

BHEL- ISG, BANGALORE 	COAL HANDLING SYSTEMS TECHNICAL ENQUIRY SPECIFICATION FOR R & P ELEVATOR	DOCUMENT NUMBER IS-1-16-2003/035
	CUSTOMER NSPCL-ROURKELA	REV NO: 00 DTD: 21/09/17

TECHNICAL ENQUIRY SPECIFICATION FOR
R & P ELEVATOR
1 X 250 MW TPP, NSPCL-ROURKELA

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A. PROJECT INFORMATION:

The proposed unit of 1x250 MW will be installed on the western side of existing 2x60 MW units within the boundary of Rourkela Steel Plant in Sundergarh district of Orissa, Rourkela with all the facilities as specified in the NIT of NSPCL. Mecon-Ranchi is the consultant for NSPCL.

BASIC SITE INFORMATION:

1. Average elevation above mean sea level : 194m
2. Barometric pressure : 983 mb
3. Ambient temperature
 - a. Absolute maximum : 48°C
 - b. Absolute minimum : 6°C
4. Relative humidity (Maximum) : 65 %
5. Annual Average Rainfall : 2656.6 mm
6. Heaviest in 24 Hrs. : 257.8 mm
7. Seismic Zone : Zone-II (As per latest Revision of IS 1893 /2002) Part-I

General information related to the project and site is available in Volume I of NSPCL NIT enclosed along with this enquiry specification.

All equipment (including electrical & C&I) shall be suitable for operating satisfactorily in humid and dusty (coal & ash) atmosphere found in Thermal Power plants.

Availability of Infrastructure Facilities

Road - The site is connected by road of NH-23 through a link road from a road junction at Panposh located approx. 10 KM from proposed site.

Railway siding - The nearest railway station Rourkela is situated about one km from the proposed plant site. A new railway siding will be developed for receiving coal from the source.

Airport/Air strip - The nearest airport is at Ranchi which is about 170 KM by rail and 225 KM by road from the proposed site.

Seaport - The nearest seaport is at Paradip (Orissa) which is around 400 Kms from the proposed site.

POWER SUPPLY SYSTEM

1.1 H.T. Supply

- a. Motors above 160 KW for CHP and 200KW for remaining areas and also LT Transformers (6.6KV/415V)

Voltage & Frequency	6600 V AC, 3ph, 3W, 50 Hz
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Voltage variation	±10%
Frequency variation	±5%
Combined Voltage & frequency variation	10% (absolute sum)
Fault level	40 KA symm. for 1 sec.
Earthing	non-effectively earthed

1.2 L.T. Supply

- a. Motors and loads up to 160 KW for CHP and 200KW for remaining areas and lighting transformers (1:1)

Voltage & Frequency	415V AC, 3 phase , 4W, 50 Hz
Voltage variation	±10%
Frequency variation	±5%
Combined Voltage & frequency variation	10% (absolute sum)
Fault level	50 KA symm. for 1 sec.
Earthing	effectively earthed

- b. Control, Protection & Metering for LT Switchgear/MCC/Control Panel

Voltage & Frequency	110V AC, 1 phase, 50 Hz
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- c. Motors upto 200W, Lighting, space heaters and A.C. control & protective devices (other than mentioned in point b above)

Voltage & Frequency	240V AC, 1 phase, 2W, 50 Hz
Voltage variation	±10%
Frequency variation	±5%
Combined Voltage & frequency variation	10% (absolute sum)
Earthing	effectively earthed

- d. UPS power supply for DCS/PLC, control & instrumentation

Voltage & Frequency	240V AC, 1 phase, 2W, 50 Hz stabilized supply through UPS system
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- e. Maintenance Lighting

Voltage	24V AC
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1.3 DC Supply

- a. D.C. alarm, control & protective devices, DC motors, Emergency lighting

Voltage	220V DC, 2W
Fault level	25 KA*
Earthing	unearthed

* Indicative only

- b. Control & Instrumentation

Voltage	24V DC
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For the purpose of design an ambient temperature of 50 deg. C and relative humidity of 95% shall be considered.

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B. BROAD SCOPE:

It is not the intent to list out complete scope hereunder. However broad scope shall include but not limited to the following:

BROAD SCOPE OF SUPPLY:

SI no	Item description	Quantity	Remarks
Design, manufacturing, testing, painting, packing and transportation to site of			
1	RACK AND PINION TYPE ELEVATOR FOR CRUSHER HOUSE	1 set	544kg passenger lift for crusher house
2	Mandatory spares as per annexure 1 (mechanical, electrical and C&I)	1 lot	

BROAD SCOPE OF SERVICES:

SI no	Item description	Quantity	Remarks
1	Packaging, Dispatch and Transportation of equipments under the scope of supply (complete mechanical, electrical and C&I items) from works to site, & handing over to BHEL/BHEL's other contractor (E&C agency).	1 lot	
2	Supervision of erection & commissioning and Performance guarantee testing of bidder supplied equipment	1 lot	4 man-days 2 man-visits; Supervision charges shall be valid till the successful handing over of equipment to end user
3	Training of customer personnel at manufacturer's factory premises and O&M training at site for bidder's equipment	1 lot	As per manufacturer's standard training modules

1. Scope of bidder shall include design, supply and supervision services of equipment complete with drives, electrics and C&I system as per enclosed Technical specification - Control & annexures of NSPCL Rourkela project shall be followed.

Design: Includes basic engineering, detailed engineering, preparation and submission of engineering & civil assignment drawings/ calculations/ datasheets/ quality assurance documents/ field quality plans, commissioning procedures, operation & maintenance manuals, Performance Guarantee test procedures and obtaining approval from NSPCL / NSPCL's consultant / BHEL.

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Supply: Includes manufacturing/ fabrication, shop floor testing, stage inspections, final inspections, shop floor painting, packing & transportation to site, customs clearance/ port clearance and any other statutory clearances.

Receipt and unloading, storage at site, local transportation at site, erection and commissioning, carrying out PG testing is excluded from bidder's scope and shall be in the scope of BHEL's other vendor as per the instructions of successful bidder.

Manufacturer's standards and recommendations for tolerances in assembly and erection shall be submitted by the successful bidder before actual erection of equipment.

However achieving the PG parameters for the equipment during PG test shall be the responsibility of the bidder and any shortfall in PG parameters of the equipment shall be corrected suitably by the bidder to avoid LD. Bidder to also note that performance of the equipment during PG test shall be in bidder's scope only. Any instruments/ tools and tackles required for carrying out PG test shall be arranged by the vendor at their own expense well in advance. Following are the functional guarantee parameters as per this tender:-

- a) Checks for average speed and load capacity.***
- b) Leveling accuracy.***
- c) Trouble free smooth operation.***
- d) Satisfactory operation of controls & limit switches.***
- e) Unmanned tests of safety devices like brakes, governors etc.***

Supervision services: Includes supervising the erection & commissioning and PG testing of bidder's equipment until final handing over and written confirmation from end customer.

Bidder to note that performance and power guarantee of the system shall be in bidder's scope only.

- 2. Bidder to note that the type of elevator mentioned in the above table is different from those indicated in NSPCL NIT. But type in the above table is final and bidder shall follow the same. All the other technical specification shall be as per NSPCL NIT only.**
- 3. Bidder's scope shall also include supply of mandatory spares (as per Section VI of volume-III of NIT specs), start-up & commissioning spares. Applicable spares for equipment in this package to be considered by the bidder. Mandatory spares list shall be as per enclosed Annexure-1, Volume-III Section-VI of NSPCL NIT and amendments & clarifications document Bidder shall also furnish the list of recommended spares for 3 year operation along with the offer.**

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4. All items like base frame, buffer bracket, buffer spring, ground enclosure, landing enclosure with dor, base panel, Tie-ins, Mast, Rack, pinion, Landing door, 3-phase Cam, limit cam, cable guide, cage unit, cable trolley, landing cam, fixed power cable, trailing cables, foundation bolts, safety railing, limit switches, cage fan, ladder etc are in bidder's scope of supply
5. 5 sets of detailed erection assembly drawings (including all part drawings) with BOQ for the complete equipment shall be submitted by the bidder at least 3 months prior to the start of respective erection activity. Depictions/Match marking shall be embossed on the parts to be assembled for ease of erection at site. Any ambiguities arising out of deficiency in marking/depiction should be sorted by the vendor at his own expense.
6. Successful bidder shall furnish the detailed packing /shipment box details with information such as packing box size, type of packing, weight of each consignment etc. Without these details the BBU shall not be approved during detail engineering. Also, complete billing break-up with above mentioned details shall be submitted within 10 days of LOI.
7. All items/equipment shall be dispatched in properly packed condition (no item shall be dispatched in loose condition such that it becomes difficult to store/identify its location at site at a later stage). Any damage of items due to improper packing shall be accountable to bidder. All individual items/elements of RP elevator shall be provided as BOQ during detailed engineering. This shall be physically cross checked during inspection. MDCC shall be availed only after receiving packing list inline with the BOQ.
8. Successful bidder shall submit "Storage Instructions" for the storage (at site) for the entire equipment in bidder's scope of supply and the bidder shall ensure that the Shipment list/Packing list and Storage Instructions are available at site before the items/equipment reach the project site. One copy of the storage instructions should go along with the box.
9. Any additional mandays/manvisits, if required due to issues related to equipment design, quality of manufacturing, intricacies in erection/commissioning/trial run for reasons attributable to successful bidder, have to be borne by the vendor without any cost implication to BHEL. Supervision charges shall not be applicable for any visit which is necessary to rectify any defect in the equipment or its part supplied by vendor.
10. Bidder shall submit a signed copy of BHEL's tender enquiry specification with all enclosures along with the technical offer without any deviations.
11. Bidder has to fill the critical parameters in annexure-2 and submit a signed and stamped copy of the same along with the offer for evaluation.

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12. Complete detail engineering drawings, calculations, selection of components etc. shall be reviewed & subject to approval of BHEL / NSPCL/ NSPCL's consultant during detail engineering.
13. Any comments/ clarifications on technical/ inspection requirements furnished as part of bidder's covering letter **shall not be considered by BHEL**, and bidder's offer shall be construed to be in conformance with the specification. Any Specific deviation (any such which is contradicting with the specification) shall be mentioned in the deviation/cost withdrawal format only. **Deviation mentioned elsewhere shall stand null and void.**

C. OTHER IMPORTANT POINTS:

Points mentioned below also form part of technical specification and bidder to also consider these things in their scope for this package, apart from referred bid documents and broad scope mentioned above.

1. The design, manufacture, inspection and testing of the equipment shall comply with all the currently applicable statutes, regulations and safety codes in the locality where the equipment is to be installed and shall also conform to the latest edition of Indian and other international standards and codes. Nothing in this specification shall be construed to relieve the contractor of the required statutory responsibility. In case of any conflict & ambiguity in the standard to be followed the decision of BHEL shall be final and binding.
2. Bidder's shall raise all ambiguities, conflict in the standard & specification and/or interpretation of clauses, if any, in this enquiry spec. and its enclosures during pre-bid stage itself, failing which it shall be understood that bidder has no issue and at later date successful bidder shall have no right to take any technical and commercial advantage out of any ambiguity, conflict in the standard & specification and/or interpretation of clauses and the decision of BHEL shall be final and binding and any change due to this shall have no price implication on BHEL and shall have to be absorbed by successful bidder.
3. Bidder shall ensure the correctness of civil assignment drgs which shall be an input for BHEL's civil and structural design agency. For this purpose, bidder shall vet and clear the drawings of crusher house.
 - a. Successful bidder has to give slab details with hole/pocket details for mounting the base frame of elevator, mesh reinforcement details including rod dia. and spacing and other relevant details
 - b. Any rectification due to the mismatch arising out of improper/incorrect/insufficient data in the drawing submitted by bidder will be attended under this package vendor's expense.
4. Rust preventive paint after inspection at shop floor before dispatch shall be in bidder's scope

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5. Supply of base frame, fixing bolts, sleeves and foundation bolts for all equipment /items shall be in bidder's scope. Erection shall be by BHEL's other vendors.
6. Material of construction for all equipment shall be subject to BHEL/NSPCL/ NSPCL's consultant approval during detail engineering.
7. Supply of special tools and tackles as applicable for the equipment / system shall be in the scope of bidder
8. Engineering drg/doc must essentially contain the following but not limited to these and any drg/doc required by BHEL shall be furnished by bidder during detail engineering:
 - a. General Arrangement drgs, etc.
 - b. Civil assignment drgs with Load data.
 - c. Various schedules
 - d. Design & capacity calculations
 - e. Data sheets
 - f. Operation Philosophy
 - g. Review and vetting of Fabrication drgs & other structures (wherever applicable).
 - h. O&M manuals
 - i. PG test procedures
 - j. QAPs
 - k. FQPs
9. Bidder to extend all help and documentary support for compliance and addressing any statutory issues raised at site which pertains to the area / work under bidder's scope.
10. Drawings of all the equipment shall be furnished in editable AutoCAD format during detail engineering.
11. Bidder's scope shall include supply of start-up & commissioning spares. Applicable spares for the equipment in this package to be considered by the bidder. List of items in the commissioning spares shall be decided by bidder inline with the system requirement. It is bidder's responsibility to obtain the approval of list from BHEL/Customer/Customer consultant. In case any shortage of spares happen during commissioning, the same shall be arranged immediately by vendor without any cost implication to BHEL and vendor has to ensure that commissioning is not affected.
12. All working parts requiring lubrication shall be of sealed construction so that dust, dirt and other foreign matter do not come in contact with wearing surface.
13. All bearings shall be properly lubricated. Grease nipples and reservoirs shall be furnished

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wherever necessary. The vendor's engineer supervising the installation/trial run should properly see that correct quantity and grade of lubricant/grease/oil is used.

14. All the equipment shall be of robust construction, suitable for operation in dusty, humid and outdoor operation.
15. Quality assurance and inspection of equipment shall be as per NSPCL specification.
16. Bidder shall submit the signed and stamped copy of all the pages which constitutes this technical enquiry specification signed by authorized signatory and clearly mentioning each clause under following two categories to avoid any ambiguity in scope understanding & the scope division along with technical offer.
 - a. "Accepted without deviation and considered in scope of work"
 - b. "Not considered in scope of work"
17. Bidder to note that "no deviation" from the enclosed NSPCL tender documents shall be acceptable unless and until written approval from BHEL/NSPCL/NSPCL's-consultant has been accorded.
18. Painting scheme shall be submitted by bidder in line with NSPCL NIT (Part C of Volume IIG) and the same shall be subject to approval of BHEL/NSPCL/NSPCL's-consultant. Final approved painting scheme shall be followed by bidder without any price implication to BHEL.

D. ELECTRICAL SCOPE: AS PER ANNEXURE- 3

E) DOCUMENTS / INFORMATION TO BE FURNISHED ALONGWITH TECHNICAL OFFER:

Following shall be submitted for this package.

- a. GA drawings of equipment along with load data
- b. Data sheet of equipment
- c. Weight of the equipment
- d. Catalogues of respective equipment
- e. Motor rating of all the equipment
- f. Confirmation of scope in line with Tender.
- g. Type and quantity of oil, lubricants & consumables for initial fill and till successful commissioning and handing over of equipment.
- h. List of commissioning spares and start-up spares
- i. List of special tools and tackles
- j. Unpriced price schedule mentioning "Quoted" against each item in our price format.

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F) EXCLUSIONS:

1. Erection and commissioning and PG testing of bidder's equipment is excluded. However bidder shall supervise the same until final handing over to end customer. **It is the responsibility of the successful bidder to demonstrate the guaranteed capacity of equipments supplied by them.**

G) LIST OF ENCLOSURES:

Following enclosures is an integral part of this technical enquiry and must be signed and stamped and submitted along with the offer (enclosed in soft form in CD):

- 1) NSPCL SPECS/ NIT DOCUMENTS:-
 - a. CHAPTER ON ELEVATORS FROM NIT
- 2) PQR
- 3) GA & LOAD DATA OF CRUSHER HOUSE REV.00
- 4) ANNEXURE-1:- LIST OF MANDATORY SPARES
- 5) ANNEXURE-2:- BIDDER'S DATASHEET
- 6) ANNEXURE-3:- ELECTRICAL SCOPE & SPECIFICATION.