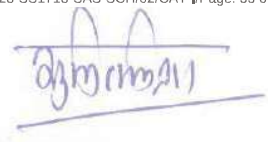
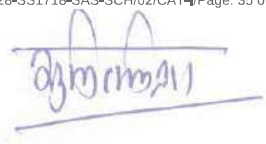


220kV REACTOR							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
70	GIB COMP. GD7 GAS PRESSURE LOW 1ST STAGE-(B PH)	BCU	X	-	-	-	SPS
71	GIB COMP. GD7 GAS PRESSURE LOW 2ND STAGE-(R,Y,B PH)	BCU	X	-	-	-	SPS
72	GIB COMP. GD7 GAS PRESSURE LOW 3RD STAGE-(R,Y,B PH)	BCU	X	-	-	-	SPS
73	GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
74	GAB COMP. GD8 GAS PRESSURE LOW 1ST STAGE-(Y PH)	BCU	X	-	-	-	SPS
75	GAB COMP. GD8 GAS PRESSURE LOW 1ST STAGE-(B PH)	BCU	X	-	-	-	SPS
76	GAB COMP. GD8 GAS PRESSURE LOW 2ND STAGE-(R,Y,B PH)	BCU	X	-	-	-	SPS
77	GAB COMP. GD8 GAS PRESSURE LOW 3RD STAGE-(R,Y,B PH)	BCU	X	-	-	-	SPS
78	MAIN BUS-I GD15 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
79	MAIN BUS-I GD15 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
80	MAIN BUS-I GD15 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
81	MAIN BUS-I GD15 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
82	MAIN BUS-I GD15 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
83	MAIN BUS-II GD16 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
84	MAIN BUS-II GD16 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
85	MAIN BUS-II GD16 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
86	MAIN BUS-II GD16 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
87	MAIN BUS-II GD16 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
88	L/R SWITCH IN LOCAL MODE	BCU	X	-	-	-	SPS
89	N/M SWITCH IN MAINTENACE MODE	BCU	X	-	-	-	SPS
90	N/M SWITCH IN NORMAL MODE	BCU	X	-	-	-	SPS
91	DC-1 SUPPLY FAIL	BCU	X	-	-	-	SPS
92	DC-2 SUPPLY FAIL	BCU	X	-	-	-	SPS
93	DCDB-2 SUPPLY FAIL	BCU	X	-	-	-	SPS
94	DCDB-1 SUPPLY FAIL	BCU	X	-	-	-	SPS
95	DS/ES ABNORMAL CIRCUIT SUPERVISION STATUS	BCU	X	-	-	-	SPS
96	DC-1 FAIL	BCU	X	-	-	-	SPS
97	DC SOURCE-2 FAIL	BCU	X	-	-	-	SPS
98	CB TC-1 FAULTY	BCU	X	-	-	-	SPS
99	CB TC-2 FAULTY	BCU	X	-	-	-	SPS
100	MANUAL CB OPENALARM	BCU	X	-	-	-	SPS
101	MANUAL CB CLOSEALARM	BCU	X	-	-	-	SPS
102	IRF-PU	BCU	X	-	-	-	SPS
103	CB CLOSE COMMAND TO B/B MAIN-1 PU	BCU	-	X	-	-	SPC
104	CB CLOSE COMMAND TO CLOSING CKT	BCU	-	X	-	-	SPC
105	CB TRIP COMMANDTC TC-1	BCU	-	X	-	-	SPC
106	CB TRIP COMMANDTC TC-2	BCU	-	X	-	-	SPC
107	TRIP RELAY 86A RESET	BCU	-	X	-	-	SPC
108	TRIP RELAY 86B RESET	BCU	-	X	-	-	SPC
109	DISCONNECTOR 89A CLOSE COMMAND	BCU	-	X	-	-	DPC
110	DISCONNECTOR 89A OPEN COMMAND	BCU	-	X	-	-	
111	DISCONNECTOR 89B CLOSE COMMAND	BCU	-	X	-	-	DPC
112	DISCONNECTOR 89B OPEN COMMAND	BCU	-	X	-	-	
113	DISCONNECTOR 89L CLOSE COMMAND	BCU	-	X	-	-	DPC
114	DISCONNECTOR 89L OPEN COMMAND	BCU	-	X	-	-	
115	EARTH SWITCH ESA OPEN COMMAND	BCU	-	X	-	-	DPC
116	EARTH SWITCH ESA CLOSE COMMAND	BCU	-	X	-	-	
117	EARTH SWITCH ESB OPEN COMMAND	BCU	-	X	-	-	DPC
118	EARTH SWITCH ESB CLOSE COMMAND	BCU	-	X	-	-	
119	EARTH SWITCH 89ESL OPEN COMMAND	BCU	-	X	-	-	DPC
120	EARTH SWITCH 89ESL CLOSE COMMAND	BCU	-	X	-	-	
121	POLE DISCREPANCY -1 RESET	BCU	-	X	-	-	SPC
122	POLE DISCREPANCY -2 RESET	BCU	-	X	-	-	SPC
123	75A SELECT	BCU	-	X	-	-	SPC
124	75A DESELECT	BCU	-	X	-	-	SPC
125	75B SELECT	BCU	-	X	-	-	SPC
126	75B DESELECT	BCU	-	X	-	-	SPC
127	R PHASE VOLTAGE	BCU	-	-	-	X	MV
128	B PHASE VOLTAGE	BCU	-	-	-	X	MV
129	Y PHASE VOLTAGE	BCU	-	-	-	X	MV
130	R PHASE CURRENT	BCU	-	-	-	X	MV
131	B PHASE CURRENT	BCU	-	-	-	X	MV
132	Y PHASE CURRENT	BCU	-	-	-	X	MV
133	RB LINE VOLTAGE	BCU	-	-	-	X	MV
134	BY LINE VOLTAGE	BCU	-	-	-	X	MV
135	YR LINE VOLTAGE	BCU	-	-	-	X	MV
136	FREQUENCY	BCU	-	-	-	X	MV
137	ACTIVE POWER	BCU	-	-	-	X	MV
138	REACTIVE POWER	BCU	-	-	-	X	MV

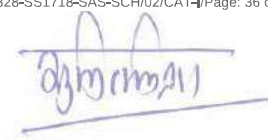


220kV REACTOR							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
139	APPARENT POWER	BCU	-	-	-	X	MV
140	POWER FACTOR	BCU	-	-	-	X	MV
141	64R FAULTY	87T	X	-	-	-	SPS
142	64 OPTD	87T	X	-	-	-	SPS
143	86A OPTD	87T	X	-	-	-	SPS
144	86B OPTD	87T	X	-	-	-	SPS
145	86A SUPVN	87T	X	-	-	-	SPS
146	MAIN CB CLOSED	87T	X	-	-	-	SPS
147	MAIN CB OPEN	87T	X	-	-	-	SPS
148	LV MAIN CB OPEN	87T	X	-	-	-	SPS
149	LV LBB OPTD	87T	X	-	-	-	SPS
150	LV TBC OPEN	87T	X	-	-	-	SPS
151	LV TBC LBB OPTD	87T	X	-	-	-	SPS
152	OCEF OPTD	87T	X	-	-	-	SPS
153	21 FAULTY	87T	X	-	-	-	SPS
154	OTI ALARM	87T	X	-	-	-	SPS
155	BUCH. TRIP	87T	X	-	-	-	SPS
156	PRV-1 TRIP	87T	X	-	-	-	SPS
157	PRV-2 TRIP	87T	X	-	-	-	SPS
158	PNRV TRIP	87T	X	-	-	-	SPS
159	WTI TRIP	87T	X	-	-	-	SPS
160	SPR TRIP	87T	X	-	-	-	SPS
161	87T FAULTY	64R	X	-	-	-	SPS
162	BUCH. TRIP	64R	X	-	-	-	SPS
163	PRV-1 TRIP	64R	X	-	-	-	SPS
164	PRV-2 TRIP	64R	X	-	-	-	SPS
165	WTI TRIP	64R	X	-	-	-	SPS
166	OTI TRIP	64R	X	-	-	-	SPS
167	BUCHHOLZ ALARM	21	X	-	-	-	SPS
168	MOG LOW ALARM	21	X	-	-	-	SPS
169	MOG HIGH ALARM	21	X	-	-	-	SPS
170	AIR CELL RAPTURE RELAY ALARM	21	X	-	-	-	SPS
171	86B OPTD	21	X	-	-	-	SPS
172	86B SUPVN	21	X	-	-	-	SPS
173	87T OPTD	21	X	-	-	-	SPS
174	WTI ALARM	21	X	-	-	-	SPS

220kV BUSCOUPLER							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
1	CB-R-PHASE OPEN	BCU	X	-	-	-	DPS
2	CB-R-PHASE CLOSED	BCU	X	-	-	-	
3	CB-Y-PHASE OPEN	BCU	X	-	-	-	
4	CB-Y-PHASE CLOSED	BCU	X	-	-	-	DPS
5	CB-B-PHASE OPEN	BCU	X	-	-	-	
6	CB-B-PHASE CLOSED	BCU	X	-	-	-	
7	CB POSITION	BCU	-	X	-	-	DPS
8	DISCONNECTOR 89A OPEN	BCU	X	-	-	-	DPS
9	DISCONNECTOR 89A CLOSE	BCU	X	-	-	-	
10	DISCONNECTOR 89B OPEN	BCU	X	-	-	-	
11	DISCONNECTOR 89B CLOSE	BCU	X	-	-	-	DPS
12	EARTH SWITCH ESA OPEN	BCU	X	-	-	-	
13	EARTH SWITCH ESA CLOSE	BCU	X	-	-	-	
14	EARTH SWITCH ESB OPEN	BCU	X	-	-	-	DPS
15	EARTH SWITCH ESB CLOSE	BCU	X	-	-	-	
16	EARTH SWITCH 200-89AE OPEN	BCU	X	-	-	-	
17	EARTH SWITCH 200-89AE CLOSE	BCU	X	-	-	-	DPS
18	EARTH SWITCH 200-89BE OPEN	BCU	X	-	-	-	
19	EARTH SWITCH 200-89BE CLOSE	BCU	X	-	-	-	
20	VT-I R-PHASE ISLOATOR OPEN	BCU	X	-	-	-	DPS
21	VT-I R-PHASE ISLOATOR CLOSE	BCU	X	-	-	-	
22	VT-I Y-PHASE ISLOATOR OPEN	BCU	X	-	-	-	
23	VT-I Y-PHASE ISLOATOR CLOSE	BCU	X	-	-	-	DPS
24	VT-I B-PHASE ISLOATOR OPEN	BCU	X	-	-	-	
25	VT-I B-PHASE ISLOATOR CLOSE	BCU	X	-	-	-	
26	VT-II R-PHASE ISLOATOR OPEN	BCU	X	-	-	-	DPS
27	VT-II R-PHASE ISLOATOR CLOSE	BCU	X	-	-	-	
28	VT-II Y-PHASE ISLOATOR OPEN	BCU	X	-	-	-	
29	VT-II Y-PHASE ISLOATOR CLOSE	BCU	X	-	-	-	DPS
30	VT-II B-PHASE ISLOATOR OPEN	BCU	X	-	-	-	
31	VT-II B-PHASE ISLOATOR CLOSE	BCU	X	-	-	-	
32	CB SPRING EXCESSIVE RUNTIME (R-PH)	BCU	X	-	-	-	SPS
33	CB SPRING EXCESSIVE RUNTIME (Y-PH)	BCU	X	-	-	-	SPS
34	CB SPRING EXCESSIVE RUNTIME (B-PH)	BCU	X	-	-	-	SPS
35	CB MOTOR FAIL(R-PH)	BCU	X	-	-	-	SPS
36	CB MOTOR FAIL(Y-PH)	BCU	X	-	-	-	SPS
37	CB MOTOR FAIL(B-PH)	BCU	X	-	-	-	SPS
38	CB SPRING CHARGED(R-PH)	BCU	X	-	-	-	SPS
39	CB SPRING CHARGED(Y-PH)	BCU	X	-	-	-	SPS
40	CB SPRING CHARGED(B-PH)	BCU	X	-	-	-	SPS
41	POLE DISCREPANCY OPTD.-1	BCU	X	-	-	-	SPS
42	POLE DISCREPANCY OPTD.-2	BCU	X	-	-	-	SPS
43	CB COMP. GD1 GAS PRESSURE LOW 1ST STAGE ALARM -(R PH)	BCU	X	-	-	-	SPS
44	CB COMP. GD1 GAS PRESSURE LOW 1ST STAGE ALARM -(Y PH)	BCU	X	-	-	-	SPS
45	CB COMP. GD1 GAS PRESSURE LOW 1ST STAGE ALARM -(B PH)	BCU	X	-	-	-	SPS
46	CB COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(R PH)	BCU	X	-	-	-	SPS
47	CB COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(Y PH)	BCU	X	-	-	-	SPS
48	CB COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(B PH)	BCU	X	-	-	-	SPS
49	CB COMP. GD1 GAS PRESSURE LOW 3RD STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
50	CB COMP. GD1 GAS PRESSURE LOW 3RD STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
51	CB COMP. GD1 GAS PRESSURE LOW 3RD STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
52	CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
53	CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
54	CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
55	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
56	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
57	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
58	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
59	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
60	89B/ESB COMP. GD3 GAS PRESS. LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
61	89B/ESB COMP. GD3 GAS PRESS. LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
62	89B/ESB COMP. GD3 GAS PRESS. LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
63	89B/ESB COMP. GD3 GAS PRESS. LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
64	89B/ESB COMP. GD3 GAS PRESS. LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
65	ESA COMP. GD4 GAS PRESS. LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
66	ESA COMP. GD4 GAS PRESS. LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
67	ESA COMP. GD4 GAS PRESS. LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
68	ESA COMP. GD4 GAS PRESS. LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
69	ESA COMP. GD4 GAS PRESS. LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS

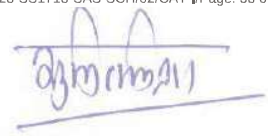


220kV BUSCOUPLER							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
70	BUFFER COMP. GD5 GAS PRESS. LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
71	BUFFER COMP. GD5 GAS PRESS. LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
72	BUFFER COMP. GD5 GAS PRESS. LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
73	BUFFER COMP. GD5 GAS PRESS. LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
74	BUFFER COMP. GD5 GAS PRESS. LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
75	CTA COMP. GD6 GAS PRESS. LOW1ST STAGE (GAS REFILL)-(R PH)	BCU	X	-	-	-	SPS
76	CTA COMP. GD6 GAS PRESS. LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
77	CTA COMP. GD6 GAS PRESS. LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
78	CTA COMP. GD6 GAS PRESS. LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
79	CTA COMP. GD6 GAS PRESS. LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
80	200-ESA COMP. GD9 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
81	200-ESA COMP. GD9 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
82	200-ESA COMP. GD9 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
83	200-ESA COMP. GD9 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
84	200-ESA COMP. GD9 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
85	VT - I COMP. GD10 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
86	VT - I COMP. GD10 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
87	VT - I COMP. GD10 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
88	VT - I COMP. GD10 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH) ≤ 0.51 MPa	BCU	X	-	-	-	SPS
89	VT - I COMP. GD10 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH) ≤ 0.50 MPa	BCU	X	-	-	-	SPS
90	200-ESB COMP. GD11 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
91	200-ESB COMP. GD11 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
92	200-ESB COMP. GD11 GAS PRESSURE LOW1ST STAGE-(B PH)	BCU	X	-	-	-	SPS
93	200-ESB COMP. GD11 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
94	200-ESB COMP. GD11 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
95	VT - II COMP. GD12 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
96	VT - II COMP. GD12 GAS PRESSURE LOW1ST STAGE-(Y PH)	BCU	X	-	-	-	SPS
97	VT - II COMP. GD12 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
98	VT - II COMP. GD12 GAS PRESSURE LOW2ND STAGE-(R,Y,B PH)	BCU	X	-	-	-	SPS
99	VT - II COMP. GD12 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
100	MAIN BUS-I BUFFER COMP. GD21 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
101	MAIN BUS-I BUFFER COMP. GD21 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
102	MAIN BUS-I BUFFER COMP. GD21 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
103	MAIN BUS-I BUFFER COMP. GD21 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
104	MAIN BUS-I BUFFER COMP. GD21 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
105	MAIN BUS-II BUFFER COMP. GD22 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
106	MAIN BUS-II BUFFER COMP. GD22 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
107	MAIN BUS-II BUFFER COMP. GD22 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
108	MAIN BUS-II BUFFER COMP. GD22 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
109	MAIN BUS-II BUFFER COMP. GD22 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
110	MAIN BUS-I BUFFER COMP. GD19 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
111	MAIN BUS-I BUFFER COMP. GD19 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
112	MAIN BUS-I BUFFER COMP. GD19 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
113	MAIN BUS-I BUFFER COMP. GD19 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
114	MAIN BUS-I BUFFER COMP. GD19 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
115	MAIN BUS-II BUFFER COMP. GD20 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
116	MAIN BUS-II BUFFER COMP. GD20 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
117	MAIN BUS-II BUFFER COMP. GD20 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
118	MAIN BUS-II BUFFER COMP. GD20 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
119	MAIN BUS-II BUFFER COMP. GD20 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
120	L/R SWITCH IN LOCAL MODE	BCU	X	-	-	-	SPS
121	N/M SWITCH IN NORMAL MODE	BCU	X	-	-	-	SPS
122	N/M SWITCH IN MAINTENANCE MODE	BCU	X	-	-	-	SPS
123	DC-1 SUPPLY FAIL	BCU	X	-	-	-	SPS
124	DC-2 SUPPLY FAIL	BCU	X	-	-	-	SPS
125	DCDB-2 SUPPLY FAIL	BCU	X	-	-	-	SPS
126	DCDB-1 SUPPLY FAIL	BCU	X	-	-	-	SPS
127	VT-II MCB STATUS	BCU	X	-	-	-	SPS
128	VT-I MCB STATUS	BCU	X	-	-	-	SPS
129	DS/ES ABNORMAL CIRCUITSUPERVISION STATUS	BCU	X	-	-	-	SPS
130	DC-1 FAIL	BCU	X	-	-	-	SPS
131	DC-2 FAIL	BCU	X	-	-	-	SPS
132	CB TC-1 FAULTY	BCU	X	-	-	-	SPS
133	CB TC-2 FAULTY	BCU	X	-	-	-	SPS
134	PU RELAY FAULTY	BCU	X	-	-	-	SPS
135	CB MANUAL CLOSE	BCU	X	-	-	-	SPS
136	CB MANUAL TRIP	BCU	X	-	-	-	SPS
137	MAIN BUS-I BUFFER COMP. GD19 GAS PRESSURE LOW1ST STAGE-(RPH)	BCUM	X	-	-	-	SPS
138	MAIN BUS-I BUFFER COMP. GD19 GAS PRESSURE LOW1ST STAGE-(Y PH)	BCUM	X	-	-	-	SPS



220kV BUSCOUPLER							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
139	MAIN BUS-I BUFFERCOMP. GD19 GASPRESSURE LOW 1STSTAGE-(BPH)	BCUM	X	-	-	-	SPS
140	MAIN BUS-I BUFFERCOMP. GD19 GASPRESSURE LOW 2NDSTAGE-(R,Y,BPH)	BCUM	X	-	-	-	SPS
141	MAIN BUS-II BUFFER COMP.GD20 GAS PRESSURE LOW1ST STAGE-(RPH)	BCUM	X	-	-	-	SPS
142	MAIN BUS-II BUFFER COMP.GD20 GAS PRESSURE LOW1ST STAGE-(YPH)	BCUM	X	-	-	-	SPS
143	MAIN BUS-IIBUFFERCOMP.GD20 GASPRESSURELOW1STSTAGE-(BPH)	BCUM	X	-	-	-	SPS
144	MAIN BUS-II BUFFERCOMP. GD20 GASPRESSURE LOW 2NDSTAGE-(R,Y,BPH)	BCUM	X	-	-	-	SPS
145	L/R SWITCH IN LOCALMODE	BCUM	X	-	-	-	SPS
146	N/M SWITCH IN NORMALMODE	BCUM	X	-	-	-	SPS
147	N/M SWITCH IN MAINTENACEMODE	BCUM	X	-	-	-	SPS
148	DC-1 SUPPLY FAIL	BCUM	X	-	-	-	SPS
149	DC-2 SUPPLY FAIL	BCUM	X	-	-	-	SPS
150	DCDB-2 SUPPLY FAIL	BCUM	X	-	-	-	SPS
151	DCDB-1 SUPPLY FAIL	BCUM	X	-	-	-	SPS
152	VT-II MCB STATUS	BCUM	X	-	-	-	SPS
153	VT-I MCB STATUS	BCUM	X	-	-	-	SPS
154	DS/ES ABNORMALCIRCUIT SUPERVISIONSTATUS	BCUM	X	-	-	-	SPS
155	PU RELAY OPTD	BCUM	X	-	-	-	SPS
156	PU RELAY FAULTY	BCUM	X	-	-	-	SPS
157	LBB PROT.N. OPTD	BCUM	X	-	-	-	SPS
137	CB CLOSE COMMAND TO B/B MAIN-1 PU	BCU	-	-	X	-	SPC
138	CB CLOSE COMMAND TO CLOSING CKT	BCU	-	-	X	-	SPC
139	CB TRIP COMMANDTC TC-1	BCU	-	-	X	-	SPC
140	CB TRIP COMMANDTC TC-2	BCU	-	-	X	-	SPC
141	TRIP RELAY 86A RESET	BCU	-	-	X	-	SPC
142	TRIP RELAY 86B RESET	BCU	-	-	X	-	SPC
143	DISCONNECTOR 89A CLOSE COMMAND	BCU	-	-	X	-	DPC
144	DISCONNECTOR 89A OPEN COMMAND	BCU	-	-	X	-	
145	DISCONNECTOR 89B CLOSE COMMAND	BCU	-	-	X	-	DPC
146	DISCONNECTOR 89B OPEN COMMAND	BCU	-	-	X	-	
147	EARTH SWITCH ESA OPEN COMMAND	BCU	-	-	X	-	DPC
148	EARTH SWITCH ESA CLOSE COMMAND	BCU	-	-	X	-	
149	EARTH SWITCH ESB OPEN COMMAND	BCU	-	-	X	-	DPC
150	EARTH SWITCH ESB CLOSE COMMAND	BCU	-	-	X	-	
151	EARTH SWITCH 200-ESA OPEN COMMAND	BCU	-	-	X	-	DPC
152	EARTH SWITCH 200-ESA CLOSE COMMAND	BCU	-	-	X	-	
153	EARTH SWITCH 200-ESB OPEN COMMAND	BCU	-	-	X	-	DPC
154	EARTH SWITCH 200-ESB CLOSE COMMAND	BCU	-	-	X	-	
155	POLE DISCREPANCY -1 RESET	BCU	-	-	X	-	SPC
156	POLE DISCREPANCY -2 RESET	BCU	-	-	X	-	SPC
157	R PHASE VOLTAGE	BCU	-	-	-	X	MV
158	B PHASE VOLTAGE	BCU	-	-	-	X	MV
159	Y PHASE VOLTAGE	BCU	-	-	-	X	MV
160	R PHASE CURRENT	BCU	-	-	-	X	MV
161	B PHASE CURRENT	BCU	-	-	-	X	MV
162	Y PHASE CURRENT	BCU	-	-	-	X	MV
163	RB LINE VOLTAGE	BCU	-	-	-	X	MV
164	BY LINE VOLTAGE	BCU	-	-	-	X	MV
165	YR LINE VOLTAGE	BCU	-	-	-	X	MV
166	FREQUENCY	BCU	-	-	-	X	MV
167	ACTIVE POWER	BCU	-	-	-	X	MV
168	REACTIVE POWER	BCU	-	-	-	X	MV
169	APPARENT POWER	BCU	-	-	-	X	MV
170	POWER FACTOR	BCU	-	-	-	X	MV

220kV TRANSFORMER-3 LV							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
1	CB OPEN	BCU	X	-	-	-	DPS
2	CB CLOSED	BCU	X	-	-	-	
3	CB POSITION	BCU	-	X	-	-	
4	DISCONNECTOR 89M OPEN	BCU	X	-	-	-	DPS
5	DISCONNECTOR 89M CLOSE	BCU	X	-	-	-	
6	DISCONNECTOR 89T OPEN	BCU	X	-	-	-	DPS
7	DISCONNECTOR 89T CLOSE	BCU	X	-	-	-	
8	EARTH SWITCH 89LE OPEN	BCU	X	-	-	-	DPS
9	EARTH SWITCH 89LE OPEN	BCU	X	-	-	-	
10	DISCONNECTOR 89L OPEN	BCU	X	-	-	-	
11	DISCONNECTOR 89L CLOSE	BCU	X	-	-	-	DPS
12	GAS REFILL ALARM	BCU	X	-	-	-	
13	LOW GAS PR. ALARM-1	BCU	X	-	-	-	SPS
14	LOW GAS PR. ALARM-2	BCU	X	-	-	-	SPS
15	GAS PR. LOCKOUT	BCU	X	-	-	-	SPS
16	CLOSING SPRING CHARGED	BCU	X	-	-	-	SPS
17	SPRING FAIL TO CHARGE	BCU	X	-	-	-	SPS
18	MOTOR OVERLOAD	BCU	X	-	-	-	SPS
19	DC-1 FAIL	BCU	X	-	-	-	SPS
20	DC-2 FAIL	BCU	X	-	-	-	SPS
21	AC FAIL	BCU	X	-	-	-	SPS
22	CB L/R IN REMOTE	BCU	X	-	-	-	SPS
23	CB CLOSE CMD	BCU	X	-	-	-	SPS
24	DC-1 FAIL	BCU	X	-	-	-	SPS
25	DC-2 FAIL	BCU	X	-	-	-	SPS
26	TC-1 FAULTY	BCU	X	-	-	-	SPS
27	TC-2 FAULTY	BCU	X	-	-	-	SPS
28	CB OPEN CMD	BCU	X	-	-	-	SPS
29	96 OPTD	BCU	X	-	-	-	SPS
30	50LBB OPTD	BCU	X	-	-	-	SPS
31	ITX MODE	BCU	X	-	-	-	SPS
32	87-1 FAULTY	BCU	X	-	-	-	SPS
33	87-2 FAULTY	BCU	X	-	-	-	SPS
34	50LBB FAULTY	BCU	X	-	-	-	SPS
35	86A OPTD	BCU	X	-	-	-	SPS
36	86B OPTD	BCU	X	-	-	-	SPS
37	CB CLOSE COMMAND TO CLOSING CKT	BCU	-	X	-	-	SPC
38	CB TRIP COMMANDTC TC-1	BCU	-	X	-	-	SPC
39	CB TRIP COMMANDTC TC-2	BCU	-	X	-	-	SPC
40	86A RESET COMMAND	BCU	-	X	-	-	SPC
41	86A RESET COMMAND	BCU	-	X	-	-	SPC
42	DISCONNECTOR 89M CLOSE COMMAND	BCU	-	X	-	-	DPC
43	DISCONNECTOR 89M OPEN COMMAND	BCU	-	X	-	-	
44	DISCONNECTOR 89L CLOSE COMMAND	BCU	-	X	-	-	DPC
45	DISCONNECTOR 89L OPEN COMMAND	BCU	-	X	-	-	
46	DISCONNECTOR 89T CLOSE COMMAND	BCU	-	X	-	-	DPC
47	DISCONNECTOR 89T OPEN COMMAND	BCU	-	X	-	-	
48	EARTH SWITCH 89TE OPEN COMMAND	BCU	-	X	-	-	DPC
49	EARTH SWITCH 89TE CLOSE COMMAND	BCU	-	X	-	-	
50	NITX SELECT	BCU	-	X	-	-	SPC
51	NITX DE SELECT	BCU	-	X	-	-	SPC
52	ITX SELECT	BCU	-	X	-	-	SPC
53	ITX DESELECT	BCU	-	X	-	-	SPC
54	96 RESET COMMAND	BCU	-	X	-	-	SPC
55	89M INTERLOCK	BCU	-	X	-	-	SPC
56	89L INTERLOCK	BCU	-	X	-	-	SPC
57	89T INTERLOCK	BCU	-	X	-	-	SPC
58	89TE INTERLOCK	BCU	-	X	-	-	SPC
59	R PHASE VOLTAGE	BCU	-	-	-	X	MV
60	B PHASE VOLTAGE	BCU	-	-	-	X	MV
61	Y PHASE VOLTAGE	BCU	-	-	-	X	MV
62	R PHASE CURRENT	BCU	-	-	-	X	MV
63	B PHASE CURRENT	BCU	-	-	-	X	MV
64	Y PHASE CURRENT	BCU	-	-	-	X	MV
65	RB LINE VOLTAGE	BCU	-	-	-	X	MV
66	BY LINE VOLTAGE	BCU	-	-	-	X	MV
67	YR LINE VOLTAGE	BCU	-	-	-	X	MV
68	FREQUENCY	BCU	-	-	-	X	MV
69	ACTIVE POWER	BCU	-	-	-	X	MV



220kV TRANSFORMER-3 LV							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
70	REACTIVE POWER	BCU	-	-	-	X	MV
71	APPARENT POWER	BCU	-	-	-	X	MV
72	POWER FACTOR	BCU	-	-	-	X	MV

220kV TRANSFORMER-4 LV							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
1	CB OPEN	BCU	X	-	-	-	DPS
2	CB CLOSED	BCU	X	-	-	-	
3	CB POSITION	BCU	-	X	-	-	
4	DISCONNECTOR 89M OPEN	BCU	X	-	-	-	DPS
5	DISCONNECTOR 89M CLOSE	BCU	X	-	-	-	
6	DISCONNECTOR 89T OPEN	BCU	X	-	-	-	DPS
7	DISCONNECTOR 89T CLOSE	BCU	X	-	-	-	
8	EARTH SWITCH 89LE OPEN	BCU	X	-	-	-	DPS
9	EARTH SWITCH 89LE OPEN	BCU	X	-	-	-	
10	DISCONNECTOR 89L OPEN	BCU	X	-	-	-	
11	DISCONNECTOR 89L CLOSE	BCU	X	-	-	-	DPS
12	GAS REFILL ALARM	BCU	X	-	-	-	
13	LOW GAS PR. ALARM-1	BCU	X	-	-	-	SPS
14	LOW GAS PR. ALARM-2	BCU	X	-	-	-	SPS
15	GAS PR. LOCKOUT	BCU	X	-	-	-	SPS
16	CLOSING SPRING CHARGED	BCU	X	-	-	-	SPS
17	SPRING FAIL TO CHARGE	BCU	X	-	-	-	SPS
18	MOTOR OVERLOAD	BCU	X	-	-	-	SPS
19	DC-1 FAIL	BCU	X	-	-	-	SPS
20	DC-2 FAIL	BCU	X	-	-	-	SPS
21	AC FAIL	BCU	X	-	-	-	SPS
22	CB L/R IN REMOTE	BCU	X	-	-	-	SPS
23	CB CLOSE CMD	BCU	X	-	-	-	SPS
24	DC-1 FAIL	BCU	X	-	-	-	SPS
25	DC-2 FAIL	BCU	X	-	-	-	SPS
26	TC-1 FAULTY	BCU	X	-	-	-	SPS
27	TC-2 FAULTY	BCU	X	-	-	-	SPS
28	CB OPEN CMD	BCU	X	-	-	-	SPS
29	96 OPTD	BCU	X	-	-	-	SPS
30	50LBB OPTD	BCU	X	-	-	-	SPS
31	ITX MODE	BCU	X	-	-	-	SPS
32	87-1 FAULTY	BCU	X	-	-	-	SPS
33	87-2 FAULTY	BCU	X	-	-	-	SPS
34	50LBB FAULTY	BCU	X	-	-	-	SPS
35	86A OPTD	BCU	X	-	-	-	SPS
36	86B OPTD	BCU	X	-	-	-	SPS
37	CB CLOSE COMMAND TO CLOSING CKT	BCU	-	X	-	-	SPC
38	CB TRIP COMMANDTC TC-1	BCU	-	X	-	-	SPC
39	CB TRIP COMMANDTC TC-2	BCU	-	X	-	-	SPC
40	86A RESET COMMAND	BCU	-	X	-	-	SPC
41	86A RESET COMMAND	BCU	-	X	-	-	SPC
42	DISCONNECTOR 89M CLOSE COMMAND	BCU	-	X	-	-	DPC
43	DISCONNECTOR 89M OPEN COMMAND	BCU	-	X	-	-	
44	DISCONNECTOR 89L CLOSE COMMAND	BCU	-	X	-	-	DPC
45	DISCONNECTOR 89L OPEN COMMAND	BCU	-	X	-	-	
46	DISCONNECTOR 89T CLOSE COMMAND	BCU	-	X	-	-	DPC
47	DISCONNECTOR 89T OPEN COMMAND	BCU	-	X	-	-	
48	EARTH SWITCH 89TE OPEN COMMAND	BCU	-	X	-	-	DPC
49	EARTH SWITCH 89TE CLOSE COMMAND	BCU	-	X	-	-	
50	NITX SELECT	BCU	-	X	-	-	SPC
51	NITX DE SELECT	BCU	-	X	-	-	SPC
52	ITX SELECT	BCU	-	X	-	-	SPC
53	ITX DESELECT	BCU	-	X	-	-	SPC
54	96 RESET COMMAND	BCU	-	X	-	-	SPC
55	89M INTERLOCK	BCU	-	X	-	-	SPC
56	89L INTERLOCK	BCU	-	X	-	-	SPC
57	89T INTERLOCK	BCU	-	X	-	-	SPC
58	89TE INTERLOCK	BCU	-	X	-	-	SPC
59	R PHASE VOLTAGE	BCU	-	-	-	X	MV
60	B PHASE VOLTAGE	BCU	-	-	-	X	MV
61	Y PHASE VOLTAGE	BCU	-	-	-	X	MV
62	R PHASE CURRENT	BCU	-	-	-	X	MV
63	B PHASE CURRENT	BCU	-	-	-	X	MV
64	Y PHASE CURRENT	BCU	-	-	-	X	MV
65	RB LINE VOLTAGE	BCU	-	-	-	X	MV
66	BY LINE VOLTAGE	BCU	-	-	-	X	MV
67	YR LINE VOLTAGE	BCU	-	-	-	X	MV
68	FREQUENCY	BCU	-	-	-	X	MV
69	ACTIVE POWER	BCU	-	-	-	X	MV



संदर्भ/Ref : CC-ENGG-TR202136-1001604-SS1118-CRP-SAS-GTP

Date : 10/11/2023

From : Somiran Das
General Manager

To : M/s Techno Electric & Engineering Company
Limited
1B, Park Plaza (South), 71
Park Street
Kolkata-700016, West Bengal

Cc : CGM (Projects), RHQ, SR-II

Subject : GIS SS package-SS90:for (i) Ext.of 765/400kV Nizamabad GIS ss including 765kV bus ducts,Bushings,400kV GIS bays etc. under Aug. of Transformation capacity in Southern Region;(ii)(a) Extn. Of 400/230 kV Tuticorin-II GIS ss for installation of 4th ICT & (b) Extn. Of 400/230 kV Tuticorin-II GIS ss for installation of 5th ICT under Transmission system for Tirunelveli and Tuticorin Wind Energy Zone (TN)(500 MW) and (iii) Extn.of 400kV Nizamabad GIS ss under Consultancy services to TSTRANSCO

LOA Ref : CC-CS/5002002107/GIS-EXCLUDING/DOM/A00-CC CS-1/NOA-I/SR2-500007 & CC-CS/5002002107/ GIS-EXCLUDING/DOM/A00-CC CS-1/NOA-II/SR2-500008 Dated 19/05/2022

Please find enclosed following drawings/ documents for necessary action at your end.

Vendor Drg. No. : NIZAMABAD GIS S/S- CRP-SAS -GTP
Orgn. Drg. No. : TR202136-1001604-SS1118-CRP-SAS-GTP
Revision No. : 02
Drg. Title : NIZAMABAD GIS S/S- CRP-SAS -GTP
App. Category : CAT-I
Release Date : 10/11/2023



Scan to verify

Comments : -

अनुमोदित श्रेणी/App. Category:

- I. फेब्रिकेशन/निर्माण/टाइप टेस्टिंग हेतु जारी।
Approved/released for fabrication/construction.
- II. फेब्रिकेशन/निर्माण/टाइप टेस्टिंग हेतु अनुमोदित/जारी बशर्ते दिए गए टिप्पणियाँ एवं आशोधनों की सम्मिलित किया जाये। कृपया रिवाइज्ड दस्तावेज अनुमोदनार्थ प्रस्तुत करें।
Approved/released for fabrication/ construction subject to incorporation of comments and modification as noted. Revised drawing required for approval.
- III. टिप्पणियाँ सम्मिलित करने के उपरांत दस्तावेज को अनुमोदनार्थ प्रस्तुत करें।
To be resubmitted for approval after incorporating the comments.
- IV. सूचनार्थ एवं रिकार्ड हेतु।
For information and record.
- REL-CON निर्माण हेतु जारी।
Released for construction.

नोट/Note:

1. Approval/Comments conveyed herein neither relieve the contractor of his contractual obligations and his responsibilities, weights, quantities, design details assemble fits, performance particulars and conformity of the supplies with the Indian Statutory Laws as

केन्द्रीय कार्यालय: "सौदामिनी", प्लॉट नंबर 2, सेक्टर-29, गुरुग्राम-122001, (हरियाणा), दूरभाष: 0124-2571700-719

Corporate Office: "Saudamini", Plot No. 2, Sector-29, Gurugram-122001, (Haryana) Tel.: 0124-2571700-719

पंजीकृत कार्यालय: बी-9, कुतुब इंस्टीट्यूशनल एरिया, कटवारिया सराय, नई दिल्ली-110016. दूरभाष: 011-26560112, 26560121, 26564812, 26564892, सीआईएन: L40101DL1989GOL038121

Registered Office: B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi-110016. Tel: 011-26560112, 26560121, 26564812, 26564892, CIN : L40101DL1989GOL038121

Website: www.powergridindia.com



पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड
(भारत सरकार का प्रामाण्य)
POWER GRID CORPORATION OF INDIA LIMITED
(A Government of India Enterprise)

- may be applicable, nor does it limits the purchaser's right under the contract.
2. The approval conveyed vide this letter does not cover the approval of make for sub-vendor items.

केन्द्रीय कार्यालय: "सौदामिनी", प्लॉट नंबर 2, सेक्टर -29, गुरुग्राम -122001, (हरियाणा) ,दूरभाष: 0124-2571700-719

Corporate Office: "Saudamini", Plot No. 2, Sector-29, Gurugram-122001, (Haryana) Tel.: 0124-2571700-719

पंजीकृत कार्यालय: बी -9, कुतुब इंस्टीट्यूशनल एरिया, कटवारिया सराय, नई दिल्ली -110016. दूरभाष: 011-26560112, 26560121, 26564812, 26564892, सीआईएन: L40101DL1989GOI038121

Registered Office: B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi-110016. Tel: 011-26560112, 26560121, 26564812, 26564892, CIN : L40101DL1989GOI038121

Website: www.powergridindia.com

GENERAL TECHNICAL PARTICULARS FOR 765/400 kV NIZAMABAD S/S-EXTN. PROJECT
GTP/REV-C/19-10-2023

1. GTP OF C264 (BCU)

PARAMETERS	TECHNICAL DATA
Make	Schneider Electric
Model	C264
Case	80TE
Communication protocols supported	IEC61850 Edition-2 and all other IEC Protocol like IEC-60870-101, IEC-60870-103, IEC-60870-104, Modbus, DNP3
Hardware version	V5 or above
IO Configuration per BCU	Total IO cards per BCU: 14 No. Maximum (Combination of AIU, DIU, DOU) Max. no. of AIU cards per BCU: 6 Nos. Max. no. of DIU cards per BCU: 13 Nos. Max. no. of DOU cards per BCU: 13 Nos. Max. no. of TMU cards per BCU: 1 No.
Mimic on BCU	LCD display, 16 LED's (5 are system LED's and 11 are user configurable), Keypad for local control.
POWER SUPPLY BOARD	
Model	BIU241-A04
Input Supply	220V DC and 115 to 230V AC
Input Power (Max.)	40W
Watchdog	One watchdog relay (closed if the product is healthy)
COMMUNICATION (IN POWER SUPPLY BOARD)	
Ports & Data transmission rates	2 Nos RS232/RS485 ports (Insulated), Full-duplex serial protocol with transmission rate of 50 to 38400 bps
PROCESSOR	
Model	CPU275
Microprocessor	32-bits microprocessor (266 MHz)
RAM/ROM	128Mb Flash Memory, 256Mb SDRAM
Internal Battery	C264 have internal battery for hold SOE buffer memory. C264 will detention SOE data for 2 years.
Nos of master stations communication simultaneously	C264 can communicated with up to 6 Nos masters on IEC104 & IEC101 protocols.
RSTP (rapid spanning tree Protocol)	C264 is supporting RSTP protocol
SSL/VPN/NERC/CIP	C264 compliance SSL/VPN/NERC/CIP
Programmable logic controller	C264 support ISAGRAF PLC as per IEC-61131
Select Before Execute Function	Yes
Electromagnetic Compatibility (EMC) Tests	Complied with IEC61850
Automatic Restart Capability for power interruptions	Yes
Pulse Counting Feature	Counter Values stored in static memory more than 48H when device is OFF. Pulse frequency should 20Hz as maximum

GENERAL TECHNICAL PARTICULARS FOR 765/400 kV NIZAMABAD S/S-EXTN. PROJECT
GTP/REV-C/19-10-2023

	16 counters and total frequency does not exceed 160Hz Supported counters: - SCT & DCT
COMMUNICATION (IN PROCESSOR UNIT)	
Serial	2 (non-insulated) legacy interfaces RS232 with transmission rate of 50 to 56000 bps
IRIG-B	One IRIG-B input (BNC plug)
Ethernet	2 Nos 10/100 Base-T (copper) port – RJ45 connector Port 1: SBUS(IEC61850) for communication IEDs + SCADA + MAINTENANCE Port 2: Communication of IEC104 SCADA protocol.
DIGITAL INPUT BOARD	
Model	DIU211
No. Of Channels	16 optically insulated DI with 1 common for 2 inputs
Scanning Period	1 ms
Input Voltage	220V DC
DIGITAL OUTPUT BOARD	
Model	DOU201
Burden	On internal 5V bus is 250mW plus 200mW per activated relay
No. Of Channels	8 single pole relays with one normally open (NO) contact 2 single pole relays with one common for 2 outputs (NO/NC) Contacts current carrying capacity are 5A continuous, 30 A for 500ms and 100 A for 30ms
ANALOGUE INPUT BOARD	
Model	AIU211
Analog to digital converter (A/D)	12 bits plus sign bit with accuracy of 99.8% at 25 °C
No. Of Channels	8 Modular independent analog inputs of opto-isolated AI on one board (currents)
Sensor range for AIU211	-20 mA ...+20 mA / -10 mA ...+10 mA / -5 mA.... +5 mA / -1 mA ...+1 mA / 0 mA ...+1 mA / 0 mA ...+5 mA / 0 mA ...+10 mA / 0 mA.... +20 mA / 4 mA ...+20 mA
Acquisition Period	Short & Long
Scanning period	100ms to 500ms – configurable
TRANSDUCERLESS MEASUREMENT UNIT	
Model	TMU220
No. of CT/VT	4 CT of two ranges – 1/5 Amps. 5 VT Nominal voltage 57.73 to 500 Vrms
No. Of Channels	8 Modular independent analog inputs of opto-isolated AI on one board (currents)
Samples	64 samples/period
Accuracy	Current – 0.2% full scale Voltage – 0.2% full scale Frequency - ± 0.01 Hz Amplitude - < 1% Phase - $\pm 1^\circ$ Overall temperature coefficient - ± 10 ppm/°C Harmonics - H15

**GENERAL TECHNICAL PARTICULARS FOR 765/400 kV NIZAMABAD S/S-EXTN, PROJECT
GTP/REV-C/19-10-2023**

SOE	C264 can stored minimum 1000 events. SOE buffer & time shall be maintained by C264.
ETHERNET SWITCH UNIT	
Model	REU V2
Ports	2 Eth. SFP based Ports (HSR/PRP/RSTP) + 10/100BaseT RJ45 Eth. Port.
Software	PACIS
Configuration & Diagnostic Software	SCE & CAT Tool
WEB Access	C264 can be access through Web access with Http
C264 can support min 1000 data Points for both soft & hardwired signals	Compliance, C264 can support max. 5000 data points (hardwire & soft signals).
Scan group	C264 can be configured up to 16 scan groups & all scan groups per communication port can be defined.
C264 time synchronization (10 PPM)	C264 time can be synchronized through master station over IEC60870-5-104/101/NTP/SNTP. Also, C264 carrying time stamping of the events which are not received as time stamp from connected IEDs/MFM, etc.
Serial Ports	2 Nos RS485 ports on BIU modules & 2 Nos Ports on CPU modules which can be configured up to 115200 BPS
Max no IED supported on IEC61850 protocol	32 Nos of IEC61850 IED's servers for a C264 client 16 Nos of IEC61850 clients for a C264 server,
IED Goose size (IEC61850)	128 binary inputs, 64 measurements

GENERAL TECHNICAL PARTICULARS FOR 765/400 kV NIZAMABAD S/S-EXTN. PROJECT
GTP/REV-C/19-10-2023

2. GTP OF C264 (IO RACK)

PARAMETERS	TECHNICAL DATA
Make	Schneider Electric
Model	C264
Case	80TE
Communication protocols supported	IEC61850 Edition-2 and all other IEC Protocol like IEC-60870-101, IEC-60870-103, IEC-60870-104, Modbus, DNP3
Hardware version	V5 or above
IO Configuration per BCU	Total IO cards per IO RACK: 15 No. Maximum (Combination of AIU, DIU, DOU) Max. no. of AIU cards per BCU: 6 Nos. Max. no. of DIU cards per BCU: 14 Nos. Max. no. of DOU cards per BCU: 14 Nos.
Mimic on BCU	LCD display, 16 LED's (5 are system LED's and 11 are user configurable), Keypad for local control.
POWER SUPPLY BOARD	
Model	BIU241-A04
Input Supply	220V DC and 115 to 230V AC
Input Power (Max.)	40W
Watchdog	One watchdog relay (closed if the product is healthy)
COMMUNICATION (IN POWER SUPPLY BOARD)	
Ports & Data transmission rates	2 Nos RS232/RS485 ports (Insulated), Full-duplex serial protocol with transmission rate of 50 to 38400 bps
PROCESSOR	
Model	CPU275
Microprocessor	32-bits microprocessor (266 MHz)
RAM/ROM	128Mb Flash Memory, 256Mb SDRAM
Internal Battery	C264 have internal battery for hold SOE buffer memory. C264 will detention SOE data for 2 years.
Nos of master stations communication simultaneously	C264 can communicated with up to 6 Nos masters on IEC104 & IEC101 protocols.
RSTP (rapid spanning tree Protocol)	C264 is supporting RSTP protocol
SSL/VPN/NERC/CIP	C264 compliance SSL/VPN/NERC/CIP
Programmable logic controller	C264 support ISAGRAF PLC as per IEC-61131
Select Before Execute Function	Yes
Electromagnetic Compatibility (EMC) Tests	Complied with IEC61850
Automatic Restart Capability for power interruptions	Yes
Pulse Counting Feature	Counter Values stored in static memory more than 48H when device is OFF. Pulse frequency should 20Hz as maximum 16 counters and total frequency does not exceed 160Hz Supported counters: - SCT & DCT

**GENERAL TECHNICAL PARTICULARS FOR 765/400 kV NIZAMABAD S/S-EXTN, PROJECT
GTP/REV-C/19-10-2023**

COMMUNICATION (IN PROCESSOR UNIT)	
Serial	2 (non-insulated) legacy interfaces RS232 with transmission rate of 50 to 56000 bps
IRIG-B	One IRIG-B input (BNC plug)
Ethernet	2 Nos 10/100 Base-T (copper) port – RJ45 connector Port 1: SBUS(IEC61850) for communication IEDs + SCADA + MAINTENANCE Port 2: Communication of IEC104 SCADA protocol.
DIGITAL INPUT BOARD	
Model	DIU211
No. Of Channels	16 optically insulated DI with 1 common for 2 inputs
Scanning Period	1 ms
Input Voltage	220V DC
DIGITAL OUTPUT BOARD	
Model	DOU201
Burden	On internal 5V bus is 250mW plus 200mW per activated relay
No. Of Channels	8 single pole relays with one normally open (NO) contact 2 single pole relays with one common for 2 outputs (NO/NC) Contacts current carrying capacity are 5A continuous, 30 A for 500ms and 100 A for 30ms
ANALOGUE INPUT BOARD	
Model	AIU211
Analog to digital converter (A/D)	12 bits plus sign bit with accuracy of 99.8% at 25 °C
No. Of Channels	8 Modular independent analog inputs of opto-isolated AI on one board (currents)
DC Current range for AIU211	-20 mA ...+20 mA / -10 mA ...+10 mA / -5 mA.... +5 mA / -1 mA ...+1 mA / 0 mA ...+1 mA / 0 mA ...+5 mA / 0 mA ...+10 mA / 0 mA.... +20 mA / 4 mA ...+20 mA
Acquisition Period	Short & Long
Scanning period	100ms to 500ms – configurable
ETHERNET SWITCH UNIT	
Model	REU V2
Ports	: 2 Eth. SFP based Ports (HSR/PRP/RSTP) + 10/100BaseT RJ45 Eth. Port.
Software	PACIS
Configuration & Diagnostic Software	SCE & CAT Tool
WEB Access	C264 can be access through Web access with Http
C264 can support min 1000 data Points for both soft & hardwired signals	Compliance, C264 can support max. 5000 data points (hardwire & soft signals).
Scan group	C264 can be configured up to 16 scan groups & all scan groups per communication port can be defined.
C264 time synchronization (10 PPM)	C264 time can be synchronized through master station over IEC60870-5-104/101/NTP/SNTP. Also, C264 carrying time stamping of the events which are not received as time stamp from connected IEDs/MFM, etc.
Serial Ports	2 Nos RS485 ports on BIU modules & 2 Nos Ports on CPU modules which can be configured up to 115200 BPS
Max no IED supported on IEC61850 protocol	32 Nos of IEC61850 IED's servers for a C264 client 16 Nos of IEC61850 clients for a C264 server,
IED Goose size (IEC61850)	128 binary inputs,

GENERAL TECHNICAL PARTICULARS FOR 765/400 kV NIZAMABAD S/S-EXTN. PROJECT
GTP/REV-C/19-10-2023

	64 measurements
--	-----------------

3. GTP OF ETHERNET FIBER SWITCH

PARAMETERS	TECHNICAL DATA
Make	As per PowerGrid Sub vendor list
Size	19" Rack Mountable
Type	Modular Managed Ethernet Switch
Connector Type	RJ45 for Tx and ST for Fx
Ports	16Fx
Network Speed	10/100Mbps
Auxiliary Voltage	100-240VAC, 50-60HZ or 100-240VDC,
Standards	IEEE802.3x, 802.3p (Flow control) IEEE802.3ad (Port Aggregation) IEEE802.1X IEEE802.3ah, 802.1ag (OAM)
Features	Secure Web Management Port Security SNMP V2, V3 Virtual LAN capability Tag Base VLANs, IGMP snooping and IGMP-L2 multicast management
Forwarding mode	Store & Forwarding mode
Humidity Range	10%...90% (Relative), 5%...95% (Storage)
Approvals	KEMA & IEC61850-3

4. GTP OF LINE INTERFACE UNIT (LIU)

PARAMETERS	TECHNICAL DATA
Make	As per PowerGrid Sub vendor list
Insertion Loss	< 0.1 dB (for adapters)
No. of Ports	12 & 24
Height	19" rack mountable
Connector Type	Fiber optic connector – ST Type

5. GTP OF FIBRE OPTIC CABLE

PARAMETERS	TECHNICAL DATA
Make	As per PowerGrid Sub vendor list
Cable Type	6 Core Multi mode Cable
Fiber Type	62.5/125 mm
Armored /Unarmored	Armored
Attenuation	< 3.5 dB/km @850nm, <1.0 dB/km @1300nm
Band Width	>= 200 MHz.km @850nm, >=500 MHz.km @1300nm
No. of Fibre	6 Core
Color of Fibre	BLUE, WHITE, ORANGE, GREEN, BROWN & SLATE

GENERAL TECHNICAL PARTICULARS FOR 765/400 kV NIZAMABAD S/S-EXTN. PROJECT
GTP/REV-C/19-10-2023

Cladding Diameter	125um $\pm$ 2
Core Diameter	62.5 um $\pm$ 3
Numeric ApeC264re	0.275 $\pm$ 0.015
Outer Cable Diameter	$\geq$ 8.0 mm $\pm$ 0.5
Max. Installation Tension	1500 Newton
Min. Bending Radius	80mm (temporary) 160mm (permanent)
Crush Resistance	2000 Newton
Operating/ Installation Temperature	-30 to +70°C

CROSS SECTIONAL VIEW:

OUTER SHEATH (H.D.P.E.) ←

CORRUGATED STEEL TAPE ←

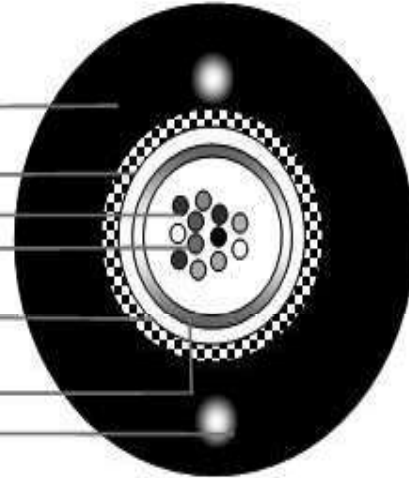
FILLING JELLY ←

OPTICAL FIBRE ←

GLASS YARN REINFORCEMENT ←

LOOSE TUBE WITH FIBRES ←

STEEL WIRE ←



संदर्भ/Ref : CC-ENGG-TR201928-1001081-SS1720-SAS-ARCH-DRG

Date : 02/02/2022

From : Ashok Kumar
 Senior GM

To : Deejay System Consultants Pvt Lt
 Spazedge, Suite-215, Tower - A, Sec
 Chandigarh 122022
 122022

Cc : ED, NERTS, Shillong

Subject : AIS Sub-Station Package for Bay Extension Of 132kV Roing (POWERGRID) Substation & Bay Extension Of 132kv Chapakhowa (Assam) Substation Associated with North Eastern Region Strengthening Scheme-X (NERSS-X)

LOA Ref : NESH/CSM/FY-2021-22/4500-07/NOA/09 Dated 21/04/2021

Please find enclosed following drawings/ documents for necessary action at your end.

Vendor Drg. No. : TR201928-1001081-SSXXXX-132KV-ROING-SAS-ARCH-DRG

Orgn. Drg. No. : TR201928-1001081-SS1720-SAS-ARCH-DRG

Revision No. : 01

Drg. Title : ROING S/S-132KV-CHAPAKHOWA1&2 BAYS-SAS- AUG-
 ARCHITECTURE DRGS

App. Category : CAT-I

Release Date : 02/02/2022


Scan to verify

Comments : M/S Deejay vide mail dtd:27.01.2022 has confirmed to supply & install EFS free of cost without any additional cost implication to POWERGRID.

अनुमोदित श्रेणी/App. Category:

- I. फेब्रिकेशन/निर्माण/टाइप टेस्टिंग हेतु जारी।
Approved/released for fabrication/construction.
- II. फेब्रिकेशन/निर्माण/टाइप टेस्टिंग हेतु अनुमोदित/जारी बशर्ते दिए गए टिप्पणियाँ एवं आशोधनों की सम्मिलित किया जाये। कृपया रिवाइज्ड दस्तावेज अनुमोदनार्थ प्रस्तुत करें।
Approved/released for fabrication/ construction subject to incorporation of comments and modification as noted. Revised drawing required for approval.
- III. टिप्पणियाँ सम्मिलित करने के उपरांत दस्तावेज को अनुमोदनार्थ प्रस्तुत करें।
To be resubmitted for approval after incorporating the comments.
- IV. सूचनार्थ एवं रिकार्ड हेतु।
For information and record.
- REL-CON निर्माण हेतु जारी।
Released for construction.

नोट/Note:

1. Approval/Comments conveyed herein neither relieve the contractor of his contractual obligations and his responsibilities, weights, quantities, design details assemble fits, performance particulars and conformity of the supplies with the Indian Statutory Laws as may be applicable, nor does it limits the purchaser's right under the contract.
2. The approval conveyed vide this letter does not cover the approval of make for sub-vendor items.

	Revised Drawing Issued For Approval
	Issued For Approval
	DESCRIPTION
	REVISIONS



DEEJAY SYSTEM CONSULTANTS PVT. LTD.



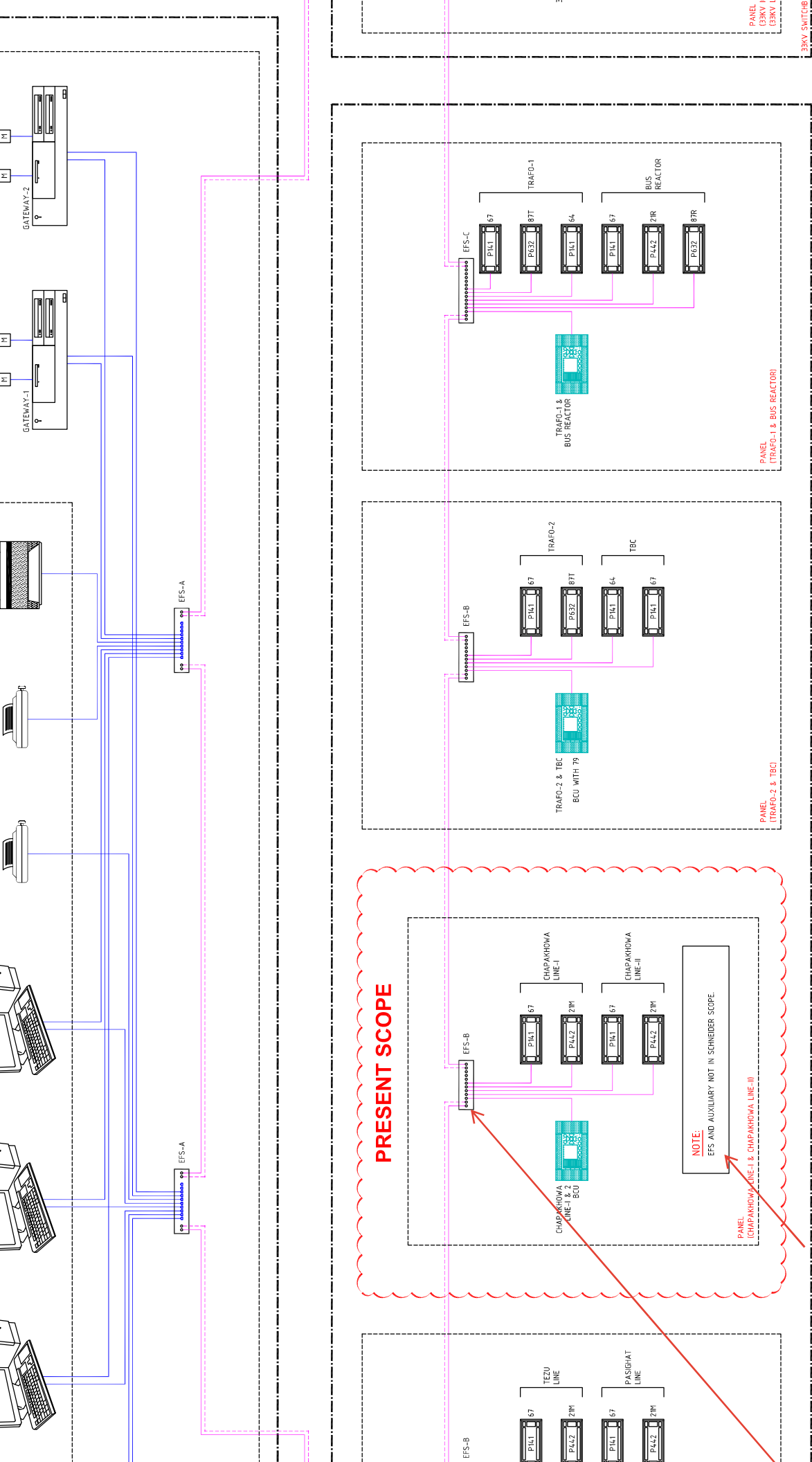
POWERGRID CORPORATION OF INDIA LIMITED

Division Of 132kV Roing (POWERGRID) Substation & Bay Extension Of 132kv Chapakhowa (Assam) Substation Association
Strengthening Scheme-X (NERSS-X)

MFY:2021-22/4500-07/NOA/09 DTD 21-04-2021

2	TITLE :
DATE	
16-Jan-22	

POINC S/S 132KV CHAPAKHOWA 183 BAYS SAS A/C ARCHITECT



01.2022 (attached in supporting documents) has
out any additional cost implication to POWERGRID.

LIST OF MATERIALS		
SL.	DESCRIPTION	QTY.
1	GPS	1
2	GPS CLOCK WITH ANTENNA (FOR TIME SYNCHRONIZING)	1
3	ETHERNET FIBER SWITCH (4Fx + 10Tx PORT)	2
5	ETHERNET FIBER SWITCH (10Tx PORT)	3
7	ETHERNET FIBER SWITCH (10Tx PORT)	1
9	ETHERNET FIBER SWITCH (10Tx PORT)	2
11	ETHERNET FIBER SWITCH (10Tx PORT)	1
13	ETHERNET FIBER SWITCH (10Tx PORT)	1
15	ETHERNET FIBER SWITCH (10Tx PORT)	1
17	ETHERNET FIBER SWITCH (10Tx PORT)	1
19	ETHERNET FIBER SWITCH (10Tx PORT)	1
21	ETHERNET FIBER SWITCH (10Tx PORT)	1

संदर्भ/Ref : CC-ENGG-CS201439-1000328-SS1719-SAS-AUG

Date : 06/12/2022

From : S J Lahiri
 Senior GM

To : FLOWMORE LIMITED
 443 PHASE III GURGAON 122016
 122016

Cc : ED, NERPSIP, Guhwati

Subject : Substation Package-ARP-SS05 under Comprehensive Scheme for Strengthening of Transmission & Distribution System in NER & Sikkim: Intra-State: Arunachal

LOA Ref : CC-CS/165-NER/SS-4220/3/G7/NOA-I/9199 & NOA-II/9200 Dated 30/06/2021

Please find enclosed following drawings/ documents for necessary action at your end.

Vendor Drg. No. : KZ2Q-PG-TEZU-SA

Orgn. Drg. No. : CS201439-1000328-SS1719-SAS-AUG

Revision No. : 02

Drg. Title : TEZU(EXTN) S/S -SAS AUGMENTATION DRAWING

App. Category : CAT-I

Release Date : 06/12/2022


Scan to verify

Comments : Approved with remarks to be taken care of.

अनुमोदित श्रेणी/App. Category:

I. फेब्रिकेशन/निर्माण/टाइप टेस्टिंग हेतु जारी।

Approved/released for fabrication/construction.

II. फेब्रिकेशन/निर्माण/टाइप टेस्टिंग हेतु अनुमोदित/जारी बशर्ते दिए गए टिप्पणियाँ एवं आशोधनों की सम्मिलित किया जाये। कृपया रिवाइज्ड दस्तावेज अनुमोदनार्थ प्रस्तुत करें।

Approved/released for fabrication/ construction subject to incorporation of comments and modification as noted. Revised drawing required for approval.

III. टिप्पणियाँ सम्मिलित करने के उपरांत दस्तावेज को अनुमोदनार्थ प्रस्तुत करें।

To be resubmitted for approval after incorporating the comments.

IV. सूचनार्थ एवं रिकार्ड हेतु।

For information and record.

REL-CON निर्माण हेतु जारी।

Released for construction.
नोट/Note:

1. Approval/Comments conveyed herein neither relieve the contractor of his contractual obligations and his responsibilities, weights, quantities, design details assemble fits, performance particulars and conformity of the supplies with the Indian Statutory Laws as may be applicable, nor does it limits the purchaser's right under the contract.

2. The approval conveyed vide this letter does not cover the approval of make for sub-vendor items.

SYSTEM ARCHITECTURE

132/33Kv DPAP TEZU Ext. S/S

KZ2Q-PG-TEZU (SA);
Rev-C

[This document and all information contained herein are proprietary to GE. Any unauthorized use, distribution, or reproduction of this document (in whole or in part) or of any information contained herein is specifically prohibited. This legend must appear on any authorized reproduction (in whole or in part)]



GE T&D India Limited
(Grid Automation-Pallavaram India)

CUSTOMER: DEPARTMENT OF POWER, GOVERNMENT OF ARUNACHAL
PRADESH(DPAP)
PROJECT: SUBSTATION PACKAGE ARP-SS05 UNDER COMPREHENSIVE
SCHEME FOR STRENGTHENING OF TRANSMISSION AND DISTRIBUTION
SYSTEM IN ARUNACHAL PRADESH
DOCUMET Ref.: KZ2Q-PG-TEZU-SA



DOCUMENT NAME	SYSTEM ARCHITECTURE & BILL OF QUANTITY
OWNER	DEPARTMENT OF POWER, GOVERNMENT OF ARUNACHAL PRADESH(DPAP)
CONSULTANT	POWER GRID CORPORATION OF INDIA LIMITED
CONTRACTOR	FLOWMORE LIMITED
PROJECT	SUBSTATION PACKAGE ARP-SS05 UNDER COMPREHENSIVE SCHEME FOR STRENGTHENING OF TRANSMISSION AND DISTRIBUTION SYSTEM IN ARUNACHAL PRADESH
NOA No.:	CC-CS/165-NER/SS-4220/3/G7/NOA-I/9199 dated 30.6.2021 CC-CS/165-NER/SS-4220/3/G7/NOA-II/9200 dated 30.6.2021
SUBSTATION	DPAP 132/33Kv TEZU Ext. S/s

Rev	Date	Revision Comments	Author	Reviewer	Validator
A	04.02.2022	FOR SUBMISSION	PLS	JKK	SSS
B	09.06.2022	FOR SUBMISSION	SSR	JKK	SSS
C	04.11.2022	FOR SUBMISSION	SSR	JKK	SSS



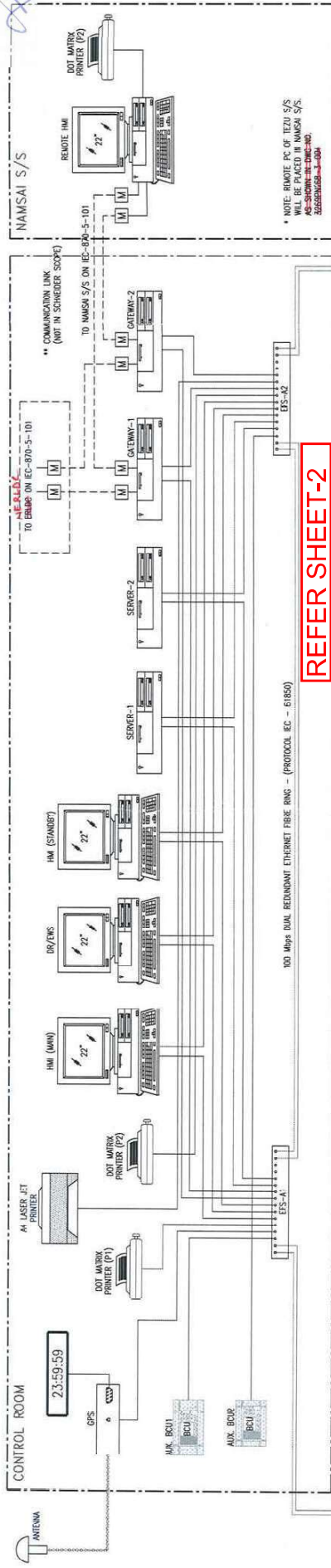
GE T&D India Limited
(Grid Automation-Pallavaram India)

CUSTOMER: DEPARTMENT OF POWER, GOVERNMENT OF ARUNACHAL PRADESH(DPAP)
SUBSTATION: SUBSTATION PACKAGE ARP-SS015 UNDER COMPREHENSIVE SCHEME FOR STRENGTHENING OF TRANSMISSION AND DISTRIBUTION SYSTEM IN ARUNACHAL PRADESH
DOCUMET Ref: KZ2Q-PG-TEZU-SA

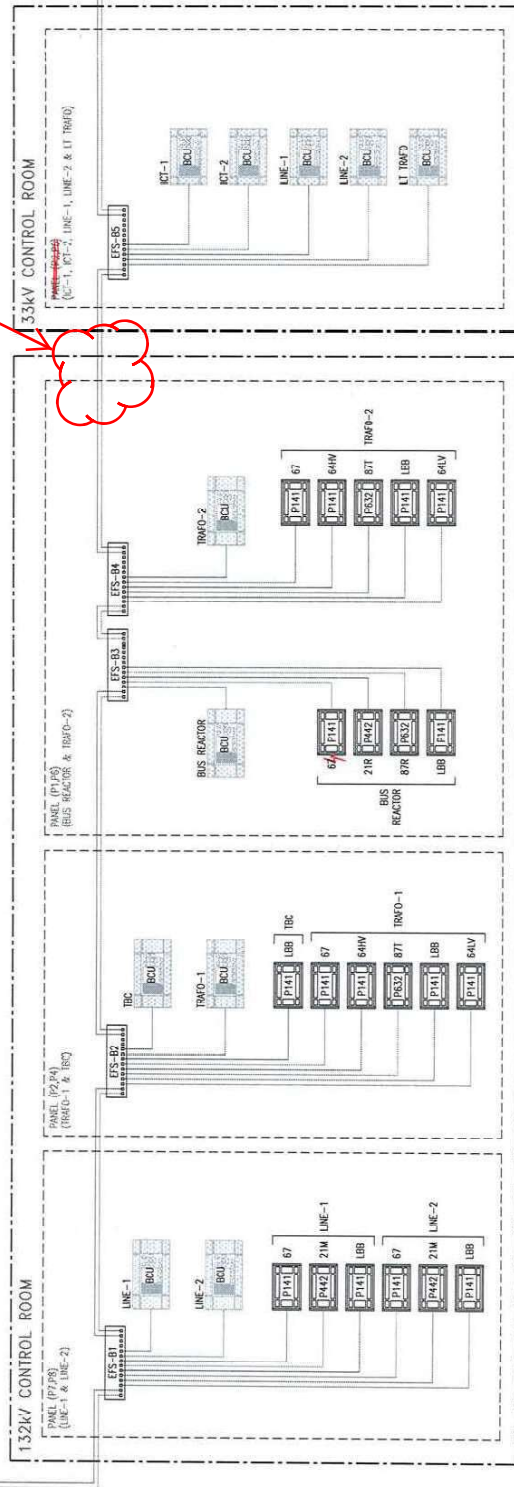
REV: C

DATE: 04.11.2022

SHEET : 2 of 5



REFER SHEET-2

[illegible]

S/L	DESCRIPTION	QTY.	HARDWARE/SOFTWARE SPECIFICATION
1	HMI PC	2	MAKE : ADVANTECH ; AS PER APPROVED GTP
2	DR/JWS	1	MAKE : ADVANTECH ; AS PER APPROVED GTP
3	GATEWAY-1&2	2 ✓	MAKE : ADVANTECH ; AS PER APPROVED GTP
4	SERVER-1 & 2	2	MAKE : ADVANTECH ; AS PER APPROVED GTP
5	MANAGED SWITCH (EFS-A1 TO EFS-A2) (FOR CONTROL ROOM)	2	MAKE : RUGGEDCOM (4fx + 12fx PORT)
6	MANAGED SWITCH (EFS-B1 TO EFS-B5)	5 ✓	MAKE : RUGGEDCOM (14FX PORT)
7	C OLOUR LASERJET PRINTER (P1)	1	MAKE : HP/XEROX – A4 ; AS PER APPROVED GTP
8	DOT MATRIX PRINTER (P2)	2	MAKE : EPSON ; AS PER APPROVED GTP
9	PLCC MODEM	6 ✓	MAKE : DECODE IDM 50B ; AS PER APPROVED GTP
10	BCU	13 ✓	MAKE : SCHNEIDER ; CONFIGURED AS PER APPROVED SCHEMATIC
11	GPS	1	MAKE : MASIBUS ; AS PER APPROVED GTP
12	MONITOR	3	MAKE : DELL ; AS PER APPROVED GTP

S/L	RELAY	DESCRIPTION
1	87T	TRANSFORMER DIFFERENTIAL PROTECTION
2	67	DIRECTIONAL OVERCURRENT & E/F PROTECTION
3	87R	REACTOR DIFFERENTIAL PROTECTION FOR LINE REACTOR
4	21M	DISTANCE PROTECTION RELAY
5	79	AUTO RECLOSE
6	64HV	REF PROTECTION (HV SIDE)
7	64LV	REF PROTECTION (LV SIDE)

_____ 100 MBPS FIBER OPTIC ETHERNET LINK (MULTI MODE)
 _____ 100 MBPS UTP CABLE RJ45 ETHERNET LINK
 _____ CO-AXIAL CABLE (BPS LINK)
 _____ STP CABLE FOR SERIAL LINK
 _____ RS-485 SERIAL LINK (MODBUS PROTOCOL)

PROPOSED LOCATION FOR EXTENSION PURPOSE.
EXISTING RING TO BE SUITABLY REMOVED TO
ACCOMMODATE THE PROPOSED SCOPE.

SHEET-1 OF

OWNER: POWER GRID CORPORATION OF INDIA LIMITED

PROJECT-PR-52 132/33KV NEW S/S TRNS SYSTEM II

Schneider
Electric

OVERALL SYSTEM ARCHITECTURE
132/33kV TEZU SUBSTATION

Schneider Electric	SCALE	SH
	NA	0
5427-PK-045-TEZ-E-SYD-PCP-0907	REV.	NEXT
	0	

Title	BILL OF MATERIAL FOR SUBSTATION AUTOMATION SYSTEM		
Project	Substation Package ARP-SS-05 under Comprehensive Scheme for strengthening of Transmission and Distribution System in Arunachal Pradesh	Prep By	SSR
Substation	132/33kV TEZU Ext. S/s	Checked By	JKK
Owner	Department of Power, Government of Arunachal Pradesh(DPAP)	Approved By	SSS
Consultant	Power Grid Corporation of India Ltd. (PGCIL)	Rev	C
Contractor	Flowmore Limited	Date	04-11-2022
PGCIL NOA Ref	CC-CS/165-NER/SS-4220/3/G7/NOA-I/9199 dated 30.6.2021 CC-CS/165-NER/SS-4220/3/G7/NOA-II/9200 dated 30.6.2021		
Flowmore PO Ref	FL/GE/PGCIL-PKG.-ARP-SS-05/230 dated 28.07.2021		
Doc. Ref.	KZ2QSAB7		
WBS Ref.	3269PP1732		



Sl.No.	Flowmore PO Item Ref as per Annexure-II	Voltage Level	Material Category	Item Description	Make	Unit	Qty.	Panel Ref
1	AUGMENTATION OF SUBSTATION AUTOMATION SYSTEM FOR 132KV BAY AS PER TECHNICAL SPECIFICATION	132KV	BCU	BCU FOR BAY-11 HALAIPANI LINE (4DI;3DO)	ALSTOM	NOS.	1	+GIR11
2		132KV	EFS	ETHERNET SWITCH FOR STATION-RING(EFS-1) (12FX;MM;ST-PORTS)	HIRSCHMANN	NOS.	1	+GIR11
3		132KV	LIU	LIU FOR STATION RING EXTENSION TO 33KV BOARD (24 PORT;MM;ST-PORTS)	GENTECH	NOS.	1	LOOSE
4		132KV	CABLES	FO PATCH CORD (3 MTRS>;MM;ST-ST)	PRESTON	NOS.	6	LOOSE
5		132KV	CABLES	FO PATCH CORD (15 MTRS>;MM;ST-ST)	PRESTON	NOS.	4	LOOSE
6		132KV	BCU	MANDATORY SPARE BCU (4DI;3DO WITH TMU)	ALSTOM	NOS.	1	LOOSE
7	A3	132KV	EFS	MANDATORY SPARE EFS (12FX;MM;ST;RJ45)	HIRSCHMANN	NOS.	1	LOOSE

Any other item required for the successful completion of works shall be supplied by M/s Flowmore without any additional price implication to POWERGRID.