



PRODUCT STANDARD

PULVERISERS

HYDERABAD

Product
STD No.

BA 35024

Rev No.

00

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GRINDING ROLLS & MATCHING BULL RING SEGMENTS

1.0 GENERAL:

This specification governs the procurement of grinding elements consisting of Grinding Rolls and Bull Ring Segments meeting the technical requirements / performance requirements for the Bowl Mills for NTPC Sipat.

2.0 QUALIFYING REQUIREMENTS

The bidder shall satisfy the following minimum qualifying requirements by submitting documentary evidences along with the technical offer, failing which the offers shall be summarily rejected.

2.1 Qualifying categories

Evidence of the established performance as given below and in clause 6.0.0 of the Annexure-A (without repair or rebuild of the wear area) for the Grinding Rolls with matching bull ring segments for the above project.

- 2.1.1 The bidder should be a manufacturer of vertical type coal pulverizes and should have supplied such coal pulverizes to at least two (02) nos. coal fired units each of 200 MW or higher capacity, located at two different power stations and which are in successful operation for at least two (2) years, as on the date of customer's bid opening (i.e. 11.03.2015) with the same type of grinding rolls (centrifugally cast Ni-hard type or carbide insert type or weld overlay/high chrome type or sintered cast type, using one or more grinding roll sets) as offered by the bidder.

OR

- 2.1.2 (a). The bidder should be a manufacturer of the type of grinding rolls. (centrifugally cast Ni-hard type or carbide insert type or weld overlay/high chrome type or sintered cast type) offered by them and should have supplied at least 150 nos. of 50 inch or higher size such type grinding rolls and 50 sets of Bullring Segments for XRP/Raymond bowl type of coal pulverizes during last three (3) years as on the date of customer's bid opening (i.e. 11.03.2015).

AND

- 2.1.2 (b). The bidder should have either himself or through a company/agency in which he has controlling stake, own following manufacturing and testing facilities for use by the bidder for manufacturing of Grinding Elements (bidder to furnish proof of ownership of the facilities along with his bid)

Manufacturing facilities:

- i. Induction/cupola/induction Arc Furnace for melting iron 1.0 ton and above.
- ii. Centrifugal Casting Machine to accommodate Grinding Rolls over 2500 Kg (in case bidder is offering Ni-hard rolls).
- iii. Machining facility for inside bore.

PREPARED: SG

CHECKED: SG

APPROVED: TMR



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Testing facilities:

- i. Chemical composition testing.
- ii. Magnetic particle testing machine
- iii. Hardness testing
- iv. Ultrasonic testing machine to check tread to core bond
- v. Micro structure testing
- vi. Ultrasonic machine to check tread thickness
- vii. Inside micro meters to check inside taper measurements.
- viii. Spectrometer/Spectrogram
- ix. Check Bowl/Test Bowl to check the Bull Ring Segments of XRP-1003

OR

- 2.1.3 The bidder should be a manufacturer of grinding rolls for vertical type coal pulverizers and should have supplied at least fifty (50) nos. grinding rolls and 17 sets of bull ring segments for vertical type coal pulverizers and should have an ongoing collaboration/license agreement with a manufacturer who meets the qualifying requirements as stipulated at clause 2.1.2(a) above. In such a case bidder, along with his collaborator should furnish a deed of joint undertaking (DJU) for successful performance of grinding element offered by him. Further, bidder should have manufacturing and testing facilities as per para 2.1.2 (b) above and shall offer only the type of grinding rolls (i.e. Centrifugally Cast Ni-hard type or carbide insert type or weld overlay/high chrome type or sintered cast type rolls) for which his collaborator is qualified.

The bidder should have successfully manufactured and supplied “vertical Type Coal Pulverizers” or “Grinding elements* for Coal Mills” during last seven (07) years reckoned as on the date of customer’s techno commercial bid opening (i.e. 11.03.2015) as any one of the following:

Three orders with executed value not less than Rs.136 lakhs each.

OR

Two orders with executed value not less than Rs. 171 lakhs each.

OR

Single order with executed value not less than Rs. 273 Lakhs.

(NOTE: Grinding Elements means bull ring segments and grinding rolls)

Financial Criteria:

a. The Average annual turnover of bidder, in the preceding three financial years on the date bid opening (i.e. 11.03.2015), shall not be less than Rs.341.0 Lacs

b. In case where audited results for the last preceding financial year is not available, certification of financial statement from a practicing chartered accountant shall also be considered acceptable.

NOTE: other income shall not be considered for arriving at annual turnover.

BHEL reserves the right to reject any or all bids or cancel/ withdraw the NIT for the subject package without assigning any reason whatsoever and in such case no bidder/intending bidder shall have any claim arising out of such action.



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- 2.1.4** In addition to the above qualifying criteria, the bidder shall meet the clause No 6.0.0 of Annexure-A, The evidences shall be submitted in the following format.

Name of Site	Mill type	Size of grinding roll	Date of supply	Life achieved in hrs.	Coal Type as Per Annexure A
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2.2 Infrastructure for providing Technical Services

Bidder shall have the sufficient infrastructure in India for after sales services to monitor performance with respect to wear life, output, fineness, coal characteristic etc
Documentary evidences/confirmation for the above shall be submitted.

3 SCOPE OF SUPPLY: Refer Table 14

4 QUANTITY REQUIRED PER MILL

- 1) 3 Nos. Grinding Rolls.
- 2) 1 set of matching Bull Ring Segments.

5 GRINDING ROLL & BULL RING SEGMENTS:

- 5.1 Dimensions: The overall dimensions of the Grinding Roll and Bull Ring Segments shall be as per NTPC Drawings.

5.2 **Manufacturing Process:**

The manufacturing process and chemical composition is left to the discretion of the supplier with the following conditions (the relevant documents shall be submitted along with the technical offer for review and acceptance by BHEL) provided it meets the requirements of clause 7.

- 5.2.1** A detailed manufacturing process (along with the process control parameters) and manufacturing and test facilities data shall be submitted for review by BHEL.

- 5.2.2** Material used for the manufacture of the Grinding rolls and Bull ring segments shall be specified along with the technical details. The specifications shall be submitted for acceptance by BHEL. The details of the patented portion of the technology need not be provided, however the generic name of the proven patented technology along with the broad details shall be provided.

- 5.2.3** A Quality plan with stage wise inspection and acceptance criteria shall be submitted for approval by BHEL and/or customer.

6 INSPECTION:

- 6.1 The inspection of items will be as per the Customer approved Quality plan. Sample document is enclosed.
- 6.2 Inspection of the material will be based on the applicable process of manufacture acceptable to BHEL. The tests like chemical composition, microstructure, hardness and NDT etc as applicable will be part of the approved Quality plan.
- 6.3 The overall dimension of the grinding roll, bull ring segments and any other component/item of the package shall be as per BHEL drawing.



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- 6.4 The Bull-ring Segments shall be assembled in Check Bowl. After assembling of the segments, final gap should not be more than 20 mm. The drawing for the check Bowl and the arrangement for segment assembly on Check Bowl shall be furnished by BHEL.
- 6.5 The number of Segments i.e. Plain, Half, Quarter, Keyed & Shim for each size of the mill shall be shown on Check Bowl drg. However, additional shims/ segment to fill the gap up to 20 mm shall be supplied by the vendor which may be required at site during assembly.

7 GUARANTEES & LD THEREOF: As per Annexure-A and

- 7.1 The supplier shall give back to back guarantee as called for in clause 8.0.0 of Annexure A and/or as per the terms and conditions of Customer contract.
- 7.2 Failure due to manufacturing defects (generally leading to breakage/ catastrophic failure of grinding elements) shall be replaced and installed immediately free of cost.

8 INSPECTION AT SUPPLIERS WORK

Tests and inspection are to be conducted in the presence of BHEL/ customer representatives as per approved Quality plan. The representatives shall have free access at all times while the work on the contract is being performed. The supplier shall offer all reasonable facilities without charge to satisfy the Inspection Agency that the items are conforming to this specification.

9 TEST CERTIFICATE:

All the rolls shall be identified with a serial number punched. The Bull ring segments set shall be numbered by paint for each set. Supplier shall supply 3 copies of Test certificates with following information for rolls and bull ring segments.

1. BHEL order number
2. Supplier's reference and name.
3. Heat No. / Roll no.
4. Results of chemical analysis, Hardness Test and all other tests or any other tests as per approved QAP
5. Drawing no., Material Code
6. Consignment/ Identification no.

10 ACCESSORIES

Wear measurement gauge for project site, and any other items/consumables required shall be supplied by the supplier at no extra charge to BHEL.

11 DOCUMENTS

- 11.1 Three Copies of test certificates are to be provided.

12 PACKING:

All components are to be suitably packed set wise to prevent Corrosion and damage during transit. Machined/ Ground surfaces shall be properly protected with suitable anti-corrosive compound. Each package shall be legibly marked with following information.

BHEL Order No.

1. Consignment/ Identification No.
2. Roll No./ Set No.
3. Drawing no., Material Code
4. Weight in Kg
5. Suppliers Name

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13 SUPERVISION & SERVICES:

- 13.1 Personnel for supervision for Erection and commissioning shall be deputed within a period of one week from the notice given by BHEL.
- 13.2 Mill performance shall be monitored for the guaranteed period and supplier shall visit the site periodically (approximately after every 2000 hours of operation) and record the grinding elements wear life along with BHEL/ CUSTOMER.
- 13.3 Coal quality (including rejects) shall be monitored for the guaranteed period and supplier shall visit the site periodically and record the coal quality along with BHEL/ Customer. In case BHEL is not able to visit site periodically, vendor will be given clearance to visit site on his own to monitor & record coal quality. The data so collected and visit report shall be submitted to BHEL.



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14. Scope of Supply

Item No	Item Text	Qty	Units	Conditions
1	GRINDING ROLL FOR XRP 1003	Qty. for 20 x 10000 hrs. of wear life	Set	Basic Price, Discount (%), Inland Insurance, Inland Transportation, Central Sales Tax, Excise Duty/ CENVAT, Entry Tax, Other Charges, Local Sales Tax/VAT, Primary Pkg Charge
	<p>GRINDING ROLL FOR XRP 1003 MILL OF 500 MW BOILER</p> <ol style="list-style-type: none"> 1. Procurement is based on technical specification ref. doc. No. for the procurement of Wear parts for XRP-1003 coal pulverisers. Copy enclosed 2. Quality plan and Final drawings shall be submitted by vendor for BHEL approval 3. The reference tentative drawing no. 1019-II-BLR-0338, Rev R0 for grinding rolls is enclosed. 4. In absence of any specific deviation asked by the vendor in the offer, it will be considered that the vendor has accepted all the details as mentioned in the technical specifications & special instructions of the enquiry in totality. 			
2	BULL RING SEGMENTS ASSEMBLY, MILL XRP1003	Qty. for 20 x 10000 hrs. of wear life	Set	Basic Price, Discount (%), Inland Insurance, Inland Transportation, Central Sales Tax, Excise Duty/ CENVAT, Entry Tax, Other Charges, Local Sales Tax/VAT, Primary Pkg Charge
	<p>One set of Bull Ring consists of 45 nos. Bull ring segments with packing (if required) of same material</p> <ol style="list-style-type: none"> 1. Procurement is based on technical specification ref. doc. No. for the procurement of Wear parts for XRP-1003 coal pulverisers. Copy enclosed 2. Quality plan and Final drawings shall be submitted by vendor for BHEL approval 3. The reference tentative drawing no. 1019-II-BLR-0339, Rev R0 of Bull ring segments are enclosed. <p>In absence of any specific deviation asked by the vendor in the offer, it will be considered that the vendor has accepted all the details as mentioned in the technical specifications & special instructions of the enquiry in totality.</p>			

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An example of arriving at no. of sets of wear part for the purpose of bidder's quotations is given below.

Example:-

S.No.	Description	Bidder A	Bidder B
1.	Number of coal pulveriser as per specification	20	20
2.	Guarantee wear life of each set of grinding roll	5000	7000
3.	Guarantee wear life of each set of bull ring segments	5000	7000
4.	Number of grinding rolls required to be quoted per mill	$10000 \times 20 / 5000 = 40$ sets	$10000 \times 20 / 7000 = 28.57$ i.e. 29 sets
5.	Total number of sets of bull ring segments required to be Quoted.	$10000 \times 20 / 5000 = 40$ sets	$10000 \times 20 / 7000 = 28.57$ i.e. 29 sets

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**15. TECHNICAL SPECIFICATION FOR PROCUREMENT OF WEAR PARTS FOR
XRP TYPE COAL PULVERISERS**

Tender Document No.

(Schedule of Rates and prices)

Bidder's Name & Address

BHEL Hyderabad

Item	Description	Quantity	Unit Price	Total Price
1	2	3	4	5

1. Grinding Roll

2. Bull Ring Segments

Note : Number of sets shall be quoted as per clause 4.0.0 of Annexure A.

Date:

Place:

(Signature)

(Printed Name) ..

(Designation)

(Common Seal)

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