



PPCI PUDUCHERRY POWER CORPORATION LIMITED

(A GOVERNMENT OF PUDUCHERRY UNDERTAKING)

PROJECT OFFICE, T.R. PATTINAM 609 606, KARAİKAL.



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Ref.No.T-229/MMC/2019-20/ 2825

GSTIN No.34AAACP6507E1ZS

Dt. 26.03.2020

ENQUIRY

TO

Sub: Inviting offer for Testing of Relays and Current Transformers - Reg.
QUOTATION TO BE:

Submitted on or before: 23.04.2020 -5.00 pm	Opened on: 24.04.2020 - 03.00 pm
Kept valid for 3 months from the date of opening	Submitted in TWO parts.

Wax sealed quotation is invited for **Testing of Relays and Current Transformers**. **The scope of work and specification of Relay's and CTs' are** enclosed and the terms & conditions are mentioned therein.

The Party should have previous work experience for Testing of Relays and Current Transformers. The supporting document for Testing of Relays and Current Transformers works at any Industries is to be submitted with the offer.

General Terms and conditions:

1. The rate quoted should be inclusive of Testing and Calibration Kit, manpower, transport charges, tools and tackles, etc. required for the works, all taxes and other charges as admissible.
2. Applicable other charges, if any should be clearly mentioned as whether inclusive or extra. If not mentioned, it will be presumed that the rate quoted is inclusive of all other charges.
3. **EARNEST MONEY DEPOSIT:** An Earnest Money Deposit of **Rs 6000.00** (Rupees Six thousand only) should be paid by demand draft drawn in favor of the EXECUTIVE ENGINEER (MECH.), Puducherry Power Corporation Ltd T.R. Pattinam, Karaikal on any Nationalized/Schedule bank payable at Karaikal. The earnest money deposit will bear no interest and will be released after successful completion of the work and acceptance.
4. Parties registered with NSIC or SSI/MSME is exempted for submitting EMD/SD. However copies of supporting Documents/Certificates should be kept in separate cover super scribing "**Earnest Money Deposit Exemption**".
5. The party shall be required to place the earnest money and the tender in separate sealed envelopes marked "Earnest Money" and "Tender" respectively. Both the envelopes shall then be placed in another sealed envelope and submitted to the tender inviting authority in the usual manner. The officer opening the tenders shall first open the envelope containing the earnest money. If the earnest money is found to be in order, only then the Officer shall proceed further with opening the tender.
6. **The L1 bidder shall be arrived as the lowest bidder for total amount for all the items. Bidder has to quote for all the items.**
7. The rate has to be quoted in the prescribed tabular column format for work measurement.



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8. The work should be carried out in PPCL site, T.R.Pattinam, Karaikal 609 606. **The specification of Testing of Relays and Current Transformers and the scope of the work are enclosed.**
9. No Workshop facility is available inside PPCL campus and outside private workshops to be utilized by the party concerned at their own cost.
10. Exact date for commencement of work will be intimated appropriately.
11. Necessary Gate pass should be obtained well before the commencement of work.
12. The party should ensure round the clock progress of work at site and should follow all safety rules and procedures strictly inside the plant.
13. In case of any faulty workmanship in the scope of work, the tenderer must rectify the same on free of Cost.
14. **LD Clause:** If the contractor fails to complete the work within the stipulated period, then the Contractor shall pay LD@0.5% for each week delay in work and the total LD% will be subject to the maximum of 5% of the quoted rate.
15. **The bill in triplicate along with advance stamped receipt should be sent to the undersigned for effecting payment.**
16. **PAYMENT: 80%** Payment will be made within 30 days from the date of receipt of your invoice after completion of work satisfactorily and approval of Engineer-in-charge and the balance **20%** Payment will be made after submission of ESI / EPF etc. documents.
17. **The party should have Independent code Numbers for ESI & EPF.** The balance **20%** Payment will be made only after submission of the following :
 - The Bidder or contractor should enclose duly signed list of personnel having deployed to the specific nature of work done in various Sections/Department in PPCL by furnishing the names of the persons along with the specific dates, month & year and obtained necessary certification from the concerned official of PPCL for confirmation & identification of the said manpower.

Or

Contractor shall obtain and enclose the certification of the concerned official of PPCL on the back of the Tax invoice /bill for confirmation & identification of the said man power deployment for the respective work done in PPCL

 - Register of Attendance, wages and proof for payment of wages.
 - **For EPF:**

To be generated from the EPF website for the specific month for the manpower deployed to PPCL and the same to be enclosed separately with a covering letter.

 - i. Combined challan of account no.01, 02, 10, 21 &22 with TPRN number.
 - ii. EPF-Electronic Challan cum Return (ECR)
 - iii. EPF Challan summery/EPF-TRPN details.



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• **For ESI:**

To be generated from the ESI website for the specific month for the manpower same to be enclosed separately with a covering letter.

- i. ESI challan number
- ii. ESI monthly contribution -online challan status (Transaction details)
- iii. ESI monthly contribution (Contractor wise) for the month of.....

18. Party should obtain all permits and licenses under the laws or regulations applicable and in connection with the work carried out and shall comply with and discharge all statutory obligations/liabilities under the various laws such as Factory Act/Workmen's Compensation Act /Employee's State Insurance Act / Employee's Provident Fund Act / Payment of Wages Act / Contract Labor (Regulation & Abolition) Act / Minimum Wages Act Etc., or any modification thereof.
19. Our Tax payment Identification GSTIN No.34AAACP6507E1ZS is registered with Commercial Taxes Department, Puducherry. Bidder should furnish their GST details.
20. Quotations through fax/mail and received after due date will not be considered.
21. Wax sealed quotations should be super scribed as "QUOTATION/ENQUIRY NO.T-229 for Testing of Relays and CT's work".
22. If the tender opening date happens to be a holiday, the tender will be opened on the next working day.
23. The undersigned reserves all rights to accept/reject any or all the quotations without assigning any reasons thereof.
24. The work order is not transferable and subcontract/sublet of work is not permitted.


26/03/2020

EXECUTIVE ENGINEER (MECH.)-PLANT



PUDUCHERRY POWER CORPORATION LIMITD
(A GOVERNMENT OF PUDUCHERRY UNDERTAKING)



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Sl. No	Description	Qty In Nos	Rate per unit (Rs.)	Amount (Rs.)
1	Testing & Calibration of Relays (as per the specification annexure - I enclosed from Sl.No.001 to 266)	475		
2	Testing & Calibration of Digital Integrated Generator Protection Relays (as per the specification annexure - III)	02		
3	Testing & Calibration of Digital Multifunctional Numerical Relay (Time Over current and Earth fault protection relay) for 11KV feeders (as per the specification annexure - IV)	07		
4	Testing & Calibration of Digital Multifunctional Numerical Relay (Mains Decoupling and Frequency Relay) for 110KV Bus coupler (as per the specification annexure - IV)	02		
5	Testing of Current Transformers (as per the annexure - II enclosed from Sl.No.001 to 21)	164		
Sub-Total				
GST @ %				
Total Amount (Rs.)				

Commercial Terms and Condition:

Sl. No	Details	Terms in Tender	Terms Accepted by the Party
1	Price Quoted	Inclusive of Testing, Calibration Kit, Man power, Transport charges, Tools & tackles etc.	
2	Payment Terms	80% within 30 days from the date of completion of works satisfactory and 20% after the ESI& EPF Compliances	
3	Validity	90 Days from date of opening of Tender	
4	Supporting Documents for the previous experience	Should be enclosed	
5	Delivery/ Completion Period	Vendor to specify	
6	Acceptance of All the Terms and Condition	To be Accepted	

Signature with Seal of the Party

Annexure - I

SI.No	Description	Relay Type	Make	Qty
Sub - Station				
GENERATOR INCOMMER - 1				
1	E/F relay IDMT	ICM21 N	ABB	1
2	O/C relay IDMT	ICM21 N	ABB	3
3	Aux. Relay for antipumping (94)	RXMEI	ABB	1
4	Aux. Relay for gas pre. Low (96) Double Ele.	RXSFI	ABB	1
5	Trip Ckt Supervision Relay (74)	TSR	ABB	1
6	Tripping Relay (86)	RXPQ8	ABB	1
GENERATOR INCOMMER - 2				
7	E/F relay IDMT	ICM21 N	ABB	1
8	O/C relay IDMT	ICM21 N	ABB	3
9	Aux. Relay for antipumping (94)	RXMEI	ABB	1
10	Aux. Relay for gas pre. Low (96) Double Ele.	RXSFI	ABB	1
11	Trip Ckt Supervision Relay (74)	TSR	ABB	1
12	Tripping Relay (86)	RXPQ8	ABB	1
LV - 1				
13	Directional O/C	CDD	GEC ALSTHOM	3
14	Directional E/F	CDD	GEC ALSTHOM	1
15	O/C relay IDMT + INST	ICM 21 K	ABB	3
16	E/F relay IDMT + INST	ICM 21 P	ABB	1
17	Neutral Displacement Relay	UBX 117	ABB	1
18	Aux. Relay for antipumping (94)	RXMEI	ABB	1
19	Aux. Relay for gas pre. Low (96) Double Ele.	RXSFI	ABB	1
20	Trip Ckt Supervision Relay (74)	TSR	ABB	1
21	Tripping Relay (86)	RXPQ8	ABB	1
22	Flag Relay (2ele)	RXSFI	ABB	1
23	Sensitive Earth Fault Relay	RXIG28	ABB	1
LV - 2				
24	Directional O/C	CDD	GEC ALSTHOM	3
25	Directional E/F	CDD	GEC ALSTHOM	1
26	O/C relay IDMT + INST	ICM 21 K	ABB	3
27	E/F relay IDMT + INST	ICM 21 P	ABB	1
28	Neutral Displacement Relay	UBX 117	ABB	1
29	Aux. Relay for antipumping (94)	RXMEI	ABB	1
30	Aux. Relay for gas pre. Low (96) Double Ele.	RXSFI	ABB	1
31	Trip Ckt Supervision Relay (74)	TSR	ABB	1
32	Tripping Relay (86)	RXPQ8	ABB	1
33	Flag Relay (2ele)	RXSFI	ABB	1
34	Sensitive Earth Fault Relay	RXIG28	ABB	1
FEEDER - 1 (POLAGAM)				
35	O/C relay IDMT + INST	ICM 21 K	ABB	3
36	E/F relay IDMT + INST	ICM 21 P	ABB	1
37	Aux. Relay for gas pre. Low (96) Double Ele.	RXSFI	ABB	1
38	Aux. Relay for antipumping (94)	RXMEI	ABB	1
39	Trip Ckt Supervision Relay (74)	TSR	ABB	1
40	Tripping Relay (86)	RXPQ8	ABB	1

FEEDER - 2 (LINK)				
41	O/C relay IDMT + INST	ICM 21 K	ABB	3
42	E/F relay IDMT + INST	ICM 21 P	ABB	1
43	Aux. Relay for gas pre. Low (96) Double Ele.	RXSFI	ABB	1
44	Aux. Relay for antipumping (94)	RXMEI	ABB	1
45	Trip Ckt Supervision Relay (74)	TSR	ABB	1
46	Tripping Relay (86)	RXPQ8	ABB	1
FEEDER - 3 (KARAIKAL)				
47	O/C relay IDMT + INST	ICM 21 K	ABB	3
48	E/F relay IDMT + INST	ICM 21 P	ABB	1
49	Aux. Relay for gas pre. Low (96) Double Ele.	RXSFI	ABB	1
50	Aux. Relay for antipumping (94)	RXMEI	ABB	1
51	Trip Ckt Supervision Relay (74)	TSR	ABB	1
52	Tripping Relay (86)	RXPQ8	ABB	1
FEEDER - 4 (STEEL)				
53	O/C relay IDMT + INST	ICM 21 K	ABB	3
54	E/F relay IDMT + INST	ICM 21 P	ABB	1
55	Aux. Relay for gas pre. Low (96) Double Ele.	RXSFI	ABB	1
56	Aux. Relay for antipumping (94)	RXMEI	ABB	1
57	Trip Ckt Supervision Relay (74)	TSR	ABB	1
58	Tripping Relay (86)	RXPQ8	ABB	1
FEEDER - 5 (VANJURE)				
59	O/C relay IDMT + INST	ICM 21 K	ABB	3
60	E/F relay IDMT + INST	ICM 21 P	ABB	1
61	Aux. Relay for gas pre. Low (96) Double Ele.	RXSFI	ABB	1
62	Aux. Relay for antipumping (94)	RXMEI	ABB	1
63	Trip Ckt Supervision Relay (74)	TSR	ABB	1
64	Tripping Relay (86)	RXPQ8	ABB	1
FEEDER - 6 (ALLOY)				
65	O/C relay IDMT + INST	ICM 21 K	ABB	3
66	E/F relay IDMT + INST	ICM 21 P	ABB	1
67	Aux. Relay for gas pre. Low (96) Double Ele.	RXSFI	ABB	1
68	Aux. Relay for antipumping (94)	RXMEI	ABB	1
69	Trip Ckt Supervision Relay (74)	TSR	ABB	1
70	Tripping Relay (86)	RXPQ8	ABB	1
FEEDER - 7 (INDUSTRIAL)				
71	O/C relay IDMT + INST	ICM 21 K	ABB	3
72	E/F relay IDMT + INST	ICM 21 P	ABB	1
73	Aux. Relay for gas pre. Low (96) Double Ele.	RXSFI	ABB	1
74	Aux. Relay for antipumping (94)	RXMEI	ABB	1
75	Trip Ckt Supervision Relay (74)	TSR	ABB	1
76	Tripping Relay (86)	RXPQ8	ABB	1
FEEDER - 8 (PPCL)				
77	O/C relay IDMT + INST	ICM 21 K	ABB	3
78	E/F relay IDMT + INST	ICM 21 P	ABB	1
79	Aux. Relay for gas pre. Low (96) Double Ele.	RXSFI	ABB	1

80	Aux. Relay for antipumping (94)	RXMEI	ABB	1
81	Trip Ckt Supervision Relay (74)	TSR	ABB	1
82	Tripping Relay (86)	RXPQ8	ABB	1
BUS SECTIONALIZER				
83	O/C relay IDMT	ICM 21 N	ABB	3
84	E/F relay IDMT	ICM 21 N	ABB	1
85	Synchronizing check relay	SKD	GEC ALSTHOM	1
86	Aux. Relay for antipumping (94)	RXMEI	ABB	1
87	Aux. Relay for gas pre. Low (96) Double Ele.	RXSFI	ABB	1
88	Trip Ckt Supervision Relay (74)	TSR	ABB	1
89	Tripping Relay (86)	RXPQ8	ABB	1
90	Flag Relay (2ele)	RXSFI	ABB	1
BUS PT				
91	Fuse Failure relay (97)	FFR	ABB	2
92	Under Voltage relay (27)	RXEG21	ABB	4
93	Time Delay relay	RXKL1	ABB	2
PCC				
11 kV PANELS				
GTG INCOMER				
94	Gen. Differential Relay	4B3X3	EASUN EYROLLE	3
95	Trip Ckt Supervision Relay (74)	B51	EASUN EYROLLE	1
GTG INCOMMER (STANDBY)				
96	Gen. Differential Relay	4B3X3	EASUN EYROLLE	3
97	Trip Ckt Supervision Relay (74)	B51	EASUN EYROLLE	1
GRID INCOMER - 1				
98	Over Current	TJM10	EASUN EYROLLE	2
99	U/V Relay	TEB2	EASUN EYROLLE	2
100	Tripping Relay	B24H2		1
101	Trip Ckt Supervision Relay (74)	B51	EASUN EYROLLE	1
102	Feeder differential relay	4B3X3	EASUN EYROLLE	3
103	Sensitive Earth Fault Relay	CTU	ENGLISH ELECTRICAL	1
104	Timer for UV relay	MDDA	EASUN REYROLLE	1
GRID INCOMER - 2				
105	Over Current	TJM10	EASUN REYROLLE	2
106	U/V Relay	TEB2	EASUN REYROLLE	2
107	Tripping Relay	B24H2		1
108	Trip Ckt Supervision Relay (74)	B51	EASUN REYROLLE	1
109	Feeder differential relay	4B3X3	EASUN REYROLLE	3
110	Sensitive Earth Fault Relay	CTU	ENGLISH ELECTRICAL	1
111	Timer for UV relay	MDDA	EASUN REYROLLE	1
BUS COUPLER & BUS PT				
112	Over Current relay	TJM10	EASUN REYROLLE	2
113	UV relay	TEB2	EASUN REYROLLE	4
114	Tripping Relay (86)	B24H2	EASUN REYROLLE	1
115	Trip Ckt Supervision Relay (95)	B51	EASUN REYROLLE	1
9.6 MW STEAM TURBINE INCOMER				
116	Gen. Differential Relay	4B3X3	EASUN REYROLLE	3
117	Trip Ckt Supervision Relay (74)	B51	EASUN REYROLLE	1
5 MVA TRANSFORMER - 1				
118	Over Current relay	TJM 11	EASUN REYROLLE	3
119	Earth Fault Relay	TJM 10	EASUN REYROLLE	2
120	Restricted E/F Relay	B4B3	EASUN REYROLLE	1

121	Tripping Relay	B24H2	EASUN REYROLLE	1
122	Auxiliary Relay	B33X3	EASUN REYROLLE	2
123	Transformer Differential Relay	4C21	EASUN REYROLLE	3
124	Trip Ckt Supervision Relay (74)	B51	EASUN REYROLLE	1
5 MVA TRANSFORMER - 2				
125	Over Current Relay	TJM 11	EASUN REYROLLE	3
126	Earth Fault Relay	TJM 10	EASUN REYROLLE	2
127	Restricted E/F Relay	B4B3	EASUN REYROLLE	1
128	Tripping Relay	B24H2	EASUN REYROLLE	1
129	Auxiliary Relay	B33X3	EASUN REYROLLE	2
130	Transformer Differential Relay	4C21	EASUN REYROLLE	3
131	Trip Ckt Supervision Relay (74)	B51	EASUN REYROLLE	1
2 MVA TRANSFORMER - 1				
132	Over Current relay	TJM 11	EASUN REYROLLE	3
133	Earth Fault Relay	TJM 10	EASUN REYROLLE	2
134	Tripping Relay	B24H2	EASUN REYROLLE	1
135	Auxiliary Relay	B33X3	EASUN REYROLLE	2
136	Trip Ckt Supervision Relay (74)	B51	EASUN REYROLLE	1
2 MVA TRANSFORMER - 2				
137	Over Current relay	TJM 11	EASUN REYROLLE	3
138	Earth Fault Relay	TJM 10	EASUN REYROLLE	2
139	Tripping Relay	B24H2	EASUN REYROLLE	1
140	Auxiliary Relay	B33X3	EASUN REYROLLE	2
141	Trip Ckt Supervision Relay (74)	B51	EASUN REYROLLE	1
2 MVA TRANSFORMER (STANDBY)				
142	Over Current relay	TJM 11	EASUN REYROLLE	3
143	Earth Fault Relay	TJM 10	EASUN REYROLLE	2
144	Tripping Relay	B24H2	EASUN REYROLLE	1
145	Auxiliary Relay	B33X3	EASUN REYROLLE	2
146	Trip Ckt Supervision Relay (74)	B51	EASUN REYROLLE	1
6.6 KV PANEL				
5 MVA TRANSFORMER 1 &2 (6.6 KV)				
147	Over Current relay	TJM 10	EASUN REYROLLE	4
148	E/F Relay	TJM 10	EASUN REYROLLE	2
149	UV relay	TEB2	EASUN REYROLLE	4
150	Tripping relay	B24H2	EASUN REYROLLE	2
151	Trip Ckt Supervision Relay (74)	B51	EASUN REYROLLE	2
152	Time for UV Relay	MDDA	EASUN REYROLLE	2
BUS COUPLER (6.6 KV)				
153	Over Current	TJM 10	EASUN REYROLLE	2
154	E/F Relay	TJM 10	EASUN REYROLLE	1
155	Tripping Relay	B24H2	EASUN REYROLLE	1
156	Trip Ckt Supervision Relay (74)	B51	EASUN REYROLLE	1
BUS PT CUM TRUNKING				
157	UV relay	TEB2	EASUN REYROLLE	4
158	Timer for UV relay	MDDA	EASUN REYROLLE	2
MOTOR FEEDERS				
159	MOTOR FEEDER PROTECTION	SPAM 150C	ABB	11
160	UV Relay	B12	EASUN REYROLLE	2
161	Tripping Relay	B24H2	EASUN REYROLLE	11
162	Trip Ckt Supervision Relay (74)	B51	EASUN REYROLLE	11

PCC (415V)

INCOMER 1 , 2				
163	E/F Relay Inst.	CDG	GEC ALSTHOM	2
164	Over Current (Inverse)	CDG	GEC ALSTHOM	2
165	E/F Relay (Inverse)	CDG	GEC ALSTHOM	2
166	Tripping Relay	VAJ	GEC ALSTHOM	2
167	Trip Ckt Supervision Relay (74)	VAX MK II	GEC ALSTHOM	2
168	Definite time Relay	VTT	GEC ALSTHOM	2
169	Fuse Failure Relay	VAPM	GEC ALSTHOM	2
170	UV relay	VAGM	GEC ALSTHOM	4
BUS COUPLER 1 (415 V)				
171	Over Current (Inverse)	CDG	GEC ALSTHOM	1
172	E/F Relay (Inverse)	CDG	GEC ALSTHOM	1
173	Synchronizing check relay	SKE	GEC ALSTHOM	1
174	Definite time Relay	VTT	GEC ALSTHOM	3
175	Fuse Failure Relay	VAPM	GEC ALSTHOM	2
176	UV relay	VAGM	GEC ALSTHOM	4
177	Trip Ckt Supervision Relay (74)	VAX MK II	GEC ALSTHOM	1
178	Tripping Relay	VAJ	GEC ALSTHOM	1
FIRE PROTECTION 1				
179	Over Current (Inverse)	CDG	GEC ALSTHOM	1
180	E/F Relay (Inverse)	CDG	GEC ALSTHOM	1
181	Tripping Relay	VAJ	GEC ALSTHOM	1
182	Trip Ckt Supervision Relay (74)	VAX MK II	GEC ALSTHOM	1
FIRE PROTECTION 2				
183	Over Current (Inverse)	CDG	GEC ALSTHOM	1
184	E/F Relay (Inverse)	CDG	GEC ALSTHOM	1
185	Tripping Relay	VAJ	GEC ALSTHOM	1
186	Trip Ckt Supervision Relay (74)	VAX MK II	GEC ALSTHOM	1
BOP 1 & 2				
187	Over Current relay (Inverse)	CDG	GEC ALSTHOM	2
188	E/F Relay (Inverse)	CDG	GEC ALSTHOM	2
189	Tripping Relay	VAJ	GEC ALSTHOM	2
190	Trip Ckt Supervision Relay (74)	VAX MK II	GEC ALSTHOM	2
COOLING WATER 1 & 2				
191	Over Current (Inverse)	CDG	GEC ALSTHOM	2
192	E/F Relay (Inverse)	CDG	GEC ALSTHOM	2
193	Tripping Relay	VAJ	GEC ALSTHOM	2
194	Trip Ckt Supervision Relay (74)	VAX MK II	GEC ALSTHOM	2
MVWS 1 & 2				
195	Control Relay	VAJC	GEC ALSTHOM	2
196	Multifunction Motor Protection Relay	MM30	L&T	2
197	Tripping Relay	VAJ	GEC ALSTHOM	2
198	Trip Ckt Supervision Relay (74)	VAX MK II	GEC ALSTHOM	2
GTG 1 & 2				
199	Over Current (Inverse)	CDG	GEC ALSTHOM	2
200	E/F Relay (Inverse)	CDG	GEC ALSTHOM	2
201	Tripping Relay	VAJ	GEC ALSTHOM	2
202	Trip Circuit Supervision Relay	VAX MK II	GEC ALSTHOM	2
STG 1 & 2				
203	Over Current (Inverse)	CDG	GEC ALSTHOM	2
204	E/F Relay (Inverse)	CDG	GEC ALSTHOM	2
205	Tripping Relay	VAJ	GEC ALSTHOM	2

206	Trip Circuit Supervision Relay	VAX MK II	GEC ALSTHOM	2
BUS COUPLER 2 (415 V)				
207	Over Current (Inverse)	CDG	GEC ALSTHOM	1
208	E/F Relay (Inverse)	CDG	GEC ALSTHOM	1
209	Fuse Failure Relay	VAPM	GEC ALSTHOM	1
210	UV relay	VAGM	GEC ALSTHOM	2
211	Tripping Relay	VAJ	GEC ALSTHOM	1
212	Trip Ckt Supervision Relay	VAX MK II	GEC ALSTHOM	1
D.G. INCOMER				
213	Trip Circuit Supervision Relay	VAX MK II	GEC ALSTHOM	1
MCC				
GT MCC 1&2				
214	Instantaneous Under Voltage	VAGM	GEC ALSTHOM	4
215	Definite time Relay	VTT	GEC ALSTHOM	2
216	Fuse Failure Relay	VAPM	GEC ALSTHOM	2
217	Trip Circuit Supervision Relay	VAX MK II	GEC ALSTHOM	2
218	Aux. Relay	VAA	GEC ALSTHOM	2
STG MCC 1&2				
219	Instantaneous Under Voltage	VAGM	GEC ALSTHOM	4
220	Definite time Relay	VTT	GEC ALSTHOM	2
221	Fuse Failure Relay	VAPM	GEC ALSTHOM	2
222	Trip Circuit Supervision Relay	VAX MK II	GEC ALSTHOM	2
STG MCC BUS COUPLER				
223	Instantaneous Under Voltage	VAGM	GEC ALSTHOM	4
224	Fuse Failure Relay	VAPM	GEC ALSTHOM	2
225	Trip Circuit Supervision Relay	VAX MK II	GEC ALSTHOM	1
226	Definite time Relay	VTT	GEC ALSTHOM	1
380 KVA GEN. SET				
227	Tripping Relay	VAJ	ENGLISH ELECTRICAL	1
228	Negative Sequence Relay	CTNM	GEC ALSTHOM	1
229	UV relay	VAGM	ENGLISH ELECTRICAL	1
230	Over Voltage Relay	VDG	GEC ALSTHOM	1
231	UV relay	VDG	GEC ALSTHOM	1
232	Under Frequency Relay	FTG	ENGLISH ELECTRICAL	1
233	Definite time reverse power relay	CCUM	GEC ALSTHOM	1
234	Definite Time Relay	VIT	GEC ALSTHOM	1
235	Over Current (Inverse)	CDG	GEC ALSTHOM	2
236	E/F Relay (Inverse)	CDG	GEC ALSTHOM	1
237	Instantaneous differential relay	CAG	GEC ALSTHOM	3
GTG RELAY PANEL				
238	Tripping relay	VAJ	GEC ALSTHOM	2
239	Instantaneous Under Voltage Relay	VAGM	GEC ALSTHOM	1
240	Over Voltage Relay	VTU	GEC ALSTHOM	1
241	Definite Time Over Current Relay	CTU	GEC ALSTHOM	1
242	Trip Circuit Supervision Relay	VAX MK II	GEC ALSTHOM	2
243	Definite Time Relay	VTT	GEC ALSTHOM	2
244	Auxiliary Relay	VAA	GEC ALSTHOM	11
245	Voltage Balance Relay	MVAP	ENGLISH ELECTRICAL	2
246	Check Synchronising Relay	SKE	GEC ALSTHOM	1
247	Gen. Cable Diff Protection Relay	CAG	GEC ALSTHOM	1
248	Reverse Power Relay	WCDM	GEC ALSTHOM	3
249	Rotor Earth Fault Relay	7UR 2202	SIEMENS	1

STG RELAY PANEL				
250	Tripping Relay	VAJ	GEC ALSTHOM	2
251	Instantaneous Under Voltage	VAGM	GEC ALSTHOM	1
252	Over Voltage Relay	VTU	GEC ALSTHOM	1
253	Definite Time Over Current Relay	CTU	GEC ALSTHOM	1
254	Trip Circuit Supervision Relay	VAX MK II	GEC ALSTHOM	2
255	Definite Time Relay	VTT	GEC ALSTHOM	1
256	Auxiliary relay	VAA	GEC ALSTHOM	11
257	Voltage Balance Relay	MVAP	ENGLISH ELECTRICAL	2
258	Check Synchronising relay	SKE	GEC ALSTHOM	1
259	Gen. Cable Diff Protection Relay	CAG	GEC ALSTHOM	1
260	Rotor Earth Fault Relay	7UR 2202	SIEMENS	1
110 V D.C STATION DISTRIBUTION				
261	Battery Earth Fault Relay	CAEM, MK II	GEC ALSTHOM	1
262	Inst U/V Relay	VAGM	GEC ALSTHOM	1
125 D.C DISTRIBUTION				
263	Battery Earth Fault Relay	CAEM, MK II	GEC ALSTHOM	1
264	Inst U/V Relay	VAGM	GEC ALSTHOM	1
S.S 110 V D.C DISTRIBUTION				
265	E/F Relay	CAEM, MK II	GEC ALSTHOM	1
266	U/V Relay	VAGM	GEC ALSTHOM	1
Total No of Relays				475

Annexure - II

SI#	Specification For CT's	Qty
	FEEDER	
	CT DETAIL	
1	CWP & BFP Ratio : 25/1-1A, Core I, Class: 7.5 VA, 10P10, Core II, Class: 7.5VA, 3	18
2	GBC Ratio: 40/1-1A, Core I : 7.5 VA, 10P10, Core II: 7.5 VA, 3	15
3	INCOMER I & II, Ratio: 500/1-1-A, Core I: 15 VA, 5P10, Core II: 15VA, 1.0, Core III: VK≥90 (RCT + 0.2) + 40 V	6
4	BUS COUPLER Ratio: 500/1-1+1A, Core: 15VA, 5P10	3
	11KV PCC	
5	2 MVA Transformer - I & II Ratio: 150/1-1A, Core I: 15VA, 5P10, Core II: 15VA, 1	6
6	5 MVA Transformer - I&II Ratio : 300/1-1A, Core I: 15VA, 5P10, Core II: 15VA, 1	6
7	Diff. CT for 5 MVA Tr - I&II 300/1A,270 (RCT + 0.2)	6
8	Incomer - I&II Ratio: 2000/1A, Core I: 20 VA, 5P20, Core II: 20 VA, 1.0	6
9	Vk ≥ 40 (RCT + 0.2), Ps	12
10	Bus Coupler Ratio: 2000/1A, CoreI: 15 VA, 5p20, Core II: 15VA, 1.0	3
	Substation	
11	Generator Incomer Ratio: 2000/1A, Core I: 15VA, 5P20, Core II: 20 VA, 1 Accy Class: 0.2s for Incomer II & 0.5 for Incomer I	6
12	Transformer - I&II Ratio: 1000/1A, Core I: 20 VA, 1, Core II: 15 VA, 5P20	6
13	Diff. CT Vk > = 250 V, Io < = 302mA,at Vk/2,Rct < = 1.5 Ω	6

14	Bus Coupler Ratio: 2000/1A, Core I : 25 VA, 1, Core II : 30 VA, 5P20	3
15	Feeders Ratio: 400/1A, Core I: 20 Va, 1, Core II: 15 VA, 5P20	24
	STG	
16	STG - Stator Bus Ratio: 800/1A	
	Class: 0.5, Burden: 40 VA	3
	Class: 0.5, Burden: 100 VA	3
	Class: PS	3
17	STG - NGR BUS Ratio: 800/1A	
	Class: 0.5, Burden : 40 VA	3
	Class : PS	3
	Class: 0.2, Burden : 100 VA	3
18	STG - Neutral Bus 100/1A, Class: 5P10, Burden: 15 VA	1
	GTG	
19	GTG Stator Bus Ratio: 2000/1A	
	Class: PS	3
	Class: 5P10, Burden: 100 VA	3
	Class : PS	3
20	GTG NGR Bus Ratio: 2000/1A	
	Class: 0.5, Burden: 40 VA	3
	Class: PS	3
	Class: 0.2 , Burden : 100 VA	3
21	GTG Neutral Ratio: 100/1A	1
	Total No of CT's	164

ANNEXURE - III

SPECIFICATION OF THE DIGITAL INTEGRATED GENERATOR PROTECTION RELAY - 02 Nos.

Make : GEC Alsthom India Ltd.,
Type : LGPG 111 01S144LED
Sl. No. : 039064 J for GTG & 039065J for STG
AC Current In : 1A
Auxiliary Voltage Vx (1) : 110V DC
Auxiliary Voltage Vx (2) : 110V DC
Frequency Fn : 50 Hz
Total : 2 Nos

SCOPE OF WORK

- The above relays are to be tested by using 3 Phase Micro processor based secondary injection test kit of "Omicron or Doble" make test kit.
- All the functions that are enabled & disabled in LGPG relay are to be tested.
- Testing is to be done for present setting only.
- After testing of the relay, original setting to be restored back.
- All testing, calibrating instruments and tools required for the testing is under the agency's scope.
- The contractor should have valid calibration certificate for the testing instruments to be used at the site.
- The contractor should mobilize sufficient manpower to complete the job within the stipulated shutdown period.
- After completion of testing the agency should furnish two sets of test reports.
- In case of any faulty workmanship in the scope of work, malfunction the party must rectify the same at their own cost.

ANNEXURE - IV

SPECIFICATION OF THE DIGITAL MULTIFUNCTIONAL NUMERICAL RELAY (TIME OVERCURRENT AND EARTH FAULT PROTECTION RELAY) - 07 No's in 11 KV

Distribution Feeders

Make : SEGC (C &S)
Type : MRI1-IE (Time over current and earth fault relay with Circuit Breaker failure protection)
Auxiliary Voltage : 110V DC
Total : 07 No's

SPECIFICATION OF THE DIGITAL MULTIFUNCTIONAL NUMERICAL RELAY (MAINS DECOUPLING AND FREQUENCY RELAY) 02Nos IN 110 KV BUSCOUPLER PANEL

Make : SEGC (C & S)
Type : MRF2-1-HD & MRN2-1-1HD
Auxiliary Voltage : 110V (50 to 270 V AC, 70 to 360 V AC)
Nominal Voltage : 100 V
Nominal Frequency: 50 -60 HZ
Total : 02 Nos.

SCOPE OF WORK

- The above relays are to be tested by using 3 Phase Micro processor based secondary injection test kit.
- All the functions that are enabled & disabled in SEGC numerical relay are to be tested.
- Testing is to be done for present setting only.
- After testing of the relay, original setting to be restored back.
- All testing, calibrating instruments and tools required for the testing is under the agency's scope.
- The contractor should have valid calibration certificate for the testing Instruments to be used at the site.
- The contractor should mobilize sufficient manpower to complete the job within the stipulated shutdown period.
- After completion of testing the agency should furnish two sets of test reports.
- In case of any faulty workmanship in the scope of work, malfunction the party must rectify the same at their own cost.

ANNEXURE - V

Scope of Work for Relays & CT's Testing

1. Testing of Relay to be done through secondary injection method from the secondary terminals of PT & CT including wiring.
2. All relays are to be tested one by one.
3. Relays are to be tested in at least three different plugs & time settings.
4. All relays are to be restored back to or original setting in the original place after testing.
5. Following tests are to be done in CTs:
 - a) Measurement of IR Value between primary to secondary core and earth, primary to secondary cores, each secondary core to other cores, all secondary cores to earth.
 - b) Polarity tests
 - c) Winding resistance test
 - d) Ratio test
 - e) Knee point Voltage Test.
6. All testing instruments & tools should be brought by the contractor.
7. The contractor should have valid calibration certificate for the testing instruments to be used at the site.
8. The contractor should mobilize sufficient manpower to complete the job within the stipulated shutdown period.
9. After completion of testing the agency should furnish two sets of test reports.
10. In case of any faulty workmanship in the scope of work, malfunction the party must rectify the same at their own cost.
11. At the time of plant startup, if any problem observed in the relays, the contractor should be available at PPCL site to rectify the above.