

# **TENDER SPECIFICATION**

**BHEL:PSSR:SCT: 1214**

**FOR**

Handling at Site Stores / Storage yard,  
Transportation to Site of Work, Erection, Testing  
and Commissioning of Electrical and Controls &  
Instrumentation works for Unit 1 & 2 of 2 x 125  
MW

**at**

***JINDAL STAINLESS LIMITED***

**Duburi  
Jajpur District,  
Orissa State.**

**PART – II PRICE BID**

**BOOK NO :**



**BHARAT HEAVY ELECTRICALS LIMITED**

(A Government of India Undertaking)  
Power Sector – Southern Region  
690, Anna Salai, Nandanam, Chennai – 600 035.

BHARAT HEAVY ELECTRICALS LIMITED  
(A Government of India Undertaking)  
Power Sector, Southern Region  
690, Anna Salai, Nandanam, Chennai – 35

**TENDER SPECIFICATION NO:BHEL:PSSR:SCT:1214**

**NAME OF WORK**

Handling at Site Stores / Storage yard,  
Transportation to Site of Work, Erection, Testing  
and Commissioning of Electrical and Controls &  
Instrumentation works for Unit 1 & 2 of 2 x  
125 MW at Jindal Stainless Ltd., Duburi Jajpur  
District, Orissa State.

(PRICE BID)

**PART II**

Issued to  
M/s.

For and on behalf of  
BHARAT HEAVY ELECTRICALS LIMITED

Senior Deputy General Manager/Contracts

(This tender document is not transferable)

Place: Chennai-600 035.  
Date:

# **JINDAL STAINLESS LTD – DUBURI CPP (2x125 MW)**

SECTION – VIII  
APPENDIX - V

## **RATE SCHEDULE FOR ELECTRICAL/ C&I PACKAGE**

***Before filling the Rates, the bidder shall go through the detailed specification of all the items given in the detailed Bill of Materials(BOM) as well as Scope of Work specified in Section VI***

| SL. NO. | BOM REF.                                                    | DESCRIPTION                      | QTY             | QTY      | QTY      | UNIT RATE | TOTAL RATE |
|---------|-------------------------------------------------------------|----------------------------------|-----------------|----------|----------|-----------|------------|
|         |                                                             |                                  | Unit 1 & Common | Unit 2   | Total    |           |            |
|         | ERECTION/ COMMISSIONING OF LOCAL/ FIELD MOUNTED INSTRUMENTS |                                  |                 |          |          |           |            |
| 1.      | A.1.1                                                       | PD Type Flow Meter               | 1 set*          | 1 set*   | 2 sets*  |           |            |
| 2.      | A.1.2, A.2.1, A.3.1, A.4.1, B.2.1, C.1.1, D.3.3.1, E.2.1.1  | Pressure Gauges                  | 273 Nos.        | 267 Nos. | 540 Nos. |           |            |
| 3.      | A.1.3, E.2.1.4                                              | DP Gauges                        | 5 Nos.          | 5 Nos.   | 10 Nos.  |           |            |
| 4.      | D.3.3.5, E.2.1.8                                            | Thermocouples with thermowell    | 97 Nos.         | 97 Nos.  | 194 Nos. |           |            |
| 5.      | B.2.3, B.3.1, E.2.1.9, E.3.1                                | Fan bearing RTDs/ Mill RTDs etc. | 43 Nos.         | 43 Nos.  | 86 Nos.  |           |            |
| 6.      | D.3.3.6, E.1.1.1, E.2.1.10                                  | RTDs along with thermowell       | 53 Nos.         | 53 Nos.  | 106 Nos. |           |            |
| 7.      | B.2.6                                                       | Thermocouple Assembly for APH    | 4 sets*         | 4 sets*  | 8 sets*  |           |            |

| SL. NO. | BOM REF.                                                            | DESCRIPTION                                              | QTY             | QTY      | QTY      | UNIT RATE | TOTAL RATE |
|---------|---------------------------------------------------------------------|----------------------------------------------------------|-----------------|----------|----------|-----------|------------|
|         |                                                                     |                                                          | Unit 1 & Common | Unit 2   | Total    |           |            |
| 8.      | A.4.4.1, A.4.4.2                                                    | MTM Thermocouples of route length 10 to 12 Mtr (6 mm OD) | 48 Nos.         | 48 Nos.  | 96 Nos.  |           |            |
| 9.      | A.4.4.3, A.4.4.4                                                    | MTM Thermocouples of route length 14 to 16 Mtr (6 mm OD) | 43 Nos.         | 43 Nos.  | 86 Nos.  |           |            |
| 10.     | A.1.4, A.4.2, B.2.2, B.3.2, C.1.2, D.3.3.2, E.2.1.7                 | Temperature Gauges with thermowell                       | 217 Nos.        | 217 Nos. | 434 Nos. |           |            |
| 11.     | A.1.5, A.2.2, A.3.2, A.4.3, B.2.5, C.1.3, D.1.2.3, D.3.3.3, E.2.1.3 | Pressure Switches                                        | 55 Nos.         | 55 Nos.  | 110 Nos. |           |            |
| 12.     | A.1.6, A.2.3, A.3.3, E.2.1.6                                        | DP Switches                                              | 26 Nos.         | 26 Nos.  | 52 Nos.  |           |            |
| 13.     | B.2.4                                                               | Temperature Switches                                     | 4 Nos.          | 4 Nos.   | 8 Nos.   |           |            |
| 14.     | C.1.4, E.2.1.12                                                     | Level Switches (float type)                              | 42 Nos.         | 42 Nos.  | 84 Nos.  |           |            |
| 15.     | D.3.3.7                                                             | Level switches (capacitance type)                        | 4 Nos.          | --.      | 4 Nos.   |           |            |
| 16.     | D.3.3.10, E.2.1.2                                                   | Pressure Transmitters                                    | 175 Nos.        | 168 Nos. | 343 Nos. |           |            |
| 17.     | D.3.3.11, E.2.1.5, E.2.1.11                                         | DP Transmitters                                          | 80 Nos.         | 80 Nos.  | 160 Nos. |           |            |
| 18.     | D.3.3.12                                                            | Displacement Type Level Transmitters                     | 8 Nos.          | 8 Nos.   | 16 Nos.  |           |            |

| SL. NO. | BOM REF.                       | DESCRIPTION                                                                                             | QTY             | QTY      | QTY      | UNIT RATE | TOTAL RATE |
|---------|--------------------------------|---------------------------------------------------------------------------------------------------------|-----------------|----------|----------|-----------|------------|
|         |                                |                                                                                                         | Unit 1 & Common | Unit 2   | Total    |           |            |
| 19.     | A.3.6                          | Pneumatic Pressure Controllers including 1 No. Pneumatic Transmitter, 2 Nos. Air Filter Regulators etc. | 1 set*          | 1 set*   | 2 sets*  |           |            |
| 20.     | A.1.10                         | Air Filter Regulators, Air Lock Valves & Speed Regulators                                               | 16 sets*        | 15 sets* | 31 sets* |           |            |
| 21.     | A.2.4, A.3.4, D.1.2.1, D.3.3.9 | Air Filter Regulators                                                                                   | 53 Nos.         | 53 Nos.  | 106 Nos. |           |            |
| 22.     | D.1.2.2, D.3.3.8, E.2.1.15     | I/P Converters                                                                                          | 41 Nos.         | 41 Nos.  | 82 Nos.  |           |            |
| 23.     | E.2.1.13                       | Solenoid Valves                                                                                         | 10 Nos.         | 10 Nos.  | 20 Nos.  |           |            |
| 24.     | A.3.5                          | Purge Meter cum DP Regulators                                                                           | 10 Nos.         | 10 Nos.  | 20 Nos.  |           |            |
| 25.     | A.1.7                          | Flame Scanner Head Assembly                                                                             | 16 sets*        | 16 sets* | 32 sets* |           |            |
| 26.     | A.1.9                          | FSSS Local Oil Gun Maintenance Switch Box                                                               | 12 Nos.         | 12 Nos.  | 24 Nos.  |           |            |
| 27.     | A.1.12                         | H.E.A. Excitor box assembly with accessories                                                            | 12 sets*        | 12 sets* | 24 sets* |           |            |
| 28.     | A.2.8                          | Burner Tilt Shear Pin Failure Indication Box                                                            | 4 Nos.          | 4 Nos.   | 8 Nos.   |           |            |
| 29.     | A.2.9                          | Heavy Duty Limit Switch (for Burner Tilt)                                                               | 8 Nos.          | 8 Nos.   | 16 Nos.  |           |            |

| SL. NO. | BOM REF. | DESCRIPTION                                                                                                                                                                              | QTY             | QTY     | QTY      | UNIT RATE | TOTAL RATE |
|---------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|----------|-----------|------------|
|         |          |                                                                                                                                                                                          | Unit 1 & Common | Unit 2  | Total    |           |            |
| 30.     | A.4.7    | Electronic Water Level Indicator along with Display Units, Ascetor Cabinet and other accessories                                                                                         | 1 set*          | 1 set*  | 2 sets*  |           |            |
| 31.     | A.4.8    | Steam leak detection system along with Panel and other accessories                                                                                                                       | 1 set*          | 1 set*  | 2 sets*  |           |            |
| 32.     | A.4.6    | ERV Controller with Pressure Switch                                                                                                                                                      | 1 set*          | 1 set*  | 2 sets*  |           |            |
| 33.     | B.2.7    | Rotor Stoppage Alarm Box with accessories                                                                                                                                                | 2 sets*         | 2 sets* | 4 sets*  |           |            |
| 34.     | B.2.8    | ON/OFF Switch Box including light assembly                                                                                                                                               | 2 sets*         | 2 sets* | 4 sets*  |           |            |
| 35.     | E.4.2    | Rotor Earth Fault Relay                                                                                                                                                                  | 1 No.           | 1 No.   | 2 Nos.   |           |            |
| 36.     | E.2.1.14 | Speed Measuring Loop for BFPDT Governing System                                                                                                                                          | 6 sets*         | 6 sets* | 12 sets* |           |            |
| 37.     | A.1.8    | 4 Nos. of flame scanner amplifier (19" Racks )                                                                                                                                           | 1 set*          | 1 set*  | 2 sets*  |           |            |
| 38.     | A.2.10   | Vibration Monitoring System (VMS) for Fans & Mills, along with 30 sets of Horizontal velocity type pick-ups, 11 Nos. Local wall mounted cabinets for transmitters and other accessories. | 1 set*          | 1 set*  | 2 sets*  |           |            |

| SL. NO. | BOM REF. | DESCRIPTION                                                                                                                                                                         | QTY             | QTY     | QTY     | UNIT RATE | TOTAL RATE |
|---------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|---------|-----------|------------|
|         |          |                                                                                                                                                                                     | Unit 1 & Common | Unit 2  | Total   |           |            |
| 39.     | E.1.1.3  | Vibration Monitoring System for BFPs & CEPs along with 12 Nos. of probes, Vibration monitors and other accessories                                                                  | 1 set*          | 1 set*  | 2 sets* |           |            |
| 40.     | B.1.3.4  | Opacity Monitoring System, for ESP along with 1 No. Local Control Unit, Air Blower and other accessories.                                                                           | 2 sets*         | 2 sets* | 4 sets* |           |            |
| 41.     | D.3.5.1  | SOX/NOX/CO Analyzer system along with Sample Handling System consisting of 1 No. local analyser panel and other accessories                                                         | 1 set*          | 1 set*  | 2 sets* |           |            |
| 42.     | D.3.5.2  | Low temperature O2 Analyser along with Electronic Unit and other accessories                                                                                                        | 4 sets*         | 4 sets* | 8 sets* |           |            |
| 43.     | D.3.5.3  | SPM Analyser along with Local Control /Display Unit, Remote Calibration Unit, Purge Air System, and accessories.                                                                    | 1 set*          | 1 set*  | 2 sets* |           |            |
| 44.     | D.3.6.1  | Steam and water analysis system, consisting of:<br>Primary Cooler Racks: 2 Nos., Chiller Unit : 1 No., Wet Panel: 1 No., Dry panel: 1 No., Sensors/ Analysers and other accessories | 1 set*          | 1 set*  | 2 sets* |           |            |

| SL. NO.                                                                 | BOM REF.                       | DESCRIPTION                                                                                                               | QTY             | QTY     | QTY      | UNIT RATE | TOTAL RATE |
|-------------------------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------|-----------------|---------|----------|-----------|------------|
|                                                                         |                                |                                                                                                                           | Unit 1 & Common | Unit 2  | Total    |           |            |
| 45.                                                                     | E.2.1.16                       | Vibration Monitoring System for BFP Drive Turbine along with 29 Nos. of probes, 2 Nos. Monitor rack and other accessories | 1 set*          | 1 set*  | 2 sets*  |           |            |
| 46.                                                                     | E.4.1                          | CO2 Main Control Panel for Generator Fire Protection along with accessories                                               | 1 set*          | 1 set*  | 2 sets*  |           |            |
|                                                                         |                                |                                                                                                                           |                 |         |          |           |            |
| <b>ERECTION/ COMMISSIONING OF UCB/ CONTROL ROOM MOUNTED INSTRUMENTS</b> |                                |                                                                                                                           |                 |         |          |           |            |
| 47.                                                                     | D.3.4.1, D.3.4.2               | Bar Graph Indicators/ Digital Indicators                                                                                  | 16 Nos.         | 16 Nos. | 32 Nos.  |           |            |
|                                                                         |                                |                                                                                                                           |                 |         |          |           |            |
| <b>REMOVAL, CALIBRATION, REFIXING AND COMMISSIONING OF INSTRUMENTS</b>  |                                |                                                                                                                           |                 |         |          |           |            |
| 48.                                                                     | E.1.2.3, E.1.3.5               | Pressure Gauges                                                                                                           | 32 Nos.         | 32 Nos. | 64 Nos.  |           |            |
| 49.                                                                     | E.1.2.4, E.1.3.6               | DP Gauges                                                                                                                 | 6 Nos.          | 6 Nos.  | 12 Nos.  |           |            |
| 50.                                                                     | B.3.3, E.1.2.1, E.1.3.7, E.3.2 | Temperature Gauges                                                                                                        | 66 Nos.         | 66 Nos. | 132 Nos. |           |            |
| 51.                                                                     | E.1.2.2, E.1.3.9               | Pressure Transmitters                                                                                                     | 14 Nos.         | 14 Nos. | 28 Nos.  |           |            |
| 52.                                                                     | E.1.2.5, E.1.3.10              | DP Transmitters                                                                                                           | 6 Nos.          | 6 Nos.  | 12 Nos.  |           |            |

| SL. NO. | BOM REF.                                                                      | DESCRIPTION                                               | QTY             | QTY     | QTY     | UNIT RATE | TOTAL RATE |
|---------|-------------------------------------------------------------------------------|-----------------------------------------------------------|-----------------|---------|---------|-----------|------------|
|         |                                                                               |                                                           | Unit 1 & Common | Unit 2  | Total   |           |            |
| 53.     | E.1.3.8                                                                       | Pressure Switches                                         | 2 Nos.          | 2 Nos.  | 4 Nos.  |           |            |
| 54.     | E.1.2.6                                                                       | Level Switches                                            | 2 Nos.          | 2 Nos.  | 4 Nos.  |           |            |
|         |                                                                               |                                                           |                 |         |         |           |            |
|         | <b>ERECTION/ COMMISSIONING OF PNEUMATIC POWER CYLINDERS (REGULATING TYPE)</b> |                                                           |                 |         |         |           |            |
| 55.     | A.2.12.1, A.2.12.6                                                            | FD Fan Inlet/ PA Fan Control Damper                       | 4 Nos.          | 4 Nos.  | 8 Nos.  |           |            |
| 56.     | A.2.12.2                                                                      | AH Air Bypass Damper                                      | 2 Nos.          | 2 Nos.  | 4 Nos.  |           |            |
| 57.     | A.2.12.3                                                                      | SADC Power Cylinders                                      | 48 Nos.         | 48 Nos. | 96 Nos. |           |            |
| 58.     | A.2.12.4                                                                      | Burner Tilt Power Cylinder                                | 4 Nos.          | 4 Nos.  | 8 Nos.  |           |            |
| 59.     | A.2.12.5                                                                      | ID Fan Inlet Control Damper                               | 2 Nos.          | 2 Nos.  | 4 Nos.  |           |            |
| 60.     | A.2.12.7                                                                      | Hot PA Regulating Damper                                  | 5 Nos.          | 5 Nos.  | 10 Nos. |           |            |
| 61.     | A.2.12.8, A.2.12.9                                                            | Cold PA Control Damper / Dynavane Filter Bleed Air Damper | 6 Nos.          | 6 Nos.  | 12 Nos. |           |            |
|         |                                                                               |                                                           |                 |         |         |           |            |

| SL. NO. | BOM REF.                                                           | DESCRIPTION                                       | QTY             | QTY    | QTY       | UNIT RATE | TOTAL RATE |
|---------|--------------------------------------------------------------------|---------------------------------------------------|-----------------|--------|-----------|-----------|------------|
|         |                                                                    |                                                   | Unit 1 & Common | Unit 2 | Total     |           |            |
|         | ERECTION/ COMMISSIONING OF PNEUMATIC POWER CYLINDERS (ON/OFF TYPE) |                                                   |                 |        |           |           |            |
| 62.     | A.2.11.1                                                           | Scanner Air Fan Emergency Damper                  | 1 No.           | 1 No.  | 2 Nos.    |           |            |
|         |                                                                    |                                                   |                 |        |           |           |            |
|         | ERECTION/ COMMISSIONING OF MASTER SLAVE CLOCK SYSTEM               |                                                   |                 |        |           |           |            |
| 63.     | D.3.7.1                                                            | Master clock control panel                        | 1 No.           | --     | 1 No.     |           |            |
| 64.     | D.3.7.2                                                            | Slave clocks                                      | 4 Nos.          | --     | 4 Nos.    |           |            |
| 65.     | D.3.7.3                                                            | GPS Antenna along with interconnecting cable      | 1 set*          | --     | 1 set*    |           |            |
| 66.     | D.3.7.4                                                            | RS232 Data Cable                                  | 1050 Mtrs       | --     | 1050 Mtrs |           |            |
| 67.     | D.3.7.5                                                            | RG58 Coaxial Cable for Pulse/ IRIGB               | 500 Mtrs        | --     | 500 Mtrs  |           |            |
| 68.     | D.3.7.6                                                            | Power Supply Cable, 3 Core x 2.5 sq. mm           | 150 Mtrs        | --     | 150 Mtrs  |           |            |
|         |                                                                    |                                                   |                 |        |           |           |            |
|         | ERECTION/ COMMISSIONING OF UPS WITH ACDB AND BATTERY               |                                                   |                 |        |           |           |            |
| 69.     | D.3.8.1                                                            | 70 KVA, 240V AC, Parallel Redundant UPS with ACDB | 1 set*          | 1 set* | 2 sets*   |           |            |

| SL. NO. | BOM REF.                                                                       | DESCRIPTION                                        | QTY             | QTY      | QTY      | UNIT RATE | TOTAL RATE |
|---------|--------------------------------------------------------------------------------|----------------------------------------------------|-----------------|----------|----------|-----------|------------|
|         |                                                                                |                                                    | Unit 1 & Common | Unit 2   | Total    |           |            |
| 70.     | D.3.8.2                                                                        | UPS Battery                                        | 2 sets*         | 2 sets*  | 4 sets*  |           |            |
|         |                                                                                |                                                    |                 |          |          |           |            |
|         | <b>ERECTION/ COMMISSIONING OF LT SWITCHGEAR/ CONTROL PANELS/ CONTROL BOXES</b> |                                                    |                 |          |          |           |            |
| 71.     | A.5.1                                                                          | Soot Blower MCC                                    | 1 set*          | 1 set*   | 2sets*   |           |            |
| 72.     | B.1.1.1                                                                        | ESP MCC                                            | 1 set*          | 1 set*   | 2sets*   |           |            |
| 73.     | D.2.1.1                                                                        | Digital AVR                                        | 1 set*          | 1 set*   | 2 sets*  |           |            |
| 74.     | B.1.1.2                                                                        | Auxiliary Control Panel                            | 2 Nos.          | 2 Nos.   | 4 Nos.   |           |            |
| 75.     | A.5.2                                                                          | Starter Box for Scanner Air Fan Motor              | 1 No.           | 1 No.    | 2 Nos.   |           |            |
| 76.     | A.5.3                                                                          | Starter Box for Furnace Temperature Probe          | 1 No.           | 1 No.    | 2 Nos.   |           |            |
| 77.     | B.1.1.3                                                                        | Electronic Control Panel with Bapcon controllers   | 14 Sets*        | 14 Sets* | 28 Sets* |           |            |
| 78.     | B.1.1.4                                                                        | Rapper Control Panel along with Rapcon controllers | 1 No.           | 1 No.    | 2 Nos.   |           |            |
| 79.     | B.1.1.5                                                                        | Ash level indicators                               | 28 Sets*        | 28 Sets* | 56 Sets* |           |            |
| 80.     | A.3.7                                                                          | Gravimetric Feeder Panel                           | 5 sets*         | 5 sets*  | 10 sets* |           |            |

| SL. NO. | BOM REF.                                             | DESCRIPTION                      | QTY             | QTY     | QTY     | UNIT RATE | TOTAL RATE |
|---------|------------------------------------------------------|----------------------------------|-----------------|---------|---------|-----------|------------|
|         |                                                      |                                  | Unit 1 & Common | Unit 2  | Total   |           |            |
| 81.     | B.1.1.6                                              | Data Logger PC with accessories  | 1 set*          | 1 set*  | 2 sets* |           |            |
| 82.     | B.1.1.7                                              | IOS PC with accessories          | 1 set*          | 1 set*  | 2 sets* |           |            |
|         |                                                      |                                  |                 |         |         |           |            |
|         | <b>ERECTION/COMMISSIONING OF MMIPIS (DCS System)</b> |                                  |                 |         |         |           |            |
| 83.     | D.1.1.1, D.2.2.1, D.3.1.1                            | Single Cubicle Panels            | 5 Nos.          | 5 Nos.  | 10 Nos. |           |            |
| 84.     | D.1.1.2, D.2.2.2, D.3.1.2                            | Suite of Two Cubicles            | 15 Nos.         | 15 Nos. | 30 Nos. |           |            |
| 85.     | D.1.1.3, D.2.2.3, D.3.1.3                            | Suite of three Cubicles          | 8 Nos.          | 8 Nos.  | 16 Nos. |           |            |
| 86.     | D.1.1.4, D.2.2.4                                     | Suite of Four Cubicles           | 3 Nos.          | 3 Nos.  | 6 Nos.  |           |            |
| 87.     | D.3.2.1                                              | Unit Electrical Control Panel    | 1 No.           | 1 No.   | 2 Nos.  |           |            |
| 88.     | D.3.2.2                                              | Station Electrical Control Panel | 1 No.           | --      | 1 No.   |           |            |
| 89.     | D.3.2.3                                              | Unit Electrical Panel            | 1 No.           | 1 No.   | 2 Nos.  |           |            |
| 90.     | D.3.2.4                                              | Station Electrical Panel         | 1 No.           | --      | 1 No.   |           |            |
| 91.     | D.3.2.5                                              | Unit Control Panel               | 1 No.           | 1 No.   | 2 Nos.  |           |            |

| SL. NO. | BOM REF.                                                                 | DESCRIPTION                                                                                                                                      | QTY             | QTY        | QTY        | UNIT RATE | TOTAL RATE |
|---------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------------|------------|-----------|------------|
|         |                                                                          |                                                                                                                                                  | Unit 1 & Common | Unit 2     | Total      |           |            |
| 92.     | D.4.5                                                                    | Unit Control Desk                                                                                                                                | 1 set*          | 1 set*     | 2 sets*    |           |            |
| 93.     | D.4.1                                                                    | Computer Stations<br>'maxEngineer' Stations, 'maxOperator' Stations,<br>'maxStorian' Station, 'maxLink' Station etc.                             | 11 sets*        | 11 sets*   | 22 sets*   |           |            |
|         |                                                                          | <b>Note: Rates quoted for PCs should be inclusive of associated furniture including PC tables, operator chairs, printer tables/consoles etc.</b> |                 |            |            |           |            |
| 94.     | D.4.2                                                                    | 67" Large Video Screen along with other loose supplied items                                                                                     | 1 set*          | 1 set*     | 2 sets*    |           |            |
| 95.     | D.4.3                                                                    | Network Panels                                                                                                                                   | 3 Nos.          | 3 Nos.     | 6 Nos.     |           |            |
| 96.     | D.4.4.1                                                                  | Ethernet Cable                                                                                                                                   | 4,500 Mtrs      | 4,500 Mtrs | 9,000 Mtrs |           |            |
| 97.     | D.4.4.2                                                                  | Power Cables: 4 C x 1 sq. mm cables                                                                                                              | 500 Mtrs        | 500 Mtrs   | 1,000 Mtrs |           |            |
|         |                                                                          |                                                                                                                                                  |                 |            |            |           |            |
|         | <b>ERECTION/ TESTING OF LOCAL INSTRUMENT ENCLOSURES/ RACKS (LIE/LIR)</b> |                                                                                                                                                  |                 |            |            |           |            |
| 98.     | D.3.13.1                                                                 | LIE of size: 700 x 800 x 1500 mm; Approx. wt.: 250 kg each                                                                                       | 1 No.           | 1 No.      | 2 Nos.     |           |            |
| 99.     | D.3.13.2                                                                 | LIE of size: 1450 x 800 x 2300 mm; Approx. wt: 375 kg each                                                                                       | 5 Nos.          | 5 Nos.     | 10 Nos.    |           |            |

| SL.<br>NO. | BOM REF. | DESCRIPTION                                                 | QTY                | QTY     | QTY     | UNIT<br>RATE | TOTAL<br>RATE |
|------------|----------|-------------------------------------------------------------|--------------------|---------|---------|--------------|---------------|
|            |          |                                                             | Unit 1 &<br>Common | Unit 2  | Total   |              |               |
| 100.       | D.3.13.3 | LIE of size: 1100 x 800 x 2300 mm; Approx. wt.: 300 kg each | 16 Nos.            | 16 Nos. | 32 Nos. |              |               |
| 101.       | E.1.3.4  | LIR of Size 2000 x 650 x 2150 mm; Approx. wt:400 kg         | 1 No.              | 1 No.   | 2 Nos.  |              |               |
| 102.       | E.1.3.3  | LIR of Size 2000 x 650 x 2150 mm; Approx. wt:250 kg.        | 1 No.              | 1 No.   | 2 Nos.  |              |               |
| 103.       | D.3.13.4 | LIR of size 1800 x 600 x 2150 mm; Approx. wt: 325 kg each   | 7 Nos.             | 7 Nos.  | 14 Nos. |              |               |
| 104.       | D.3.13.5 | LIR of size 1300 x 600 x 2150 mm; Approx. wt: 250 kg each   | 9 Nos.             | 9 Nos.  | 18 Nos. |              |               |
| 105.       | D.3.13.6 | LIR of size 500 x 650 x 1600 mm; Approx. wt: 500 kg each    | 1 No.              | 1 No.   | 2 Nos.  |              |               |
| 106.       | E.1.3.1  | LGB of approx. Size 1900 x 550 x 1600 mm; Wt: 400 kg        | 3 Nos.             | 3 Nos.  | 6 Nos.  |              |               |
| 107.       | E.1.3.2  | LGB of approx. Size 1900 x 550 x 1600 mm; Wt: 300 kg        | 2 Nos.             | 2 Nos.  | 4 Nos.  |              |               |
|            |          |                                                             |                    |         |         |              |               |

Signature of the Tenderer

| SL.<br>NO. | BOM REF.                                  | DESCRIPTION                                                                                                                  | QTY                | QTY        | QTY        | UNIT<br>RATE | TOTAL<br>RATE |
|------------|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|--------------------|------------|------------|--------------|---------------|
|            |                                           |                                                                                                                              | Unit 1 &<br>Common | Unit 2     | Total      |              |               |
|            | ASSEMBLY & ERECTION OF JB MOUNTING FRAMES |                                                                                                                              |                    |            |            |              |               |
| 108.       | D.2.6.1 to D.2.6.5                        | Assembly and installation of Mounting Frames with loose supplied prefabricated materials like slotted angles, channels, etc. | 10 Nos.            | 10 Nos.    | 20 Nos.    |              |               |
|            |                                           |                                                                                                                              |                    |            |            |              |               |
|            | LAYING, TERMINATION & TESTING OF CABLES   |                                                                                                                              |                    |            |            |              |               |
|            |                                           | LT POWER CABLES (ARMOURED CABLES)                                                                                            |                    |            |            |              |               |
| 109.       | A.6.1.1                                   | 3 C x 6 sq. mm, Cu cable                                                                                                     | 1000 Mtrs          | 1000 Mtrs  | 2000 Mtrs  |              |               |
| 110.       | A.6.1.2                                   | 3 C x 2.5 sq. mm, Cu cable                                                                                                   | 21000 Mtrs         | 21000 Mtrs | 42000 Mtrs |              |               |
| 111.       | B.1.5.1                                   | 2 C X 120 sq.mm, Al cables                                                                                                   | 12500Mtr           | 12500Mtrs  | 25000 Mtrs |              |               |
| 112.       | B.1.5.2                                   | 3 C X 10 sq. mm, Al cable                                                                                                    | 5800Mtrs           | 5800Mtrs   | 11600 Mtrs |              |               |
| 113.       | B.1.5.3                                   | 3 C X 35 sq. mm, Al cable                                                                                                    | 720 Mtrs           | 720 Mtrs   | 1440 Mtrs  |              |               |
| 114.       | B.1.5.4                                   | 1 C X 630 sq. mm, Al cable                                                                                                   | 2000 Mtrs          | 2000 Mtrs  | 4000 Mtrs  |              |               |
| 115.       | D.3.9.18                                  | 2C x 10 sq. mm/ 2 C x 6 sq. mm cable                                                                                         | 3500 Mtrs          | 3500 Mtrs  | 7000 Mtrs  |              |               |

| SL.<br>NO. | BOM REF.         | DESCRIPTION                                                         | QTY                | QTY        | QTY        | UNIT<br>RATE | TOTAL<br>RATE |
|------------|------------------|---------------------------------------------------------------------|--------------------|------------|------------|--------------|---------------|
|            |                  |                                                                     | Unit 1 &<br>Common | Unit 2     | Total      |              |               |
| 116.       | D.3.9.19         | 2 C x 50/70 sq. mm Cu cable                                         | 500 Mtrs           | 500 Mtrs   | 1000 Mtrs  |              |               |
| 117.       | D.3.9.20         | 2 C x 16/25/35 sq. mm Cu cable                                      | 500 Mtrs           | 500 Mtrs   | 1000 Mtrs  |              |               |
|            |                  | <i>LT CONTROL CABLES (FRLS, PVC<br/>INSULATED, ARMoured CABLES)</i> |                    |            |            |              |               |
| 118.       | B.1.6.1          | 10C X 2.5 sq. mm cable                                              | 11800 Mtrs         | 11800 Mtrs | 23600 Mtrs |              |               |
| 119.       | B.1.6.2          | 3 C X 2.5 sq. mm cable                                              | 15000 Mtrs         | 15000 Mtrs | 30000 Mtrs |              |               |
| 120.       | A.6.1.3, B.1.6.3 | 2 C X 2.5 sq. mm cable                                              | 7600 Mtrs          | 7600 Mtrs  | 15200 Mtrs |              |               |
| 121.       | A.6.1.4          | 2C X 1.5 sq.mm cable                                                | 750 Mtrs           | 750 Mtrs   | 1500 Mtrs  |              |               |
| 122.       | A.6.1.5          | 4C X 1.5 sq.mm, cable                                               | 6400 Mtrs          | 6400 Mtrs  | 12800 Mtrs |              |               |
| 123.       | A.6.1.6          | 7C X 1.5 sq.mm cable                                                | 9000 Mtrs          | 9000 Mtrs  | 18000 Mtrs |              |               |
| 124.       | A.6.1.7          | 10C X 1.5 sq.mm, cable                                              | 7000 Mtrs          | 7000 Mtrs  | 14000 Mtrs |              |               |
| 125.       | A.6.1.8          | 19 C x 1.5 sq. mm, cable                                            | 2000 Mtrs          | 2000 Mtrs  | 4000 Mtrs  |              |               |
|            |                  | <i>INSTRUMENTATION CABLES</i>                                       |                    |            |            |              |               |
| 126.       | A.6.1.9          | Flame Scanner Shielded Cable, 2 P x 0.5 sq. mm                      | 2600 Mtrs          | 2600 Mtrs  | 5200 Mtrs  |              |               |

| SL.<br>NO. | BOM REF.                                                          | DESCRIPTION                                    | QTY                | QTY            | QTY             | UNIT<br>RATE | TOTAL<br>RATE |
|------------|-------------------------------------------------------------------|------------------------------------------------|--------------------|----------------|-----------------|--------------|---------------|
|            |                                                                   |                                                | Unit 1 &<br>Common | Unit 2         | Total           |              |               |
|            |                                                                   | <i>PVC/FRLS, shielded, Armoured, Cu Cables</i> |                    |                |                 |              |               |
| 127.       | F.1.1                                                             | 1 P x 0.5 sq. mm cable                         | 2,000 Mtrs         | 2,000 Mtrs     | 4,000 Mtrs      |              |               |
| 128.       | A.6.1.10, D.3.9.8,<br>D.3.9.11, F.1.2,<br>F.1.8                   | 2 P x 0.5 sq. mm / 4 C x 0.5 sq. mm cable      | 22,950<br>Mtrs     | 22,950<br>Mtrs | 45,900<br>Mtrs  |              |               |
| 129.       | A.6.1.11, D.2.3.4,<br>D.3.9.9, D.3.9.12,<br>E.1.6.1, F.1.3, F.1.9 | 4 P x 0.5 sq. mm / 8 C x 0.5 sq. mm cable      | 53,275<br>Mtrs     | 53,275<br>Mtrs | 106,550<br>Mtrs |              |               |
| 130.       | A.6.1.12, D.3.9.10,<br>D.3.9.13, F.1.4,<br>F.1.10                 | 8 P x 0.5 sq. mm / 16 C x 0.5 sq. mm cable     | 68,350<br>Mtrs     | 68,350<br>Mtrs | 136,700<br>Mtrs |              |               |
| 131.       | D.2.3.3, F.1.5                                                    | 12 P x 0.5 sq. mm cable                        | 4000 Mtrs          | 4000 Mtrs      | 8000 Mtrs       |              |               |
| 132.       | A.6.1.13, F.1.6                                                   | 16 P x 0.5 sq. mm, Armoured cable              | 2000 Mtrs          | 2000 Mtrs      | 4000 Mtrs       |              |               |
| 133.       | A.6.1.14                                                          | 10 P x 0.6 sq. mm, Armoured cable              | 60 Mtrs            | 60 Mtrs        | 120 Mtrs        |              |               |
| 134.       | A.6.1.15, B.1.7.1,<br>D.3.9.14, F.1.7                             | 2 P x 1.5 sq.mm/ 4C x 1.5 sq. mm cable         | 12,950<br>Mtrs     | 12,950<br>Mtrs | 25,900<br>Mtrs  |              |               |
|            |                                                                   |                                                |                    |                |                 |              |               |

| SL.<br>NO. | BOM REF.         | DESCRIPTION                                      | QTY                | QTY        | QTY        | UNIT<br>RATE | TOTAL<br>RATE |
|------------|------------------|--------------------------------------------------|--------------------|------------|------------|--------------|---------------|
|            |                  |                                                  | Unit 1 &<br>Common | Unit 2     | Total      |              |               |
|            |                  | <i>PVC/FRLS, shielded, Unarmoured, Cu Cables</i> |                    |            |            |              |               |
| 135.       | D.3.9.1, D.3.9.5 | 2 pair x 0.5 sq. mm cable                        | 9000 Mtrs          | 9000 Mtrs  | 18000 Mtrs |              |               |
| 136.       | D.3.9.2, D.3.9.6 | 4 pair x 0.5 sq. mm cable                        | 20000 Mtrs         | 20000 Mtrs | 40000 Mtrs |              |               |
| 137.       | D.3.9.3, D.3.9.7 | 8 pair x 0.5 sq. mm cable                        | 11500 Mtrs         | 11500 Mtrs | 23000 Mtrs |              |               |
| 138.       | D.3.9.4          | 12 pair x 0.5 sq. mm cable                       | 1000 Mtrs          | 1000 Mtrs  | 2000 Mtrs  |              |               |
| 139.       | A.6.1.16         | 4 P x 0.5 sq. mm, pigtail cable (Unarmoured)     | 360 Mtrs           | 360 Mtrs   | 720 Mtrs   |              |               |
|            |                  |                                                  |                    |            |            |              |               |
|            |                  | <i>PTFE Insulated Cables</i>                     |                    |            |            |              |               |
| 140.       | D.2.3.1          | 2 pair x 0.5 sq. mm PTFE cable                   | 2000 Mtrs          | 2000 Mtrs  | 4000 Mtrs  |              |               |
| 141.       | D.2.3.2          | 4 pair x 0.5 sq. mm PTFE cable                   | 1500 Mtrs          | 1500 Mtrs  | 3000 Mtrs  |              |               |
| 142.       | D.2.3.5          | 5 Core x 1.5 sq. mm PTFE cable                   | 1500 Mtrs          | 1500 Mtrs  | 3000 Mtrs  |              |               |
|            |                  |                                                  |                    |            |            |              |               |

| SL.<br>NO. | BOM REF.                                 | DESCRIPTION                                               | QTY                | QTY        | QTY        | UNIT<br>RATE | TOTAL<br>RATE |
|------------|------------------------------------------|-----------------------------------------------------------|--------------------|------------|------------|--------------|---------------|
|            |                                          |                                                           | Unit 1 &<br>Common | Unit 2     | Total      |              |               |
|            |                                          | <i>Compensating Cables</i>                                |                    |            |            |              |               |
| 143.       | A.6.1.17, D.2.3.6,<br>D.3.9.15           | 2 P X 16 AWG, T/C Extension Cable/ 2 Pair x<br>0.5 sq. mm | 10450 Mtrs         | 10450 Mtrs | 20900 Mtrs |              |               |
| 144.       | D.3.9.16                                 | 4 P X 20 AWG, T/C Extension Cable                         | 3500 Mtrs          | 3500 Mtrs  | 7000 Mtrs  |              |               |
| 145.       | D.3.9.17                                 | 6 P X 20 AWG, T/C Extension Cable                         | 3000 Mtrs          | 3000 Mtrs  | 6000 Mtrs  |              |               |
|            |                                          |                                                           |                    |            |            |              |               |
|            | <b>ERECTION OF CABLE TRAYS AND DUCTS</b> |                                                           |                    |            |            |              |               |
| 146.       | A.6.2.4, D.3.10.1,<br>E.1.6.2            | Perforated Cable Tray, 50 mm wide                         | 2170 mtrs          | 2170 mtrs  | 4340 mtrs  |              |               |
| 147.       | A.6.2.1, D.3.10.2                        | Perforated Cable Tray, 100 mm wide                        | 4380 Mtrs          | 4380 Mtrs  | 8760 Mtrs  |              |               |
| 148.       | A.6.2.2, E.1.6.3                         | Perforated Cable Tray, 150 mm wide                        | 1260 Mtrs          | 1260 Mtrs  | 2520 Mtrs  |              |               |
| 149.       | A.6.2.3                                  | Perforated Cable Tray, 300 mm wide                        | 75 Mtrs            | 75 Mtrs    | 150 Mtrs   |              |               |
| 150.       | B.1.4.1                                  | Ladder type 600 mm wide                                   | 125 Mtrs           | 125 Mtrs   | 250 Mtrs   |              |               |
| 151.       | B.1.4.2                                  | Ladder type 450 mm wide                                   | 1500 Mtrs          | 1500 Mtrs  | 3000 Mtrs  |              |               |
| 152.       | B.1.4.3                                  | Ladder type 150 mm wide                                   | 250 Mtrs           | 250 Mtrs   | 500 Mtrs   |              |               |

| SL.<br>NO. | BOM REF.                                    | DESCRIPTION                                                                                 | QTY                | QTY      | QTY      | UNIT<br>RATE | TOTAL<br>RATE |
|------------|---------------------------------------------|---------------------------------------------------------------------------------------------|--------------------|----------|----------|--------------|---------------|
|            |                                             |                                                                                             | Unit 1 &<br>Common | Unit 2   | Total    |              |               |
|            |                                             | <b><i>Cable Ducts With Covers</i></b>                                                       |                    |          |          |              |               |
| 153.       | D.2.5.1                                     | 60 x 60 x 1000 mm                                                                           | 180 Nos.           | 180 Nos. | 360 Nos. |              |               |
| 154.       | D.2.5.2                                     | 180 x 100 x 1000 mm                                                                         | 60 Nos.            | 60 Nos.  | 120 Nos. |              |               |
| 155.       | D.2.5.3                                     | 250 x 100 x 1000 mm                                                                         | 50 Nos.            | 50 Nos.  | 100 Nos. |              |               |
|            |                                             |                                                                                             |                    |          |          |              |               |
|            | <b>ERECTION OF JUNCTION BOXES/ PB BOXES</b> |                                                                                             |                    |          |          |              |               |
| 156.       | B.1.3.2                                     | Power Junction Boxes for hopper heaters/ support insulator heaters/ shaft insulator heaters | 36 Nos.            | 36 Nos.  | 72 Nos.  |              |               |
| 157.       | B.1.3.3                                     | Control Junction Boxes for hopper thermostat, start stop PBs, ALI, Opacity Monitor          | 8 Nos.             | 8 Nos.   | 16 Nos.  |              |               |
| 158.       | B.1.3.1                                     | Local Start Stop Push Buttons (for Rapping Motors)                                          | 30 Nos.            | 30 Nos.  | 60 Nos.  |              |               |
| 159.       | D.3.11.1                                    | 12 way Junction Boxes                                                                       | 5 Nos.             | 5 Nos.   | 10 Nos.  |              |               |
| 160.       | A.6.3.1, D.3.11.2, E.1.4.1                  | 24 way Junction Boxes                                                                       | 107 Nos.           | 107 Nos. | 214 Nos. |              |               |
| 161.       | A.6.3.3, D.3.11.3                           | 36 way Junction Boxes                                                                       | 24 Nos.            | 24 Nos.  | 48 Nos.  |              |               |

| SL.<br>NO.                         | BOM REF.          | DESCRIPTION                                                                      | QTY                | QTY      | QTY      | UNIT<br>RATE | TOTAL<br>RATE |
|------------------------------------|-------------------|----------------------------------------------------------------------------------|--------------------|----------|----------|--------------|---------------|
|                                    |                   |                                                                                  | Unit 1 &<br>Common | Unit 2   | Total    |              |               |
| 162.                               | A.6.3.2, D.3.11.4 | 48 way FRP Junction Boxes                                                        | 26 Nos.            | 26 Nos.  | 52 Nos.  |              |               |
| 163.                               | D.2.4.1, D.3.11.5 | 64 way Junction Boxes                                                            | 59 Nos.            | 59 Nos.  | 118 Nos. |              |               |
| 164.                               | D.3.11.6          | 72 way Junction Boxes                                                            | 1 No.              | 1 No.    | 2 Nos.   |              |               |
| 165.                               | A.6.3.4, D.2.2.5  | 2 PB/ 3PB Push Button Boxes/ Fire Protection Switch Box                          | 5 Nos.             | 5 Nos.   | 10 Nos.  |              |               |
| 166.                               | D.2.4.2           | Junction Box for K-type Thermocouples                                            | 17 Nos.            | 17 Nos.  | 34 Nos.  |              |               |
| 167.                               | A.4.5             | Junction Boxes for MTM Thermocouples                                             | 21 Nos.            | 21 Nos.  | 42 Nos.  |              |               |
|                                    |                   |                                                                                  |                    |          |          |              |               |
| <b>TESTING OF HEATING ELEMENTS</b> |                   |                                                                                  |                    |          |          |              |               |
| 168.                               | B.1.2.1           | Testing and Termination and dressing of Heating Elements for Hopper (Panel type) | 336 Nos.           | 336 Nos. | 672 Nos. |              |               |
| 169.                               | B.1.2.2           | Testing Heating elements for support insulator heater                            | 112 Nos.           | 112 Nos. | 224 Nos. |              |               |
| 170.                               | B.1.2.3           | Testing Heating elements for shaft insulator heater                              | 14 Nos.            | 14 Nos.  | 28 Nos.  |              |               |
| 171.                               | B.1.2.4           | Testing Thermostats for hopper heaters.                                          | 14 Nos.            | 14 Nos.  | 28 Nos.  |              |               |

| SL.<br>NO. | BOM REF.                                  | DESCRIPTION                               | QTY                | QTY        | QTY        | UNIT<br>RATE | TOTAL<br>RATE |
|------------|-------------------------------------------|-------------------------------------------|--------------------|------------|------------|--------------|---------------|
|            |                                           |                                           | Unit 1 &<br>Common | Unit 2     | Total      |              |               |
| 172.       | B.1.2.5                                   | Testing Thermostat for support insulators | 2 Nos.             | 2 Nos.     | 4 Nos.     |              |               |
|            |                                           |                                           |                    |            |            |              |               |
|            | <b>ERECTION/ TESTING OF IMPULSE PIPES</b> |                                           |                    |            |            |              |               |
| 173.       | E.1.5.1                                   | CS Pipe Gr. B, Dia 16 x 2.6               | 560 Mtrs           | 560 Mtrs   | 1120 Mtrs  |              |               |
| 174.       | A.6.4.1, C.2.1,<br>D.3.12.2, E.2.4.1      | CS Pipe, ½” SCH 80                        | 2680 Mtrs          | 2680 Mtrs  | 5360 Mtrs  |              |               |
| 175.       | D.3.12.4                                  | CS Pipe ½” SCH 160, GR C                  | 500 Mtrs           | 500 Mtrs   | 1000 Mtrs  |              |               |
| 176.       | D.3.12.3                                  | CS Pipe ¾” SCH 80, GR C                   | 1,350 Mtrs         | 1,350 Mtrs | 2,700 Mtrs |              |               |
| 177.       | E.2.4.2                                   | AS Pipe 21.3 x 3.73, ½” SCH 80            | 560 Mtrs           | 560 Mtrs   | 1120 Mtrs  |              |               |
| 178.       | D.3.12.5                                  | AS Pipe, P22, ½” SCH XXS                  | 300 Mtrs           | 300 Mtrs   | 600 Mtrs   |              |               |
| 179.       | E.2.4.3                                   | SS Tube 12.7 x 2.1                        | 760 Mtrs           | 760 Mtrs   | 1520 Mtrs  |              |               |
| 180.       | D.3.12.1, E.2.4.6                         | SS Pipe, ½” SCH 40                        | 820 Mtrs           | 820 Mtrs   | 1640 Mtrs  |              |               |
| 181.       | E.2.4.5                                   | SS Pipe, 1” SCH 40                        | 110 Mtrs           | 110 Mtrs   | 220 Mtrs   |              |               |
| 182.       | D.3.12.6                                  | SS 316 PIPE, SCH 160                      | 500 Mtrs           | 500 Mtrs   | 1000 Mtrs  |              |               |

| SL.<br>NO. | BOM REF.                                                                     | DESCRIPTION                   | QTY                | QTY       | QTY       | UNIT<br>RATE | TOTAL<br>RATE |
|------------|------------------------------------------------------------------------------|-------------------------------|--------------------|-----------|-----------|--------------|---------------|
|            |                                                                              |                               | Unit 1 &<br>Common | Unit 2    | Total     |              |               |
| 183.       | E.2.4.4                                                                      | SS Pipe 60.3 x 2.8            | 35 Mtrs            | 35 Mtrs   | 70 Mtrs   |              |               |
|            |                                                                              |                               |                    |           |           |              |               |
|            | <b>ERECTION OF EARTHING MATERIALS, HOSES, TUBES, CLAMPING MATERIALS etc.</b> |                               |                    |           |           |              |               |
| 184.       | A.6.5.1                                                                      | Soft Galvanised wire, 1.219   | 2000 Mtrs          | 2000 Mtrs | 4000 Mtrs |              |               |
| 185.       | B.1.8.3                                                                      | GI wire 8 SWG                 | 4000 Mtrs          | 4000 Mtrs | 8000 Mtrs |              |               |
| 186.       | A.6.5.3, B.1.8.1                                                             | GI Flat 50 x 6 mm             | 860 Mtrs           | 860 Mtrs  | 1720 Mtrs |              |               |
| 187.       | B.1.8.2                                                                      | GI Flat 30 x 5 mm             | 800 Mtrs           | 800 Mtrs  | 1600 Mtrs |              |               |
| 188.       | A.1.11                                                                       | OD 8 mm Copper Tube           | 65 Mtrs            | 65 Mtrs   | 130 Mtrs  |              |               |
| 189.       | A.2.7, D.1.2.4,<br>D.3.14.3, F.2.1                                           | ¼” OD, PVC Sheathed Cu Tube   | 2905 Mtrs          | 2905 Mtrs | 5810 Mtrs |              |               |
| 190.       | A.2.5                                                                        | ¼” size Teflon Hose, 2 M each | 48 Nos.            | 48 Nos.   | 96 Nos.   |              |               |
| 191.       | A.2.6                                                                        | 1” size Teflon Hose, 3 M each | 4 Nos.             | 4 Nos.    | 8 Nos.    |              |               |
|            |                                                                              |                               |                    |           |           |              |               |

| SL.<br>NO. | BOM REF.                                                        | DESCRIPTION                                                   | QTY                | QTY        | QTY        | UNIT<br>RATE | TOTAL<br>RATE |
|------------|-----------------------------------------------------------------|---------------------------------------------------------------|--------------------|------------|------------|--------------|---------------|
|            |                                                                 |                                                               | Unit 1 &<br>Common | Unit 2     | Total      |              |               |
|            | FABRICATION/ ERECTION OF STRUCTURAL STEEL                       |                                                               |                    |            |            |              |               |
| 192.       | A.6.5.2, B.1.9.1,<br>D.3.14.1, E.1.7.1,<br>E.2.3                | Structural Steel for fabrication of supports / Local<br>Racks | 13.1 MT            | 13.1 MT    | 26.2 MT    |              |               |
|            |                                                                 |                                                               |                    |            |            |              |               |
|            | ERECTION/TESTING OF GI PIPE (HEAVY DUTY)                        |                                                               |                    |            |            |              |               |
| 193.       | C.3.1                                                           | GI pipe, Nb50 x 4.5 mm                                        | 400 Mtrs           | 400 Mtrs   | 800 Mtrs   |              |               |
| 194.       | C.3.2                                                           | GI pipe, Nb25 x 4.05 mm                                       | 200 Mtrs           | 200 Mtrs   | 400 Mtrs   |              |               |
| 195.       | C.3.3, D.3.14.2                                                 | GI pipe, Nb15 x 3.25 mm / ½” pipes                            | 3000 Mtrs          | 3000 Mtrs  | 6000 Mtrs  |              |               |
|            |                                                                 |                                                               |                    |            |            |              |               |
|            | CHECKING AND COMMISSIONING OF FOLLOWING ERECTED BY OTHER AGENCY |                                                               |                    |            |            |              |               |
| 196.       | E.4.3.1                                                         | 125 MW Generator                                              | 1 No. \$           | 1 No. \$   | 2 Nos. \$  |              |               |
| 197.       | B.1.10.1                                                        | ESP Transformers                                              | 14 Nos. \$         | 14 Nos. \$ | 28 Nos. \$ |              |               |
| 198.       | A.7.1, E.1.8.1                                                  | HT Motors (6.6 kV)                                            | 15 Nos.\$          | 15 Nos. \$ | 30 Nos. \$ |              |               |
| 199.       | B.3.4.1                                                         | Lub Oil Skids for FD/ PA Fans                                 | 4 sets*\$          | 4 sets*\$  | 8 sets*\$  |              |               |

| SL. NO. | BOM REF.                               | DESCRIPTION                                                     | QTY             | QTY        | QTY         | UNIT RATE | TOTAL RATE |
|---------|----------------------------------------|-----------------------------------------------------------------|-----------------|------------|-------------|-----------|------------|
|         |                                        |                                                                 | Unit 1 & Common | Unit 2     | Total       |           |            |
| 200.    | B.3.4.2                                | Hydraulic Coupling for ID Fan                                   | 2 sets*\$       | 2 sets*\$  | 4 sets*\$   |           |            |
| 201.    | B.2.9.2                                | Air Preheater Skids                                             | 4 sets*         | 4 sets*\$  | 8 sets*\$   |           |            |
| 202.    | C.4.5                                  | HP dosing (Phosphate dosing) skid                               | 1 set*\$        | 1 set*\$   | 2 sets*\$   |           |            |
| 203.    | F.3.1                                  | LP Dosing (Hydrazine/ Ammonia) Skids                            | 2 sets \$       | 2 sets \$  | 4 sets \$   |           |            |
| 204.    | A.3.8.1                                | Feeder Mounted C&I Equipment along with Feeder Integral Cabinet | 5 sets*\$       | 5 sets*\$  | 10 sets*\$  |           |            |
| 205.    | A.4.9.1                                | Direct Water Level Gauges                                       | 2 Nos. \$       | 2 Nos. \$  | 4 Nos. \$   |           |            |
| 206.    | A.2.13.1 to A.2.13.5, E.3.4.1, E.3.4.2 | Pneumatic Dampers (On/Off Type)                                 | 35 Nos. \$      | 35 Nos. \$ | 70 Nos. \$  |           |            |
| 207.    | C.4.4, E.2.2.2                         | Flow switch / Flow Gauges                                       | 37 No. \$       | 37 No. \$  | 74 Nos. \$  |           |            |
| 208.    | D.3.3.4                                | Flow Meter                                                      | 1 No.\$         | 1 No. \$   | 2 Nos. \$   |           |            |
| 209.    | A.1.13.3, A.3.8.2, A.3.8.3, E.2.2.4    | Checking of Limit Switches                                      | 81 No.\$        | 81 No. \$  | 162 Nos. \$ |           |            |
| 210.    | A.4.9.2, B.2.9.1, E.1.8.3, E.2.2.3     | Solenoid valves                                                 | 38Nos. \$       | 38Nos. \$  | 76Nos. \$   |           |            |
| 211.    | E.2.2.5                                | Checking of Position transmitters                               | 6 Nos. \$       | 6 Nos. \$  | 12 Nos. \$  |           |            |

| SL. NO. | BOM REF.                                  | DESCRIPTION                                             | QTY             | QTY         | QTY         | UNIT RATE | TOTAL RATE |
|---------|-------------------------------------------|---------------------------------------------------------|-----------------|-------------|-------------|-----------|------------|
|         |                                           |                                                         | Unit 1 & Common | Unit 2      | Total       |           |            |
| 212.    | E.2.2.6                                   | Level Switches                                          | 4 Nos. \$       | 4 Nos. \$   | 8 Nos. \$   |           |            |
| 213.    | B.3.4.3, E.1.1.2, E.1.2.7, E.3.3, E.4.3.2 | Checking the healthiness of Temperature Elements (RTDs) | 262 Nos. \$     | 262 Nos. \$ | 524 Nos. \$ |           |            |
| 214.    | E.2.2.7                                   | Servo Valves                                            | 6 Nos. \$       | 6 Nos. \$   | 12 Nos. \$  |           |            |
| 215.    | A.7.4                                     | Motor Operated Valves : Regulating Type                 | 3 Nos. \$       | 3 Nos. \$   | 6 Nos. \$   |           |            |
| 216.    | A.7.5, C.4.2                              | Motor Operated Valves: ON/ OFF Type                     | 21 Nos. \$      | 21 Nos. \$  | 42 Nos. \$  |           |            |
| 217.    | A.1.13.1                                  | Trip Valves                                             | 38 Nos. \$      | 38 Nos. \$  | 76 Nos. \$  |           |            |
| 218.    | A.1.13.2, A.4.9.3, C.4.1, E.2.2.1, F.3.2  | Control Valves                                          | 34 Nos. \$      | 34 Nos. \$  | 68 Nos. \$  |           |            |
| 219.    | A.7.2, B.1.10.3 C.4.3, E.1.8.2            | LT Motors (Ui-directional)                              | 141 Nos. \$     | 141 Nos. \$ | 282 Nos. \$ |           |            |
| 220.    | A.7.3                                     | LT Motors (Bidirectional)                               | 60 Nos. \$      | 60 Nos. \$  | 120 Nos. \$ |           |            |
| 221.    | B.1.10.2                                  | Hoist                                                   | 1 No. \$        | 1 No. \$    | 2 Nos. \$   |           |            |

\* Lump sum rate to be quoted

\$ Rate to be quoted ONLY for commissioning

**TOTAL CONTACT VALUE Rs. ....**

**Inwords Rs.....**

| SL. NO. | DESCRIPTION                                                                | QTY         | UNIT<br>RATE |
|---------|----------------------------------------------------------------------------|-------------|--------------|
|         | PROVISIONAL RATE FOR THE FOLLOWING<br>OPTIONAL ITEMS TO BE QUOTED          |             |              |
| 222.    | Fabrication and installation of canopy                                     | (per sq. m) |              |
| 223.    | Laying of Fibre Optic Cable, along with conduit (excluding<br>termination) | (per Mtr)   |              |
| 224.    | Erection of 25 mm GI Conduit                                               | (per metre) |              |
| 225.    | Erection of ¼” SS Tube                                                     | (per metre) |              |
| 226.    | Erection of ½” SS Tube                                                     | (per metre) |              |
| 227.    | Erection of Cable Trays, Perforated Type, 200 mm wide                      | (per metre) |              |
| 228.    | Erection of Cable Trays, Perforated Type, 450 mm wide                      | (per metre) |              |
| 229.    | Erection of Cable Trays, Ladder Type, 300 mm wide                          | (per metre) |              |
| 230.    | Erection of GI Flat, 25 x 3 / 5 mm                                         | (per metre) |              |
| 231.    | Erection of GI Flat, 65 x 10 mm                                            | (per metre) |              |
| 232.    | Erection of GI Flat, 75 x 10 mm                                            | (per metre) |              |
| 233.    | Erection of ½” Copper Tube                                                 | (per metre) |              |

| SL. NO. | DESCRIPTION                                                                                                                                                                | QTY         | UNIT<br>RATE |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------|
|         | PROVISIONAL RATE FOR THE FOLLOWING<br>OPTIONAL ITEMS TO BE QUOTED                                                                                                          |             |              |
| 234.    | Erection of ½” Flexible conduit                                                                                                                                            | (per metre) |              |
| 235.    | Erection of ¾” Flexible conduit                                                                                                                                            | (per metre) |              |
|         |                                                                                                                                                                            |             |              |
|         | <b>Supply of Cable Glands:</b><br><i>Double Compression type, Nickel Plated, Weatherproof, Brass<br/>Cables glands, conforming to IS12943:1990. of following<br/>sizes</i> |             |              |
| 236.    | Upto 12 sq mm                                                                                                                                                              | (Per No.)   |              |
| 237.    | 12.1 – 16.5 sq mm                                                                                                                                                          | (Per No.)   |              |
| 238.    | 16.6 – 18 sq mm                                                                                                                                                            | (Per No.)   |              |
| 239.    | 18.1 – 20 sqmm                                                                                                                                                             | (Per No.)   |              |
| 240.    | 20.1 – 23 sq mm                                                                                                                                                            | (Per No.)   |              |
| 241.    | 23.1 – 26 sq mm                                                                                                                                                            | (Per No.)   |              |
| 242.    | 26.1 – 30 sq mm                                                                                                                                                            | (Per No.)   |              |
| 243.    | 30.1 – 33 sq mm                                                                                                                                                            | (Per No.)   |              |

| SL. NO. | DESCRIPTION                                                       | QTY       | UNIT<br>RATE |
|---------|-------------------------------------------------------------------|-----------|--------------|
|         | PROVISIONAL RATE FOR THE FOLLOWING<br>OPTIONAL ITEMS TO BE QUOTED |           |              |
| 244.    | 33.1 – 37 sq mm                                                   | (Per No.) |              |
| 245.    | 37.1 – 41 sq mm                                                   | (Per No.) |              |
| 246.    | 41.1 – 46 sq mm                                                   | (Per No.) |              |
| 247.    | 46.1 – 52 sq mm                                                   | (Per No.) |              |
| 248.    | 52.1 – 60 sq mm                                                   | (Per No.) |              |
| 249.    | 60.1 – 67 sq mm                                                   | (Per No.) |              |
| 250.    | 67.1 – 72 sq mm                                                   | (Per No.) |              |
| 251.    | 72.1 – 78 sq mm                                                   | (Per No.) |              |
| 252.    | 78.1 – 84 sq mm                                                   | (Per No.) |              |
| 253.    | 84.1 – 94 sq mm                                                   | (Per No.) |              |
| 254.    | 94.1 – 105 sq mm                                                  | (Per No.) |              |
|         |                                                                   |           |              |

| SL. NO. | DESCRIPTION                                                                                                  | QTY       | UNIT<br>RATE |
|---------|--------------------------------------------------------------------------------------------------------------|-----------|--------------|
|         | PROVISIONAL RATE FOR THE FOLLOWING<br>OPTIONAL ITEMS TO BE QUOTED                                            |           |              |
|         | Supply of Cable Lugs<br><i>Crimping &amp; Ring Type Tinned Copper/ Aluminum Lugs for<br/>following sizes</i> |           |              |
| 255.    | 6 sq. mm, Al                                                                                                 | (per No.) |              |
| 256.    | 10 sq. mm, Al                                                                                                | (per No.) |              |
| 257.    | 35 sq. mm, Al                                                                                                | (per No.) |              |
| 258.    | 630 sq. mm, Al                                                                                               | (per No.) |              |
| 259.    | 120 sq. mm, Al                                                                                               | (per No.) |              |
| 260.    | 6 sq. mm, Cu                                                                                                 | (per No.) |              |
| 261.    | 16 sq. mm, Cu                                                                                                | (per No.) |              |
| 262.    | 25 sq. mm, Cu                                                                                                | (per No.) |              |
| 263.    | 35 sq. mm, Cu                                                                                                | (per No.) |              |
| 264.    | 50 sq. mm, Cu                                                                                                | (per No.) |              |
| 265.    | 70 sq. mm, Cu                                                                                                | (per No.) |              |

## **NOTE TO RATE SCHEDULE**

1. The quantities indicated in the Rate Schedule are only approximate and are liable for variation. Payment shall be made to the actual quantity erected at the unit rate quoted / accepted.
2. Dimension and weight indicated in the Rate Schedule are only approximate and given for guidance of the contractor.
3. Rates include complete installation, testing, commissioning and trial operation of equipments laying and dressing of cables, termination of cables etc.
4. Where the provisional rates /values are asked for, the successful contractor who has been awarded the work shall have to match their provisional rates for all categories of work, with the lowest provisional rates/value quoted by other qualified bidders. Only those rate/values will be paid for these works. However BHEL RESERVES ITS RIGHT TO TREAT THESE PROVISIONAL WORKS AS OPTIONAL AND GET IT DONE THROUGH OTHERS ALSO AS PER OUR DISCRETION. The above condition shall be binding on the contractor.
5. Tenderers are requested to quote their rates, only in the price bid (part II) provided by BHEL. Quoting of rates in any other form/formats will not be entertained.
6. The Tenderer should affix his signature in all pages

Signature of the Tenderer