ISO 9001:2000
&14001:2004
MAHARATNA
COMPANY

MATERIAL MANAGEMENT (PURCHASE)
CENTRAL FOUNDRY FORGE PLANT,BHEL HARDWAR
RANIPUR, HARIDWAR (INDIA) – 249403
Phone No.01334-281277/285635, FAX No. 01334-225892
e-mail :ranjank@bhelhwr.co.in, kraj@bhelhwr.co.in,manoj26@bhelhwr.co.in

Ref: FF/PPX/3004 Dated: 11.09.2013

**Subject : Corrigendum for technical specification .**

With reference to tender Enquiry no - **3004P/360/3/0218P1** due on 30.09.2013 for Power distribution Board with technical specification CFFF/CDS/CAPITAL/2MVA/13-14/02 (for material code FF4210813095) and CFFF/CDS/CAPITAL/2MVA/13-14/03(for material code FF4210813109).

Technical specification of tender enquiry has been revised. Revised technical specification no CFFF/CDS/CAPITAL/2MVA/13-14/02 Revision 01 dt 09.09.2013 (for material code FF4210813095) and CFFF/CDS/CAPITAL/2MVA/13-14/03 Revision 01 dt 09.09.2013(for material code FF4210813109) are enclosed.

All the vendors are requested to submit their offer according to revised technical specification.

The vendor who has already submitted their quotation, they can submit their revised offer **in time** clearly indication **REVISED OFFER** on sealed offer envelope. In such cases only revised offer will be opened.

Thanking You,

Yours Faithfully,
For & ON BEHALF OF CFFP/ BHEL, HARDWAR

Raj Kishore
Manager ( Purchase)

**SPECIFICATION NO-CFF/CDS/CAPITAL/2MVA/13-14/02 , Revision-01, Date: 09.09.2013**
**TENDER NO: 3004P/360/3/0218P1, dated : 27.08.2013**

## 3200 A , 415V DISTRIBUTION BOARD (QTY- 5Nos)

1. The Power Distribution Board (PDB) should consist of ACBs (Only specified makes) housed in a sheet steel enclosure of thickness not less than 2 mm suitable for three phase four wire system.
2. PDB should be painted first with corrosion resistant paint and then with industrial grade grey paint and contain base frame suitable for floor mounting.
3. The frame is to be provided with proper sealing against rodent/ reptile entry.
4. The backside of the PDB should be provided with openable Door/ Doors.
5. The PDB is to be designed to accommodate 08 Nos (3.5Cx 300sq mm) cables for incomer of 3200 A and 04 No(3.5Cx300 sq mm) cables for 1250 A outgoing feeder, 03 No (3.5Cx300 sq. mm) cables for each 800A outgoing feeder and 01 No (3.5Cx300 sq. mm) cable in each 400 A outgoing feeder. The PDB should have provision for entry of all the cables through detachable plates at the bottom.
6. The PDB should be provided with the earthing bus bar and suitable for natural air cooling arrangement (Preferably Net type).
7. There should be three sections in PDBs for housing incoming and outgoing ACBs/ Switches. The incoming feeder must be positioned as per the position indicated below and the overall height of PDB should not exceed 2300 mm.
8. All the bus bars should contain sleeves with heat shrunk PVC as per standard colour coding i.e. Red, Yellow, Blue for phases and Black for Neutral and the clearances of bus bars from each other and panel body should be as per relevant IS.

The PDB should have the following items

### A) INCOMING FEEDER DETAILS

| S.NO | ITEM | QTY |
|---|---|---|
| 01 | 4 Pole, Air circuit breaker, 3200A, 415 V, manual draw out (MDO) type of breaking capacity at least 50 KA with guide frame and over current protection, short circuit protection, Earth fault protection & shunt trip. | 01 No |
| 02 | Voltmeter :0- 500V analog | 03 Nos |
| 03 | Ammeter: 0-3200 A, analog | 03 Nos |
| 04 | Phase live indicator, High luminosity LED's. | 06 Nos |
| 05 | Fuse-2A with base. | 09 Nos |
| 06 | Current Transformer of ratio 3200/5A | 03 Nos |
| 07 | Digital Energy meter | 01 No |

**B) OUTGOING FEEDER DETAILS**:

Outgoing feeder shall include :

i) 01 No feeder of 1250 A ii) 6 No feeders of 800A iii) 2 No feeders of 400 A.

**i) 1250A OUTGOING FEEDER DETAILS**

| S.NO | ITEM | QTY |
|---|---|---|
| 01 | 4Pole, Air circuit breaker, 1250A, 415 V, manual draw out (MDO) type of breaking capacity at least 50KA with guide frame and overload / instantaneous short circuit / delayed short circuit / ground fault protection. | 01 Nos |
| 02 | Indicating Light | 03 Nos |
| 03 | Fuse-2A with base | 03 Nos |
| 04 | Analog Ammeter with selector switch (0-1250 A) | 01 Nos |
| 05 | Current Transformer of ratio 1250/5A , | 03 Nos |

**ii) 800A OUTGOING FEEDER DETAILS:**

| S.NO | ITEM | QTY |
|---|---|---|
| 01 | 4 Pole, Air circuit breaker, 800A, 415 V, manual draw out (MDO) type of breaking capacity at least 50KA with guide frame, overload / instantaneous short circuit / delayed short circuit / ground fault protection. | 06 Nos |
| 02 | Indicating Light | 18 Nos |
| 03 | Fuse-2A with base | 18 Nos |
| 04 | Analog Ammeter with selector switch (0-800 A ) | 06 Nos |
| 05 | Current Transformer of ratio 800/5A | 18 Nos |

**iii) 400A OUTGOING FEEDER DETAILS:**

| S.NO | ITEM | QTY |
|---|---|---|
| 01 | 4 Pole, 415 Volts, 400A MCCB unit of breaking capacity at least 36 KA with indicating LED | 02 Nos |

**Preferable Make of Items:**

| S.NO | ITEM | MAKE/DESCRIPTION |
|---|---|---|
| 01 | Air circuit Breaker, MCCB. | L&T or SIEMENS Microprocessor based. |
| 02 | Voltmeters & Ammeters | AE, 96*96sq mm, Analog |
| 03 | Indicators LED's | L&T/SIEMENS |
| 04 | Current Transformers | KAPPA/AE/ENG ELECTRIC |
| 05 | Bus bars | Aluminium |
| 06 | Ammeter selector switch | L&T/SIEMENS/KAYCEE |
| 07 | Digital Energy meter | Conzerv/ Schneider/ L&T |

**POSITIONING OF ACBs / MCCBs**

<table>
<tr><td>ACB 800 A, 4P</td><td></td><td>ACB 800 A, 4P</td><td></td><td>MCCB 400A, 4P</td><td>MCCB 400A, 4P</td></tr>
<tr><td>ACB 800 A, 4P</td><td></td><td>ACB 800 A, 4P</td><td></td><td colspan="2">ACB 800 A, 4P</td></tr>
<tr><td>ACB 800 A, 4P</td><td></td><td>ACB for Incomer 3200 A, 4P</td><td></td><td colspan="2">ACB 1250 A, 4P</td></tr>
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A.R.IDRISI
Sr. ENGINEER-CDS

IMRAT SINGH
Sr. MANAGER-CDS

**SPECIFICATION NO- CFF/CDS/CAPITAL/2MVA/13-14/03, Revision-01, Date: 09.09.2013**
**TENDER NO: 3004P/360/3/0218P1, dated : 27.08.2013**

## 3200 A, 415V DISTRIBUTION BOARD (QTY- 01No)

1. The Power Distribution Board (PDB) should consist of ACBs (Only specified makes) housed in a sheet steel enclosure of thickness not less than 2 mm suitable for three phase four wire system.
2. PDB should be painted first with corrosion resistant paint and then with industrial grade grey paint and contain base frame suitable for floor mounting.
3. The frame is to be provided with proper sealing against rodent/ reptile entry.
4. The backside of the PDB should be provided with openable Door/ Doors.
5. The PDB is to be designed to accommodate 08 Nos (3.5Cx 300sq mm) cables for incomer of 3200 A and 06 No (3.5Cx300 sq.mm) cables for 2000A outgoing feeder, 04 No(3.5Cx300 sq mm) cables for 1250 A outgoing feeder, 03 No (3.5Cx300 sq. mm) cables for each 800A outgoing feeder and 01 No cables in rest each outgoing feeder. The PDB should also have provision for entry of all the cables through detachable plates at the bottom.
6. The PDB should be provided with the earthing bus bar and suitable for natural air cooling arrangement (Preferably Net type).
7. There should be three sections in PDBs for housing incoming and outgoing ACBs/ Switches. The incoming feeder must be positioned as per the position indicated below and the overall height of PDB should not exceed 2300 mm.
8. All the bus bars should contain sleeves with heat shrunk PVC as per standard colour coding i.e. Red, Yellow, Blue for phases and Black for Neutral and the clearances of bus bars from each other and panel body should be as per relevant IS

The PDB should have the following items.

### A) INCOMING FEEDER DETAILS

| S.NO | ITEM | QTY |
|---|---|---|
| 01 | Air circuit breaker, 3200A, 4 Pole, 415 V, manual draw out (MDO) type of breaking capacity at least 50 KA with guide frame and over current protection, short circuit protection, Earth fault protection & shunt trip. | 01 Nos |
| 02 | Voltmeter :0- 500V analog, AE make. | 03 Nos |
| 03 | Ammeter: 0-3200 A, analog, AE make. | 03 Nos |
| 04 | Phase live indicator, High luminosity LED's. | 06 Nos |
| 05 | Fuse-2A with base. | 09 Nos |
| 06 | Current Transformer of ratio 3200/5A | 03 Nos |
| 07 | Digital Energy meter | 01 No |

**B) OUTGOING FEEDER DETAILS**:

Outgoing feeder shall include :

i) 01 No feeder of 2000 A ii) 01 No feeder of 1250A iii) 02 No feeders of 800A iv) 02 No feeders of 400 A. v) 02 No feeders of 250 A

**i) 2000A OUTGOING FEEDER DETAILS**

| S.NO | ITEM | QTY |
|---|---|---|
| 01 | Air circuit breaker, 2000A, 4Pole , 415 V, manual draw out (MDO) type of breaking capacity at least 50KA with guide frame and overload / instantaneous short circuit / delayed short circuit / ground fault protection. | 01 Nos |
| 02 | Indicating Light | 03 Nos |
| 03 | Fuse-2A with base | 03 Nos |
| 04 | Analog Ammeter with selector switch (0-2000 A) | 01 Nos |
| 05 | Current Transformer of ratio 2000/5A. | 03 Nos |
| 06 | Digital Energy meter | 01 No |

**ii) 1250A OUTGOING FEEDER DETAILS**

| S.NO | ITEM | QTY |
|---|---|---|
| 01 | Air circuit breaker, 1250A, 4Pole, 415 V, manual draw out (MDO) type of breaking capacity at least 50KA with guide frame and overload / instantaneous short circuit / delayed short circuit / ground fault protection. | 01 Nos |
| 02 | Indicating Light | 03 Nos |
| 03 | Fuse-2A with base | 03 Nos |
| 04 | Analog Ammeter with selector switch (0-1250 A) | 01 Nos |
| 05 | Current Transformer of ratio 1250/5A. | 03 Nos |

**iii) 800A OUTGOING FEEDER DETAILS:**

| S.NO | ITEM | QTY |
|---|---|---|
| 01 | Air circuit breaker, 800A, 4 Pole, 415 V, manual draw out (MDO) type of breaking capacity at least 50KA, with guide frame overload / instantaneous short circuit / delayed short circuit / ground fault protection. | 02 Nos |
| 02 | Indicating Light | 06 Nos |
| 03 | Fuse-2A with base | 06 Nos |
| 04 | Analog Ammeter with selector switch (0-800 A ) | 02 Nos |
| 05 | Current Transformer of ratio 800/5A , | 06 Nos |

**iv) 400A OUTGOING FEEDER DETAILS:**

| S.NO | ITEM | QTY |
|---|---|---|
| 01 | 4 Pole, 415 V 400A MCCB of breaking capacity at least 36 KA with indicating LED. | 02 Nos |

**v) 250A OUTGOING FEEDER DETAILS:**

| S.NO | ITEM | QTY |
|---|---|---|
| 01 | 4 Pole, 415 V, 250A MCCB unit of breaking capacity at least 36 KA with indicating LED. | 02 Nos. |

**Preferable Make of Items:**

| S.NO | ITEM | MAKE/DESCRIPTION |
|---|---|---|
| 01 | Air circuit Breaker, MCCB | L&T or SIEMENS Microprocessor based |
| 02 | Voltmeters & Ammeters | AE, 96*96sq mm, Analog |
| 03 | Indicators LED's | L&T/SIEMENS |
| 04 | Current Transformer | KAPPA/AE/ENG ELECTRIC |
| 05 | Bus bars | Aluminium |
| 06 | Ammeter selector switch | L&T/SIEMENS/KAYCEE |
| 07 | Digital Energy meter | Conzerv/ Schneider/ L&T |

**POSITIONING OF ACBs / MCCBs**

| | | | | |
|---|---|---|---|---|
| MCCB 400 A, 4P | | MCCB 250 A, 4P | | MCCB 250 A, 4P |
| ACB 800 A, 4P | | ACB 800 A, 4P | | MCCCB 400 A, 4P |
| ACB 2000 A, 4P | | **ACB for Incomer 3200 A, 4P** | | ACB 1250 A, 4P |

A.R.IDRISI
Sr. ENGINEER-CDS

IMRAT SINGH
Sr. MANAGER-CDS