

TENDER SPECIFICATION

No. BHE/PW/PUR/IOCI-CLE/610

FOR

Handling at Storage Yard/ Stores, Transportation to Site, Calibration, Erection, Testing, Commissioning, Final Painting and Handing over of Electrical and Control & Instrumentation Works of Co-Generation Plant comprising of HRSG(2 x 100 TPH), Frame 6B Gas Turbine (2 x 30 MW) and their Auxiliaries, Piping etc.

AT

**INDIAN OIL CORPORATION LIMITED
GUJARAT REFINERY, JAWAHAR NAGAR
VADODARA (GUJARAT)**



PART: II - PRICE BID

BHARAT HEAVY ELECTRICALS LIMITED
(A Govt. of India Undertaking)
POWER SECTOR - WESTERN REGION
345, KINGS WAY - NAGPUR 440 001

BHARAT HEAVY ELECTRICALS LIMITED
(A GOVERNMENT OF INDIA UNDERTAKING)
POWER SECTOR - WESTERN REGION
SHREEMOHINI COMPLEX
345, KINGS WAY - NAGPUR 440 001

TENDER SPECIFICATION DOCUMENT ISSUE DETAILS

TENDER SPECIFICATION No. BHE/PW/PUR/IOCI-CLE/610

NAME OF THE WORK: Handling at Storage Yard/ Stores, Transportation to Site, Calibration, Erection, Testing, Commissioning, Final Painting and Handing over of Electrical and Control & Instrumentation Works of Co-Generation Plant comprising of HRSG(2 x 100 TPH), Frame 6B Gas Turbine (2 x 30 MW) and their Auxiliaries, Piping etc.

AT

INDIAN OIL CORPORATION LIMITED
GUJARAT REFINERY, JAWAHAR NAGAR
VADODARA (GUJARAT)

EARNEST MONEY DEPOSIT: Please see Special Conditions of Contract.

LAST DATE FOR TENDER SUBMISSION: Please obtain updated information from web page
"http://www.bhel.com" → Tender Notifications → View
Corrigendums.

THESE TENDER SPECIFICATION DOCUMENTS CONTAINING **PART-I** AND **PART-II** ARE
ISSUED TO:

M/s.

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PLEASE NOTE:
THESE TENDER SPECS DOCUMENTS ARE NOT TRANSFERABLE.

For Bharat Heavy Electricals Limited

Dy. General Manager (Purchase)
Place: Nagpur
Date:

BHEL-PSWR-NAGPUR
Tender Specification No. BHE/PW/PUR/PLT-CNI/600
Part-II: Price Bid
RATE SCHEDULE

(Page 1 of 1)

NAME OF THE WORK: Handling at Storage Yard/ Stores, Transportation to Site, Calibration, Erection, Testing, Commissioning, Final Painting and Handing over of Electrical and Control & Instrumentation Works of Co-Generation Plant comprising of HRSG(2 x 100 TPH), Frame 6B Gas Turbine (2 x 30 MW) and their Auxiliaries, Piping etc. at Indian Oil Corporation Ltd Gujarat Refinery, Jawahar Nagar, Vadodara.

Description of Work	TOTAL LUMP SUM AMOUNT	
	In Figures (in Rupees)	In Words (in Rupees)
Handling at Storage Yard/ Stores, Transportation to Site, Calibration, Erection, Testing, Commissioning, Final Painting and Handing over of Electrical and Control & Instrumentation Works of Co-Generation Plant comprising of HRSG(2 x 100 TPH), Frame 6B Gas Turbine (2 x 30 MW) and their Auxiliaries, Piping etc. at Indian Oil Corporation Ltd Gujarat Refinery, Jawahar Nagar, Vadodara. BOQ attached as part of Price Bid		

Note:

1. Amount quoted shall be considered as the total lumpsum amount for the complete BOQ as given in Part-II: Price Bid.
2. Individual item rates shall be in proportion to the weightages specified in the BOQ.
3. Refer Clause 11.4.1 of tender specification for variation in quantity.

DATE

SIGNATURE & OFFICIAL SEAL OF BIDDER

TS NO BHE/PW/PUR/IOCI-CLE/610
BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR REGION
BILL OF QUANTITIES

SEC	SI No	DESCRIPTION	TOTAL QTY	UOM	WEIGHTAGE
A	POWER TRANSFORMERS				
	A.1	Transportation up to foundation, Assembly, Testing & Commissioning of Three phase 40/45 MVA, 11/ 34.5 KV ,ONAN/ONAF, OLTC Generator Transformer including all accessories, piping, cabling etc. (Approx Weight 68,000 Kg each T/F and Size 8800x10200x6100 mm o	2	No.	2.70%
	A.2	Transportation from stores/ storage yard to erection site, assembly, testing & commissioning of 2 MVA, 6.6/0.433 KV , ONAN/ONAF OFTC, Auxiliary Transformer- 1/2/3/4 , including all accessories, piping, cabling etc (Approx weight 7000 Kg per Transformer	4	No.	1.80%
	A.3	Transportation from stores/ storage yard to erection site , assembly, testing & commissioning of Lighting T/F, 150 KVA , 3 phase 415 volts / 415 volts , 3 PH , ONAN, Dry type Transformer , including all accessories,(Approx weight 800 Kg per Transformer,	2	No.	0.18%
	A.4	Transportation from stores/ storage yard to erection site , assembly, testing & commissioning of Emergency Lighting T/F, 50 KVA , 3 phase 415 volts / 415 volts , 3 PH , ONAN, Dry type Transformer , including all accessories,(Approx weight 500 Kg per Tran	1	No.	0.05%
	A.5	Transportation from stores/ storage yard to erection site, assembly, testing & commissioning of 30 MVA, 3 phase 33 KV /11KV,OLTC ,INTER CONNECTING TRANSFORMER , Oil Type,ONAN/ONAF , including all accessories, piping, cabling etc(Aprox size 8800x10200 x	2	No.	0.90%
	A.6	Transportation from stores/ storage yard to erection site, assembly, testing & commissioning of 10 MVA, 3 phase 33 KV /6.9KV,ONAN/ONAF,OFTC , Station Auxillary Transformer , 3 PH, Oil Type , including all accessories, piping, cabling etc(Aprx dim. 8800x1	2	No.	0.63%
B	33 & 6.6 kV INDOOR SWITCHGEAR. EACH BOARD CONSISTING OF VACUUM BREAKER TYPE VM 12, PT PANELS, AUXILIARY TRANSFORMER PANEL, BUS EXTENSION CHAMBERS & ACCESSORIES etc. EACH BREAKER IS HOUSED WITH CONTROL, METERING & PROTECTION DEVICES; GCB				
	B.1	Modification / Expansion in existing 11 KV Switch Board-1: Dimension of EACH PANEL is approx 1000 x 2550 x 3300 mm and Approx Weight 900 Kg. per Panel .(Modification has to be carried out in 3 panels and Expansion by 1 panel).	1	Set	0.04%
	B.2	33.0 KV Switch Board-3 (2 nos. of GENERATION SWITCHBOARD & 1 no. DISTRIBUTION SWITCH BOARD) : consists of 72 Panels . Dimension of EACH PANEL is approx 1000 x 2550 x 3300 mm and Approx Weight 900 Kg. per Panel .	4	Set	7.19%
	B.3	6.6 KV Distribution Switchboard 1 : consists of 34 panels. Dimension of EACH PANEL is approx 1000 x 2550 x 3300 mm and Approx Weight 900Kg. per Panel .	2	Set	1.80%
C	TRANSPORTATION FROM STORES/ STORAGE YARD TO ERECTION SITE, ASSEMBLY, ERECTION, TESTING & COMMISSIONING OF 415 V LT SWITCH GEAR BOARDS / MC, DOUBLE FRONT / SINGLE FRONT, COMPRISES OF AIR CIRCUIT BREAKERS, PT PANELS, AUX. TRANSFORMER PANEL, TRUNKING CUBICL				
	C.1	415 Volt LT STATION PMCC-1 , Double Front, Approx Overall dimensions 20640 x 1754 x 2500 mm, Approx weight 15200Kg. / PMCC, Panel shall be supplied in loose shipping section.	1	Set	0.31%
	C.2	415 Volt LT STATION PMCC-2 , Double Front, Approx Overall dimensions 20640x1754x2500 mm, Approx weight 9900Kg. / PMCC, Panel shall be supplied in loose shipping section.	1	Set	0.22%
	C.3	415 Volt BOP MCC , Single / Double Front, Approx Over all dimensions 12800x944x2500 mm, Approx weight 6600 Kg. / MCC, Panels shall be supplied in loose shipping section.	1	Set	0.18%
	C.4	415 Volt GT MCC 1&2 , Single / Double Front, Approx Over all dimensions 15200 x 944 x 2500 mm, Approx weight 9100 Kg./ MCC, Panels shall be supplied in loose shipping section.	1	Set	0.25%

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SEAL SIGNATURE OF THE BIDDER

TS NO BHE/PW/PUR/IOCI-CLE/610
BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR REGION
BILL OF QUANTITIES

SEC	SI No	DESCRIPTION	TOTAL QTY	UOM	WEIGHTAGE
	C.5	415 Volt AC / VENT MCC , Single / Double Front, Approx Over all dimensions 13600 x 944 x 2500 mm, Approx Weight 5100 Kg. / MCC, Panels shall be supplied in loose shipping section.	1	Set	0.20%
	C.6	415 Volt , ASB , Single / Double Front, Approx Over all dimensions 10400 X 644 X 2500 mm, Approx Weight 2500 Kg. / MCC, Panels shall be supplied in loose shipping section.	1	Set	0.11%
	C.7	415 Volt HRSG MCC 1 & 2 , Single / Double Front, Approx Over all dimensions 9600 x 944 x 2500 mm, Approx weight 6000 Kg./ MCC, Panels shall be supplied in loose shipping section.	2	Set	0.27%
	C.8	415 Volt AC , MLDB , Single / Double Front, Approx Over all dimensions 5600X 644 X 2500 mm, Approx Weight 3000 Kg. / MCC, Panels shall be supplied in loose shipping section.	1	Set	0.09%
	C.9	415 Volt AC , ELDB ,Single / Double Front, Approx Over all dimensions 2400 X 644 X 2500 mm, Approx Weight 2000 Kg. / MCC, Panels shall be supplied in loose shipping section.	1	Set	0.08%
	C.10	110 Volt DC ELDB , Single / Double Front, Approx Over all dimensions 1500 X 1000 X 2450 mm, Approx Weight 1000 Kg. / MCC, Panels shall be supplied in loose shipping section.	1	Set	0.07%
	C.11	110 Volt DCDB-1 , Single / Double Front, Approx Over all dimensions 4800 X 644 X 2500 mm, Approx Weight 3500 Kg. / MCC, Panels shall be supplied in loose shipping section.	1	Set	0.13%
	C.12	125 Volt GT- 1& 2 DCDB , Single / Double Front, Approx Over all dimensions 5600 X 644 X 2500 mm, Approx Weight 1500 Kg. / MCC, Panels shall be supplied in loose shipping section.	2	Set	0.25%
	C.13	110 Volt UPS DB , Single / Double Front, Approx Over all dimensions 5000 X 1000 X 2000 mm, Approx Weight 3000 Kg. / MCC, Panels shall be supplied in loose shipping section.	1	Set	0.09%
	C.14	Aux. Control Panels, Approx dimension 6000x1000x2300 in mm & Approx wt. 4000 kg.	1	Set	0.10%
	C.15	415 Volt GT MCC , Single / Double Front, Approx Over all dimensions 8860 x 900 x 2450 mm, Approx weight 7500 Kg./ MCC, Panels shall be supplied in loose shipping section.	2	Set	0.29%
	C.16	LTMCC for Motor Operated Valves Actuators, 4 section each 150 kg	2	Set	0.27%
D	PB STATIONS				
	D.1	Start/ Stop PB station (stop PB with pad locking), Unit wt. 2.5 kg., Dimension 108x285x125 mm	87	Nos.	0.10%
	D.2	Start/ Stop PB station with Ammeter (stop PB with pad locking), Unit wt. 5 kg., Dimension 108 x 295 x 125 mm.	50	Nos.	0.07%
	D.3	Emergency Stop PB (mushroom type), Unit Wt. 2 kg., Dimension 145 x 245 x 116 mm.	16	Nos.	0.03%
E	DC BATTERY SYSTEM (Transportation of material from Stores/ storage yard to erection site, Erection, Assembly, Testing & Commissioning of 110 VOLT BATTERY / BATTERY CHARGER, 24 VOLT BATTERY / BATTERY CHARGER FOR SG , TG&STATION C&I.FOPH,CWPH ETC.				
	E.1	110V,250A Station Battery Charger- Approx Overall Dimesion-- 2500x830x2000mm, Weight-- 2000Kg and 110V,,800 AH. 88 Cells Nicad Station Battery-. Dimesion-- 4370x830x2500mm Weight--5500Kg. Battery Shall be mounted on teak wood still age & loose	1	Sets	0.22%
	E.2	GT Battery charger, Approx Dimension 1600 x 800 x 2200 mm , Approx Wt.850 kg. with batteries 125 V DC, Approx. dimension 50005 x 416 x 1400, Wt. 2000 kgs. Battery Shall be mounted on teak wood still age & loose accessories such as inter cell / stack con	2	Sets	0.36%
F	CABLING, EARTHING,LIGHTENING PROTECTION SYSTEM, : Transportation of material from Stores/ storage yard to erection site, Erection, Assembly, Testing & Commissioning				
F1	HT POWER CABLE XLPE INSULATED , PVC / FRLS OUTER SHEATHED (CU. CONDUCTOR, ARMoured)				
	F1.1	33 KV (E) 1C X 630 SQ MM (Wt. 3265 kg/km, Drum Length of 500 m.)	8000	M	1.08%

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BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR REGION
BILL OF QUANTITIES

SEC	SI No	DESCRIPTION	TOTAL QTY	UOM	WEIGHTAGE
	F1.2	11 KV (UE), 1C X 630 SQ MM (Wt. 4000kg/km, Drum Length of 500 m.)	1800	M	0.23%
	F1.3	6.6 KV (UE), 1C X 630 SQ MM (Wt. 4000 kg/km , Drum Length of 500 m)	3000	M	0.34%
	F1.4	6.6 KV (UE), 3C X 300 SQ MM (Wt. 5000kg/km, Drum Length of 500 m)	1000	M	0.13%
F2	1.1 KV LT XLPE POWER CABLES (ALUMINIUM CONDUCTOR, ARMOURED, FRLS OUTER SHEATHED)				
	F2.1	4 C X 300 SQ MM (Wt. 1000 kg/km)	3000	M	0.27%
	F2.2	4C X 185 SQ MM (wt. 1289 kg/km)	2000	M	0.14%
	F2.3	4C X 50 SQ MM (Wt. 2075 kg/km)	5000	M	0.34%
	F2.4	4C X 35 SQ MM (Wt. 3610 kg/km)	2500	M	0.15%
	F2.5	4C X25 SQ MM (Wt. 5400 kg/km)	2000	M	0.11%
	F2.6	3C X 95 SQ MM	4000	M	0.31%
	F2.7	3C X 70 SQ MM	4000	M	0.27%
	F2.8	3C X 50 SQ MM	2000	M	0.14%
	F2.9	3C X 25 SQ MM	5000	M	0.36%
	F2.10	3C X 16 SQ MM	3500	M	0.24%
	F2.11	1C X 120 SQ MM	2000	M	0.13%
F3	1.1 KV LT XLPE POWER CABLES (COPPER CONDUCTOR, UN-ARMOURED, FRLS OUTER SHEATHED)				
	F3.1	1C X 150 SQ MM (WT 1337 KG/KM)	1500	M	0.13%
	F3.2	1C X 35 SQ MM (WT 142 KG/KM)	500	M	0.04%
	F3.3	1C X 6 SQ MM (WT. 458 KG/KM)	1000	M	0.07%
	F3.4	1C X 240 SQ MM (Wt. 1630kg/km)	500	M	0.07%
	F3.5	1C X 120 SQ MM	500	M	0.06%
	F3.6	1C X 1000 SQ MM	16000	M	2.88%
	F3.7	4C X 16 SQ MM	5000	M	0.40%
	F3.8	4C X 6 SQ MM	2000	M	0.13%
	F3.9	3C X 25 SQ MM	2000	M	0.18%
	F3.10	3C X 10 SQ MM	2000	M	0.14%
	F3.11	3C X 120 SQ MM	600	M	0.04%
	F3.12	3C X 6 SQ MM	5000	M	0.22%
	F3.13	3C X 4 SQ MM	20000	M	1.08%
	F3.14	4C X 95 SQ MM (Wt. 727 kg/km)	3000	M	0.24%
F4	LT PVC CONTROL & SIGNAL CABLES (COPPER CONDUCTOR, ARMOURED, FRLS OUTER SHEATHED)				
	F4.1	1.1 KV, 3C X 2.5 SQ MM (Wt. 500kg/km)	51000	M	2.52%
	F4.2	1.1 KV, 3C X 1.5 SQ MM (Wt. 400 kg/km)	10000	M	0.49%
	F4.3	1.1 KV, 5C X 2.5 SQ MM (Wt. 650 kg/km)	40000	M	2.16%
	F4.4	1.1 KV, 19C X 2.5 SQ MM (Wt.1200 kg/km)	8000	M	0.65%
	F4.5	1.1 KV, 24C X 2.5 SQ MM (Wt. 1400 kg/km)	7000	M	0.63%
	F4.6	12C X 2.5 SQ MM	16000	M	1.15%
	F4.7	2C X 2.5 SQ MM	32000	M	1.44%
	F4.8	7C X 2.5 SQ MM	46000	M	2.07%
	F4.9	6P X 1.5 SQ.MM	66000	M	2.97%
	F4.10	12P X 1.5 SQ.MM	54000	M	2.67%
	F4.11	1P X 1.5 SQ MM	14000	M	0.63%
	F4.12	2P X 1.5 SQ.M	8000	M	0.36%
	F4.13	6 TRIAD 1.5 SQ.MM	2000	M	0.09%
	F4.14	CABLE T/C-FR37 OD 1 BEND, R=305	2200	M	0.10%
	F4.15	4P X 0.5 SQ.MM	800	M	0.04%
	F4.16	12 PAIR CHROMEL ALU., OD =30 mm	4000	M	0.18%
	F4.17	SINGLE PAIR, CHROMEL-ALU,OD= 15 mm	1400	M	0.07%
	F4.18	8T X 1.5 SQ.MM	6000	M	0.27%
	F4.19	1T X 1.5 SQ.MM	1000	M	0.04%
	F4.20	12P X 16 AWG Cr-AI EXTENSION CABLE	6000	M	0.30%
	F4.21	1P X 16 AWG Cr-AI EXTENSION CABLE	1000	M	0.04%
	F4.22	6P SCREENED CABLE	2000	M	0.09%
	F4.23	12P SCREENED CABLE	12500	M	0.62%
	F4.24	1P/2P SCREENED CABLE	2000	M	0.07%
	F4.25	Thermocouple Extension cable, - 1 pair x 16 AWG, 10 to 12 twist/meter.	2500	M	0.13%
G1	PRE FABRICTED CABLE TRAYS WITH COVERS				
	G1.1	LADDER TYPE GALVANISED, CABLE TRAY COMPLETE WITH COUPLER PLATES & FIXING HARDWARES			0.00%
	G1.1.1	600 MM WIDE, (Wt. 5 kg)	7800	Mtrs.	2.63%
	G1.1.2	300 MM WIDE, (Wt. 10 kg)	300	Mtrs.	0.07%
	G1.1.3	750 MM WIDE (WT. 5 KG)	1250	Mtrs.	0.45%
	G1.2	PERFORATED TYPE GALVANISED, CABLE TRAY COMPLETE WITH COUPLER PLATES,& FIXING HARDWARES			
	G1.2.1	300 MM WIDE, (Wt.15 kg)	500	Mtrs.	0.11%
	G1.2.2	50 MM WIDE, (Wt.10 kg)	2500	Mtrs.	0.45%

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SEAL SIGNATURE OF THE BIDDER

TS NO BHE/PW/PUR/IOCI-CLE/610
BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR REGION
BILL OF QUANTITIES

SEC	SI No	DESCRIPTION	TOTAL QTY	UOM	WEIGHTAGE
	G1.2.3	100 MM WIDE	500	Mtrs.	0.10%
	G1.3	PERFORATED TYPE ANODIZED ALUMINIUM, CABLE TRAY COMPLETE WITH COUPLER PLATES,& FIXING HARDWARES			
	G1.3.1	50 MM WIDE, (Wt.10 kg)	2500	Mtrs.	0.45%
	G1.3.2	150 MM WIDE, (WT. 30 KG.)	2500	Mtrs.	0.51%
	G1.3.3	300 MM WIDE ,(WT.7.5 KG)	1250	Mtrs.	0.28%
G2		PRE FABRICATED CABLE TRAYS ACCESSORIES			
	G2.1	HORIZONTAL TEE/BEND WITH COUPLER PLATES FOR LADDER TYPE CABLE TRAYS			
	G2.1.1	300 MM WIDE, 450 MM BENDING RADIUS (UNIT WT. 40 KG.)	10	Nos	0.01%
	G2.1.2	600 MM WIDE, 900 MM BENDING RADIUS (UNIT WT. 40 KG.)	50	Nos	0.02%
	G2.1.3	750 MM WIDE 1250 MM BENDING RADIUS (UNIT WT. 45KG)	20	Nos	0.01%
	G2.1.4	750 MM WIDE BEND ,1250 MM BENDING RADIUS (UNIT WT. 40KG)	20	Nos	0.01%
	G2.1.5	600 MM WIDE, 900 MM BENDING RADIUS (UNIT WT. 55 KG.) FOR LDR TYPE (CHANNEL) CABLE TRAY 2	50	Nos	0.02%
	G2.1.6	600 MM WIDE BEND, 900 MM BENDING RADIUS (UNIT WT. 35 KG.) FOR LDR TYPE (CHANNEL) CABLE TRAY 2	50	Nos	0.02%
	G2.2	VERTICAL ELBOW -UP/DOWN WITH COUPLER PLATES FOR LADDER TYPE CABLE TRAYS			
	G2.2.1	300MM WIDE, UP OF 600 MM BENDING RADIUS (UNIT WT. 10KG.)	10	Nos	0.01%
	G2.2.2	300 MM WIDE, DOWN OF 600 MM BENDING RADIUS (UNIT WT. 10 KG.)	10	Nos	0.01%
	G2.2.3	750 MM WIDE, UP OF 1250 MM BENDING RADIUS (UNIT WT. 20KG)	20	Nos	0.01%
	G2.2.4	750 MM WIDE, DOWN OF 1250 MM BENDING RADIUS (UNIT WT. 20KG)	15	Nos	0.01%
	G2.2.5	600 MM WIDE, UP OF 900 MM BENDING RADIUS (UNIT WT. 35 KG.) FOR LDR TYPE (CHANNEL) CABLE TRAY 2	50	Nos	0.03%
	G2.2.6	600 MM WIDE, DOWN OF 900 MM BENDING RADIUS (UNIT WT. 35 KG.) FOR LDR TYPE (CHANNEL) CABLE TRAY 2	50	Nos	0.03%
	G2.3	HORIZONTAL CROSS WITH COUPLER PLATES FOR LADDER TYPE CABLE TRAYS			
	G2.3.1	300 MM WIDE, 600 MM BENDING RADIUS (UNIT WT. 35 KG.) FOR LDR TYPE (CHANNEL) CABLE TRAY 2	10	Nos	0.01%
	G2.3.2	750 MM WIDE, 1250 MM BENDING RADIUS (UNIT WT. 60KG)	20	Nos	0.01%
	G 2.4	REDUCER WITH COUPLER PLATE			
	G 2.4.1	750 MM TO 600 MM RIGHT HAND REDUCER FOR LADDER TYPE (UNIT WT.25)	15	Nos	0.01%
	G 2.4.2	750 MM TO 600 MM LEFT HAND REDUCER FOR LADDER TYPE (UNIT WT. 25)	15	Nos	0.01%
	G 2.4.3	600 MM TO 300 MM LEFT HAND REDUCER FOR LDR TYPE (CHANNEL) CABLE TRAY2 (UNIT WT. 25)	20	Nos	0.01%
	G 2.4.4	600 MM TO 300 MM RIGHT HAND REDUCER FOR LDR TYPE (CHANNEL) CABLE TRAY2 (UNIT WT. 25)	70	Nos	0.03%
	G 2.4.5	750 MM TO 600 MM RIGHT HAND REDUCER FOR LDR TYPE (CHANNEL) CABLE TRAY2 (UNIT WT. 60)	15	Nos	0.01%
H		STRUCTURAL STEEL FOR FABRICATION			
	H1.1	ISMC - 100 X 50 X 6 mm	50400	Kg	2.04%
	H1.2	ISA - 65X 65 X 6 mm	50000	Kg	2.02%
	H1.3	ISA - 50X 50 X 6 mm	15400	Kg	0.62%
I		HT CABLE TERMINATION KITS FOR , XLPE INSULATED, HEAT SHRINKABLE COPPER / ALUMINIUM CABLE			
	I.1	33 KV, 1C X 630 SQ MM ,Cu. Cable (Unit Wt. 2 Kg.)	120	Nos.	1.89%
	I.2	11 KV, 1C X 630 SQ MM, Al. Cable (Unit Wt. 2Kg)	60	Nos.	0.81%
	I.3	6.6 KV, 1C X630 SQ MM ,Al. Cable (Unit Wt. 2 Kg).	18	Nos.	0.24%
	I.4	6.6 KV, 3C X 300 SQ MM , Al. Cable (Unit Wt. 2 Kg.)	40	Nos.	0.54%
J		EARTHING & LIGHTNING PROTECTION SYSTEM			
	J.1	65 mm dia Pipe Electrodes, 3M long GI	80	Nos.	0.32%
	J.2	75 x 10 mm GI Strips, For Underground & Above ground earthing	8000	Mtrs	2.88%
	J.3	50 x 6 mm GI Strips, For Above ground equipment earthing	4300	Mtrs	1.16%
	J.4	35 x 6 mm GI Strips, For Above ground equipment earthing	3000	Mtrs	0.78%
	J.5	8SWG GI wire , solid, For Above ground equipment earthing	4850	Mtrs	0.15%

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	J.6	16SWG GI wire , solid, For Above ground equipment earthing	4000	Mtrs	0.14%
	J.7	3/8" Dia GI fine wire rope	3250	Mtrs	0.22%
	J.8	5/8" Dia GI fine wire rope	3000	Mtrs	0.20%
	J.9	Plate Electrodes with Copper Strips (For electronics equipment earthing)	30	Mtrs	0.07%
	J.10	VERTICAL AIR TERMINATION ROD	10	Nos	0.02%
	J1.11	LIGHTNING PROTECTION	2	Set	0.01%
K1	FIRE PROOF SEALING MATERIALS				
	K1.1	Fire Break Coating for HT/LT Power Cables (Sprayable type liquid)	300	Mtrs	0.67%
	K1.2	Fire Proofing materials for sealing of wall / floor openings and panel bottom (Suitable for sealing both vertical & horizontal cable penetration)	500	Mtrs	1.12%
K2	FIRE SEALING SYSTEM				
	K2.1	FIRE PROOF SEALING MATERIALS i) Powder kind of things in bags of 50 kg - To be applied below the Panels/Floor Cut outs. - 500 Sq.Mtrs ii) Spray paints in tin drums in 25 lts -- To be applied/sprayed on on power cables 3 mtrs	500	Sq. Ft.	1.12%
L	Items Required for the Substation.and Supply, Erection, Testing Commissioning by PSWR				
	L1.1	6 mm thick chequered plate for covering cutouts in Switch Gear room.	100	sq.mtr	0.36%
	L1.2	1 Mtr. Long Earthing Discharge Rods.	1	M	0.01%
	L1.3	GI Conduits of 100/150 mm dia., medium duty, Class-B type, Galvanizing thickness min. 75 microns.	100	M	0.03%
	L1.4	200 NB G.I. HUME PIPES, shall comply to IS:458.	200	M	0.05%
	L1.5	200 MM DIA PVC CONDUITS	200	M	0.04%
M	ILLUMINATION PACKAGE (LIGHTING SYSTEM)				
	M1	ILLUMINATION FITTINGS			
	M1.1	INDOOR SURFACE MOUNTED DECORATIVE FIXTURES			
	M1.1.1	TKC 24/236, TYPE 4	350	Nos.	0.33%
	M1.1.2	TMX 95/236, TYPE 5	25	Nos.	0.02%
	M1.2	INDOOR RECESS MOUNTED DECORATIVE FIXTURES			
	M1.2.1	TBS 50/236, TYPE 3	100	Nos.	0.09%
	M1.2.2	DBD 10/75, TYPE 5	25	Nos.	0.02%
	M1.3	INDOOR BULK HEAD FIXTURE			
	M1.3.1	NXC 11/60, TYPE 1	30	Nos.	0.03%
	M1.4	WELL GLASS FIXTURES			
	M1.4.1	NDC 22/100, TYPE 1 FOR GLS LAMP	35	Nos.	0.04%
	M1.4.2	SDL 23/ SON 70, TYPE 2 FOR HIGH PRESSURE SODIUM VAPOUR LAMP (NON INTEGRAL TYPE)	400	Nos.	0.45%
	M1.5	ROAD LIGHTNING FIXTURES			
	M1.5.1	SRP 22/ SON 250, TYPE 2, FOR 250W HPSB LAMP	20	Nos.	0.02%
	M1.5.2	SRX 12/ SON 70 (STREET L), TYPE 1, FOR HPSV LAMP	40	Nos.	0.04%
	M1.5.3	SDK 21 / SON 250 , TYPE-2	20	Nos.	0.02%
	M1.6	FLOOD LIGHT WITH 250 HPSV SONT LAMPS			
	M1.6.1	SNF 14/ SONT 250, TYPE 2	15	Nos.	0.02%
	M1.6.2	SNF 14/ SONT 400, TYPE 2	18	Nos.	0.02%
	M1.6.3	Aviation Lamp,for HRSG STACK	2	set	0.02%
	M2	Lighting poles (including civil works)			
	M2.1	3 Mtr Lighting Pole	130	Nos.	1.17%
	M2.2	3.75 Mtr Lighting Pole	20	Nos.	0.22%
	M2.3	8 Mtr Lighting Pole	30	Nos.	0.54%
	M2.4	11 Mtr Lighting Pole	15	Nos.	0.30%
	M3	GI Conduits / Hume pipes (Including erection of coupler , Inspection Bends & 90 Degree Bends, Saddles& Conduit Plugs)			
	M3.1	Flexible Conduit 19 mm dia	500	Mtr	0.11%
	M3.2	19 mm dia down rod (Length of Each conduit = 3.0 Mtrs)	800	Mtrs	0.29%
	M3.3	GI Conduit 25 mm dia (Length of Each conduit = 3.0 Mtrs)	6000	Mtrs	1.83%
	M3.4	GI Conduit 50 mm dia (Length of Each conduit = 3.0 Mtrs)	100	Mtrs	0.04%
	M3.5	5/15 A Plug Sockets - Flush Mounted	40	Nos.	0.01%
	M3.6	5/15 A Plug Sockets - Surface Mounted	40	Nos.	0.01%
	M4	Surface mounted Switchboards			
	M4.1	SSB-1 Surface mounted Switchboards consisting of 1 no. 5 Amp paino type switch & 5A receptacle with switch	20	Nos.	0.01%
	M4.2	SSB-2 Surface mounted Switchboards consisting of 2 nos. 5 Amp paino type switch & 5A receptacle with switch	20	Nos.	0.01%
	M4.3	SSB-3 Surface mounted Switchboards consisting of 3 nos. 5 Amp paino type switch & 5A receptacle with switch	15	Nos.	0.01%

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SEC	SI No	DESCRIPTION	TOTAL QTY	UOM	WEIGHTAGE
	M4.4	SSB-5 Surface mounted Switchboards consisting of 5 nos. 5 Amp paino type switch & 5A receptacle with switch	10	Nos.	0.01%
	M4.5	FSB-3 Flash mounted Switchboards consisting of 3 nos. 5 Amps paino type switch & 5A receptacle with switch	10	Nos.	0.01%
	M4.6	FSB-5 Flash mounted Switchboards consisting of 5 nos. 5 Amps paino type switch & 5A receptacle with switch	15	Nos.	0.01%
	M5	Lighting panels			
	M5.1	With 6 Out going Feeders, Approx Dimension of 800 x 600 x 250 in mm and Approx Unit Wt. of 25 kg.	7	Nos.	0.03%
	M5.2	With 12 Out going Feeders, Approx Dimension of 900 x 600 x 250 in mm and Approx Unit Wt. of 30 kg.	15	Nos.	0.08%
	M5.3	With 18 Out going Feeders, Approx Dimension of 1000 x 600 x 250 in mm and Approx Unit Wt. of 35 kg.	5	Nos.	0.03%
	M5.4	Street Lightning Panel with 6 outgoing feeders, Approx Dimension of 800 x 600 x 250 in mm and Approx Unit Wt. of 25 kg.	8	Nos.	0.03%
	M5.5	Street Lightning Panel with 12 outgoing feeders, Approx Dimension of 900 x 600 x 250 in mm and Approx Unit Wt. of 30 kg.	8	Nos.	0.03%
	M5.6	Street Lightning Panel with 18 outgoing feeders, Approx Dimension of 1000 x 600 x 250 in mm and Approx Unit Wt. of 35 kg.	5	Nos.	0.02%
	M5.7	DC Lightning Panel with 6 outgoing feeders, Approx Dimension of 800 x 600 x 250 in mm and Approx Unit Wt. of 25 kg.	8	Nos.	0.03%
	M5.8	24 V DC Module	10	Nos.	0.04%
	M6	Industrial Recepticles			
	M6.1	20 A SP Receptacle	10	Nos.	0.04%
	M6.2	63 A TP Receptacle	20	Nos.	0.07%
	M7	Lighting JB's			0.00%
	M7.1	Lightning JB- round - 88 mm dia. - 3 way	100	Nos.	0.03%
	M7.2	Lightning JB- rectangular - 150 x 100 x 100 mm - 4 way	100	Nos.	0.04%
	M7.3	4 way conduit branching JB	100	Nos.	0.02%
	M7.4	3 way conduit branching JB	650	Nos.	0.15%
	M7.5	Junction box with Ball & Socket	600	Nos.	0.13%
	M7.6	Dummy Junction box with Ball & Socket	450	Nos.	0.10%
	M7.7	Explosion proof junction box	150	Nos.	0.03%
	M7.8	Diverter Damper local JB, Approx dimension 2000x1000x1000 in mm& Approx wt 500 kg each	4	Nos.	0.02%
	M7.9	Guillotine Damper local JB, Approx dimension 2000x1000x1000 in mm& Approx wt 500 kg each	4	Nos.	0.02%
	M7.10	Junction boxes upto 48 way	124	Nos.	0.35%
	M7.11	Junction boxes above 48 way	84	Nos.	0.25%
	M8	Burried Cable	500	Mtrs	0.22%
	M9	Flexible Wires			
	M9.1	1.1 KV, PVC Insulated, Single Core Copper Conductor Flexible Wires			
	M9.1.1	2.5 sq mm ,RED, yellow, blue, black, green, grey & White colour Flexible wire	95000	Mtr.	3.42%
	M9.1.2	4.0 sq mm ,RED, yellow, blue, black, green, colour Flexible wire	9000	Mtr.	0.40%
N1		GT CONTROLS & INSTRUMENTATION			
	N1.1	maxDNA System cabinets, Approx Dimension 2355 x 800x800 mm & Approx Unit Wt. 450 kg each .	60	Nos	1.62%
	N1.2	Relay Cubicles, Approx Dimension 2355x800x800 mm & Approx Unit Wt. 450 kg each.	16	Nos	0.43%
	N1.3	Mark -VI TMR GT Control Panel, Approx Dimension 2400x900x2260 in mm & Approx Unit Wt. 1200 kg each.	4	Nos	0.11%
	N1.4	MARK-VI HMI, Unit Wt.100kg, each HMI consist of 1 no. of i) CPU, Dimension 450x456x168 in mm ii) Monitor Dimension 400x205x422 in mm iii) Keyboard, Dimension 35.6x180x464.8 in mm iv) Optical mouse v) DMP 132 column	6	Sets	0.27%
	N1.5	Network Switches, Approx Dimension 44x223x440 in mm, Approx Unit Wt. 15 kg each	8	Nos	0.14%
	N1.6	DVAR, Approx dimension 2324x1200x1200 in mm & Approx Unit Wt. 1000 kg. Each	4	Nos	0.36%
	N1.7	Operating Interface Stations (OIS & EWS other stations for DCS), Approx Dimension 500x100x700 in mm & Approx Unit Wt. 100 kg each	12	Nos	0.54%
	N1.8	Hart Management system (HMS), Approx Unit WT. 500 kg.	2	Set	0.07%

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SEC	SI No	DESCRIPTION	TOTAL QTY	UOM	WEIGHTAGE
	N1.9	Control Desk / Computer Desk , Approx Dimension 8000X1000 (LxD) & Approx Unit Wt. 6000kg	2	Set	0.31%
	N1.10	Console Desk, Approx Dimension 8000X1300 (LxD) & Approx Unit Wt. 6000kg	2	Set	0.31%
	N1.11	Printer tables, Approx Dimension 600X600 (LxD) & Approx Unit Wt. 100kg	2	Set	0.03%
	N1.12	Printers, Approx Unit Wt. 20 kg.	6	Nos	0.09%
	N1.13	Station CPU, Approx dimension 470x530x170 in mm & Approx Unit wt. 25kg	2	Nos	0.04%
	N1.14	Station Monitor, Approx dimension 495x508x500 in mm & Approx Unit wt. 25kg	2	Nos	0.04%
	N1.15	Station Printer, Approx dimension 431x380x166 in mm & Approx Unit wt. 25kg	2	Nos	0.03%
	N1.16	CCTV Panels	1	Nos	0.11%
	N1.17	90 KVA, 110 Volts UPS Panel with 2 Battery Banks.	10	Set	3.37%
	N1.18	Machine Monitoring System Panels	4	Nos	0.11%
	N1.19	Programmable Logic control system(PLC) Package panel, Approx. dimension 2450 x 750 x 820 in mm. Approx Wt. 400 kg.	30	Nos	0.81%
	N1.20	PLC Package Engineering and work stations	10	Nos	0.18%
	N1.21	SCADA Marshalling panels. Approx Dimension 1000x1000x2350 in mm & Approx Wt. 500 kg of each panel.	6	Nos	0.13%
	N1.22	Speedtronics Mark VI Panel Doors, Approx Dimension 2257x1000x2400 in m & Approx Wt. 1023 kgs	2	Nos	0.05%
	N1.23	GT Auxillary panel, Approx Dimension 1000x900x2286 in mm & Approx WT. 200 kg	2	Nos	0.05%
	N1.24	Microprocessor based CO2 Fire fighting panel, Approx Dimension 600x500x1800 in mm & Approx wt 300 kg each.	2	Nos	0.18%
	N1.25	Inlet air filter panel, Approx dimension 660x255x1015 in mm & Approx wt 500 kg	2	Nos	0.04%
	N1.26	Haz. Gas Monitoring system, Approx Dimension 161x361x178 in mm & Approx wt 3.5 kg.	2	Nos	0.05%
	N1.27	SYSTEM-1-BNC-Machinery monitoring system server, Approx dimension 470x530x170 in mm & Approx wt 40 kg	2	Nos	0.05%
	N1.28	Local Burner panel, Apprx. Dimension 400 X400 mm2	2	Nos	0.04%
	N1.29	Evaporative cooler system Push button cum instrument control panel (730X200X600mm)	4	Nos	0.18%
	N1.30	VMS cabinet for BFP/CWP (800X800X2100), (Includes installation of BNC rack and related monitoring computer also) including OCAMMS (Online Computer Aided system for Machinery vibration Monitoring and analysis system)	2	Nos	0.05%
	N1.31	Smapping system - Dry Panel (1500X2100X 600) including analyzers	2	Nos	0.28%
	N1.32	Sampling system - Wet Panel (2300X2100X600)	1	Nos	0.07%
	N1.33	DC Distribution Board, 125 VDC , overall dimensions 4500x600x2430 in mm & approx. wt. 1700 kg.	2	Set	0.05%
N2	FIELD INSTRUMENTS/DEVICES				
	N2.1	Pressure Transmitters electronic/smart type	102	Nos	0.30%
	N2.2	DP transmitters electronic for level, DP & flow measurement /smart type	47	Nos	0.19%
	N2.3	Pressure Gauges	155	Nos	0.28%
	N2.4	Pressure Switches	12	Nos	0.03%
	N2.5	Temperature Gauge Stem Type/Capillary type	60	Nos	0.11%
	N2.6	Temperature element - Thermocouple	10	Nos	0.02%
	N2.7	Temperature element - RTD	18	Nos	0.04%
	N2.8	Temperature Transmitter	108	Nos	0.15%
	N2.9	Level switches	6	Nos	0.02%
	N2.10	Level Gauge	6	Nos	0.03%
	N2.11	Anubar	1	Nos	0.01%
	N2.12	Ch-Al thermocouple	20	Mtrs	0.00%
	N2.13	MTM thermocouple	68	Mtrs	0.21%
	N2.14	Electronic water level indicator	2	Mtrs	0.10%
	N2.15	BHEL Conductivity Switch	2	nos	0.02%
	N2.16	O2 Analyser	2	nos	0.05%
	N2.17	CO Analyser	2	nos	0.05%
	N2.18	CO2 Analyser	2	nos	0.05%
	N2.19	SOX & NOX Analyser	2	nos	0.05%
	N2.20	Smoke Density Analyser	2	nos	0.05%
	N2.21	Flame Scanner, UV TYPE	36	nos	0.16%
	N2.22	Flame Intesity Meter	36	nos	0.16%

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N3	Impulse pipes, tubes, GI pipes & fittings (SS/CS/AS/Copper/GI) (Including siphons and condensing pots wherever required)				
	N3.1	SS tube 12.7 x 2.1 mm	850	Mtrs	0.34%
	N3.2	SS pipe 21.3 x 3.7 mm	700	Mtrs	0.35%
	N3.3	SS pipe 33.4 x 3.4 mm	100	Mtrs	0.06%
	N3.4	SS316 tubing 1/4"	2000	Mtrs	0.58%
	N3.5	1" GI tubing	300	Mtrs	0.07%
	N3.6	Condensing Pot	30	nos	0.01%
	N3.7	1/2 SCH 40 SS316	1000	Mtrs	0.56%
	N3.8	LOCAL GAUGE BOARD	16	Nos	0.58%
	N3.9	CANOPY OF INSTRUMENTS	400	Nos	0.13%
O	COMMISSIONING SERVICES				
	O.1	Uni-Directional Electric Drives	30	Nos	0.07%
	O.2	Electric Actuators	150	Nos	0.67%
	O.3	Pneumatic Control Valves/Temperature Actuated Control Valve, Regulating Dampers.	40	Nos	0.18%
	O.4	Pneumatic ON/OFF Valves, ON/OFF Solenoid Valves etc.	75	Nos	0.34%
	O.5	Limit Switches	50	Nos	0.10%
	O.6	Integrated Testing of Controls. Protection and relay testing.	2	Set	0.27%
	O.7	Control valves	50	Nos	0.18%
	O.8	ON/OFF Control Valve	11	Nos	0.04%
	O.9	Mass Flow meter	8	nos	0.06%
	O.10	Generator system testing as per clause no.4.8 A of technical bid	1	Set	0.34%
		GRAND TOTAL			100.00%