Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026.

Tender Ref.: ET/433

(PART-I)

NOTICE INVITING TENDER

01.	Tender Number	: **ET/433**
02.	Name of work	: **Calibration/ Testing of Protective relays and meters**
03.	Period of Contract	: **One Month**
04.	Earnest Money Deposit	: **NIL**
04.	Estimated Cost	: **Rs.0.50 Lakhs**
05.	Last Date & Time for the Receipt of Completed Tender.	: **13:30 Hrs. on 15.07.2016**
06.	Date & Time for Tender Opening	: **13:45 Hrs. on 15.07.2016**
07.	Place of submission of Tender	: Tender Box marked as "**FS&T**" located in Reception Area of Electronics Division, BHEL Mysore Road, Bangalore – 560 026.

This tender document contains total of 15 pages in Two parts **Part-I and Part-II** as described below

01. Instructions to Tenderers and Technical cum Commercial bid (Part-I: 08 pages) – Separate envelope.
02. Price bid (Part- II: 7 pages) - Separate envelope.

Note:

1. The tenderer shall read the tender documents carefully and fill all the columns neatly. Incomplete tenders may be rejected.
2. The tenderer shall return the duly filled in tender document after affixing signature on all pages.
3. The Tenderer shall ensure and put **"Instructions to Tenderers, Scope of Work, and Technical cum Commercial bid" together in one cover and "Price bid (Part – II)" in a separate cover. Both these covers shall be separately sealed and then put together in a single cover and sealed**. All the sealed covers shall be properly identified with necessary information such as Tender reference, type of document put inside, date of tender opening to enable to open the correct document cover only.

Issued to:

Signature of Tenderer Signature of Issuing Officer

Tender Ref.: ET/433

INSTRUCTIONS TO TENDERERS

1. Sealed Tenders in two part bid for the above noted work are hereby invited from Contractors experienced in works of similar kind and magnitude.

2. Tenders should be addressed to the Issuing Officer, Electronics Division, Bharat Heavy Electricals Limited, Mysore Road, Bangalore – 560 026. The full name and address of the Tenderer, name of the work and the date of opening should be indicated on the cover.

2.1 The local address of the Contractor, the name of the person to whom all the correspondence are to be addressed should be indicated with telephone number (both office and residence), FAX/ email address, Mobile phone No. etc..

3. All entries in the tender documents should be in the same ink. Erasures and over writing are not permitted. The Tenderer concerned with proper indication of the name, designation and address of the person signing should duly sign all cancellations and insertions.

4. Tenderers shall fill in all the required particulars in the blank spaces provided for this purpose in the tender documents and also sign each and every page of the tender document including the drawings (wherever applicable) attached there to before submitting tender.

5. Unit rates should be quoted in figures as well as in words in Indian Currency only i.e. Rupees and Paise with reference to each item and for all the items shown in the attached schedule. The rates shall exclude all taxes and duties, but include transportation charges and any statutory levies. Amount of each item and the total on each sheet as also the grand total amount of the whole contract shall be filled by the tenderers.

6. In case the rate quoted in figures differ from those quoted in words, the lower of the rates will be taken as the tendered rate and shall be binding on the tenderers.

7. In quoting their rates, the tenderers are advised to take into account all factors including any fluctuations in market rates. No claim for enhanced rates will be entertained on this account after acceptance of the tender or during the currency of the con

8. (a) The rates quoted in the tender shall remain valid for a period of 'THREE MONTHS' from the date of opening of tender.
(b) Tenderer shall not increase their quoted rates, once the Tenderer has submitted his quotation and during execution of the contract in case his tender is accepted.

9. Before tendering, the tenderers are advised to inspect the site of work and its environments and be well acquainted with the actual working and other prevailing conditions, position of materials and labor. They should be well versed with Instructions to tenderers, drawing wherever applicable and specifications and all other documents which form part of the agreement to be entered into subsequent to award of work.

Signature of Tenderer Signature of Issuing Officer

10. Should a Tenderer find discrepancies or omissions in the drawings wherever applicable / Specifications / Scope of work / Terms & Conditions attached to the tender documents or should be in doubt as to their meaning, he should at once address to the authority inviting the tender for clarifications. Every endeavor is made to avoid any error which can materially affect the basis of the tender but the successful Tenderer shall take upon himself to provide for the risk of any error which may be subsequently discovered and shall make no subsequent claim on account thereof.

11. In case, the date of tender opening falls on Holiday, the tender will be opened on the subsequent date of intimation.

12. Conditional and unsigned tenders, tenders containing absurd rates and amounts, tenders which are incomplete or otherwise considered defective, tenders which are not in accordance with the tender conditions laid down by the Accepting Officer and tenders not submitted in the prescribed forms are liable to be rejected.

13. Tenders submitted by post should be sent by "Registered Post with Acknowledgement due". These should be posted with due consideration for any delay in postal delivery. Tenders received after the due date of opening of tenders are liable to be rejected.

14. The Contractor's responsibility under this contract shall commence from the date of receipt of the order or acceptance of his tender.

15. The Contractor shall comply with statutory requirement such as ESI. Etc. alternatively, the contractor shall take necessary workmen compensation insurance policies covering third party risks to their/his employees in lieu of ESI.

16. **TERMS OF PAYMENT:**
Payment will be made after satisfactory completion of work on prorate basis against submission of bill and calibration report

17 **SECURITY DEPOSIT**

17.1 The successful tenderer shall deposit the Security deposit before start of the work. The rate of Security deposit will be as below.

Upto Rs. 10 Lakhs	10 %
Above Rs. 10 Lakhs upto Rs. 50 Lakhs	Rs. 1 Lakh + 7.5% of the amount exceeding Rs. 10 Lakhs
Above Rs. 50 Lakhs	Rs. 4 Lakhs + 5 % of the amount exceeding Rs. 50 Lakhs

17.2 Security deposit may be furnished in any one of the following forms

i) Cash (as permissible under the Income Tax Act)

ii) Pay Order, Demand Draft in favour of BHEL

iii) Local Cheques of scheduled banks, subject to realization.

iv) Securities available from Post Offices such as National Savings Certificates, Kisan Vikas Patras etc. (Certificates should be held in the name of Contractor furnishing the security and duly pledged in favour of BHEL and discharged on the back)

v) Bank Guarantee from scheduled Banks / Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format should have the approval of BHEL.

vi) Fixed Deposit Receipt issued by Scheduled Banks / Public Financial Institutions as defined in the Companies Act. The FDR should be in the name of the contractor, A/C. BHEL, duly discharged on the back.

vii) Security Deposit can also be recovered at the rate of 10% from the running bills. However in such cases at least 50% of Security Deposit shall be deposited before start of the work and the balance 50% may be recovered from the running bills.

viii) The Security deposit shall not carry any interest.

NOTE:

a. Acceptance of Security Deposit against Sl. No. (iv) and (vi) above will subject to hypothecation or endorsement on the document in favour of BHEL. However, BHEL will not be liable or responsible in any matter for the collection of interest or renewal of the documents or in any other matter connected therewith.

b. Security deposit will be returned after satisfactory completion of work along with Final bill.

18 **CLEANING OF SITE:**

After completion of the work, the contractor shall remove all debris, take away left over construction materials, machine, equipment, temporary offices, stores, work shop etc. and make the area neat and clean. The cost of this work shall be included in the quoted rate.

BHARAT HEAVY ELECTRICALS LIMITED
ELECTRONICS DIVISION
&
ELECTRONICS SYSTEMS DIVISION
BANGALORE

HEALTH, SAFETY & ENVIRONMENTAL POLICY

The Management is committed to be an environmentally sound company in its activities, products, services and to provide safe and healthy working environment covering its employees, Contractors, Contract labors, trainees, suppliers, Customers and all Interested parties, as an integral part of business performance through:-

1. Compliance with applicable Legal and other requirements related to Occupational Health, Safety and Environment.
2. Setting objectives and targets to eliminate / control / minimize environmental pollution, risks due to Occupational Health and Safety Hazards for preventing injury & ill health and reviewing the objectives and targets to have continual improvement in HSE performance.
3. Promotion of activities for conservation of resources by environmental management with focus on electrical energy and chemicals.
4. Communication of HSE Policy to employees, customers, suppliers, contractors and all interested parties and enhancement of Environmental, Occupational Health and Safety management Systems by pro-active measures.
5. Commitment for regular evaluation and pro-active measures for prevention & control of environmental pollution / risks due to incidents & occupational diseases.
6. Appropriate training of employees, customers, suppliers, contractors and all interested parties on Health, Safety and Environmental (HSE) aspects.
7. Formulation and maintenance of HSE Management programs for continual improvement.
8. Periodic review & audit of HSE Management Systems to ensure its continuing suitability, adequacy and effectiveness.
9. Co-operation with concerned agencies / regulatory bodies engaged in HSE activities.

SD / -
Executive Director

Electronics Division, Mysore Road, Bangalore -560026
Electronic System Division, Electronic City Bangalore 560100

SCOPE OF WORK:

The scope of work includes the following

1. Calibration and testing of the relays and meters as detailed in Price Bid.
2. Removing the relays/ meters from the breaker for the purpose of calibration/testing and restoring the same after the calibration should be done by the contractor
3. Work shall be carried out in the presence of BHEL/ Engineer-In-Charge as per the schedule provided after getting prior clearance.
4. Report should be submitted within one week from the date of calibration.

Tender Ref.: ET/433

TECHNO COMMERCIAL BID:

A) Information Part :

S.N.	Particulars	To be filled by Bidder
1.0	Name of the Contractor	
2.0	Address (Office)	
3.0	Address (Residence)	
4.0	Telephone Number	
	Office	
	Residence	
	Mobile No.	
5.0	Email id.	

Signature of Tenderer Signature of Issuing Officer

B) Essential Criteria for Techno-Commercial Acceptance of Bid

Sl. No.	Particulars	To be filled by Bidder
1.	Calibration certificate from a certified agency for all the Master Meters and tools used for calibration. (List of instruments and their test certificates to be enclosed along with the NABL certification of the certifying agency.**)**	**Yes/No.**
2.	License from Chief Electrical Inspector to Govt. of Karnataka for carrying out Calibration and testing. (Valid license copy to be enclosed.)	**Yes/No.**
3.	The Contractor shall comply with statutory requirement such as ESI. Etc. Alternatively, the contractor shall take necessary workmen compensation insurance before commencement of work.	**(Acceptable/ Not Acceptable)**
4.	Payment will be made after completion of work	**(Acceptable/ Not Acceptable)**
5.	Execution of the work fully as per Specification & all items of work in NIT	**(Acceptable/ Not Acceptable)**
6.	Security deposit clause as per NIT	**(Acceptable/ Not Acceptable)**

Note: Offers not complying with the above requirements are liable for rejection.

PART-II PRICE BID ET/433

Sl.No	Location	Name of the Relay	Model	Sl.No	CT	Hz	VT	Aux.Volts	make	NO	QUOTE	
	Substation -1											
	HT Side										**Unit Price In Rs.**	**Amount In Rs.**
1	500 KVA TFR 2	Contact (BKR) Multiplication Relay	Pc. TR_07839	HR1105518		50		110VDC	asun Reyrol	1		
2		Numerical O/C & E/F Relay	7SR1206-4HA12-1CA0/BB ARGUS	BF1012084396		50		110VDC	Siemens	1		
3		High Speed Tripping Relay	PC. TR_07715	HR1104059		50		110VDC	asun Reyrol	1		
4		TRAFO TROUBLE RELAY	GV2025	S0722597		50		110VDC	ABB	1		
5		TRAFO TROUBLE RELAY	GV2025	S0722567		50		110VDC	ABB	1		
6	500 KVA TFR 1	Numerical O/C & E/F Relay	7SR1206-4HA12-1CA0/BB ARGUS	BF1012084400		50		110VDC	Siemens	1		
7		High Speed Tripping Relay	PC. TR_07715	HR1104061		50		110VDC	asun Reyrol	1		
8		TRAFO TROUBLE RELAY	GV2025	S0722677		50		110VDC	ABB	1		
9		TRAFO TROUBLE RELAY	GV2025	S0722643		50		110VDC	ABB	1		
10	Ring main to SS-2	Contact (BKR) Multiplication Relay	Pc. TR_07839	HR1105525		50		110VDC	asun Reyrol	1		
11		Numerical O/C & E/F Relay	7SR1206-4HA12-1CA0/BB ARGUS	BF1012076403		50		110VDC	Siemens	1		
12		High Speed Tripping Relay	PC. TR_07715	HR1104062		50		110VDC	asun Reyrol	1		
13	Ring main to SS-3	Contact (BKR) Multiplication Relay	Pc. TR_07839	HR1105520		50		110VDC	asun Reyrol	1		
14		Numerical O/C & E/F Relay	7SR1206-4HA12-1CA0/BB ARGUS	BF1012076402		50		110VDC	Siemens	1		
15		High Speed Tripping Relay	PC. TR_07715	HR1104063		50		110VDC	asun Reyrol	1		
16	I/C from KEB	Contact (BKR) Multiplication Relay	Pc. TR_07839	HR1105521		50		110VDC	asun Reyrol	1		
17		Numerical O/C & E/F Relay	7SR1206-4HA12-1CA0/BB ARGUS	BF1012084401		50		110VDC	Siemens	1		
18		High Speed Tripping Relay	PC. TR_07715	HR1104060		50		110VDC	asun Reyrol	1		
19	**LT SIDE**											
20	Incoming from TFR-2	Over Current & Earth fault relay (inverse type CDG)	CDG31FF131BS	M415777		50		30 V DC	AREVA	3		

21	Incoming from TFR-1	Over Current & Earth fault relay (inverse type CDG)	CDG31FF131BS	M415778		50		30 V DC	AREVA	3		
22	Incoming from TFR-3	Over Current & Earth fault relay (inverse type CDG)	CDG31FF131BS	M415775		50		30 V DC	AREVA	3		
	SUBSTATION-3											
	HT Side											
23	I/C FROM SS 1	IDMT Over Current RELAY	CDG31EG002SBCH	13505450837005	2.5 to 10 A	50		30 V DC	AREVA	2		
24		IDMT Earth Fault relay	CDG31EG002SBCH	13505450837005	0.5 to2 A	50		30 V DC	AREVA	1		
25		Tripping RELAY	VAJH13YF628	131505420844003	110-125V DC	50		30V DC	AREVA	1		
26	O/G to 500 KVA TFR	IDMT Over Current RELAY	CDG31EG002SBCH	13505450837004	2.5 to 10 A	50		30 V DC	AREVA	2		
27		IDMT Earth Fault relay	CDG31EG002SBCH	13505450837004	0.5 to2 A	50		30 V DC	AREVA	1		
28		Tripping RELAY	VAJH13YF628	131505420844002	110-125V DC	50		30V DC	AREVA	1		
29	O/G to 1000 KVA TFR1	IDMT Over Current RELAY	CDG31EG002SBCH	13505450837003	2.5 to 10 A	50		30 V DC	AREVA	2		
30		IDMT Earth Fault relay	CDG31EG002SBCH	13505450837003	0.5 to2 A	50		30 V DC	AREVA	1		
31		Tripping RELAY	VAJH13YF628	131505420844005	110-125V DC	50		30V DC	AREVA	1		
32	O/G to 1000 KVA TFR2	IDMT Over Current RELAY	CDG31EG002SBCH	13505450837002	2.5 to 10 A	50		30 V DC	AREVA	2		
33		IDMT Earth Fault relay	CDG31EG002SBCH	13505450837002	0.5 to2 A	50		30 V DC	AREVA	1		
34		Tripping RELAY	VAJH13YF628	131505420844006	110-125V DC	50		30V DC	AREVA	1		
35	O/G TO COE	IDMT Over Current RELAY	CDG31EG002SBCH	13505450837001	2.5 to 10 A	50		30 V DC	AREVA	2		
36		IDMT Earth Fault relay	CDG31EG002SBCH	13505450837001	0.5 to2 A	50		30 V DC	AREVA	1		
37		Tripping RELAY	VAJH13YF628	131505420844004	110-125V DC	50		30V DC	AREVA	1		
38	O/G TO BLDG -14	IDMT Over Current RELAY	CDG31EG002SBCH	13505450837007	2.5 to 10 A	50		30 V DC	AREVA	2		
39		IDMT Earth Fault relay	CDG31EG002SBCH	13505450837007	0.5 to2 A	50		30 V DC	AREVA	1		
40		Tripping RELAY	VAJH13YF628	131505420844007	110-125V DC	50		30V DC	AREVA	1		
41	I/C from Substation - 2	IDMT Over Current RELAY	CDG31EG002SBCH	13505450837008	2.5 to 10 A	50		30 V DC	AREVA	2		
42		IDMT Earth Fault relay	CDG31EG002SBCH	13505450837008	0.5 to2 A	50		30 V DC	AREVA	1		
43		Tripping RELAY	VAJH13YF628	131505420844001	110-125V DC	50		30V DC	AREVA	1		
44	**LT side**											
45	I/C from 1000 KVA TFR 2	Over Current Relay Inv Type CDG	CDG31EG011SBCH	32301239/10/12	2.5 to 10 A	50		30 V DC	AREVA	2		
46		Earth Fault relay Inv type CDG	CDG31EG011SBCH	32301239/10/12	1 to 4 A	50		30 V DC	AREVA	1		
47	I/C from 1000 KVA TFR 1	Over Current Relay Inv Type CDG	CDG31EG011SBCH	32301238/10/12	2.5 to 10 A	50		30 V DC	AREVA	2		
48		Earth Fault relay Inv type CDG	CDG31EG011SBCH	32301238/10/12	1 to 4 A	50		30 V DC	AREVA	1		
49	I/C From 500 KVA TFR	Over Current Relay Inv Type CDG	CDG31EG011SBCH	32301240/10/12	2.5 to 10 A	50		30 V DC	AREVA	2		
50		Earth Fault relay Inv type CDG	CDG31EG011SBCH	32301240/10/12	1 to 4 A	50		30 V DC	AREVA	1		

	Substation -2											
	HT Side											
51	RTCC Panel	Automatic Voltage Regulating Relay	EE301-T	915		50		110 V DC	EMCO	1		
52		Under Voltage Relay	MVT186	BR1319463		50		110 V DC	ER	1		
53		Over Voltage Realy	MVT187	BR1319464		50		110 V DC	ER	1		
54	HVCB-1	IDMT Over Current RELAY	2TJM10	BR0622021		50		110 V DC	ER	2		
55		Earth Fault Relay	2TJM10	BR0622021		50		110 V DC	ER	1		
56		Tripping Relay	B24	HR0619981		50		110V DC	ER	1		
57	HVCB-2 (Spare)	IDMT Over Current RELAY	2TJM10	HR0622479		50		110 V DC	ER	2		
58		Earth Fault Relay	2TJM10	HR0622479		50		110 V DC	ER	1		
59		Reverse Power Relay	CCUM21PF1UA	13099571063		50	1	110 V DC	ALSTOM	1		
60		Tripping Relay	B24	HR0619983		50		110V DC	ER	1		
61	I/C from 2.5 MVA OLTC TR (HVCB-3)	IDMT Phase Fault relay	TJM	HR9510193		50		110 V DC	ER	2		
62		Earth Fault Relay	TJM	HR9510193		50		110 V DC	ER	1		
63		Instantaneous earth fault relay	CF3	HR9510150		50		110 V DC	ER	1		
64		Time reverse power relay	CCUM21	94036901001		50		110 V DC	EE	1		
65		Tripping Relay	B24	HR9406016		50		110V DC	ER	1		
66	O/G to Substation 3	DMT Phase Fault relay	405A4372	HR9514568		50		110 V DC	ER	2		
67		Earth Fault Relay	405A4372	HR9514568		50			ER	1		
68	O/G to 1250 KVA TFR 2	Over Current Relay Inv Type CDG	CDAG051EG004SG(M)	89093021001	2.5 to 10 A	50	1		EE	2		
69		Earth Fault relay Inv type CDG	CDAG051EG004SG(M)	89093021001		50			EE	1		
70		Auxillary relay	VAA 21BF63B	89050929001		50		30 V DC	EE	1		
71		Tripping relay	VAJH 13AF63B	M111967		50		30 V DC	EE	1		
72		Fuse Failure Relay	VAPM31AF21A	130276070209001		50			ALSTOM	1		
73		Under Voltage Relay	VDG13AF7001ACH	130146500106001		50			ALSTOM	1		
74	O/G to 1250 KVA TFR 1	Over Current Relay Inv Type CDG	CDAG31EG9001B(M)	M925801	2.5 to 10 A	50		24-250 V DC	EE	2		
75		Earth Fault relay Inv type CDG	CDAG31EG90001B(M)	M925801	1 to 4 A	50		24-250 V DC	EE	1		
76		Auxillary relay	VAA83BF8039B(M)	M498339		50		220V DC	EE	1		
77	O/G to Grounding TFR	Earth Fault Relay	SPECM3BF26C	M300653		50			EE	1		
	DG POWER HOUSE											
78	DG 5 PANEL	DEFINITE TIME REVERSE POWER RELAY	CCUM31PF4A	M925761	15	50	1	30 V DC	EE	1		
79		Reverse Power Relay(Reactive) TYPE CCDM	CCDM	M145759	15	50	1	24 V DC	EE	1		
80		CHECK SYNCHRONIZING RELAY	SKE11BF8003 B(M)	M894038		50			ALSTOM	1		

81		Over Current Relay Inv Type CDG	CDG36EG1B	M765707	2.5 to 10 A	50	1		EE	2		
82		Earth Fault relay Inv type CDG	CDG36EG1B	M765707	1 to 4 A	50	1		EE	1		
83	1000 KVA TFR 1 Panel	Over Current Relay Inv Type CDG	CDG36EG1B	M765704	2.5 to 10 A	50	1		EE	2		
84		Earth Fault relay Inv type CDG	CDG36EG1B	M765705	1 to 4 A	50	1		EE	1		
85	DG-6 PANEL	Over Current Relay Inv Type CDG	CDAG51EG005SG(M)	89093022001	2.5 to 10 A	50			EE	2		
86		Earth Fault relay Inv type CDG	CDAGSEG005SG	89093022001	2.5 to 10 A	50			EE	1		
87		INSTANTANEOUS DIFFERENTIAL RELAY	CAG34AF87A	M889506	0.5 to 2A	50			EE	1		
88		REVERSE POWER REALY	CCDM21AF4AS	89050712001	5 Amp	50		24 V DC	EE	1		
89	TFR 2 Panel	Over Voltage Realy (DG-6)	VDG11HF7005D(M)	M044613		50	1	24 V DC	EE	1		
90		Under Voltage Relay (DG-6)	VDG13AF9154 C(M)	M164652		50		24 V DC	EE	1		
91		Over Current Relay Inv Type CDG	CDG31EG9001B(M)	M108105	2.5 to 10 A	50		24 V DC	EE	2		
92		Earth Fault relay Inv type CDG	CDG31EG9001B(M)	M108105	1 to 4 A	50		24 V DC	EE	1		
93	DG-7 panel	Under Frequency Relay	MFVUM2201AA0013A	97016412001		50		110/125V	EE	1		
94		Over Voltage Realy	VDG11AF00181(M)	95102483081		50			EE	1		
95		Under Voltage Relay	VDG13AF700A(M)	96031969005		50		24 V DC	EE	1		
96		DEFINITE TIME REVERSE POWER RELAY	CCUM21PF172A	96020190006	5	50		30V DC	EE	1		
97		Reverse Power Relay TYPE CCDM	CCUM21PF172A	96020190006	6	50		30V DC	EE	1		
98	Bus Coupler Panel	Over Current Relay Inv Type CDG (DG-7)	CDG31EG9001B(M)	M0616658	15	50	1	24 V DC	EE	2		
99		Earth Fault relay Inv type CDG (DG-7)	CDG31EG9001B(M)	M0616658	15	50	1	24 V DC	EE	1		
100	DG-8 Panel	INSTANTANEOUS DIFFERENTIAL RELAY	CAG34AF58A	130147980106001	0 - 5 A	50		24 V DC	ALSTOM	1		
101		DEFINITE REVERSE POWER RELAY TYPE CCUM	CCUM21PF101A	130147980106001	5 AMP	50		24 V DC	ALSTOM	1		
102		Over Current Relay Inv Type CDG	CDG31EG011SA(M)	99172324003	2.5 to 10 A	50			ALSTOM	2		
103		Earth Fault relay Inv type CDG	CDG31EG012SB(M)	98464132006	5 AMP	50			ALSTOM	1		
104		TRIPPING RELAY TYPE VAJ	VAJH13YF8003BCH	139143410104001					ALSTOM	1		
105	Synchronizing Panel	CHECK SYNCHRONIZING RELAY	SKE11BF8002 B(M)	89040525002		50		125/110V	EE	1		

	SYSTEM TESTING RELAYS											
106	I/C FROM SS-3	OVER CURRENT	R1118	L71570-A	_/5A	50		240 V AC	UE	1		
107	I/C FROM SS-3	OVER CURRENT	R1118	L71570-C	_/5A	50		240 V AC	UE	1		
108	I/C FROM SS-3	EARTH FAULT	R1015	L71570-B	_/5A	50		240 V AC	UE	1		
109	SC TFR	EARTH FAULT	R1015	L71576	1A	50		240 V AC	UE	1		
110	SC TFR	EARTH FAULT	R1015	L71658	1A	50		240 V AC	UE	1		
111	50 KW MG SET	EARTH FAULT	R1015	L71657	_/5A	50		240 V AC	UE	1		
112	50 KW MG SET	EARTH FAULT	R1015	L71571-C	_/5A	50		240 V AC	UE	1		
	SUB ASSEMBLY											
	HT Side											
113	I/C FROM SS 3	IDMT Over Current RELAY	CDG31EG002SBCH	31131194	2.5 to 10 A	50		30 V DC	AREVA	2		
114		IDMT Earth Fault relay	CDG31EG002SBCH	31131194	0.5 to2 A	50		30 V DC	AREVA	1		
115		Tripping RELAY	VAJH13YF628	31203873	110-125V DC	50		30V DC	AREVA	1		
116	O/G to 800 KVA TFR-1	IDMT Over Current RELAY	CDG31EG002SBCH	31131192	2.5 to 10 A	50		30 V DC	AREVA	2		
117		IDMT Earth Fault relay	CDG31EG002SBCH	31131192	0.5 to2 A	50		30 V DC	AREVA	1		
118		Tripping RELAY	VAJH13YF628	31203874	110-125V DC	50		30V DC	AREVA	1		
119	O/G to 800 KVA TFR-2	IDMT Over Current RELAY	CDG31EG002SBCH	31131199	2.5 to 10 A	50		30 V DC	AREVA	2		
120		IDMT Earth Fault relay	CDG31EG002SBCH	31131199	0.5 to2 A	50		30 V DC	AREVA	1		
121		Tripping RELAY	VAJH13YF628	31203875	110-125V DC	50		30V DC	AREVA	1		
	LT Side											
122	TFR-1	IDMT Over Current RELAY	2TJM10	HR0732248		50		110 V DC	ER	2		
123		Earth Fault Relay	2TJM10	HR0732248		50		110 V DC	ER	1		
124	TFR-2	IDMT Over Current RELAY	2TJM10	HR0733429		50		110 V DC	ER	2		
125		Earth Fault Relay	2TJM10	HR0733429		50		110 V DC	ER	1		
	COE TEST LAB											
	HT SIDE											
126	O/G to 1000 KVA TFR1	IDMT Over Current RELAY	CDG31EG002SBCH	13505450837002	2.5 to 10 A	50		30 V DC	AREVA	2		
127		IDMT Earth Fault relay	CDG31EG002SBCH	13505450837002	0.5 to2 A	50		30 V DC	AREVA	1		
128		Tripping RELAY	86/VAJH13/F628	131505420844006	110-125V DC	50		30V DC	AREVA	1		

LIST OF (MEASURING INSTRUMENTS) PANEL METERS INSTALLED IN POWER PANELS OF DG SET & TRANSFORMER

Sl.No	Location	Name of the METER	Model	Sl.No	CTR	PTR	AUX VOLTS		MAKE	QTY		
1	DG 5	Ammeter		88974363	1600/5A	415V			IMP	1		
2		PF	SF/1443P/3EPF	12078/6/4	1600/800/5A	440			NIPPEN	1		
3		VOLTMETER		88974226	1600/5A	415			IMP	1		
4	DG 6	AMMETER		88974231	1600/5A	415			IMP	1		
5		KW		8C963044	1600/5A	415			IMP	1		
6		PF	MSTPF	632.147/MAR/88	1600/5A	440			IMP	1		
7		VOLTMETER		88974229		415			IMP	1		
8	DG 7	AMMETER		88974230		415			IMP	1		
9		KW		8C963048		415			IMP	1		
10		PF	SF/1443P/3EPF	12/83/511/17		440			AE	1		
11		VOLTMETER		88974227		415			IMP	1		
12	TFR 1	VOLTMETER		88974225		415			IMP	1		
13		PF		8C962919	2000/5A	415			IMP	1		
14		Hz		31016		415			MECO -V	1		
15		AMMETER		88974362	2000/5A	415			IMP	1		
16	TFR 2	VOLTMETER		88974228		415			IMP	1		
17		Hz		5J41989		415			IMP	1		
18		AMMETER		88974364	2000/5A	415			IMP	1		
19	S/S 2 (RTCC Panel)	KV	MIS/14	6H211267		11kV/110V			IMP	1		
20		KV	SI	30467/9/95		11kV/110V				1		
21	SS-2 (HVCB-1)	AMMETER			150/5A	415				1		
22		KV meter				11kV/110V				1		
23		MW Meter			150/5A	11kV/110V				1		
24	SS-2 (HVCB-3)	AMMETER	SI	31428/10/95	150/1A					1		
25		KV meter	SI	28279/6/95		11kV/110V				1		
26		MW Meter	SI	6259/10/95	150/1A	11kV/110V				1		
27	POWER PANEL OF DG ST 8	KW	17/01	98322/21	1600/5	440V			AE	1		
28		PF			1600/5	440V			AE	1		
29		AC AMMETER			1600/5	440V			AE	1		
30		AC VOLTMETER			1600/5	440V			AE	1		
31		AC VOLTMETER DG TERMINAL VOLTAGE	S96 MECO - V	59185		500V				1		
32		DC VOLTMETER EXCITATION VOLTAGE	M96MECO	7911/1		100V				1		
33		DC AMMETER EXCITATION CURRENT	M96MECO	1794/2	5 AMP					1		
34		AC VOLTMETER DG TERMINAL VOLTAGE	S96 MECO - V	58115		500V				1		
35		DC VOLTMETER EXCITATION VOLTAGE	M96MECO	7902/1		100V				1		
36		DC AMMETER EXCITATION CURRENT	M96MECO	1799/2	5 AMP					1		

37	AVR PANELS OF DG SETS	AC VOLTMETER DG TERMINAL VOLTAGE	S96 MECO - V	59658		500V				1		
38		DC VOLTMETER EXCITATION VOLTAGE	M96MECO	17918/1		500V				1		
39		DC AMMETER EXCITATION CURRENT	M96MECO	1823/2	5 AMP					1		
40		AC VOLTMETER DG TERMINAL VOLTAGE	S96 MECO - V	60516		500V				1		
41		DC VOLTMETER EXCITATION VOLTAGE	M96MECO	7904/1		100V				1		
42		DC AMMETER EXCITATION CURRENT	M96MECO	1418/2	5 AMP					1		
43	SYNCHRONIZING PANEL	Double range Voltmeter	MMISDV	653782/A/88		(0-600V) range			Inudustrial meters Pvt.Lted	1		
44		SYNCHROSCOPE		6/85/14182/1		110 V			AE	1		
45		Double range Frequency meter	MSRF/4	20272/Feb/88		(45 to 55 HZ)range			Inudustrial meters Pvt.Lted	1		

TOTAL In Rs.

Taxes as applicable(@ _____%) in Rs.

Grand Total In Rs.

In Words (Rupees_____Only)

including all taxes and duties