

TENDER SPECIFICATION BHEL PSSR SCT 1828

FOR

**Handling at site stores / storage yard, transporting to site, erection,
testing & commissioning including supply and application of final
painting of Control and Instrumentation works**

at

**1 x 800 MW North Chennai TPS Stage III, Ponneri Taluk,
Thiruvallur District, Tamil Nadu**

VOLUME –II PRICE BID

TECHNOCOMMERCIAL BID - Consists of Book- I & Book- II

Book- I Consists of

- Notice Inviting Tender
- Volume-IA: Technical Conditions of Contract

Book-II consists of

- Volume-IB : Special conditions of Contract,
Rev 01 dated 1st June 2012
Amendment 01 dated 1st October, 2015
- Volume-IC : General conditions of Contract
Rev 01 dated 1st June 2012,
Amendment 03 dated 1st October, 2015
- Volume-ID : Forms & Procedures
Rev 01 dated 1st June 2012
Amendment 01 dt 1st October. 2015



BHARAT HEAVY ELECTRICALS LIMITED

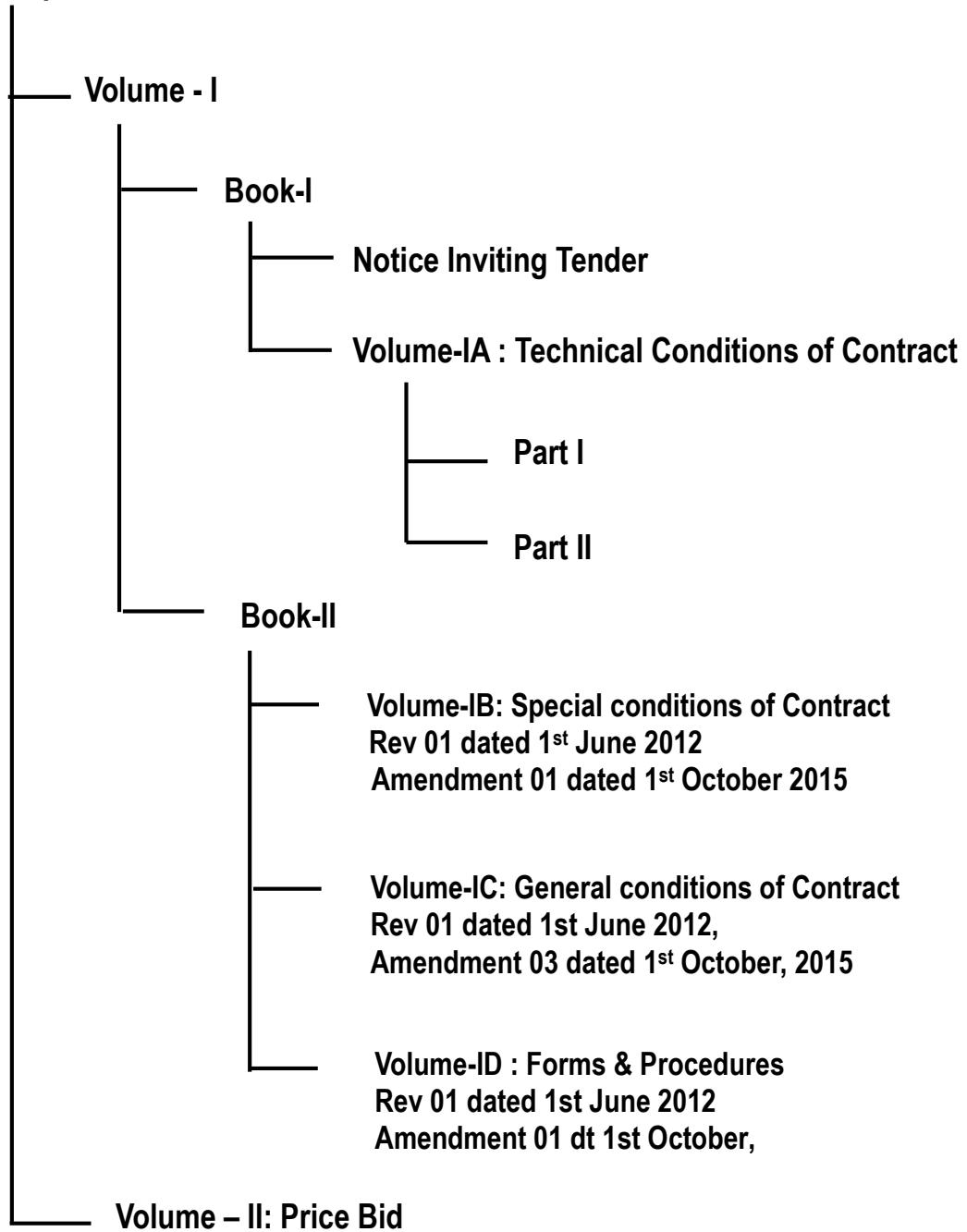
(A Government of India Undertaking)

Power Sector – Southern Region

690, Anna Salai, Nandanam, Chennai – 600 035

TENDER SPECIFICATION CONSISTS OF

Tender Specification



PRICE BID

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Part B : Format to quote total amount	01
Part C: Bill of quantities with weightage for amount of each items with respect to the total quoted price	52

PART A

Instruction to Bidders:

1. The quantity indicated in the BOQ / Price bid Part-C is approximate only and is liable for variation. Payment will be as per actual quantity executed as certified by BHEL Engineer.
2. The 'Total amount' mentioned in Part-B of the Price Bid corresponds to the entire Bill of Quantities (BOQ) given in Part -C of the Price Bid.
3. Bidders shall quote 'Total Amount' in the format for Price Bid available in the e-procurement portal. Bidders may also quote 'Total Amount' in the format given in Part -B of this document (Optional). Bidders shall only quote 'Total Amount' in the format given in PART -B of the price bid. Any other entry elsewhere in the price bid shall be treated as Null and Void. Quoting of rates in any other form / formats will not be entertained.
4. BHEL has pre-fixed the weightages for the amount of individual items of Bill of Quantity with respect to the 'Total Amount' in Part-C.
5. Based on the pre-fixed weightages, the amount for the individual items of the Bill of Quantity shall be arrived at. This amount shall be rounded off to the nearest rupee.
6. Based on the quantities of individual item and the amount arrived in SI No: 5 above, unit rate of individual items shall be derived. This unit rate shall be rounded off to four decimal places.
7. Bidders to note that this is an item rate contract. Payment shall be made for the actual quantities of work executed at the unit rate arrived at as per SI No.6 above.

Part B: Format to quote Total Amount

**Tender Specification BHEL:PSSR:SCT:1828 for C&I Works
at 1 X 800 MW Coal Based North Chennai Thermal Power Project Stage III**

Total Amount for the entire Bill of Quantities(BOQ) given in Part C

In Figures

In words

Note :

Bidders to quote Total Amount in this format given above, which shall be taken into account for evaluation and awarding and hence, shall be complete in all respect for the full scope defined in specification and in accordance with all terms & conditions of tender.

Date

SIGNATURE OF BIDDER WITH SEAL

Part C : Bill of Quantities

**Tender Specification BHEL:PSSR:SCT:1828 for C&I Works
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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
--	ERECTION and COMMISSIONING OF LOCAL / FIELD MOUNTED INSTRUMENTS	--		
A.1.1.1	PD type mass flow meter LFO, HFO, HFO return mounting with matching flanges, electronics amplifier box, inter cabling etc.	set*	3	.0000723
E.30.8 , F.8.1.3, H.2.3, H.8.5, H.2.4, H.8.6, E.30.9 , F.8.1.4, A.1.2.1	Pressure Transmitters /DP transmitters / Temperature Transmitters	Nos	1,070	.0125764
E.30.7 , E.30.10, F.8.1.10, H.2.5, H.8.11, , B.2.2	Level Transmitter (guided wave/ Ultrasonic type) Along with Accessories	Nos*	52	.0025508

Part C : Bill of Quantities

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A.1.1. 2, A.1.7. 4, B.1.1, C.1.1. 1, E.30.1 , F.8.1. 1, F.12.1 , H.2.1 , H.5.2 , H.6.1 , H.7.3 , H.8.10 , H.12.3 , J.2.1 , A.1.1. 3, E.30.2 , F.8.1. 2	Pressure / DP gauge	Nos	689	.0058036

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A.1.1. 4, A.1.7. 3, C.1.1. 2, E.30.3 , F.8.1. 7, F.12.3 , H.2.2 , H.7.4 , H.8.4 , H.12.2 , J.2.2 , B.1.10 , H.5.5 , H.6.5	Temperature Gauges	Nos	459	.0056785
C.1.1. 4, F.8.1. 6	Level gauges	Nos	12	.0003447

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A.1.1.5, A.1.1.6, B.1.5, E.30.6, F.8.1.5, H.2.8, H.5.3, H.6.2, H.8.7, H.8.9, H.8.8	Pressure / Differential Pressure switch / Temperature switch	Nos	172	.0017912
A.1.1.7, F.12.2, H.2.6, H.8.12, H.12.1, E.31.7, E.31.8	Level Swiches (RF/ Float / Capacitance / Conductivity type) along with accessories	Nos*	72	.0021985

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
B.1.4 , F.1.2 , F.8.1. 8 , F.12.5 , H.2.7 , H.8.1 , H.5.4 , H.6.3 , B.1.6 , B.1.7 , H.2.9 , H.8.2 , H.8.3 , A.1.7. 1 , E.30.4 , E.30.5 , F.8.1. 9 , F.1.1 , B.1.9	RTD / Thermocouple with Thermowell	Nos	944	.0106172
C.1.1. 6	Anu bar flow meter	set	2	.0000642

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
E.30.1 1, F.8.1. 13	E/P Converters	Nos	57	.0005623
E.31.1 , E.31.2 , E.31.4 , E.31.5 , E.31.6	EWLI 08 /19 channel along with interconnecting cables and accessories	set*	12	.001682
A.1.8. 20	ERV Controller with Pressure Switch Dimension: 305 x 305 x 203mm; weight: 10 kg each	Set*	4	.0002518
A.1.1. 8	FSSS Local Oil Gun Maintenance Switch Box	Nos	22	.0004334
A.1.1. 9, J.1.3	H.E.A Exciter box with accessories	Set*	22	.00074
A.1.1. 10, J.1.1	Flame Scanner Head Assembly with accessories	Set*	42	.0013964
A.1.6. 2	Feeder coal Flow monitor assembly Flange mounted	Nos	9	.0009682

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A.1.8.1, A.1.8.2, A.1.8.3, A.1.8.4, A.1.8.5	MTM T/Cs of route length 10 to 18 Mtrs (8 mm OD)	Nos	310	.0074265
A.1.8.6, A.1.8.7, A.1.8.8, A.1.8.9, A.1.8.10, A.1.8.11, A.1.8.12, A.1.8.13, A.1.8.14	MTM T/Cs of route length 20 to 28 Mtrs (3mm/8mm OD)	Nos	373	.0162666

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A.1.8. 15, A.1.8. 16, A.1.8. 17, A.1.8. 18, A.1.8. 19	MTM T/Cs of route length 30 TO 40 Mtrs (3 mm OD)	Nos	49	.0023459
A.1.9. 1, A.1.9. 2, E.30.1 2, A.1.9. 3	1/4 / 1/2 / 1 inch Air Filter Regulators / Purge Meter	Nos	90	.00058
B.1.2 , A.1.7. 2, C.1.1. 5, A.1.15 .3, H.5.1	Flow switch/Flow meter/Flow Indicators/Vaccum Switch	Nos	75	.0014481
B.1.3	GO no GO switch	Nos	2	.0001158
B.1.8	ON/OFF Switch Box including light assembly and interconnecting heat resistance cable	set	2	.0000593

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
C.1.1.3	Thermowells (screwed & Welded)	Nos	205	.0012157
F.8.1.11, H.8.15	Speed measuring loop / Speed probe	Nos	12	.0001303
F.8.1.12	proximeter unit, local field cable etc. for Governing System	Set*	16	.0003414
H.6.4	Moisture Sensor Probes	Nos	2	.0000431
H.8.13	Limit switches	Nos	11	.0000466
H.8.14	Position Transmitters	Nos	34	.0004584
C.1.4.1, C.1.4.2	Heat Tracer along with Accessories	Mtrs	1,815	.0015109
--	ERECTION AND COMMISSIONING OF SPECIAL INSTRUMENTS	--		
E.32.1, E.32.2	High temp / Low temp O2 Analyser	Set*	13	.0032039
E.32.3, B.2.1	Opacity monitor	Set*	7	.0028474
E.32.4, E.32.5	SOX/NOX/CO (Combined) analyser system	set*	1	.001054

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
E.32.1 0, E.32.1 1, E.32.1 2	CO gas analyser / Velocity analyser / Mercury analyser	Set*	4	.0029997
E.33.1 .1, E.33.1 .2, E.34.3 , E.33.1 .6	SWAS system	Set*	1	.0029851
E.35.1	VMS panel for HT drives	Nos	1	.0004522
E.35.2	Installation of mounting pad, brackets for shaft vibration, key phasers	Set*	1	.0020103
--	ERECTION AND COMMISSIONING OF UPS/ BATTERY & BATTERY CHARGER	--		
E.36.1	2 X200 KVA UPS	Set*	1	.0022306
E.36.7	Lead Acid Plante Battery 1500 AH made up of around 252 cells	Set*	2	.0033183
E.36.9	24 V/ 324 A Battery Charger	Set*	2	.0004598
E.36.8	24 V DC Lead Acid Battery: Model YHP 17 Make EXIDE rating 860 AH 24 V DC	Set*	2	.0008448

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
E.37.1 , E.38.1 , E.39.1	2 X35 KVA UPS / 2 X 15 KVA UPS / 2 X 10 KVA UPS	Set*	6	.0073036
E.37.6 , E.38.6 , E.39.6	Lead Acid Plante Battery: Model YHP11 (220V/535AH) made up of around 110 cells Lead Acid Plante Battery Model: YKP17 (220V/200AH) made up of around 110 cells Lead Acid Plante Battery Model: YKP13 (220V/150AH) made up of around 110 cells	Set*	7	.0115412
E.36.2 , E.37.2 , E.38.2 , E.39.2 , E.22.5	ACDB	Nos	15	.0088337
E.36.3	Power distribution board	Nos	1	.000128
--	ERECTION AND COMMISSIONING OF CONTROL PANELS	--		
C.1.5. 9	LT Power distribution board 80 KW rating, floor mounted non drawout overall size 4000mm(L) x 1000mm(W) x 2300mm(H)	set	1	.0006476
A.1.3. 1, A.1.3. 2	Acoustic Steam Leak Detector (ASLD) panel assembly along with loose supplied items like sensors, amlifiers etc.,	set*	1	.0006505

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A.1.4. 1	Furnace camera CCTV head assembly with advance retract mechanism and control junction box panels (800mm x 600mm x 250 mm) with inter connecting pipes, air filter regulators, ss hose mounted at Boiler 45 mtr elevation. Remote control box (800mm x 600mm x 400mm) with 24 inch monitor and accessories at CCR, 40 inch LED monitor,	set*	2	.0005137
A.1.6. 1	Gravimetric Feeder Remote Power Cabinet including Feeder coal flow monitor assembly ,Size 1400 x 2365 x 610 , weight 300 Kg	Nos	9	.001943
B.3.1 , B.3.2 , B.3.3 , B.3.4 , B.3.5	Automatic Leakage Control System (ALCS)- Air Preheater Consists of,ALCS DCS Panel 750x750x2067 mm 1 No,ALCS Drive Control Panel 680x400x1053 mm 6 Nos,ALCS Controller with panel 370x210x520 mm 6 Nos, Sensor Electronic With Enclosure 140x100x70 mm 6 Nos, Interfacing Box 140x100x70 mm 6 Nos. With complete accessories	SET*	1	.0006505
E.2.1. 1 , E.4.1 , E.4.2 , E.5.1 , E.7.1 , E.9.2 , E.9.4 , E.11.3 ; E.13.3 ; H.13.1	Suit of one Cubicles	Nos	25	.0037888

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
E.1.1.1, E.2.1.2, E.3.1.1, E.11.2, E.13.2	Suit of two Cubicles	Nos	12	.0026891
E.1.1.2, E.2.1.3, E.3.1.2, E.9.1, E.9.3, E.11.1, E.13.1	Suit of three Cubicles	Nos	18	.006525
E.1.1.3, E.2.1.4, E.3.1.3, E.9.5	Suit of Four Cubicles	Nos	18	.0067616
E.1.1.4	Suit of Five Cubicles	Nos	3	.0015616

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
E.17.1 , E.17.2 , E.23.1 .1 , E.48.2 , E.48.3	Network Panel	Nos	6	.0008182
F.13.2	VFD Dynamic classifier panel for pulveriser	Nos	9	.0020444
E.3.1. 4	UNIT CONTROL PANEL	Nos	1	.0008639
E.3.1. 5	ELECTRICAL CONTROL PANEL	Nos	1	.0008639
E.48.1	EPABX Panel	Set	1	.0001515
E.29.1	Hart Management System (HMS)	set*	1	.0010398
E.47.1 , E.47.4	Master clock System Panel alongwith accessories power supply unit, signal conditioners etc Size: 800 x 800 x 2415 mm; 300 kg approx.installation of antenna 2 nos, lightning arrester 2 nos, inline amplifier 2 nos alongwith FRLS cable from antenna to GPS receiver unit (100+100) - 200 mtrs.	set*	1	.0001446
E.47.2 , E.47.3	Slave clock (Rs 485 base) Approximate Size: 800(W) x 120(D) x 200(H) mm	Nos	50	.0022204

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A.1.1.11, J.1.2, E.28.1	19 Inch Rack Microprocessor based flame scanner amplifier / TSI	Set*	4	.000638
F.9.1, E.28.2	TSI System for BFP Drive Turbine / Main Turbine Complete Sensors and Assembly items	Set*	3	.0016317
H.1.1	Generator Instrumentation Cabinet	No.	1	.0001464
H.1.2	Gas Analyser Cabinet	set*	2	.0003324
H.1.3	Moisture Measurement System for Generator	set*	1	.0001944
H.1.4	Gen end vibration monitoring cabinet	No.	1	.0002086
H.1.5	Grounding Brush Monitor	set	1	.000088
E.32.9	MBTU panel mounted near analyser pneumatic panels (model 4080/ 4010) size 760mm x 760mm x 300mm relay panel (for model 4010) size 300mm x 300mm x 200mm, data concentrator panel at CCR size 500mm x 400mm x 210mm	set	1	.0001515
--	INSTALLATION AND COMMISSIONING OF HMI SYSTEM, STATION LAN, OFFICE WAN WITH COMPLETE ACCESSORIES FOR CCR,BOP,TANGEDCO OFFICE ,MIS, VIDEO CONFERENCE, PLANT SECURITY	--		

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
E.14.1 , E.15.1 , E.12.1 , E.10.1 , E.8.1 , E.8.2 , E.6.1. 1, E.18.1 , E.22.1 , E.17.5 , E.16.2 , E.16.7 , E.16.1 , E.17.3 , E.27.1 , E.35.5 , E.32.6 ,	OWS with monitor / LED TV alongwith UPS, original softwares and Accessories.	set	320	.0199568

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
H.14.1 , E.27.2 , E.23.1 .2, E.23.1 .3, E.24.1 , E.26.2 , E.25.1 , E.16.3 , E.16.1 3, E.16.1 4, E.23.1 .20, E.23.1 .21, E.26.4 , E.48.2 1				

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
E.14.2 , E.14.3 , E.15.2 , E.12.2 , E.12.3 , E.10.2 , E.8.3 , E.8.4 , E.6.1. 3, E.6.1. 4, E.6.1. 2, E.6.1. 5, E.22.2 , E.22.3 , E.16.5 , E.16.6 , E.17.6 ,	A4 / A3 Dot Matrix /Laser(colour / black and white)	Nos	135	.0042048

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
E.17.4 , E.27.3 , E.27.4 , E.23.1 .4, E.24.2 , E.26.3 , E.48.1 8				

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
E.14.4 , E.15.3 , E.12.4 , E.10.3 , E.18.2 , E.16.8 , E.17.7 .H.14. 2, E.27.5 , E.23.1 .7, E.23.1 .19, E.23.1 .8	Network Enclosure with or without Ethernet switches	No.	172	.016304
E.21.1	80	Set*	9	.0082325
E.22.4	LCD projector with 80	set	1	.0009147

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E.23.1 .5, E.23.1 .6, E.26.5	camera for plant and perimeter (fixing on pole/wall)	set	187	.0101187
E.24.3 , E.25.2 , E.24.4	Card reader with electromagnetic door locks / Access card controller	set	154	.000641
E.24.5 , E.26.1	ID card printer with web camera	set	3	.0001665
E.19.1 , E.19.2 , E.19.3 , E.19.4 , E.19.5	Video conference network system - Installation and commissioning assistance for MPLS VPN / Lease line at site conference room. Civil Work includes like chipping in floors / walls, cabling and conduits, LED TV, cmaera, microphones, licence, etc. Total system configuration by OEM.	SET*	1	.0002775
--	INSTALLATION OF FURNITURES	--		
E.20.1	Operator desk- HMI (unit + common) Angular installation (9 sections) dimation 750mm x 10020mm x 1050mm including fixing of power sockets, MCBs, ethernet switches hardwares etc	set	1	.001334
E.20.2	unit incharge desk (HMI) 750mm x 4550mm x 1050mm including fixing of power sockets, MCBs, ethernet switches hardwares etc	set	1	.0006058

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
E.20.3	Operator desk (simulator) 750mm x 7700mm x 1050mm including fixing of power sockets, MCBs, ethernet switches hardwares etc	set	1	.0010251
E.20.4	Station incharge incharge desk (HMI & Simulator) 750mm x 2820mm x 1050mm including fixing of power sockets, MCBs, ethernet switches hardwares etc	set	2	.0007509
E.20.5	PC/SERVER Rack - HMI 1500mm x 1000mm x 900mm including fixing of power sockets, MCBs, ethernet switches hardwares etc	set	3	.0003994
E.20.1 1, E.34.1 , E.20.1 2	Almirah / Locker	Nos	23	.0009573

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
E.26.6 , E.32.7 , E.20.8 , E.20.9 , E.20.7 , E.20.6 , E.10.5 , E.12.6 , E.14.6 , E.34.2 , E.20.1 0, E.48.1 9, E.48.2 0	Computer Table / Printer Table (INCLUDING CHAIRS)	set	108	.0085318
--	ERECTION AND COMMISSIONING OF UCB / CONTROL ROOM MOUNTED INSTRUMENTS	--		
H.7.1	Digital Indicators	Nos	10	.0001518
H.7.2	Bar Graph Indicators	Nos	5	.0000857

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
H.7.5	Vibration Indicator along with Selector Switch	Nos	4	.0000777
--	INSTALLATION OF C&I BENCH FOR CALIBRATION INSTRUMENTS	--		
E.49.1 , E.50	Electronic Test Bench	Set*	1	.0063901
--	ERECTION AND COMMISSIONING OF JB/ PUSH BUTTONS	--		

Part C : Bill of Quantities

**Tender Specification BHEL:PSSR:SCT:1828 for C&I Works
at 1 X 800 MW Coal Based North Chennai Thermal Power Project Stage III**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A.1.2. 2, A.1.12 .1, A.1.12 .2, A.1.12 .3, A.1.15 .4, E.35.3 , E.43.1 , E.43.2 , E.43.3 , E.43.4 , E.43.5 , E.43.6 , E.47.1 0, F.3.1 , F.3.2 , F.3.3 , H.11.1 , H.11.2	Junction Box 6 way to 112 way	Nos	528	.0093041

Part C : Bill of Quantities

**Tender Specification BHEL:PSSR:SCT:1828 for C&I Works
at 1 X 800 MW Coal Based North Chennai Thermal Power Project Stage III**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
, J.2.3 , J.2.4				
H.8.16 , H.11.3	Push Button	Nos	24	.0002195
--	ERECTION AND COMMISSIONING OF LIE/LIR	--		
A.1.15 .1, E.40.4 , E.40.5 , E.40.6 , E.40.7 , F.5.6 , H.9.2 , H.9.3 , F.9.3 , F.5.8 , F.5.7	Local Instrument rack	Nos	86	.0082313
A.1.15 .2, E.40.1 , E.40.2 , E.40.3	Local Instrument Enclosure	Nos	81	.0086376

Part C : Bill of Quantities

**Tender Specification BHEL:PSSR:SCT:1828 for C&I Works
at 1 X 800 MW Coal Based North Chennai Thermal Power Project Stage III**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
F.5.1 , F.5.2 , F.5.3 , F.5.4 , F.5.5	Local Gauge Board	Nos	11	.0012676
E.44.1 , E.44.2 , E.44.3	Junction Box for Temp Transmitter	Nos	91	.0050503
--	ERECTION AND COMMISSIONING OF PNEUMATIC POWER CYLINDERS (ON/OFF & REGULATING TYPE)	--		
A.1.5. 1, A.1.17 .1	SADC	Nos	144	.0094328
A.1.5. 2, J.2.10	PA , ID & FD Fans Blade Pitch Control Damper	Nos	8	.0009904
A.1.5. 3, A.1.5. 4	Hot / Cold Air Regulating Dampers	Nos	18	.002891
A.1.5. 5	Dynavane Filter Bleed Air Damper	Nos	2	.0002921
--	LAYING OF POWER CABLES Armoured/UnArmoured cu/Al power cables	--		

Part C : Bill of Quantities

**Tender Specification BHEL:PSSR:SCT:1828 for C&I Works
at 1 X 800 MW Coal Based North Chennai Thermal Power Project Stage III**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
E.36.1 0	1Cx50 sqmm	Mtrs	2,520	.0011258
E.37.3 , E.37.4 , E.38.3 , E.38.4 , E.39.3 , E.39.4	2Cx35 sqmm	Mtrs	920	.0002933
C.1.5. 2	3c x 6 sqmm	Mtrs	190	.0000485
A.1.10 .28	3C x 10 sq mm	Mtrs	500	.0001564
A.1.10 .29	3C x16 sq mm	Mtrs	2,700	.0008631
C.1.5. 3	3c x 25 sqmm	Mtrs	310	.0001006
C.1.5. 4	3c x 35 sqmm	Mtrs	655	.0002203
C.1.5. 5	3c x 50 sqmm	Mtrs	490	.0001739

Part C : Bill of Quantities

**Tender Specification BHEL:PSSR:SCT:1828 for C&I Works
at 1 X 800 MW Coal Based North Chennai Thermal Power Project Stage III**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
C.1.5.6	3c x 70 sqmm	Mtrs	760	.0003231
C.1.5.7	3c x 95 sqmm	Mtrs	1,025	.0004787
C.1.5.8	3c x 120 sqmm	Mtrs	1,295	.0010741
E.36.4 , E.36.1 1	1CX240 sqmm	Mtrs	920	.0005999
E.36.5	1CX400 sqmm	Mtrs	640	.0004388
--	TERMINATION OF POWER CABLE XLPE Armoured/UnArmoured cu/Al power cables	--		
K.13	1Cx50 sqmm	Nos	52	.0000772
K.14	2Cx35 sqmm	Nos	20	.0000297
K.4	3c x 6 sqmm	Nos	4	.0000044
K.1	3C x 10 sq mm	Nos	10	.0000205
K.2	3C x16 sq mm	Nos	54	.0001199
K.5	3c x 25 sqmm	Nos	8	.0000217
K.6	3c x 35 sqmm	Nos	14	.0000561
K.7	3c x 50 sqmm	Nos	10	.0000441

Part C : Bill of Quantities

**Tender Specification BHEL:PSSR:SCT:1828 for C&I Works
at 1 X 800 MW Coal Based North Chennai Thermal Power Project Stage III**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
K.8	3c x 70 sqmm	Nos	16	.0000733
K.9	3c x 95 sqmm	Nos	22	.0001028
K.10	3c x 120 sqmm	Nos	26	.000309
K.11	1CX240 sqmm	Nos	20	.0001187
K.12	1CX400 sqmm	Nos	14	.0000831
--	LAYING AND TERMINATION OF CONTROL CABLES	--		

Part C : Bill of Quantities

**Tender Specification BHEL:PSSR:SCT:1828 for C&I Works
at 1 X 800 MW Coal Based North Chennai Thermal Power Project Stage III**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A.1.10 .10 , A.1.10 .21 , C.1.5. 1 , E.23.1 .14 , E.23.1 .15 , E.23.1 .16 , E.24.8 , E.41.4 .2 , J.2.5 , A.1.10 .27 , E.22.7 , E.18.4 , E.48.3 1 , E.6.1. 7 , A.1.10 .26 , E.41.4 .1 , H.4.1	2CX2.5SQMM / 3Cx2.5SQMM / 3CX1.5SQMM /4C X 1SQMM / 4CX2.5SQMM	Mtrs	223,813	.0483942

Part C : Bill of Quantities

**Tender Specification BHEL:PSSR:SCT:1828 for C&I Works
at 1 X 800 MW Coal Based North Chennai Thermal Power Project Stage III**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A.1.10 .9 , A.1.10 .22 , E.41.4 .3 , A.1.10 .23 , E.41.5 .3	5Cx2.5 / 7CX2.5 SQMM	Mtrs	17,360	.0044515
A.1.10 .24 , A.1.10 .25	10Cx2.5 SQMM / 12CX2.5 SQMM	Mtrs	37,500	.0112812
--	LAYING AND TERMINATION OF Individual & Overall Shielded (Type G / F/ K), Twisted Pair, Armoured/Unarmoured cables	--		

Part C : Bill of Quantities

**Tender Specification BHEL:PSSR:SCT:1828 for C&I Works
at 1 X 800 MW Coal Based North Chennai Thermal Power Project Stage III**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A.1.10 .2, A.1.10 .6, A.1.10 .12, A.1.10 .15, A.1.10 .17, E.23.1 .13, E.41.1 .1, E.41.1 .2, E.41.2 .1, E.41.3 .1, E.47.8 , G.2.1. 1, G.2.2. 1, C.1.4. 3, E.41.5 .1, E.41.5 .2,	1TX1.5SQMM / 2PX0.5 SQMM / 2PX0.3SQMM / 2PX1.5SQMM / 2PX1.3SQMM,KX/RX/K TYPE T/C CABLE	Mtrs	252,077	.0498016

Part C : Bill of Quantities

**Tender Specification BHEL:PSSR:SCT:1828 for C&I Works
at 1 X 800 MW Coal Based North Chennai Thermal Power Project Stage III**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A.1.10 .1 , A.1.10 .30 , E.24.6				

Part C : Bill of Quantities

**Tender Specification BHEL:PSSR:SCT:1828 for C&I Works
at 1 X 800 MW Coal Based North Chennai Thermal Power Project Stage III**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A.1.3. 3, A.1.10 .3, A.1.10 .7, A.1.10 .11, A.1.10 .13, A.1.10 .18, E.41.1 .3, E.41.2 .2, E.41.3 .2, F.4.1, G.2.1. 2, G.2.2. 2, E.31.3 , E.41.1 .4, E.41.2 .3	4p x 0.5 sqmm / 6PX.05SQMM / 6PX0.5SQMM	Mtrs	320,842	.0681085

Part C : Bill of Quantities

**Tender Specification BHEL:PSSR:SCT:1828 for C&I Works
at 1 X 800 MW Coal Based North Chennai Thermal Power Project Stage III**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A.1.3.4, A.1.10.4, A.1.10.8, A.1.10.14, A.1.10.19, E.41.2.4, E.41.3.3, G.2.1.3, G.2.2.3	8p x 0.5 sqmm	Mtrs	331,113	.103704
A.1.10.5, A.1.10.16, A.1.10.20, E.41.2.5, G.2.1.4, G.2.2.4	12PX0.5 SQMM / 12PX1.3SQMM K type Compensating cables	Mtrs	60,200	.021096

Part C : Bill of Quantities

**Tender Specification BHEL:PSSR:SCT:1828 for C&I Works
at 1 X 800 MW Coal Based North Chennai Thermal Power Project Stage III**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
G.2.1.5	24 Pair x 0.5 mm2	Mtrs	8,000	.002851
E.6.1.6, E.8.5, E.10.4, E.12.5, E.14.5, E.16.12, E.17.11, E.22.6, E.27.6, H.14.3, E.23.12, E.7.2, E.47.7, E.48.28	CAT-6 UTP cables	Mtrs	45,310	.0045518

Part C : Bill of Quantities

**Tender Specification BHEL:PSSR:SCT:1828 for C&I Works
at 1 X 800 MW Coal Based North Chennai Thermal Power Project Stage III**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
E.18.3 , E.47.6 , E.36.6 , E.37.5 , E.38.5 , E.39.5	RS-485 / RG-58 CABLE	Mtrs	11,910	.0040402
E.6.1. 8, E.16.9 , E.17.8 , E.23.1 .9, E.23.1 .10, E.24.7 , E.47.5 , E.32.8 , E.48.2 9	OFC Cable	Mtrs	159,500	.0519176

Part C : Bill of Quantities

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at 1 X 800 MW Coal Based North Chennai Thermal Power Project Stage III**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
E.6.1.10, E.16.11, E.17.10, E.23.11, E.24.10	HDPE pipes for OFC	Mtrs	30,500	.0377891
--	ERECTION OF CABLE TRAYS & DUCTS	--		
A.1.11.1, J.2.6, F.4.2, E.42.1	Perforated Cable Trays, 50 mm wide	Mtrs	5,230	.0084713
A.1.11.2, E.42.2, J.2.7	Perforated Cable Trays, 100 mm wide	Mtrs	9,290	.0190178
A.1.11.3, E.42.3, F.4.3	Perforated Cable Trays, 150 mm wide	Mtrs	4,045	.0088926
--	FABRICATION AND INSTALLATION OF GI FLATS	--		
A.1.13.2	Flat 50 x 6 mm	Mtrs	450	.0005893

Part C : Bill of Quantities

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A.1.13 .3	GI Wire dia 1.219 mm	Mtrs	1,900	.0002843
--	FABRICATION AND INSTALLATION OF STRUCTURAL STEEL	--		
A.1.13 .1, E.46.1 , F.6.1 , F.9.2 , H.11.4 , J.2.9	Structural steel (ISMC, ISMB, ANGLE etc.)	MT	26.5	.0091264
--	ERECTION AND TESTING OF IMPULSE PIPES CS,AS,SS etc.,	--		
F.2.1 , H.10.1	Dia 16 x 2.6 / 13.5 x 2.6	Mtrs	2,224	.0068569

Part C : Bill of Quantities

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at 1 X 800 MW Coal Based North Chennai Thermal Power Project Stage III**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A.1.14 .5 , C.1.2. 1 , C.1.2. 2 , E.45.1 , E.45.6 , H.10.5 , H.10.7 , H.10.9 , H.10.1 0 , A.1.14 .1 , C.1.2. 3 , C.1.2. 4 , E.45.3 , E.45.4 , J.2.8 , F.10.1 , F.10.3	Dia 21.3 X 3.73 / 21.3 X 4.78 / 21.3 X 7.47 / 21.3 x 2.77	Mtrs	18,500	.069295

Part C : Bill of Quantities

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
' H.10.3 ' H.10.6 ' E.45.9				
A.1.14 .2, E.45.7 ' ' A.1.14 .4, E.45.1 0, E.45.1 1	Dia 26.7 X 3.91	Mtrs	9,960	.0469806
A.1.14 .3, H.10.8 ' E.45.5	Dia 33.4 X 4.55	Mtrs	2,012	.0195225
F.10.2 ' H.10.2 ' E.33.1 .3, E.33.1 .4	Dia 60.3 x 3.91 / 88.9 X 4	Mtrs	345	.0033615

Part C : Bill of Quantities

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
F.10.4 , F.10.5 , H.10.4 , E.33.1 .5, E.45.1 2	SS tube, 12.7 x 2.1 / 6 x 1.5 / 13.5 x 2.6	Mtrs	1,338	.0014159
--	ERECTION AND TESTING OF HOSES , TUBES & GI PIPES	--		
E.23.1 .18	GI poles 1/2 inch to 1 inch (18 feet) for fixing cameras and JB	Nos	25	.0005413
A.1.13 .4, E.46.2 , E.46.3 , C.1.3. 2, C.1.3. 1	1/2, 1 inch GI pipe	Mtrs	18,420	.0385891
E.18.5 , E.47.9	Flexible GI pipe 1 inch	Mtrs	3,200	.004185

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
E.23.1 .17, E.24.9 , E.45.8	1/2 , 3/4 inch PVC conduit with coupler accessories	Mtrs	5,350	.0023159
A.1.9. 4, A.1.9. 5, A.1.9. 6, A.1.9. 7, A.1.9. 8	1/4 , 1/2 , 3/4 , 3/8 , 1 inch OD copper tube	Mtrs	5,060	.005806
A.1.9. 9, A.1.9. 10, A.1.9. 11	1,1/4,1/2 inch teflon hose 3 mtr / 2mtr / 1mtr long	Nos	180	.000341

Part C : Bill of Quantities

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at 1 X 800 MW Coal Based North Chennai Thermal Power Project Stage III**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
E.48.4 , E.48.5 , E.48.6 , E.48.7 , E.48.8 , E.48.9 , E.48.1 0 , E.48.1 1 , E.48.1 2 , E.48.1 3 , E.48.1 4 , E.48.1 5 , E.48.1 6 , E.48.1 7 , E.48.2 2 , E.48.2 3 ,	ERECTION AND TESTING OF EPBAX SYSTEM INCLUDING ALL ACCESSORIES REFER BOQ LUMPSUMP RATE TO BE QUOTED (EXCLUDING CAT AND OFC CABLES , PANELS AND FURNITURES)	Set*	1	.0002775

Part C : Bill of Quantities

**Tender Specification BHEL:PSSR:SCT:1828 for C&I Works
at 1 X 800 MW Coal Based North Chennai Thermal Power Project Stage III**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
E.48.2 4, E.48.2 5, E.48.3 2, E.48.3 0				
E.48.2 6	PVC FRLS telephone cable (1/2/5/10 pair)	Mtrs	24,000	.0050947
E.48.2 7	Jelly filled DOT/TEC cable of various sizes (5/10/20/50/100 pair)	Mtrs	43,000	.0153241
--	COMMISSIONING OF THE FOLLOWING ERECTED BY MECHNANICAL AGENCY	--		
A.1.16 .2, A.1.16 .3	corner station Valves includes Feedbacl LS, AFR and Solenoids, 8mm Copper tubing HSD, HFO five elevation,scvange five elev	Nos	88	.0018898
A.1.16 .5	Burner Tilt Shear Pin Failure Indication Junction Box	Nos	16	.0011446
A.1.16 .7	Scanner Air Emergency open/close Damper	No.	1	.0001018
A.1.19 .5	Motor starter panel local mounted weight 100 Kg	set	1	.0000216

Part C : Bill of Quantities

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
G.3.1 , F.11.1 , C.1.6. 1 , J.3.1.1 , H.15.9 , J.3.1.2 , H.15.8 , H.15.4 , J.3.1.3 , A.1.16 .4	Control Valves with smart positioner, AFR, air lock valves etc LO TCV,Gland steam inlet and dump	Nos	110	.0009226

Part C : Bill of Quantities

**Tender Specification BHEL:PSSR:SCT:1828 for C&I Works
at 1 X 800 MW Coal Based North Chennai Thermal Power Project Stage III**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
C.1.6.3, F.11.4, H.15.2, J.4.2, J.4.3, A.1.18.1, A.1.18.2, A.1.18.3, A.1.18.4, A.1.18.5, B.5.1, F.11.5, C.1.6.2, I.1.1, J.4.1, J.4.4, A.1.19.1	LT uni directional drives & Bidirectional drives MOV/ servo motors	Nos	292	.0033004
G.3.2, G.3.3, J.4.5	HT drives	Nos	54	.0017197

Part C : Bill of Quantities

**Tender Specification BHEL:PSSR:SCT:1828 for C&I Works
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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
G.3.4 , J.4.6 , H.3.11 , A.1.19 .4	RTD / TC -Bearing / Winding	Nos	866	.0043614
G.3.5	Temp. guages mounted on HT motor	Nos	104	.0012236
H.3.1 , H.3.2	Pressure Guage	Nos	15	.0001819
H.3.3	Temp Guages	Nos	8	.0000943
H.3.4 , H.3.5	Pressure / DP Transmitter	Nos	10	.0001426
H.3.6	Pressure switches	Nos	8	.0000905
H.3.7	Level switches	Nos	6	.0001471
A.1.16 .1 , A.1.16 .6 , A.1.19 .3 , H.15.6	Limit Switches	Nos	192	.0020107
H.3.8	Flow meters	Nos	8	.000082
H.3.9	Conductivity Cells	Nos	3	.0000662
H.3.10	PW Conductivity Indicator	Nos	1	.0000275

Part C : Bill of Quantities

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at 1 X 800 MW Coal Based North Chennai Thermal Power Project Stage III**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
H.15.5 , F.11.2	Position Transmitters (Removal, calibration and re-fixing)	Nos	22	.0001172
H.15.7 , B.4.1	Solenoid Valves	Nos	63	.0005007
J.4.7	HT motor speed switch	No.	1	.0000026
--	REMOVAL, CALIBRATION & RE-FIXING OF INSTRUMENTS ERECTED BY OTHER AGENCIES	--		
B.4.5 , B.4.7 , B.4.6 , F.13.1 , B.4.2	Lub oil skids for FD/ID/PA/MILL/APH	Set*	19	.0013458
G.3.6 , G.3.7 , G.3.8 , G.3.9	Dosing Skid (Oxygen/Ammonia/NAOH/Hydrazine)	Set*	5	.000389
A.1.19 .2	Gravimetric Feeder comprising of Feeder Mounted C&I Equipment	Set*	9	.0008639
F.11.3	Governing Console Board	Set*	1	.0001822
F.7.2	Hydraulic Coupling of MDBFP	Set*	1	.0002088
H.15.1	Condenser Vacuum Pump	Set*	4	.0005137
H.15.1 0	Hydraulic Speed Control Equipment Rack (LR1)	Set*	1	.0001367

Part C : Bill of Quantities

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at 1 X 800 MW Coal Based North Chennai Thermal Power Project Stage III**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
H.15.1 1	Governing System Control rack	Set*	1	.0001822
H.15.1 2	LP Bypass Control Rack/Skid	Set*	1	.0001606
H.15.3 F.11.6	Oil Centrifuge Unit	Set*	3	.0003714
H.15.1 3	Supply Unit Racks for HP Valve-1, HP Valve-2, IP Valves (SU1, SU2 & SU3)	Set*	1	.0001318
H.15.1 4, H.15.1 5	Seal Oil Rack / Stator Water Rack	Set*	2	.0003224
H.15.1 6, H.15.1 7	Seal Oil Level / PrTxr Instrument Rack / Stator Water DP Instrument Rack	Set*	2	.0003547
H.15.1 8	H2 Dryer Unit	Set*	1	.0001213
E.4.3	Commissioning of Transducers -Removal and reclibration of Power, voltage, current, frequency output 4-20 mA		28	.0005591
--	REMOVAL, CALIBRATION & RE-FIXING OF INSTRUMENTS FOR ACID CLEANING	--		
J.5.1	Temp. gauge	Nos	2	.0000234
J.5.2	Pressure Gauges	Nos	2	.0000241

Part C : Bill of Quantities

**Tender Specification BHEL:PSSR:SCT:1828 for C&I Works
at 1 X 800 MW Coal Based North Chennai Thermal Power Project Stage III**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
J.5.3	Thermocouple stem type and MTM	Nos	8	.0000271
J.5.4	Junction box	Nos	3	.0000545
TOTAL Weightage				0.9999981