

 <b>SNC • LAVALIN</b>	<b>REVISIONS</b>						DATA SHEET No.	
	REV	DATE	BY	CK	APP	ISSUED FOR	<b>507731-0000-47ED-0001</b>	
	00	2011-09-14	NB	CJR	CJR	Tender	PROJ. No. <b>507731</b>	REQ. No.
							P.O. No.	INQ. No.
<b>ELECTRICAL DATA SHEET</b>						Reference Specification No:		
<b>BATTERY CHARGER (125V DC, 30A DC) AND BATTERY BANK (125V DC, 125Ah)</b>						<b>507731-0000-47ES-0001</b>		
Prepared By: Navneet Bradoo		Checked By: Curtis Reimer		Approved By: Curtis Reimer		Client: CITY OF WINNIPEG		
<p>ISSUED FOR: <input type="checkbox"/> BUDGET PRICE    <input checked="" type="checkbox"/> FIRM QUOTATION    <input type="checkbox"/> PURCHASE    SUPPLIER: _____</p> <p>PROJ. NAME: <u>NEWPCC DC POWER SUPPLY</u>    OWNER'S EQUIP TAG No. : _____</p> <p style="padding-left: 100px;"><u>125V DC 30A, 120Ah DC Battery &amp; Charger System</u>    SERVICE: <u>125V DC POWER SUPPLY</u> <u>FOR 5kV SWITCHGEAR CONTROLS &amp; PROTECTION</u></p> <p>SITE: <u>NORTH END WATER POLLUTION CONTROL CENTRE</u>    MODEL : _____    SERIAL No. : _____ <u>WINNIPEG, MANITOBA</u></p> <p>WHERE REQUIREMENTS ARE NOT IDENTIFIED, THE CONTRACTOR SHALL ENSURE THAT THE EQUIPMENT MEETS ALL SPECIFIED REQUIREMENTS AND IS SUITABLE FOR THE APPLICATION</p>								
	DESCRIPTION	REQUIREMENTS	NOTES	Rev				
1								
2	<b>BATTERY CHARGER, GENERAL:</b>							
3	MANUFACTURER:							
4	CHARGER TYPE:	TEMPERATURE COMPENSATED						
5	OPERATING MODE UNDER NORMAL OPERATION	CONSTANT VOLTAGE						
6	OPERATING MODE UNDER OVERLOAD/LIMIT CONDITIONS	CURRENT LIMIT						
7	MODEL NUMBER:							
8	CERTIFICATION	CSA C22.2 No. 107.1/ C-UL						
9	NOISE	REQUIRED < 60dBA						
10	HEAT LOSS	CONTRACTOR TO SPECIFY						
11	FILTER CLASS	STANDARD						
12	BATTERY TYPE	VALVE REGULATED LEAD ACID						
13	EFFICIENCY	>90%						
14	<b>AC POWER INPUT:</b>							
15	VOLTAGE (V):	600V AC, 3 PHASE, ±10%						
16	AC INPUT BREAKER	3 POLE, 600V, 35KA INTERRUPTING MINIMUM. PROVIDE LOCK & TAG FACILITY						
17	BREAKER PROTECTION CURVES	CONTRACTOR TO SPECIFY						
18	AC INPUT TRIPPING IS REQUIRED ON RECTIFIER SCR /DIODE SHORTING	AC CB TRIP OR AC CONTACTOR TRIP OPTION IS REQUIRED						
19	AC MAX. CURRENT (A):	CONTRACTOR TO SPECIFY						
20	AC INPUT CABLE SIZE	CONTRACTOR TO SPECIFY						
21	FREQUENCY(HZ):	60 ±5%						
22	PHASES :	THREE PHASE						
23	NEUTRAL:	NOT REQUIRED/ NOT AVAILABLE						
24	AC INPUT SURGE SUPPRESSION	NOT REQUIRED						
25	AC WIRING INSULATION RATING	600V AC						
26								
27	<b>DC OUTPUT</b>	125V DC						
28	MIN. VOLTAGE (V):	115V						
29	MAX VOLTAGE	135V						
30	FLOAT (V):	85% TO 130% OF RATED						
31	BOOST CHARGE	REQUIRED						
32	EQUALIZE (V):	CONTRACTOR TO SPECIFY						
33	BATTERY CHARGER DC CURRENT OUTPUT (A):	<b>30A DC</b>						
34	BATTERY CHARGER MINMUM CURRENT (A):	CONTRACTOR TO SPECIFY						
35	BATTERY CHARGER MAXIMUM DC CURRENT (A): (110%)	MINIMUM 110%						
36	DC OUTPUT FILTER RIPPLE	<2%						
37	DC VOLT REGULATION	±0.5% (0-100% LOAD) TEMPERATURE COMPENSATED						
38	INPUT/OUTPUT ISOLATION	1500V DC INPUT/OUTPUT & GROUND						
39	DC SURGE SUPPRESSION	REQUIRED						
40	SOFTSTART	REQUIRED						
41	REVERSE BATTERY PROTECTION	REQUIRED						
42	AUTOMATIC CURRENT LIMIT	REQUIRED						
43	DC WIRING VOLTAGE RATING	600V						
44								
45	<b>DC LOAD FEEDERS (BREAKERS):</b>							
46	NO OF OUTGOING LOAD FEEDING CIRCUIT BREAKERS	2 (ONE FOR DC DISTRIBUTION PANELBOARD AND OTHER FOR SPARE)						
47	MANUFACTURER:							
48	MODEL:							

49	BREAKER PROTECTION CURVES	CONTRACTOR TO SPECIFY	
50	NO OF POLES:	2 POLES/ EACH BREAKER	
51	VOLTS (DC):	250 V DC	
52	NOMINAL RATING (A):	225A DC	
53	DC INTERRUPTING CAPACITY (DC kA):	10kA	
54			
55	<b>BATTERY ISOLATING CIRCUIT BREAKER</b>		
56	MANUFACTURER:		
57	MODEL:		
58	BREAKER PROTECTION CURVES	CONTRACTOR TO SPECIFY	
59	NO OF POLES:	2 POLE	
60	VOLTS (VDC):	250V DC	
61	CAPACITY NOMINAL (A):	225 A DC OR AS PER CONTRACTOR RECOMMENDATION	
62	LOCK & TAG FACILITY	REQUIRED	
63	CB INTERRUPTING CAPACITY (KA):	10kA DC OR PER CONTRACTOR RECOMMENDATION	
64	LOCATION INSTALLED	IN BATTERY CHARGER	
65			
66	<b>BATTERY:</b>		
67	MANUFACTURER:		
68	BATTERY TYPE	VALVE REGULATED LEAD ACID (VRLA)	
69	CELL TYPE	ABSORBED GLASS MAT (AGM) OR GEL TYPE (OPTION)	
70	BATTERY DESIGN LIFE	25 yr at 25°C	
71	MODEL:		
72	TOTAL REQUIRED AH CAPACITY	125Ah @ 8h at 25°C	
73	BATTERY INTERNAL RESISTANCE DATA	REQUIRED	
74	BATTERY ELECTRIC AND SHORT CIRCUIT DATA	REQUIRED	
75	CONTINUOUS LOAD	9 A (SEE ENGINEERING NOTE-1 BELOW)	
76	PEAK LOADS / TIME	SEE ENGINEERING NOTE-1 BELOW	
77	NO OF CELLS	CONTRACTOR TO SPECIFY	
78	NO OF BLOCS	CONTRACTOR TO SPECIFY	
79	BATTERY STANDBY/BACK UP TIME (HR.)	10 HOURS	
80	BATTERY RECHARGE TIME (HR.)	8 HOURS	
81	BATTERY ENCLOSURE	REQUIRED VENTED	
82	BATTERY GASSING DATA	CONTRACTOR TO SPECIFY	
83			
84	<b>SYSTEM CABINET :</b>		
85	CHARGER ENCLOSURE:	NEMA-12	
86	OPERATION & MAINTENANCE ACCESS	PROVIDE REQUIRED CLEARANCES (FRONT, REAR & SIDES)	
87	CABLE ENTRY / EXIT	TOP AND BOTTOM	
88	TYPE	INDOOR (NEMA/EEMAC TYPE 12)	
89	SPECIAL PAINT COATINGS	RUST & CORROSION RESISTANT	
90	COLOUR EXTERIOR	ASA 61 LIGHT GRAY	
91	COLOUR INTERIOR	WHITE	
92	HEIGHT (MM):	PROVIDE	
93	LONG (MM):	PROVIDE	
94	DEPTH (MM):	PROVIDE	
95	STEEL GAUGE (MM):	PROVIDE	
96	SHIPPING SPLITS	PROVIDE	
97	GROUND PAD	REQUIRED	
98	BASE SUPPORT & MOUNTING CHANNEL	REQUIRED	
99	TOTAL CHARGER & BATTERY WEIGHT (KG/LB):	REQUIRED	
100	BATTERY STACK WEIGHT (KG/LB)	REQUIRED	
101			
102	<b>PAINTING</b>		
103	PAINT PROCESS	CONTRACTOR TO SPECIFY	
104	PRE-CLEANING	CONTRACTOR TO SPECIFY	
105	PHOSPHATIZING	CONTRACTOR TO SPECIFY	
106	PRIMER COAT	CONTRACTOR TO SPECIFY	
107	FINISH COAT	CONTRACTOR TO SPECIFY	
108	INTERIOR FINISH	WHITE	
109	EXTERIOR FINISH	MANUFACTURERS STANDARD GREY	
110			
111	<b>METERING &amp; MONITORING:</b>		
112	AC VOLTMETER	REQUIRED	
113	AC ON (GREEN LED)	REQUIRED	
114	CURRENT LIMIT (LED)	REQUIRED	
115	DC REGULATION (LED)	REQUIRED	
116	FLOAT	REQUIRED	
117	EQUALIZE	REQUIRED	
118	BOOST	REQUIRED	
119	DC VOLTMETER ON DC RECTIFIER OUTPUT	REQUIRED	
120	DC BATTERY VOLTMETER CONNECTED TO BATTERY TERMINALS	REQUIRED	
121	DC LOAD AMMETER TO MEASURE DC LOAD CURRENT	REQUIRED	
122			
123	<b>ALARMS:</b>		
124	AC FAIL ALARM & RELAY CONTACT	REQUIRED	
125	RECTIFIER FAILURE ALARM & RELAY CONTACT	REQUIRED	
126	DC HI VOLTAGE ALARM & RELAY CONTACT	REQUIRED	
127	DC LOW VOLTAGE ALARM & RELAY CONTACT	REQUIRED	
128	DC GROUND FAULT ALARM & RELAY CONTACT	REQUIRED	
129			

130	<b>BATTERY TEST SWITCH</b>				
131	"BATTERY TEST" KEY LOCKED PUSH BUTTON		REQUIRED		
132	AUTO TRANSFER DC LOAD TO BATTERY ON TEST (WITHOUT CHARGER LOADED)		REQUIRED		
133	BATTERY DISCHARGE MONITORING TILL END OF DISCHARGE VOLTAGE SETTING		REQUIRED		
134	BATTERY CHARGER KICKING-IN AND RESUMING NORMAL OPERATION AT END OF DISCHARGE BATTERY VOLTAGE LIMIT SETTING		REQUIRED		
135	RESETTABLE ELAPSED TIME HR-METER TO RECORD BATTERY TIME DURATION (LOAD STANDBY TIME)		REQUIRED		
136					
137	<b>SITE CONDITIONS:</b>				
138	AMBIENT TEMPERATURE MIN/MAX (°C)		10°C TO 30°C		
139	RELATIVE HUMIDITY		<90%		
140	ELEVATION (m)		<1000 M		
141	LOCATION (INDOOR/OUTDOOR)		INDOOR		
142	AIRBORNE CONTAMINANTS (GASES/SAND/DUST/SALT)		INDOORS - NOT APPLICABLE		
143	TROPICALIZATION		NOT REQUIRED		
144	SEISMIC UBC ZONE		NOT REQUIRED		
145	UNUSUAL CONDITIONS (EXTREME HUMIDITY/ SOLAR/ETC.)		-50°C TEMP OUTDOORS		
146	COOLING		NATURAL CONVECTION		
147					
148	<b>APPLICABLE STANDARDS:</b>				
149	CSA C22.2 No. 107.2-01		REQUIRED		
150	IEEE 946-2004		REQUIRED		
151	ANSI / UL 94-96 (R01)		REQUIRED		
152					
153	<b>NAMEPLATES:</b>				
154	NAMEPLATE		REQUIRED		
155	OTHER		CSA ENCLOSURE		
156					
157	<b>CONNECTIONS AND WIRING</b>				
158	WIRING		REQUIRED		
159	COM PORT (MODBUS RTU, MODBUS TCP OVER ETHERNET, DNP3)		MODBUS TCP OVER ETHERNET		
160	INSTRUCTION MANUAL FOR COMMUNICATIONS PROGRAMMING & SETUP		REQUIRED		
161	MODBUS USER MANUAL		REQUIRED		
162	MODBUS I/O MAPPING FOR ALL STATUS, ALARMS ETC FROM BATTERY CHARGER		REQUIRED		
163					
164	<b>TESTING:</b>				
165	FACTORY TESTING		REQUIRED AS SPECIFIED		
166	BATTERY LOAD TESTING (PROVIDE DETAILS)		REQUIRED AS SPECIFIED		
167					
168	<b>RENEWAL FREQUENCY DATA (YRS OR HRS)</b>				
169	COOLING FAN (IF USED)		DATA BY VENDOR		
170	AIR FILTERS (IF USED)		DATA BY VENDOR		
171	ELECTROLYTIC CAPACITORS OR CIRCUIT BOARD CAPACITORS		DATA BY VENDOR		
172					
173	<b>SPARES</b>				
175	DC CIRCUIT BREAKER (1)		REQUIRED		
176	RELAY CONTROL BOARD (1)		REQUIRED		
177	FUSES (2 SETS OF ALL TYPES & RATINGS)		REQUIRED		
178	BATTERY TEMPERATURE MONITORING PROBE (1)		REQUIRED		
179	INTER-CELL CONNECTORS, NUTS & BOLTS (2)		REQUIRED		
180	INTER-TIER CONNECTORS, NUTS & BOLTS (2)		REQUIRED		
181	INPUT FILTER (1)		REQUIRED		
182	OUTPUT FILTER (1)		REQUIRED		
184					
185	<b>OTHER REQUIREMENTS</b>				
186	VENDOR SITE INSTALLATION ASSISTANCE PRESENCE VISIT PRICING OPTION (1 DAY)		REQUIRED		
187	VENDOR SITE VISIT TESTING & COMMISSIONING ASSISTANCE PRESENCE PRICING OPTION (1 DAY)		REQUIRED		
188	PROVIDE O&M MANUALS		REQUIRED		
189	VENDOR SITE VISIT FOR TRAINING SERVICES INCLUDING PROVIDING TRAINING MANUALS AND AIDS (4 HOURS)		REQUIRED		
190					
194					
195	<b>ENGINEERING NOTES:</b>				
196	<b>NOTE-1</b>	<b>BATTERY LOAD CYCLE</b>			
197	A-1	55.12 A for 0.15s	A-6		
198	A-2	9A cont load for 10hr	A-7		
199	A-3	84A for 15s	A-8		
200	A-4	9A for 60s	A-9		
201	A-5	54A for 15s	A-10		
202					