TENDER DOCUMENT

NIT No.- DLI / C&E / WI-675 / 855

FOR

Tender for ‘Design, Engineering, Supply, Supervision of installation, Testing & commissioning of ‘CHUTE JAM DETECTOR AND ASSOCIATED WORKS’ for the project of “Augmentation of FUEL & FLUX CRUSHING (Package- 064) of Bhilai Steel Plant (SAIL)”.

VOLUME- 2

(Technical Part)

ENGINEERING PROJECTS (INDIA) LIMITED

(A GOVT. OF INDIA ENTERPRISE)

Core-3, Scope Complex, 7, Institutional Area,
Lodhi Road, New Delhi-110003
TEL NO: 011-24361666   FAX NO. 011- 24363426
## Contents- (Volume-2)

**NIT No. DLI/C&E/WI-675/855**

<table>
<thead>
<tr>
<th>S.No,</th>
<th>Description</th>
<th>Total sheets</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Volume-2A (General Specifications)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Introduction</td>
<td>02 sheets</td>
</tr>
<tr>
<td></td>
<td>- General Requirements (Project Synopsis, GTR, PG, Inspection &amp; Testing, Painting etc.)</td>
<td>36 sheets</td>
</tr>
<tr>
<td></td>
<td>- List of Approved Vendors</td>
<td>32 sheets</td>
</tr>
<tr>
<td></td>
<td>- List of Preferred makes</td>
<td>39 sheets</td>
</tr>
<tr>
<td>2</td>
<td>Volume-2B (Scope of Work &amp; Technical Specification.)</td>
<td>04 sheets</td>
</tr>
<tr>
<td></td>
<td>- Scope of work</td>
<td>02 sheets</td>
</tr>
<tr>
<td></td>
<td>- Technical specification</td>
<td>03 sheets</td>
</tr>
<tr>
<td>3</td>
<td>Volume-2C (Tender Drawings List)</td>
<td>01 sheet</td>
</tr>
</tbody>
</table>
TENDER DOCUMENT

NIT No.- DLI / C&E / WI-675 / 855

FOR


VOLUME- 2B

(Scope of Work & Technical Specification)

ENGINEERING PROJECTS (INDIA) LIMITED
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Core-3, Scope Complex, 7, Institutional Area,
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TEL NO: 011-24361666 FAX NO. 011-24363426
Scope of Work – Chute Jam Detection System

Scope of work of the bidder for Chute Jam Detection system shall include (but not limited to) design, engineering, manufacture, shop fabrication, assembly, testing and inspection at works, packing, supply, dispatch, transportation, delivery FOR site, required fabrication & assembly at site, completion of facilities, supply of commissioning and start-up spares, special tools and tackles, Getting approval of drawings & documents from BSP/MECON before manufacturing and supply, supervision services at site during installation, testing & commissioning of Chute Jam Detectors and Associated as specified in technical specification, providing drawings & documents, datasheets in requisite sets, quality assurance plan, internal test reports, As built drawings, demonstration of performance guarantee testing, final painting and handing over to Bhilai Steel Plant including all electrics/electronics and standard accessories of Chute Jam Detection System.

The scope of supply of the bidder shall be deemed to include all such items which although are not specifically mentioned in the specification, but are needed to make the equipment/system complete in all respect for its safe, reliable, efficient and trouble free operation.

Any modifications/deletions/additions/alteration in design/drawings/documents as required by BSP/MECON/EPI for proper execution of the system at site till completion and handing over of the project to BSP shall be in the scope of bidder.

1 Phase, 240 V +10% & -15%, 50 Hz +4% & -6% power supply shall be provided by purchaser near the control unit of Chute Jam Detection unit. Further distribution of power as required shall be in the scope of bidder.

The scope of supply and services of the bidder shall include the following:

a) Mechanical

- Each switch shall be complete in all respect including its mechanical and other standard accessories.
- Necessary fixtures, supporting angles and brackets required for mounting and supporting the equipment.
- The bidder shall include supervision services at site during installation, testing and commissioning of the equipment supplied by them.

    • All Fixing bolts and nuts including foundation bolts shall be included in the scope of supply of bidder.
• Commissioning spares as required during testing and commissioning of the equipment.
• Required quantity of initial fill of oil, grease, lubricants, hydraulic fluid etc. and other consumables which are necessary for cleaning/flushing including erection, testing and commissioning of the equipment shall be in the scope of supply of bidder.
• Necessary tools and tackles for equipment required for maintenance, testing or inspection of the equipment.
• Statutory approval wherever required shall be taken by the bidder for the equipment being supplied by them from relevant state/central authorities.
TECHNICAL SPECIFICATION FOR CHUTE JAM DETECTOR

General:

Chute jamming detectors shall be provided on chute of delivery conveyor to detect chute jamming of the conveyor. The detectors shall be so located or protected that they do not come in contact with regular flow of material. The detector shall also be protected against deposit of fine particles causing false alarm or stoppage of the conveyors. All the chute jamming detectors shall be suitable for outdoor installation.

Specifications:

1. Application : To detect chute jamming incase of material struck up in chute when falling from discharge conveyor to Receiving conveyor.

2. Material :
   - CHP Area: Coal
   - CSP Area: Coke
   - FF Area : Coke, Lime & Dolomite

3. Size of Material
   (i) Coal
   (ii) Coke : + 25 mm to – 3 mm
   (iii) Lime : + 75 mm to – 25 mm
   (iv) Dolomite : + 60 mm to – 6 mm

4. Moisture content :
   - Coal- 10 % (max)
   - Coke- 10 % (normal), 15 % (in rainy season)
   - Lime- 15 %
   - Dolomite- 15%

5. Abrasion property of material : Abrasive

6. Pressure : Atmospheric

7. Ambient Temp. : Maximum – 50 degree C.

8. Relative Humidity : 100 % (Max.), 7 % (min.)

9. Climatic condition : Tropical

10. Probe Type : Flush Mounted Disc Type
11. **Operation principle**: RF Admittance

12. **Sensor material**: SS 304

13. **Shield material**: SS 304

14. **Mounting**: Side mounting

15. **Probe Housing**: Cast Aluminum Weather Proof, Protection IP-65

16. **Process connection**: Flanged (ANSI Flange), Size shall be to suit probe unit installation as per manufacturer’s recommendation and rating shall be as per process requirement.

17. **Accessories**: Counter flange, gasket, nut, bolts etc. for fixing

18. **Control unit housing**: Cast aluminum weather proof, Protection IP-65

19. **Power Supply**: 240V AC ±10%, 50 Hz

20. **Cable Entry**: 1 no. for special cable from probe to control unit & 2 nos Cable entry suitable for 3C x 2.5 sq. mm armoured cable to suit single/double compression type cable glands.

21. **Special cable length**: 10 mtrs x 3 core signal cable shielded with PVC insulation

22. **Control Unit terminal**: Integral part of control unit suitable for 2.5 sq mm size wire

23. **Mounting Locations**: Side mounting on discharging end chute of conveyors

24. **Output**: Potential free output contacts 2NO+2 NC, Rating 5 A at 230V ±10% & -12%, 50 Hz ±6% & -6% (Output Terminals suitable for 2.5 sq mm wire/cable)

**Documentation to be submitted:**

1. **List of drawings/data to be submitted along with tender**
   
a) Duly signed, dtd and stamped copy of NIT volume-1, Volume-2 (2A,2B and 2C) and Volume-3 as a token of acceptance
   
b) Duly signed unpriced copy of price schedule (Price schedule format given in Volume-3).
   
c) No deviation Declaration to NIT Specifications (Volume-1, Volume-2 and Volume-3)
   
d) List of commissioning and start up spares to be supplied with equipment.
   
e) List of special tools and tackles to be supplied with equipment.
   
f) List of recommended spares for two years of trouble free operation & maintenance of equipment.
2. List of drawings/data to be submitted by the successful tender for approval/reference.

a) General arrangement drawing showing overall dimension and details.

b) Bill of material of equipment

c) Supplier's name for components & catalogues.

d) Mounting arrangement / Installation Drawings.

e) List of commissioning spares to be supplied with equipment.

f) List of recommended spares for two years maintenance of plant and equipment along with itemized price.

f) List of tools and tackles to be supplied with equipment.

g) Wiring Diagram, interconnection and termination details.

h) Operation and maintenance manuals, detailed technical literature.

i) Internal test reports/certificates.

j) Quality Assurance Plan.

k) Drawings as per requirement of BSP/MECON and recommendation of manufacturer.