

PROJECT TITLE:			 GREEN CUBE IDEA ENGINEERING & MINING CO.		
TARAZ BITUMEN PLANT PROJECT					
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Electrical Load List	TRZ-EL-LI-617	1			
Electrical Load List					
01	15-Jun-2026	Issued for Approval	M.KARIMKHANI	h.ABHAJI	A.MOBARAKI
00	25-May-2026	Issued for Approval	M.KARIMKHANI	h.ABHAJI	A.MOBARAKI
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1: Tag Number of Equipment 2: Equipment Description 3: Type of the Load M = Motor Q = Electrical Panel Z = Electrical Heater (Ohmic Load) 4: Motor Speed 5: Operation Condition C = Continuous I = Intermittent S = Standby 6: Power Supply Category N = Normal E(GE) = Emergency (Gas Engine) E(DG) = Emergency (Diesel Generator) 7: Break Horse Power 8: API Factor 9: Required Output Power For Motors=BHP x API Factor 10: Installed Power For Motors=Standard Rating For Other Loads=Required Power	11: Voltage Level 12: Efficiency of the Load 13: Power Factor of the Load 14: Diversity Factor of the Load 1 for continuous loads 0.5-0.75 for intermittent loads 0 for standby loads 15: Rated Current = $\text{Required Power} \times 1000 / (\sqrt{3} \times \text{Voltage} \times \text{Efficiency} \times \text{Power Factor})$ 16: Relation of Starting Current to Running Current 17: Normal Absorbed Active Power = (Required Power x Diversity Factor) / Efficiency 18: Emergency Absorbed Active Power = (Required Power x Diversity Factor) / Efficiency 19: Absorbed Reactive Power = Normal Absorbed Power x TAN(ACOS(Power Factor))
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Electrical Load List						TRZ-EL-LI-617														1				
Item	REV	Equipment Tag	Equipment Description	Type	RPM	Operation			Supply Cat.		BHP Power (KW)	API Factor	Required Output Power (KW)	Installed Power (KW)	Voltage Level (V)	Eff.	Power Factor	Diversity Factor	Rated Current (A)	Starting Current (Times F.L. Current)	Network Required Active Power (KW) N	Network Required Active Power (KW) E(DG)	Network Required Reactive Power (KVAR)	Remark
						C	I	S	N	E (DG)														
		1	2	3	4	5			6		7	8	9	10	11	12	13	14	15	16	17	18	19	
1	1	P-201 A	BI / VB LOADING PUMP A	M	*	√			√	√	40	1.15	46	55	400	0.91	0.86	1	84.8	6	50.5	50.5	30.0	
2	1	P-201 B	BI / VB LOADING PUMP B	M	*			√	√	√	40	1.15	46	55	400	0.91	0.86	0	84.8	6	0.0	0.0	0.0	
3	1	P-202 A	BI / VB CIRCULATION PUMP A	M	*		√		√	√	41.9	1.15	48.185	55	400	0.91	0.80	0.7	95.5	6	37.1	37.1	27.8	
4	1	P-202 B	BI / VB CIRCULATION PUMP B	M	*			√	√	√	41.9	1.15	48.185	55	400	0.91	0.80	0	95.5	6	0.0	0.0	0.0	
5	1	P-101A	UNLOADING PUMP A	M	*	√			√	√	25.3	1.15	29.095	37	400	0.91	0.86	1	53.7	6	32.0	32.0	19.0	
6	1	P-101B	UNLOADING PUMP B	M	*	√			√	√	25.3	1.15	29.095	37	400	0.91	0.86	1	53.7	6	32.0	32.0	19.0	
7	1	P-101C	UNLOADING PUMP C	M	*			√		√	25.3	1.15	29.095	37	400	0.91	0.86	0	53.7	6	0.0	0.0	0.0	
8	1	P-203 A	REACTOR LOADING PUMP A	M	*	√			√	√	25.3	1.15	29.095	37	400	0.91	0.95	1	48.6	6	32.0	32.0	10.5	Starting with VFD
9	1	P-203 B	REACTOR LOADING PUMP B	M	*			√	√	√	25.3	1.15	29.095	37	400	0.91	0.95	0	48.6	6	0.0	0.0	0.0	Starting with VFD
10	1	P-301 A	REACTOR UNLOADING PUMP A	M	*	√			√	√	25.3	1.15	29.095	37	400	0.91	0.95	1	48.6	6	32.0	32.0	10.5	Starting with VFD
11	1	P-301 B	REACTOR UNLOADING PUMP B	M	*			√	√	√	25.3	1.15	29.095	37	400	0.91	0.95	0	48.6	6	0.0	0.0	0.0	Starting with VFD
12	1	PHB-101 A	PREHEATER BURNER A	Q	-	√			√	√	5	1.25	6.25	7.5	400	0.91	0.85	1	11.7	-	6.9	6.9	4.3	
13	1	PHB-101 B	PREHEATER BURNER B	Q	-			√	√	√	5	1.25	6.25	7.5	400	0.91	0.85	0	11.7	-	0.0	0.0	0.0	
14	1	INC -101	INCINERATOR	Q	-	√			√	√	0.5	-	0.5	0.75	400	0.91	0.85	1	0.9	-	0.5	0.5	0.3	
15	1	C-301 A	AIR COMPRESSOR A	Q	-	√			√		142	-	156.2	160	400	1.00	0.95	1	237.3	-	156.2	0.0	51.3	Starting with VFD
16	1	C-301 B	AIR COMPRESSOR B	Q	-	√			√		142	-	156.2	160	400	1.00	0.95	1	237.3	-	156.2	0.0	51.3	Starting with VFD
17	1	C-301 C	AIR COMPRESSOR C	Q	-			√	√		142	-	156.2	160	400	1.00	0.95	0	237.3	-	0.0	0.0	0.0	Starting with VFD
18	1	P-302 A	HOT OIL PUMP A	M	3000	√			√	√	60	1.1	66	75	400	0.90	0.85	1	124.5	6	73.3	73.3	45.4	
19	1	P-302 B	HOT OIL PUMP B	M	3000			√	√	√	60	1.1	66	75	400	0.90	0.85	0	124.5	6	0.0	0.0	0.0	
20	1	HB-301 A	Hot Oil Package A	Q	-	√			√	√	3.6	-	4	4	400	0.92	0.86	1	7.3	-	4.3	4.3	2.6	
21	1	HB-301 B	Hot Oil Package B	Q	-	√			√	√	3.6	-	4	4	400	0.92	0.86	1	7.3	-	4.3	4.3	2.6	
22	1	FWP-401 A	Fire Water Pump A	M	3000			√	√	√	29	1.15	33.35	37	400	0.91	0.89	0	59.4	6	0.0	0.0	0.0	
23	1	FWP-401 B	Fire Water Pump B	M	3000			√	√	√	29	1.15	33.35	37	400	0.91	0.89	0	59.4	6	0.0	0.0	0.0	
24	1	FP-401 A	Foam Pump A	M	3000			√	√	√	29	1.15	33.35	37	400	0.91	0.89	0	59.4	6	0.0	0.0	0.0	
25	1	FP-401 B	Foam Pump B	M	3000			√	√	√	29	1.15	33.35	37	400	0.91	0.89	0	59.4	6	0.0	0.0	0.0	
26	1	LP-01	LIGHTING PANEL FOR AREA	Q	-	√			√	√	10	-	10	10	400	1	0.90	1	16.0	-	10.0	10.0	4.8	
27	0	LP-02	LIGHTING PANEL FOR COMPRESSOR ROOM	Q	-	√			√	√	1	-	1	1	400	1	0.90	1	1.6	-	1.0	1.0	0.5	
28	0	LP-03	LIGHTING PANEL FOR SCALE ROOM	Q	-	√			√	√	2	-	2	2	400	1	0.90	1	3.2	-	2.0	2.0	1.0	
29	0	LP-04	LIGHTING PANEL FOR SUBSTATION AND CONTROL ROOM	Q	-	√			√	√	3	-	3	3	400	1	0.90	1	4.8	-	3.0	3.0	1.5	

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Item	REV	Equipment Tag	Equipment Description	Type	RPM	Operation			Supply Cat.		BHP Power (KW)	API Factor	Required Output Power (KW)	Installed Power (KW)	Voltage Level (V)	Eff.	Power Factor	Diversity Factor	Rated Current (A)	Starting Current (Times F.L. Current)	Network Required Active Power (KW) N	Network Required Active Power (KW) E(DG)	Network Required Reactive Power (KVAR)	Remark		
						C	I	S	N	E (DG)																
30	0	LP-05	LIGHTING PANEL FOR MAIN OFFICE	Q	-	√			√	√	5	-	5	5	400	1	0.90	1	8.0	-	5.0	5.0	2.4			
31	0	LP-06	LIGHTING PANEL FOR LABORATORY	Q	-	√			√	√	3	-	3	3	400	1	0.90	1	4.8	-	3.0	3.0	1.5			
32	0	A-201 UPS	AC UPS	Q	-	√				√	5	-	5	5	400	1	0.90	1	8.0	-	5.0	5.0	2.4			
33	1	DC-01	DC charger	Q	-	√				√	1	-	1	1	220	1	0.90	1	2.9	-	1.0	1.0	0.5			
34	0	CB-01	LV CAPACITOR BANK	Q	-	√			√		-	-	-	-	400	-	-	-	-	-	-	-	-150			

(*) Will be finalized.

	TOTAL REQUIRED POWER		TOTAL REQUIRED POWER WITH 20% SPARE	
Total Normal Active Power	647.4	KW	776.8	KW
Total Normal Reactive Power	288.7	KVAR	346.4	KVAR
Total Normal Apparent Power	708.8	KVA	850.6	KVA
Total Emergency Active Power for Diesel Generator	334.0	KW	400.7	KW
Total Emergency Reactive Power for Diesel Generator	186.0	KVAR	223.2	KVAR
Total Emergency Apparent Power for Diesel Generator	382.3	KVA	Real Power Factor for DG	0.87
Total Normal Reactive Power With Capacitor Bank	139.2	KVAR	Real Power Factor	0.91
Total Normal Apparent Power With Capacitor Bank	662.1	KVA	Improved Power Factor	0.98