77 M, SA106-B, SA205-C	1	62	A			
163	FLUSHING AND CALIBRATION POT	PER MANUFACTURER DESIGN	1	62	A			
164	AIR RECEIVER	5 M3 SA516-60	2	124		F		
165	DIESEL FUEL DAY TANK	1.2M3 CARBON STEEL	2	124	A			

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					ACT	FOR ECA	NA	
166	FOAM STORAGE TANK	24M3 , G R P	1	62	A			Same as page 7
167	CHEMICAL SOLUTION TANK	4CU.MET., DIA 1,8M	4	248	A			
168	CHEMICAL SOLUTION TANK	0,46CU.Met., DIA 0,814 M	2	124	A			
169	CHEMICAL SOLUTION TANK	1,6CU.MET., DIA 1,4 M	2	124	A			
170	NITROGEN BOTTLE	150 BAR	204	12648	A			
171	CO2 BOTTLES	219MM DIA , 1152MM LENGTH ,124 BAR ,C.S	40	2480		F		

Total estimated Tanks per unit: 330 --- Total Tanks (20 years plan): 20,460 of all types

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					ACT	FOR ECA	NA	
	HOSES							
172	HOPPER O-WINDOW HOSE	32mm , 11bar , 38 C , AISI 304L	8	496		F		EMA for hydraulic services Toshky Industrial Company
173	BURNER SERVICE AIR HOSE	40mm , 11bar , 38 C , AISI 304L	6	372		F		
174	BOILER CAMERA HOSE	40mm , 11bar , 38 C , AISI 304L	2	124		F		
175	SOOT BLOWER SERVICE AIR HOSE	50mm , 11bar , 38 C , AISI 304L	10	620		F		
176	O WINDOW SEAL AIR HOSE	32mm , 1.2 bar , 38 C , AISI 304L	20	1240		F		
177	BURNER SEAL AIR HOSE	25mm , 1.2 bar , 38 C , AISI 304L	22	1364		F		
178	THERMO PROBE SEAL AIR HOSE	50mm , 1.2 bar , 38 C , AISI 304L	22	1364		F		
179	FUEL GAS TO BURNER HOSE	150mm , 4 bar , 50 C , AISI 304L	18	1116		F		
180	COOLING FANS HOSE	20mm , 11bar , 38 C , AISI 304L	16	992		F		
181	BURNER COOLING AIR HOSE	25mm , 1.2bar , 38 C , AISI 304L	36	2232		F		

Total estimated Hoses per unit: 160 --- Total estimated Hoses (20 years plan): 9,920 of all types

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					ACT	FOR ECA	NA	
	STRAINERS							valve manufacturers have this capability:
182	Y-STRAINER	25mm DIA , A105 , Class3000	14	868		F		I) Manufacturer surveyed:
183	Y-STRAINER	150mm DIA , A234WPB , Class300	4	248		F		Qualival
184	Y-STRAINER	20mm DIA , A105 , Class3000	4	248		F		Evaco
185	Y-STRAINER	80mm DIA , A234WPB , Class300	8	496		F		Egyptian German Co. for Ind. Valves
186	Y-STRAINER	100mm DIA , A234WPB , Class300	2	124		F		Helwan for Machinery & Tools (999)
187	Y-STRAINER	50mm DIA , A105 , Class3000	1	62		F		II) Manufacturer (not visited):
188	Y-STRAINER	25MM DIA , A182F22 , CLASS1500	3	186		F		Kobaa (valves - Alexandria)
189	Y-STRAINER	25MM DIA , A105 , CLASS 800	26	1612		F		
190	Y-STRAINER	50MM DIA ,A182F22 ,CLASS 1500	3	186		F		
191	Y-STRAINER	25MM DIA ,A105 , CLASS1500	10	620		F		
192	Y-STRAINER	65MM DIA ,A216WCB ,CLASS 300	3	186		F		
193	Y-STRAINER	40MM DIA ,A105 ,CLASS 800	1	62		F		
194	Y-STRAINER	25MM DIA , A216WCB ,CLASS1500	6	372		F		
195	Y-STRAINER	50MM DIA ,A105 ,CLASS 1500	5	310		F		
196	Y-STRAINER	15MM DIA , A105 ,CLASS 1500	34	2108		F		
197	Y-STRAINER	40MM DIA ,A216WCB ,CLASS 1500	1	62		F		
198	START UP STRAINER CONDENSATE PUMP	WIRE MESH 800 MICRON , ST. STEEL 316 , 570/100DIA	2	124		F		
199	SELF CLEANING STRAINER	54134 LPM ,B. W, A395 BODY ,S.S. ELEMENT MESH TYPE 4	2	124		F		
200	BOILER FEED PUMP SUCTION STRAINER	ST. STEEL 304/316 WIRE MESH#4	3	186		F		

Total estimated Strainers per unit: 130 --- Total Strainers (20 years plan): 8,060 of all types

MECHANICAL EQUIPMENT LIST
ESTIMATED QUANTITY FOR 320MW STEAM TURBINE (EXCLUDING DESALINATION)
BASED ON SIDI KRIR & AYOUN MOUSSA

NO	EQUIPMENT DESCRIPTION	PERFORMANCE SPECIFICATION	PER UNI	20 YRS. QTY	LOCALIZATION			POTENTIAL LOCAL MANUFACTURER
					ACT	FOR ECA	NA	
	TRAPS							<i>valve manufacturers have this capability:</i> <i>I) Manufacturer surveyed:</i> <i>Qualival</i> <i>Evaco</i> <i>Egyptian German Co. for Ind. Valves</i> <i>Helwan for Machinery & Tools (999)</i> <i>II) Manufacturer (not visited):</i> <i>Kobaa (valves - Alexandria)</i>
201	STEAM TRAP	25mm DIA , A105 , Class 3000	14	868		F		
202	DRAIN TRAP	20mm DIA , A105 , Class 2000	4	248		F		
203	STEAM TRAP	100mm DIA , A216WCB , Class 300	2	124		F		
204	STEAM TRAP	50mm DIA , A105 , Class 3000	1	62		F		
205	STEAM TRAP	DIN 25mm , A105 , Class 600	33	2046		F		
206	STEAM TRAP	DIN 50mm , A105 , Class 600	9	558		F		
207	STEAM TRAP	DIN 40mm , A105 , Class 600	1	62		F		
208	STEAM TRAP	DIN 15mm , A105 , Class 600	35	2170		F		
209	AIR RECEIVER DRAIN TRAP	DIN 25mm , SS , Class 600	2	124		F		
210	OIL TRAP	TURBINE SUPPLIER SPECIFICATION	2	124		F		

Total estimated Traps per unit: 105 --- Total estimated Strainers (20 years plan): 6,510 of all types

**MECHANICAL EQUIPMENT LIST
ESTIMATED QUANTITY FOR 320MW STEAM TURBINE (EXCLUDING DESALINATION)
BASED ON SIDI KRIR & AYOUN MOUSSA**

NO	EQUIPMENT DESCRIPTION	PERFORMANCE SPECIFICATION	. PER UNI	20 YRS. QTY	LOCALIZATION			POTENTIAL LOCAL MANUFACTURER
					ACT	FOR ECA	NA	
	ORIFICES							
211	FLOW ORIFICE	80mm , A403-WP304 ,Class2500	3	186	A			Faik Industries Technological & Electrical Sys (TES) Egyptian Japan Steel works Ebeid Industries
212	FLOW ORIFICE	100mm , A403-WP304 ,Class2500	3	186	A			
213	FLOW ORIFICE	50mm , A182-F304 ,Class300	1	62	A			
214	FLOW ORIFICE	65mm , A403-WP304 ,Class300	6	372	A			
215	FLOW ORIFICE	150mm , A403-WP304 ,Class150	6	372	A			
216	FLOW ORIFICE	50mm , A105 ,Class300	1	62	A			
217	ORIFICE PLATE SEAL OIL PUMP 1	TURBINE SUPPLIER SPECIFICATION	1	62		F		
218	ORIFICE PLATE SEAL OIL PUMP 2	TURBINE SUPPLIER SPECIFICATION	1	62		F		
219	ORIFICE PLATE SEAL OIL PUMP 3	TURBINE SUPPLIER SPECIFICATION	1	62		F		
220	RESTRICTING FLOW ORIFIES-HEATER#1	O.D=85.7mm ,I.D= 31.3mm ,THICK= 3mm	2	124		F		
221	RESTRICTING FLOW ORIFIES-HEATER#2	O.D=44.4mm ,I.D= 21.3mm ,THICK= 3mm	2	124		F		
222	RESTRICTING FLOW ORIFIES-HEATER#3	O.D=44.4mm ,I.D= 17mm ,THICK= 3mm	1	62		F		
223	RESTRICTING FLOW ORIFIES-HEATER#4	O.D=44.4mm ,I.D= 12mm ,THICK= 3mm	1	62		F		
224	RESTRICTING FLOW ORIFIES-HEATER#6	O.D=44.4mm ,I.D= 5.9mm ,THICK= 3mm	1	62		F		
225	RESTRICTING FLOW ORIFIES-HEATER#7	O.D=44.4mm ,I.D= 5.9mm ,THICK= 3mm	1	62		F		
226	RESTRICTION FLOW ORIFICE-DEAREATOR HEATER VENT	O.D=85.7mm ,I.D= 5.7mm ,THICK= 3mm	3	186		F		
227	RESTRICTING FLOW ORIFICE	DIFF. SIZES (PROCESS DESIGN REQUIREMENTS)	37	2294		F		

Total estimated Orifices per unit: 70 --- Total estimated Orifices (20 years plan): 4,340 of all types

MECHANICAL EQUIPMENT LIST
ESTIMATED QUANTITY FOR 320MW STEAM TURBINE (EXCLUDING DESALINATION)
BASED ON SIDI KRIR & AYOUN MOUSSA

NO	EQUIPMENT DESCRIPTION	PERFORMANCE SPECIFICATION	. PER UNI	20 YRS. QTY	LOCALIZATION			POTENTIAL LOCAL MANUFACTURER
					ACT	FOR ECA	NA	
	HOISTS							
228	MONORAIL HST REGEN AH	1 HP , 1.6 HP	1	62		F		I) Manufacturer surveyed: Technological & Electrical Sys (TES) DSD Ferrometalco Helwan for Machinery & Tools (999) Kandil Industries El Fateh Eng Indust. II) Manufacturer (not visited): Petrojet
229	MONORAIL HST GUIDE BRG RMVL REGEN AH	1 TON	1	62		F		
230	MONORAIL HST FD FAN MOTOR	12 TON	1	62		F		
231	MONORAIL HST FD FAN	8 TON	1	62		F		
232	MONORAIL HST FAN MOTOR GAS RECIRC.	5 TON	1	62		F		
233	MONORAIL HST G R FAN	4 TON	1	62		F		
234	MONORAIL HST BOILER DRUM LEVEL	2.72 TON , 5HP ,LEVEL 5 TO LEVEL 55	1	62		F		
235	SEISMIC DRUM SNUBBER	PER MANUFACTURER SPECIFICATIONS	1	62		F		
236	TROLLEY AND HOIST C.C.W. PUMP.	5 TONE	2	124		F		
237	TROLLEY AND HOIST F.W. PUMP EXHAUST	1,6 TONE	2	124		F		
238	TROLLEY AND HOIST REBOILER TUBE BUNDLE	12,5 TONE	2	124		F		
239	TROLLEY AND HOIST HYDROGEN GEN. BLDG.	3 TONE	1	62		F		
240	TROLLEY AND HOIST DIESEL GENERATOR	10 TONE	1	62		F		
241	TROLLEY AND HOIST FIREWATER PUMP HOUSE	3 TONE	3	186		F		
242	TROLLEY AND HOIST COOL. W. PUMP. STATION	1 TONE	2	124		F		
227	RESTRICTING FLOW ORIFICE	DIFF. SIZES (PROCESS DESIGN REQUIREMENTS)	37	2294		F		

Total estimated Hoists per unit: 60 --- Total estimated Hoists (20 years plan): 3,720 of all types

MECHANICAL EQUIPMENT LIST
ESTIMATED QUANTITY FOR 320MW STEAM TURBINE (EXCLUDING DESALINATION)
BASED ON SIDI KRIR & AYOUN MOUSSA

NO	EQUIPMENT DESCRIPTION	PERFORMANCE SPECIFICATION	. PER UNI	20 YRS. QTY	LOCALIZATION			POTENTIAL LOCAL MANUFACTURER
					ACT	FOR ECA	NA	
	FANS							
243	GAS RECIRC. FAN		2	124		F		Could be integrated by one or more of the following suppliers (under license): Hammam Industries
244	FD FAN	218.93M3/Sec ,985 RPM ,2420KW ,P RISE=8.39KPA	2	124		F		
245	COOLING AIR FAN	85.3M3/Sec ,995 RPM ,239KW ,P RISE=2.05KPA	2	124		F		
246	SEAL AIR BOOSTER FAN	39.165M3/HR , 1460RPM , 54.9KW , P RISE=434mm wg	2	124		F		EGAT Engine Factory A. O. I.
247	BLOWER SLIP RING VENTILATION	0.37 KW	1	62		F		
248	GLAND STEAM EXHAUSTER	2.2 KW	2	124		F		
249	OIL VAPOR EXHAUSTER	0.3 KW	2	124		F		
250	BEARING VAPOR EXH.	0.75 KW	2	124		F		
	AGITATOR							
251	AGITATOR	1.1KW ,680 RPM	4	248		F		
252	AGITATOR	0.37 , 2730RPM	2	124		F		
253	AGITATOR	0.75, 910 RPM	2	124		F		

Total estimated fans per unit: 15 --- Total estimated fans (20 years plan): 930 of all types --- (for Agitators 8 per unit & 500 total)

MECHANICAL EQUIPMENT LIST
ESTIMATED QUANTITY FOR 320MW STEAM TURBINE (EXCLUDING DESALINATION)
BASED ON SIDI KRIR & AYOUN MOUSSA

NO	EQUIPMENT DESCRIPTION	PERFORMANCE SPECIFICATION	PER UNI	20 YRS. QTY	LOCALIZATION			POTENTIAL LOCAL MANUFACTURER
					ACT	FOR ECA	NA	
	AIR HEATERS							
254	STEAM COIL AIR HEATER	PER MANUFACTURER SPECIFICATIONS	2	124		F		
255	AIR HEATER	PER MANUFACTURER SPECIFICATIONS	2	124			N	
	ATTEMPRATORS							
256	ATTEMPRATOR OF P.SH.-A	100mm , 184C,191bar,A106-C,Class2500	2	124			N	
257	ATTEMPRATOR OF S.SH.-A	80mm , 191C,80bar,A335-P22 , Class2500	2	124			N	
	COOLERS							
258	H2 COOLER	TURBINE SUPPLIER SPECIFICATION	1	62			N	
259	CONDENSER VACUUM PUMP HEAT EXCHANGER	10 bar , 148c, SS 304 TUBE, CAST STEEL	2	124		F		
260	MAIN TURBINE OIL COOLER	TURBINE SUPPLIER SPECIFICATION	2	124		F		
261	GENERATOR SEAL OIL COOLER	TURBINE SUPPLIER SPECIFICATION	2	124		F		
	HEATERS							
262	LP FEED WATER HEATER NO 1	15,350,570 KCAL/HR, 676.8 M2 AREA, VAC-4.5 BAR (SHELL), 50 BAR (TUBE)	1	62	A			Int'l Co. for Mfng Blrs&Steel Fab.IBSF
263	LP FEED WATER HEATER NO 2	32,515,770 KCAL/HR, 855.4 M2 AREA, VAC-4.5 BAR (SHELL), 50 BAR (TUBE)	1	62	A			Sugar & Integrated Industries
264	LP FEED WATER HEATER NO 3	23,645,520 KCAL/HR, 606 M2 AREA, VAC-6.2 BAR (SHELL), 50 BAR (TUBE)	1	62	A			DSD Ferrometalco
265	LP FEED WATER HEATER NO 4	23,504,140 KCAL/HR, 540.1 M2 AREA, VAC-10 BAR (SHELL), 50 BAR (TUBE)	1	62	A			
266	DEAERATOR FEED WATER HEATER	286.753 KG/S, VAC-12 BAR	1	62	A			
267	HIGH PRESSURE FEED WATER HEATER NO 6	30,049,240 KCAL/HR, 830 M2 AREA, VAC-27 BAR (SHELL), 246 BAR (TUBE)	1	62	A			
268	HIGH PRESSURE FEED WATER HEATER NO 7	52,014,190 KCAL/HR, 1155.3 M2 AREA, VAC-60 BAR (SHELL), 246 BAR (TUBE)	1	62	A			
269	DEAERATOR STORAGE TANK	12 BAR, 186 CU M, 3.6 M DIA X 16.8 M	1	62	A			

Total estimated heaters, coolers and attemprators quantities are as indicated in this sheet

MECHANICAL EQUIPMENT LIST
ESTIMATED QUANTITY FOR 320MW STEAM TURBINE (EXCLUDING DESALINATION)
BASED ON SIDI KRIR & AYOUN MOUSSA

NO	EQUIPMENT DESCRIPTION	PERFORMANCE SPECIFICATION	PER UNI	20 YRS. QTY	LOCALIZATION			POTENTIAL LOCAL MANUFACTURER
					ACT	FOR ECA	NA	
	HEAT EXCHANGERS							
270	BLOW DOWN HEAT EXCHANGER	HOT SIDE 450 LPM, COLD SIDE 1183 LPM	1	62		F		Int'l Co. for Mfrg Blrs&Steel Fab.IBSF
271	CLOSED COOLING WATER HEATER EXCHANGER	HOT SIDE 21225 LPM COLD SIDE 17417 LPM	2	124		F		Sugar & Integrated Industries
272	AUX. STEAM REBOILER	KETTLE TYPE 5480M3/HR ,4.98bar ,160C(15bar ,275C)	2	124		F		DSD Ferrometalco
273	REBOILER SUB-COOLER	PER DESIGN REQUIRMENTS	2	124		F		Ebeid Industies
274	FUEL OIL SUCTION HEATER	180 T/HR - SHELL SIDE (STEAM HEATER)	2	124		F		Alex. Ind. Const Serv (AICS)
275	MAZOUT STORAGE TANK TRANSFER HEATER	180 T/HR	2	124		F		Petrojet, OCTO Medical
	SOOT BLOWERS							Helwan for Machinery & Tools (999)
276	SOOT BLOWERS	PRESSURE 52 BAR, TEMP.410 C,MATERIAL C.S.	14	868		F		

Total estimated heat exchangers per unit: 11 --- Total estimated heat exchangers (20 years plan): 682 of all types

MECHANICAL EQUIPMENT LIST
ESTIMATED QUANTITY FOR 320MW STEAM TURBINE (EXCLUDING DESALINATION)
BASED ON SIDI KRIR & AYOUN MOUSSA

NO	EQUIPMENT DESCRIPTION	PERFORMANCE SPECIFICATION	PER UNI	20 YRS. QTY	LOCALIZATION			POTENTIAL LOCAL MANUFACTURER
					ACT	FOR ECA	NA	
	EXPANSION JOINTS							
277	ECONOMIZER OUTLET FLUE	C.S. A569	1	62		F		Int'l Co. for Mfrg Blrs&Steel Fab.IBSF Sugar & Integrated Industries DSD Ferrometalco Petrojet Helwan for Machinery & Tools (999) El Fateh Eng Indust. For non metallic expansion joints: Burgseal (Alimex Group)
278	ROTARY AIR HEATER INLET FLUE	FABRIC	2	124		F		
279	ROTARY AIR HEATER OUTLET FLUE	316L SS	4	248		F		
280	ROTARY AIR HEATER FLUE TO STACK	316L SS	2	124		F		
281	COMMON FLUE TO STACK	316L SS	2	124		F		
282	COOL AIR TO G.R. FAN PLENUM	FABRIC	1	62		F		
283	ECON OUTLET FLUE TO G.R. FAN	C.S. A569	4	248		F		
284	G.R. FAN INLET & OUTLET	FABRIC	4	248		F		
285	G.R. FAN TO GAS RECIRC. PLENUM	C.S. A569	2	124		F		
286	SEAL AIR TO G.R. FAN INLET DAMPER	FABRIC	2	124		F		
287	SEAL AIR TO AH INLET DAMPER	FABRIC	2	124		F		
288	G.R. FAN WARM AIR FROM HOT AIR DUCT	FABRIC	4	248		F		
289	FD FAN OUTLET	FABRIC	2	124		F		
290	ROTARY AIR HEATER INLET DUCT	316L SS	2	124		F		
291	ROTARY AIR HEATER OUTLET DUCT	C.S. A569	2	124		F		
292	COMMON DUCT TO WIND BOX	C.S. A569	2	124		F		
293	RARE WALL WIND BOX DUCT	C.S. A569	2	124		F		
294	FRONT WALL & RARE WALL WIND BOX DUCT	C.S. A569	6	372		F		
295	HOT AIR CROSSOVER DUCT	FABRIC	2	124		F		
296	HOT AIR TO GAS RECIRC. PLENUM	FABRIC	1	62		F		
297	SEAL AIR FAN OUTLET	FABRIC	2	124		F		
298	SEAL AIR TO G.R. FAN OUTLET DAMPER	FABRIC	2	124		F		
299	SEAL AIR TO BLR PENTHOUSE	FABRIC	2	124		F		
300	SEAL AIR PH TO SH VESTIBULE	FABRIC	1	62		F		
301	SEAL AIR BOOSTER FAN INLET	FABRIC	2	124		F		
302	CONDENSATE PUMP EXPANSION JOINT	400mm I D ,83C , 6.5 bar , F. V , NEOPRENE	2	124		F		
303	EXTRACTION LINE EXPANSION JOINT	20" , 5.3 PSIG , 165F , A204-321	4	248		F		
304	EXTRACTION LINE EXPANSION JOINT	16" , 12.15 PSIG ,203F , A204-321	2	124		F		
305	EXTRACTION LINE EXPANSION JOINT	18" , 16.05 PSIG ,203F , A204-321	2	124		F		
306	CIRCULATING WATER PUMP EXPANSION JOINT	1400mm I D ,83C , 6.5 bar , 15 IN. HG , NEOPRENE	2	124		F		
307	CONDENSER INLET EXPANSION JOINT	1784mm I D ,83C , 6.5 bar , 15 IN. HG , NEOPRENE	2	124		F		
308	CONDENSER OUTLET EXPANSION JOINT	1784mm I D ,83C , 6.5 bar , 15 IN. HG , NEOPRENE	2	124		F		
309	SERVICE WATER PUMP EXPANSION JOINT	500mm DIA ,29C ,10M/Sec VELOCITY	2	124		F		

MECHANICAL EQUIPMENT LIST
ESTIMATED QUANTITY FOR 320MW STEAM TURBINE (EXCLUDING DESALINATION)
BASED ON SIDI KRIR & AYOUN MOUSSA

NO	EQUIPMENT DESCRIPTION	PERFORMANCE SPECIFICATION	. PER UNI	20 YRS. QTY	LOCALIZATION			POTENTIAL LOCAL MANUFACTURER
					ACT	ECA	NA	
310	BOILER FEED WATER PUMP EXHAUST DUCT EX	ID 1488mm ,500mm LONG , BELLOW SA240-304L	2	124		F		same as page 17
311	DEMI. WATER PUMP EXPANSION JOINT	DIN 300,3 BAR, F.V, NEOPRENE	2	124		F		
312	DESALINATION PUMP EXPANSION JOINT	500mm I D ,83C , 6.5 bar , F. V , NEOPRENE	2	124		F		
313	SCREEN WASH PUMP EXPANSION. JOINT	DIN 150 , 8 BAR ,40C ,ASME CL 150	4	248		F		

Total estimated expansion joints per unit: 85 --- Total estimated expansion joints (20 years plan): 5270 of all types

MECHANICAL EQUIPMENT LIST
ESTIMATED QUANTITY FOR 320MW STEAM TURBINE (EXCLUDING DESALINATION)
BASED ON SIDI KRIR & AYOUN MOUSSA

NO	EQUIPMENT DESCRIPTION	PERFORMANCE SPECIFICATION	PER UNI	20 YRS. QTY	LOCALIZATION			POTENTIAL LOCAL MANUFACTURER	
					ACT	ECA	NA		
	STEAM GENERATOR PRESSURE PARTS								
314	STEAM DRUM	ACCORDING TO DESIGN	1	62			N		
315	MAIN BOILER	RADIANT HEAT WATER TUBE , 2403626 IB/HR	1	62	A			Int'l Co. for Mfrg Blrs&Steel Fab.IBSF Sugar & Integrated Industries DSD Ferrometalco	
316	ECONOMIZERS TUBE BUNDLES	2" ,SA178C-SA213T12 ,AS216WCB	LOT	LOT	A				
317	WATER WALL PANELS	SA 210 , SA213T3 ,2.5&3-5"	LOT	LOT	A				
318	SUPERHEATERS TUBE BUNDLES	SA213T12-SA213T22-SA213TP304H , 2.5&2.25"	LOT	LOT	A				
319	REHEATERS TUBE BUNDLES	BASED ON MANUFACTURE DESIGN	LOT	LOT	A				
320	HEADERS	BASED ON MANUFACTURE DESIGN	LOT	LOT			N		
321	DOWN COMERS	BASED ON MANUFACTURE DESIGN	LOT	LOT			N		
322	RISERS	BASED ON MANUFACTURE DESIGN	LOT	LOT			N		
323	PIPING	BASED ON MANUFACTURE DESIGN	LOT	LOT			N		
	STEAM GENERATOR STEEL STRUCTURE								
324	STEEL STRUCTURE	BASED ON MANUFACTURE DESIGN	LOT	LOT	A				I) Manufacturer surveyed: DSD Ferrometalco EZACO
325	PLATFORM ,STEEL GRATING AND HANDRAILS	BASED ON MANUFACTURE DESIGN	LOT	LOT	A				
326	CASING (INNER & OUTER)	BASED ON MANUFACTURE DESIGN	LOT	LOT	A				Arab Steel and Galvanizing factory (ASF) Kandil Industries
327	BOILER HANGERS & HANGER RODS	BASED ON MANUFACTURE DESIGN	LOT	LOT	A				
328	BACKSTAY	BASED ON MANUFACTURE DESIGN	LOT	LOT	A			El fateh Eng. Industries	
329	SUPPORT STEEL	BASED ON MANUFACTURE DESIGN	LOT	LOT	A			II) Manufacturer (not visited):	
330	DUCTS	BASED ON MANUFACTURE DESIGN	LOT	LOT	A			ARESCO	
331	DOORS	BASED ON MANUFACTURE DESIGN	LOT	LOT	A			NSF	

MECHANICAL EQUIPMENT LIST
ESTIMATED QUANTITY FOR 320MW STEAM TURBINE (EXCLUDING DESALINATION)
BASED ON SIDI KRIR & AYOUN MOUSSA

NO	EQUIPMENT DESCRIPTION	PERFORMANCE SPECIFICATION	PER UNI	20 YRS. QTY	LOCALIZATION			POTENTIAL LOCAL MANUFACTURER
					ACT	FOR ECA	NA	
	FILTERS							
332	CONTROL AIR FILTER	TURBINE SUPPLIER SPECIFICATION	1	62		F		FRAM
333	SPECIAL FILTERS(DIFFERERENT TYPES AND SIZES)	TURBINE SUPPLIER SPECIFICATION	7	434			N	FAC
334	FILTER BEFORE BLOWER SLIP RING VENTILATION	TURBINE SUPPLIER SPECIFICATION	1	62		F		
335	FILTER HOOD SPRAY	TURBINE SUPPLIER SPECIFICATION	1	62			N	
336	FINE FILTER	TURBINE SUPPLIER SPECIFICATION	1	62			N	
337	FULL FLOW FILTER	TURBINE SUPPLIER SPECIFICATION	1	62			N	
338	LIFTING OIL FILTER	TURBINE SUPPLIER SPECIFICATION	1	62			N	
339	MOISTURE FILTER	TURBINE SUPPLIER SPECIFICATION	1	62			N	
340	SEAL OIL FILTER	TURBINE SUPPLIER SPECIFICATION	1	62			N	
341	COMPRESSED AIR FILTER	TURBINE SUPPLIER SPECIFICATION	2	124		F		
342	SEAL OIL FILTER	TURBINE SUPPLIER SPECIFICATION	1	62			N	
343	DEBRIS FILTER	105056GPM , 0.09bar , 4.5mm BASKET MISH	2	124			N	
344	TRAVELING WATER SCREEN	205 521 LPM, 1.5/0.75KW, 1500/750RPM	9	558		F		MF 999, El Fateh, aircraft AOI, engine AOI
345	SCREEN WASH PUMP FILTER	7BAR, 140 GPM	4	248		F		
346	PRE-FILTER	2400 CU M/HR	4	248		F		
347	AFTER FILTER	2400 CU M/HR	4	248		F		
348	C.W. PUMP HOUSE OIL / WATER SEPARATOR	200 LPM	1	62		F		

Total estimated filters per unit: 85 --- Total estimated filters (20 years plan): 5270 of all types

MECHANICAL EQUIPMENT LIST
ESTIMATED QUANTITY FOR 320MW STEAM TURBINE (EXCLUDING DESALINATION)
BASED ON SIDI KRIR & AYOUN MOUSSA

NO	EQUIPMENT DESCRIPTION	PERFORMANCE SPECIFICATION	PER UNI	20 YRS. QTY	LOCALIZATION			POTENTIAL LOCAL MANUFACTURER
					ACT	ECA	NA	
AIR BLOWERS								
349	Air Blower - Mixed Bed	200 m3/hr , 0.5bar , Carbon Steel	2	124		F		Hammam Industries EGAT
350	Air Blower - Condensate Polisher Unit 1	190/340 m3/hr , 0.5bar , Carbon Steel	2	124		F		
351	Air Blower - Sand Filters	202 m3/hr , 0.5bar , Carbon Steel	2	124		F		
352	Air Blower - Hydrogen Dilution	9000m3/hr , 0.5bar , Carbon Steel	2	124		F		
			8	496				
COMPRESSORS								
353	AIR COMPRESSOR	2160-2400 CU M/HR , 298.3 KW , 6000V	3	186		F		Helwan for Machinery & Tools (999) NOMP Aircraft AOI Engine AOI
354	AIR COMPRESSOR	1200 CU M/HR , 150KW , 380V	1	62		F		
355	AIR COMPRESSOR FOR C.W.P. HOUSE	1200 CU M/HR , 22KW , 380V	1	62		F		
356	OXYGEN COMPRESSOR	1200CU M/HR , 12KW , 380V	1	62		F		
357	HYDROGEN COMPRESSOR	1200 CU M/HR , 25KW , 380V	2	124		F		
			8	496				
FLAME ARRESTORS								
358	FUEL OIL ADDITIVE STORAGE. TANK FLAME ARRESTOR	SUPPLIER SPECIFICATION	1	62		F		Technological & Electrical Sys (TES) ASF ARESCO
359	DIESEL FUEL DAY TANK FLAME ARRESTOR	SUPPLIER SPECIFICATION	2	124		F		
DRYERS								
360	AIR DRYER	2400 CU M/HR , .05KW	2	124		F		
SERVICE GAS SYSTEM								
361	NITROGEN STORAGE SYSTEM	10,8 NCM/MIN.	1	62		F		NOMP, AOI Technological & Electrical Sys (TES)
362	HYDROGEN HIGH PRESSURE STORAGE	12780 NCM	1	62		F		
363	HYDROGEN BOTTLE MANIFOLD	0.4KW	1	62		F		ASF ARESCO
364	OXYGEN BOTTLE MANIFOLD	0.4KW	1	62		F		
365	HYDROGEN / OXYGEN GENERATOR	11/5,5NCM/HR , 58.5KW	1	62		F		NSF
366	HYDROGEN / OXYGEN GENERATOR RECTIFIER	HYDROGEN / OXYGEN GENERATOR SUPPLIER	1	62		F		
367	HYDROGEN STORING CYLINDER	200 BAR	8	496		F		

Total estimated Blowers, compressors, dryers... quantities are as indicated in this sheet

MECHANICAL EQUIPMENT LIST
ESTIMATED QUANTITY FOR 320MW STEAM TURBINE (EXCLUDING DESALINATION)
BASED ON SIDI KRIR & AYOUN MOUSSA

NO	EQUIPMENT DESCRIPTION	PERFORMANCE SPECIFICATION	PER UNI	20 YRS. QTY	LOCALIZATION			POTENTIAL LOCAL MANUFACTURER
					ACT	ECA	NA	
	DIESEL ENGINE							
368	DIESEL ENGINE (FIRE PUMP DRIVER)	200HP, 4--STROK	2	124		F		Helwan Diesel Engines Co. (NOMP-909)
369	EMERGENCY DIESEL GENERATOR	1.275 MVA	1	62		F		Al Mohandis International Co. (not visited)
370	FIRE TRUCK	ACCORDING TO NFPA AND LOCAL LOW	2	124		F		NOMP, AOI

Total estimated quantities are as indicated in this sheet

MECHANICAL EQUIPMENT LIST
ESTIMATED QUANTITY FOR 320MW STEAM TURBINE (EXCLUDING DESALINATION)
BASED ON SIDI KRIR & AYOUN MOUSSA

NO	EQUIPMENT DESCRIPTION	PERFORMANCE SPECIFICATION	PER UNI	20 YRS. QTY	LOCALIZATION			POTENTIAL LOCAL MANUFACTURER
					ACT	FOR ECA	NA	
	HVAC							
371	EXHAUST HOOD FAN	1.1 KW	13	806		F		Hamмам Industries EGAT
372	EXHAUST HOOD FAN	3.7 KW	12	744		F		
373	EXHAUST HOOD FAN	0.55 KW	5	310		F		
374	EXHAUST HOOD FAN	1.5 KW	4	248		F		
375	CENTRIFUGAL EXHAUST FAN	1.5 KW	6	372		F		
376	CENTRIFUGAL EXHAUST FAN	0.37 KW	5	310		F		
377	CENTRIFUGAL EXHAUST FAN	0.18 KW	3	186		F		
378	CENTRIFUGAL EXHAUST FAN	0.73 KW	4	248		F		
379	CENTRIFUGAL FAN UNIT	14.7 KW	9	558		F		
380	ELECTRIC HEATER	5.93KW	1	62		F		
381	ELECTRIC HEATER	3.23KW	1	62		F		
382	ELECTRIC HEATER	6.23 KW	1	62		F		
383	ELECTRIC HEATER	4.3 KW	1	62		F		
384	ROOF AIR HANDLING UNIT	20 KW	1	62		F		
385	ROOF AIR HANDLING UNIT	30 KW	1	62		F		
386	ROOF AIR HANDLING UNIT	10 KW	1	62		F		
387	WALL AXIAL EXHAUST	5.5 KW	8	496		F		

Total estimated quantities are as indicated in this sheet

MECHANICAL EQUIPMENT LIST
ESTIMATED QUANTITY FOR 320MW STEAM TURBINE (EXCLUDING DESALINATION)
BASED ON SIDI KRIR & AYOUN MOUSSA

NO	EQUIPMENT DESCRIPTION	PERFORMANCE SPECIFICATION	PER UNI	20 YRS. QTY	LOCALIZATION			POTENTIAL LOCAL MANUFACTURER
					ACT	FOR ECA	NA	
	MOTORS							
388	MOTOR ROTARY AIR HEATER	14.9 KW	4	248		F		MADECO Helwan Diesel Engines Co. (NOMP-909)
389	MOTOR GAS RECIRC. FAN	338 HP , 600V , 989 RPM	2	124		F		
390	MOTOR FD FAN	3409 HP , 600V , 993 RPM	2	124		F		
391	MOTOR COOLING AIR FAN	F. D. FAN SUPPLIER SPECIFICATION	2	124		F		
392	MOTOR SEAL AIR BOOSTER FAN	F. D. FAN SUPPLIER SPECIFICATION	2	124		F		
393	FD FAN TURNING MOTOR	12HP , 380V , 127 RPM	2	124		F		
			14	868				
	DAMPERS							
394	REGULATING SHUT OFF DAMPER DRIVE (FLUE GAS)	FLUE GAS REGULATING SHUT OFF DAMPER	4	248		F		
395	TIGHTENING SHUT OFF DAMPER DRIVE (FLUE GAS)	FLUE GAS TIGHTENING SHUT OFF DAMPER	2	124		F		
396	REGULATING SHUT OFF DAMPER DRIVE (GAS RECIRC.)	GAS REC. REGULATING SHUT OFF DAMPER	4	248		F		
397	TIGHTENING SHUT OFF DAMPER DRIVE (GAS RECIRC.)	GAS REC. TIGHTENING SHUT OFF DAMPER	4	248		F		
398	TIGHTENING SHUT OFF DAMPER DRIVE (COMB AIR)	COMB AIR TIGHTENING SHUT OFF DAMPER	19	1178		F		
399	TIGHTENING SHUT OFF DAMPER DRIVE (SEAL AIR)	SEAL AIR. TIGHTENING SHUT OFF DAMPER	4	248		F		
			37	2294				

Total estimated quantities are as indicated in this sheet

MECHANICAL EQUIPMENT LIST
ESTIMATED QUANTITY FOR 320MW STEAM TURBINE (EXCLUDING DESALINATION)
BASED ON SIDI KRIR & AYOUN MOUSSA

NO	EQUIPMENT DESCRIPTION	PERFORMANCE SPECIFICATION	PER UNI	20 YRS. QTY	LOCALIZATION			POTENTIAL LOCAL MANUFACTURER
					ACT	FOR ECA	NA	
	INSULATION MATERIAL							
400	BOILER DRUM INSULATION	MINERAL WOOL BLOCK ASTM C612 , CL4	LOT	LOT		F		EROCK
401	PENTHOUSE , FURNACE , WALL , BURNER BOX , INSULATION	MINERAL WOOL BLOCK ASTM C612 , CL4	LOT	LOT		F		Alexandria Co for Refractories
402	DUCTS ,AIR HEATER ,FANS INSULATION	MINERAL WOOL BLOCK ASTM C612 , CL4	LOT	LOT		F		
403	HEADERS , FEEDERS , DOWN COMER ,TANK INSULATION	MINERAL WOOL BLOCK ASTM C547, CL2	LOT	LOT		F		
404	BOILER PIPING INSULATION	MINERAL WOOL BLOCK ASTM C547, CL3	LOT	LOT		F		
	LAGGING							
405	BOILER DRUM INSULATION	FLAT ALUMINUM SHEET 1mm , ASTMB209	LOT	LOT		F		Helwan for Non Ferros (Fact. 63)
406	PENTHOUSE , FURNACE , WALL , BURNER BOX , INSULATION	RIBBED ALUMINUM SHEET 1mm , ASTMB210	LOT	LOT		F		The Aluminum Company of Egypt (EGYPTALUM)
407	DUCTS ,AIR HEATER ,FANS INSULATION	FLAT ALUMINUM SHEET 1mm , ASTMB211	LOT	LOT		F		Egyptian Copper Works
408	HEADERS , FEEDERS , DOWN COMER ,TANK INSULATION	FLAT ALUMINUM SHEET 1mm , ASTMB212	LOT	LOT		F		Kandil Industries
409	BOILER PIPING INSULATION	FLAT ALUMINUM SHEET 1mm , ASTMB213	LOT	LOT		F		

MECHANICAL EQUIPMENT LIST
ESTIMATED QUANTITY FOR 320MW STEAM TURBINE (EXCLUDING DESALINATION)
BASED ON SIDI KRIR & AYOUN MOUSSA

NO	EQUIPMENT DESCRIPTION	PERFORMANCE SPECIFICATION	. PER UNI	20 YRS. QTY	LOCALIZATION			POTENTIAL LOCAL MANUFACTURER
					ACT	FOR ECA	NA	
MISCELLANEOUS								
410	SERVICE AIR QUICK DISCONNECT	40mm, Bronze, Class 150, Threaded	45	2790		F		AOI
411	SILENCER OF LIVE STEAM VENT	3bar , 547C , 550mm DIA , A285-C	1	62		F		NOMP, AOI
412	SOOT BLOWERS (RETRAC TABLE)	C.S.	34	2108		F		Faik Industries
413	SH VESTIBULE SUPPORT	BASED ON LOAD	1	62		F		El Fateh Eng Indust.
414	LOWER DOWNCOMER UPPER & SUPPORT	BASED ON LOAD	2	124		F		Kandil Industries
415	FEEDER FRAME SUPPORT	BASED ON LOAD	5	310		F		Technological & Electrical Sys (TES)
416	ECON DISCHARGE PIPE SUPPORT	BASED ON LOAD	3	186		F		Sugar & Integrated Industries
417	ECON INLET HEADER SUPPORT	BASED ON LOAD	1	62		F		
418	CO2 EVAPORATOR FAN	0.4 KW	4	248		F		
419	CO2 PRESSURE REDUCER	TURBINE SUPPLIER SPECIFICATION	2	124		F		
420	DEMISTER	TURBINE SUPPLIER SPECIFICATION	1	62		F		
421	H2 DRIER BLOWER	TURBINE SUPPLIER SPECIFICATION	1	62		F		
422	H2 DRIER CHAMBER	TURBINE SUPPLIER SPECIFICATION	2	124		F		
423	H2 DRIER HEATER	5.2 KW	1	62		F		
424	GLAND STEAM CONDENSER	TURBINE SUPPLIER SPECIFICATION	1	62		F		
425	H2-PERSSURE CONTROLLER	TURBINE SUPPLIER SPECIFICATION	4	248		F		
426	HYDRAULIC SUPPLY RACK	15 KW	1	62		F		
427	LIGHTING SLIP RING COVER	0.02 KW	1	62		F		
428	OIL SEPARATOR	5700 L/HR , 20 KW	1	62		F		
429	MAIN CONDENSER	14079 M3 SURFACE AREA , TITANIUM TUBE	1	62	A			
430	BALL CLEANING SYSTEM BALL COLLECTOR	DIA1683 , A283-C , RUBBER LINED	2	124	A			
431	BALL CLEANING SYSTEM BALL CIRCULATING PUMP	TURBINE SUPPLIER SPECIFICATION	2	124	A			
432	BALL CLEANING SYSTEM SCREEN	TURBINE SUPPLIER SPECIFICATION	2	124	A			
433	BALL CLEANING SYSTEM EJECTOR	1181 X 60.3	2	124	A			
434	BOILER ELEVATOR	ACCORDING TO DESIGN	1	62		F		
435	CONTROL ROOM ELEVATOR	ACCORDING TO DESIGN	1	62		F		
INSPECTION GLASS								
436	INSPECTION GLASS	TURBINE SUPPLIER SPECIFICATION	1	62		F		
437	INSPECTION GLASS	TURBINE SUPPLIER SPECIFICATION	1	62		F		
438	INSPECTION GLASS	TURBINE SUPPLIER SPECIFICATION	1	62		F		
439	INSPECTION GLASS	TURBINE SUPPLIER SPECIFICATION	8	496		F		
PICK-OFF DISK								
440	PICK-OFF DISK	TURBINE SUPPLIER SPECIFICATION	1	62		F		

MECHANICAL EQUIPMENT LIST
ESTIMATED QUANTITY FOR 320MW STEAM TURBINE (EXCLUDING DESALINATION)
BASED ON SIDI KRIR & AYOUN MOUSSA

NO	EQUIPMENT DESCRIPTION	PERFORMANCE SPECIFICATION	PER UNI	20 YRS. QTY	LOCALIZATION			POTENTIAL LOCAL MANUFACTURER
					ACT	ECA	NA	
441	PICK-OFF DISK	TURBINE SUPPLIER SPECIFICATION	1	62		F		
442	PICK-OFF DISK	TURBINE SUPPLIER SPECIFICATION	1	62		F		
443	PICK-OFF DISK	TURBINE SUPPLIER SPECIFICATION	1	62		F		
444	PICK-OFF DISK	TURBINE SUPPLIER SPECIFICATION	1	62		F		