TENDER DOCUMENT

TENDER NO.: DLI/C&E/WI-675/296

FOR

Tender for Design, Engineering, Supply of “DC Electromagnetic Brakes for Conveyors with Panel” for the project of “Augmentation of Fuel and Flux Crushing Facilities (Package No. 064) of Bhilai Steel Plant (SAIL)”

VOLUME – 2B

TECHNICAL SPECIFICATION
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GENERAL

The following Technical Specification shall be read in conjunction with General Technical Specification (GTS) of Bhilai Steel Plant, SAIL and General Specification. If there are any provisions in this Technical Specification, which are at variance with the provisions of General Technical Specification (GTS) of Bhilai Steel Plant, SAIL and General Specification, the provisions in this Technical Specification shall take precedence.

1.0 DOCUMENTS/INFORMATION TO BE FURNISHED ALONGWITH OFFER

(i) Clear Scope of supply.
(ii) Exclusions, if any.
(iii) List with unit rates of special tools and tackles, if any required.
(iv) Type and quantity of oil, lubricants & consumables for initial fill till successful commissioning of equipment.
(v) Price Schedule for supply as per the format enclosed.
(vii) Weight of the DCEM Brakes & Panels in Kgs.
(viii) Catalogues/Leaflets and O&M Manuals.
(ix) Reference list of your Customers for the similar supply of items.
(x) Quality Assurance Plan.
(xi) Un-priced Copy of supply (Furnish un-priced copy of Price Schedule alongwith the Technical Bid in Envelope 1).
2.0 SCOPE OF SUPPLY

The scope of the supply includes Design, engineering, manufacture, shop fabrication, assembly, testing and inspection at manufacturer’s works, packing, dispatch, transportation, delivery at site, performance guarantee testing, final painting and handing over to Bhilai Steel Plant, SAIL/EPI of ‘DC Electromagnetic Brakes for Conveyors with Panel’ as per specifications and scope defined in tender documents complete with all components, coil, accessories, which are not mentioned specifically but are required for the efficient and trouble free operation of the equipment.

a) Following items are also included in bidder’s scope

(i) Brakes shall be selected as per the details given in the specifications.

(ii) Special tools & tackles, if any required.

(iii) Painting of equipment as per Clause no. 5 of Vol. 2A.

(iv) All drawings/documents along with operation and maintenance manuals as per requirement mentioned elsewhere in the tender document.

(v) Getting approval of design/drawings and any other design calculation related to the equipments from BSP/MECON/EPI.

(vi) System Voltage shall be 3 Phase, 415V (+10%, -15%), 50Hz (±6%), all system component shall be designed accordingly. Power Supply at Panel will be provided by EPI. Further distribution of the same shall be in bidder’s scope & any other type of supply Voltage (DC/AC) required for proper operation of the equipment/system shall be arranged by the bidder in the panel. Brake Voltage shall be considered as 220V DC.

(vii) Carrying out any modifications/deletions/addition/alteration in design/drawings/documents as required by client & client’s consultant and EPI for proper execution of work at site till completion and handing over of the project to client.

Exclusions:

(i) Brake Drum is not included in the scope of bidder.

b) Tenderer to note the following:

(i) BSP GTS and “Approved Preferred” make list shall be followed for parts/components/equipment/sub units.
3.0 TECHNICAL DATA FOR DC ELECTROMAGNETIC BRAKE

Brakes shall be DC Electromagnetic type, confirming to AISE standard. The brake coils shall be made of copper and of insulation class ‘F’.

Brakes shall be designed to fail safe whenever the current is interrupted either intentionally or by failure of the main supply. Brake circuit forcing shall be provided for DC Brakes. DC Brake circuit shall be switched off on D.C. circuit for quick operation of brake.

D.C. Electro-magnetic brake shall have min 1.5 times the max. calculated torque rating. Brakes shall be mounted on brake drum coupling at input shaft end of gear box. Rectifier panel complete with contactors, timer, fuses, rectifier, resistors etc. shall be provided with each brake.

Minimum Input/output for PLC operation shall be considered as follows:

a) MPCB ON  
b) Brake contactor ON  
c) Brake ON Feedback  
d) Brake ON CMD  
e) MPCB TRIP  
f) Brake Released

Panel shall be designed suitable to operate the Brakes of conveyor etc. Enclosure shall be minimum IP 54 for indoor installation. The panel shall be provided with detachable Gland Plate. Panel shall be provided along with indication lamps and ammeter arrangement.

Suitable bus bar/Terminal Block shall be provided for termination of incoming & outgoing power cables, provision for Earthing & Earthing shall be as per IE rules and IS: 3043. Suitable terminal block shall be provided for termination of control cable & shall be capable to terminate 2 nos. of 2.5 sq. mm wire.

Limit switch with 2NO+2NC contacts shall be provided on the brakes for “Brake Released” Signal to the MCC/PLC panel.

SCHEDULE OF DC ELECTROMAGNETIC BRAKES

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Conveyor Number</th>
<th>Motor Rating (KW)</th>
<th>Brake Dia (mm)</th>
<th>Quantity</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Y7-12</td>
<td>55</td>
<td>300</td>
<td>1</td>
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<tr>
<td>2</td>
<td>Y7-13</td>
<td>90</td>
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<tr>
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<td>KD-1 (Mod.)</td>
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<tr>
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<td>C-104 (Mod.)</td>
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