

# TENDER CONTENTS

**Work of “Reconditioning and Upgradation of CNC System on 3D-Coordinate Measuring Machine 14/A/2093 of TGM.**

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**BHARAT HEAVY ELECTRICALS LTD BHOPAL - 462022**  
**WORKS ENGG. & CENTRAL SERVICES DEPTT.**  
**EMX DIVISION – CNC SECTION**

**DECLARATION SHEET**

Sealed tender is invited (In two part bids) from contractors. The basic details about the works contract are given below:

<u>S.NO</u>		
1	Name of contract	Reconditioning and Upgradation of CNC System on 3D-Coordinate Measuring Machine 14/A/2093 of TGM
2	Period of contract	18 months
3	Contact	Narendra Bagare (DGM, 07552503128), Sachin Kumar Jain (Manager, 07552505956)
4	Tender cost	NIL
5	EMD cost	Rs 1,54,000/- (One Lakh Fifty Four Thousand Only)
6	Tender Enquiry no.	WE&CS/CNC/20/EN01
7	Officer/place for obtaining tender documents	DGM, EMX, CAT Building 1 <sup>st</sup> floor, CNC Maintenance, BHEL Bhopal
8	Date of Enquiry	10/12/2020
9	Due date & time for submission of tender documents	04/01/2021 11:00AM
10	Date of tender opening	04/01/2021 1:30PM
11	Place of submission	Tender Room, Administrative Building, Ground Floor, BHEL BHOPAL (M P)
12	Tender document to be addressed to	DGM (EMX), BHEL Bhopal
13	Period of work completion	4 months from the date of release of the Machine
14	Documents attached along with NIT	<ol style="list-style-type: none"> <li>1. Tender (Annexure-1)</li> <li>2. Format for Bank Guarantee (Annexure-1-A)</li> <li>3. General Terms &amp; Conditions (Annexure-2),</li> <li>4. Instruction to contractor (Annexure-3)</li> <li>5. GST Compliance Clause (Annexure-4)</li> <li>6. Specification (Annexure-5).</li> <li>7. Price Bid Format ( Annexure-6)</li> </ol>

## **CHECKLIST FOR THE TENDERER**

### **NAME OF THE WORK: RECONDITIONING AND UPGRADATION OF CNC SYSTEM ON 3D-COORDINATE MEASURING MACHINE 14/A/2093 OF TGM**

This is an indivisible works contract and the contractor shall fill remarks column against all items. This tender schedule must be submitted along with TECHNO- COMMERCIAL BID, enclosed and duly signed and stamped on each page with your covering letter. Any deviations / deletions etc. should be brought out separately on your letter pad and enclosed to the tender documents.

The following are to be filled up by the Bidder: and it is submitted in Techno-commercial bid (part – I)

<b>S.NO</b>	<b>Detail Required</b>	<b>Detail (To be filled by the contractor)</b>
1	Name of Contractor	
2	Full Address	
3	Contact Person	
4	Phone No./Mobile no.	
5	Email ID	
6	PF CODE NO	
7	ESI CODE NO	
8	LABOUR LICENCE NO. under section 12(1) of R&A 1970 & Validity (either valid or under renewal should indicate)	
9	PAN No.	
10	GST No.	
11	Validity: 04 months from opening date (Technical Bid).	Acceptance – YES / NO
12	EMD (please see clause- (5) of enquiry)	Rs 1,54,000/- (One Lakh Fifty Four Thousand Only)
13	Security Deposit clause: acceptance (please see clause – (4) of enquiry)	<b>5% of contract value ( see clause)</b>
14	Payment Terms (please see clause 3 of enquiry)	Acceptance – YES / NO

**BHARAT HEAVY ELECTRICALS LTD**  
**BHOPAL - 462022**  
**WORKS ENGG. & CENTRAL SERVICES DEPTT.**  
**EMX DIVISION – CNC SECTION**

**Tender Enquiry No: WE&CS/CNC/20/EN01**

Dated: 08.12.2020

**Sub: Reconditioning and Upgradation of CNC System on 3D-  
Coordinate Measuring Machine 14/A/2093 of TGM Div.**

Dear Sirs,

Sealed tender subscribing the name of work, tender notice no. and due date is invited by the undersigned for executing the following work: -

Sl. No	Description of work	Earnest money Deposit	Due date	Completion time
1	<b>Reconditioning and Upgradation of CNC System on 3D-Coordinate Measuring Machine 14/A/2093 of TGM</b>	<b>Ref Clause 5</b>	<b>04.01.2021</b>	<b>4 months from the date of release of the Machine.</b>

**1. SCOPE OF WORK:**

Complete reconditioning and CNC system retrofitting shall be done on material and labour basis. The award of work shall be done on the total material and labour cost.

**The Reconditioning and upgradation work will be consisting of –**

1.1. Joint inspection of machine will involve thorough assessment of the machine performance before reconditioning. Dismantling will be carried out as per requirement for identifying the components to be replaced or repaired and taking the measurements for installation of new components for retrofit.

1.2. After joint inspection, the machine will be assembled and handed back for production till it is finally released for the start of the reconditioning and retrofitting work.

**1.3. The work is to be carried out as per the Specifications of Work (Annexure 5).**

1.4. Complete assembly and geometrical testing, job trials etc. to be carried out. A test chart performance report has to be made. The tests to be carried out in presence of contractor, production and concerned plant maintenance personnel.

1.5. Any other work involved in successful completion of the work and not covered above shall also be the responsibility of the contractor.

1.6. All worn out and replaced parts duly packed shall be property of BHEL and shall be returnable as per instruction of BHEL.

1.7. After successful geometrical and job tests, the machine would be handed over to production division for their trial run and regular production would begin on the machine. After satisfactory prove-out of the accuracies,

loading and material removal capacity of the machine by manufacturing few production items, the production, and maintenance division would then release the Performance Certificate for the machine. Only on receipt of such certificate, the work would be deemed as completed and the final bill would be processed.

## **2. FACILITIES:**

This is a labour and material contract. All perishable items, consumables like lubricants, Kerosene oil, cotton waste etc. will be supplied free of cost during reconditioning and commissioning inside our premises. However, the contractor should make his own arrangements for all the types of hand tools including pneumatic/electrical /drill machines, grinders, scraping machines etc. along with the necessary tooling, general-purpose measuring instruments, straight edges etc.

2.1. Crane facilities along with lifting tackles special tools and measuring instruments like collimator etc., trolleys, truck etc. will be made available free of charge while working inside BHEL premises only.

2.2. Facilities of minor welding, brazing, machining etc. free of cost are also available inside BHEL premises.

## **3. TERMS OF PAYMENT:** Shall be as under : –

3.1. **30% of the contract value** shall be paid after joint inspection by BHEL and contractor. This payment would be released on receipt of the B/G of like amount, which should be valid till the completion of reconditioning work.

3.2. **60% of the contract value** shall be paid after the completion of the reconditioning and CNC retrofitting and final HAND-OVER of the machine for production.

3.3. **10% of the contract value** to be paid after release of Performance Certificate by production and maintenance personnel of BHEL. This payment shall be released against the BG of like amount. The BG should be valid till the expiry of the warranty period.

3.4. **LD clause** shall be applicable as **0.50% (Half Percent) per week of the Contract Value**. The LD shall be deducted if the delivery is delayed beyond the agreed delivery period. The **maximum amount** of the LD shall be **10% (Ten Percent) of the Contract Value**.

3.5. **TDS:** As per income tax act / GST shall be deducted from each running bill and final bill of the contractor as per the rule.

3.6. Payment will be made within 60 days (45 days in case MSME vender) after successful submission of all required documents.

3.7. **TAXES:** Goods and Service Tax (GST) or any other new tax introduced by GOI shall be considered as applicable. Any loss/delay of tax credit to BHEL shall be recovered from contractor if the reason for the same is attributable to contractor. TDS will be deducted at source as per the provisions of Income Tax Act and GST Act be as applicable from time to time.

## **4. SECURITY DEPOSIT:**

The rate of security deposit will be as below:

The total amount of Security Deposit will be 5% of the contract value. EMD of the successful tenderer shall be converted and adjusted towards the required amount of Security Deposit.

The security deposit should be submitted before the start of work in the following forms:

- 1) Cash (as permissible under the extant Income Tax Act)
- 2) Local cheques of Scheduled Banks (subject to realization)/ Pay Order/ Demand Draft/ Electronic Fund Transfer in favour of BHEL
- 3) Bank Guarantee from Scheduled Banks/ Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format should have the approval of BHEL
- 4) Fixed Deposit Receipt issued by Scheduled Banks/ Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL)
- 5) Securities available from Indian Post offices such as National Savings Certificates, Kisan Vikas Patras etc. (held in the name of Contractor furnishing the security and duly endorsed/ hypothecated/ pledged, as applicable, in favour of BHEL)

(Note: BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith)

- 5. EARNEST MONEY:** Earnest Money Deposit (EMD) of ₹ 154000 /- may be accepted only through Electronic Fund Transfer credited in BHEL account (before tender opening), which can be deposited online through link <https://www.bhelbpl.co.in/qcins/iccs.htm> Tenders not submitted with earnest money are liable to be rejected. EMD given by all unsuccessful tenderers shall be refunded normally within fifteen days of award of work. EMD of successful tenderer will be retained as part of Security Deposit. EMD shall not carry any interest. DD or any other mode will not be accepted.

**Alternately, One Time EMD of Rs 5 lakhs can also be paid.**

Earnest money should be deposited by only in the following forms:

- (i) Cash deposit as permissible under the extant Income Tax Act (before tender opening)
- (ii) Electronic Fund Transfer credited in BHEL account (before tender opening)
- (iii) Banker's cheque/ Pay order/ Demand draft, in favour of BHEL (along with offer)

Tenders not submitted with earnest money are liable to be rejected. Earnest money deposit of unsuccessful offers would be returned within 15 days of acceptance of award of work by the successful bidder. EMD shall not carry any interest. The Earnest money should be submitted in separate envelope.

## **6. INSPECTION:**

The bidder can inspect the machine with prior intimation on any working day from 9:00 hrs to 16:00 hrs, before the last date for submission of tenders.

## **7. TENDER SUBMISSION AND OPENING:**

Tender submission location: **Tender Box (For Works), Tender Room,  
Ground Floor, Administrative Building,  
Bharat Heavy Electricals Limited, Bhopal – 462 022.**

Tender Submission time/date: **Before 11:00 hrs on 04.01.2021. Tenders received after 11:00 hrs will be treated as LATE TENDER and will not be considered.**

Tender opening time/date: **14.00 hrs on 04.01.2021** in Tender Room.

The tender envelope must carry the following information on the top of the envelope:

- ❖ Tender/Enquiry No: **WE&CS/CNC/20/EN01**
- ❖ Party's name:
- ❖ Tender/Enquiry Opening date: **04.01.2021**

Contractors should bring their authorisation letter from their company for witnessing the tender opening.

Contractors will be permitted in tender room to witness the tender opening from 14:00 hrs onwards.

- 8.** In the event of acceptance of tender, and if the contractor fails to commence work within prescribed period, BHEL shall, without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money.

- 9.** Accepting authority reserves the right to reject any or all quotations without assigning any reason thereof.

- 10.** For General terms and conditions for inviting reconditioning tenders and award of contract ref. Annexure-2.

**11. Quotations must be valid for at least 120 days.**

**12. INSURANCE:**

In case the machine tool or any part thereof is required to be shifted outside the premises of BHEL, Bhopal for execution of the reconditioning work, comprehensive insurance should be provided by the bidder, based on the salvaged value of the items (to be indicated by BHEL).

**13. BANK GUARANTEE:**

In case the machine tool or any part thereof is required to be shifted outside the premises of BHEL, Bhopal for execution of the reconditioning work, bank guarantee should be provided by the bidder, based on the salvaged value of the items (to be indicated by BHEL).

**14. COST OF TENDER DOCUMENTS: NIL**

Tender documents can be directly download from BHEL web site.

**15. RULES AND REGULATIONS OF THE CENTRAL/STATE GOVERNMENT:**

In the event of award of any contract to Central/State government, it will have to observe and perform all the laws/enactment for the time being in force. For an example the information about wage bills amount and deduction of contributory provident fund of all of your employees every month, have to be submitted.

Permanent P.F. Account No., ESI Reg. No., Labour License No. etc. allotted by the concerned authority should also be mentioned in your quotation. This is necessary as per the latest directives from Regional Provident Fund Commissioner M.P. Government. Documents regarding your registration with Sales Tax and Excise authorities may also be forwarded along with income tax clearance.

**16.** All the documents being sent herewith should be returned back to us duly signed on each paper along with your offer. The general terms and conditions being attached herewith shall also form an integral part of contract Agreement for individual machines in case the work order for any is awarded to you.

**17.** The quotation should be submitted as under:

**a) Techno-commercial Bid**

In the Techno-commercial bid, the detailed technical specifications of the scope of supply and scope of work along with all the commercial terms and conditions should be included.

**b) Price Bid**

- i. It should include the total price of the offer.
- ii. Material cost and the labour cost should be quoted separately indicating taxes, duties & other charges separately.
- iii. The entire cost of packaging, forwarding and transportation of materials and machine (if required) has to be borne by the bidder and quoted separately in the price bid.
- iv. It should provide the price in the enclosed Price Bid format only . If the price is provided in any other format , the same is liable to be rejected.
- v. The Techno-commercial & Price bids should be submitted in separate marked envelopes.
- vi. Contractors should bring their authorisation letter from their company for witnessing the tender opening. Contractors will be permitted in tender room to witness the tender opening from 14:00 hrs onwards.
- vii. "Price shall be Firm throughout the contract.

**c) BID OPENING**

- i. PART-I (EMD, tender fee and Techno-Commercial Bid) is to be opened on the due date and time as specified in the Tender Notice, in the presence of bidders who may like to attend in the tender room itself. Part-II (Price Bid) shall be opened subsequently of the technically qualified parties.
- ii. Date and time of Price Bid (Part-II) opening shall be intimated to the technically and commercially acceptable bidders only.
- iii. Not more than two representatives will be permitted to be present for the tender opening.

- iv. No correspondence shall be entertained from the bidders after the opening of Price bid(s).
- v. Standard pre-printed conditions of the bidders attached to the offer will not be accepted and only those mentioned in the body of his offer will be considered.
- vi. Unsolicited bids shall not be entertained. Unsolicited revised Price Bids also, shall not be entertained at any stage of the tendering process.
- vii. BHEL reserves the right to go further for price negotiation after opening of price bid if needed.
- viii. Vendor not submitting EMD, their offer's PART II will not be opened. If exempt, kindly provide the relevant certificate(like Udyog Aadhar, MSME Certificate etc)

**d) LANGUAGE ,CORRECTION AND OVERWRITING**

- i. The bidder shall quote the rates in English Language & International Numerals only
- ii. Bidder shall fill the original tender documents issued by BHEL. All entries and Signatures in the bid shall be in Blue ink only; each page of the bid shall be signed & stamped using official seal of the company by the bidder.
- iii. All entries shall be filled in neat & legible handwriting. No over-writings erasures & corrections are permitted and may render such bid liable for rejection. However, if any cancellations, corrections & insertions are in the bid, the bidder shall dully attest the same.
- iv. The Rate quoted shall be deemed to cover working under adverse conditions as well as supervision from the contractor side, Risk and overheads of all kinds. The Rate quoted shall take into account all labour, Income Tax, GST & restrictions involved in carrying the work.
- v. "Bid should be free from correction , overwriting, using corrective fluid etc any interlineation, cutting or overwriting shall be valid only if they are attested under full signature(s) of person(s) signing the bid, else bid shall be liable for rejection. All overwriting / cutting , etc will be numbered by bid opening official and announced during bid opening"

**e) TENDER EVALUATION**

- i. Prices should be indicated both in words as well as in figures. If there is a difference between price quoted in words and figures or if there is any other price discrepancy, lower value(s) will be considered for evaluation & ordering.
- ii. L1 will be evaluated based on Lump-sum basis ( i.e Lowest total cost including taxes).
- iii. In the course of evaluation, if more than one bidder happens to occupy L1 status, effective L1 will be decided by soliciting discounts form the respective L1 bidders.
- iv. Incase more than one bidder happens to occupy the L1 status even after soliciting discounts, the L1 bidder shall be decided by a toss/draw of lots, in the presence of respective L1 bidder(s) or their representative(s).
- v. Ranking will be done accordingly. BHEL's decision in such situations shall be final and binding.

**The Techno-commercial & Price bids must be submitted in separate marked envelopes.**

The contractor would submit excise invoice cum gate pass in duplicate in the name of BHEL Bhopal to CRX Division at BHEL Bhopal. CRX Division will forward these documents to excise cell after affixing the consignment note number in the same.

Thanking you.

Yours faithfully,



-----  
DGM (EMX)  
For B.H.E.L. Bhopal

Enclosures:

- ❖ Tender Specification (Annexure-1)
- ❖ Format for Bank Guarantee (Annexure-1A)
- ❖ General Terms & conditions (Annexure-2)
- ❖ Instruction to Contractor (Annexure-3)
- ❖ GST Compliance (Annexure-4)
- ❖ Specifications for the Work (Annexure-5)



## ANNEXURE- 1

### TENDER

(Here in after called as Company/Corporation)

I/We have read and examined the following documents relating to the reconditioning of machine tools as per Annexures.

- A - Notice inviting tender
- B - Format for Bank Guarantee (Annexure 1A)
- C - General Terms & conditions (Annexure 2)
- D - Specifications for the Work (Annexure 3)

I/We hereby tender for the execution of the reconditioning & retrofitting work referred to in NIT on the terms and conditions to there in at a cost of Rs.(in words) cost shall be quoted against the machine tool which the party proposes to undertake for reconditioning & retrofitting, or at such cost as may be fixed after mutual consent on negotiations.

In consideration of I/We being inviting to tender I/We agree to keep the tender open for acceptance for 120 days from the due date of submit there of and not to make any modification in it's terms and conditions, which are not acceptable to the company/corporation. Should this tender be accepted I/We hereby agree to abide by and fulfil all terms, conditions, and provisions of the aforesaid documents?

A sum of Rs. (in words) rupees with respect to the machine is hereby forwarded in cash/ treasury challan/Bank guarantee or Fixed deposit at call receipt of any nationalised/schedule Bank of India as earnest money. If I/We fail to keep the tender open as aforesaid or make any modifications in the terms and conditions of the tender which are not acceptable to the company/remedy be at liberty to forfeit the said earnest money absolutely, should this tender be accepted, I/We hereby agree to abide by and fulfil all terms and conditions and provisions of the aforesaid documents.

If, after the tender is accepted, I/we fail to commence the execution of the work as provided in the condition I/We be agree that the company/ corporation shall without prejudice to any other right or remedy be at liberty to forfeit the said earnest money absolutely.

(Signature)

Incapacity of -----

Duly authorised to sign the tender on behalf of M/s

Witness

Address

## ANNEXURE- 1A

### FORMAT FOR BANK GUARANTEE.

This deed of guarantee made this \_\_\_\_\_ of \_\_\_\_\_ 2020 by \_\_\_\_\_ Bank Ltd., in favour of Bharat Heavy Electricals Ltd., Piplani, Bhopal - 462 022 having its registered office at BHEL Bhavan, Siri Fort, New Delhi 110 049 (here in after called the company).

Whereas M/s \_\_\_\_\_ (here-in-after called the contractor) have submitted a tender for \_\_\_\_\_ in response to tender specification No. \_\_\_\_\_ (here-in-after called the said tender documents) of M/s Bharat Heavy Electricals Ltd., Piplani, Bhopal - 462 022 and where as the said tender documents provide that the bidder shall pay a sum of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_) towards earnest money deposit, to be made in the form and manner there in specified.

And where as bidder \_\_\_\_\_ have approached \_\_\_\_\_ Bank limited and at their request and in consideration of the arrangement arrived at between the said bidder and the said Bank, the said bank has agreed to give such guarantee as here in after mentioned to aforesaid company.

Now, therefore, these present witness that the Bank Limited by the hand of Shri \_\_\_\_\_ it's lawfully and duly constituted attorney, do here by undertake to pay the aforesaid company a Sum of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_) on demand being made by the said company and to keep the said company indemnified to the extent of Rs. (Rupees \_\_\_\_\_) by virtue of this guarantee against any loss or damage caused to or suffered by the said company by reason of any breach by the aforesaid bidder of any terms, condition, stipulations, undertakings any one of them contained in the said tender documents, and for payment of any money or moneys payable by the said bidder to the said company under the terms and conditions of the said tender documents (the decision regarding the breach, loss damage or payment due being solely in the discretion of the said company). We further undertake to pay the aforesaid amount in a lumpsum of demand irrespective of the fact whether the said bidder admits or denies such claims or questions it's correctness in any court tribunal or arbitration proceedings before any authority. The aforesaid guarantee will remain inforce and we shall be liable under the same, irrespective of any concession or time being granted by the said company to the bidder in or for Fulfilling conditions of the tender documents and the guarantee will remain in full force irrespective of any change of terms, conditions or stipulations or any various in the terms of the said tender documents irrespective of whether notice of such change and or variation is given to us or not and claim to receive such notice of any change and or variation of terms and or conditions of the said tender documents, is hereby specifically waived by us. Further we shall not be released from this guarantee by any of forbearance or the exercise or non-exercise of any of the powers or rights under the said tender documents by the notice of such forbearance or the exercise or non-exercise of any of the powers or rights under the said tender documents ;by the said company against the tender irrespective of whether notice of such forbearance, enforcement or non enforcement of any power or rights modification or changes made in the said tender documents or concessions shown to the bidder by the company is given to us or not.

The guarantee herein contained shall not be determined or affected by the liquidation or winding up or insolvency of or change in the constitution of the bidder but shall in all respects and for all purposes by binding and operative until payments of all moneys due or that may here after become due to the said company in respect of any liability or obligation of the bidder under the said document.

We the said Bank further agrees that the guarantee herein contained shall remain in full force and effect during the period that would be take for the finalisation the tender and execution of agreement therefore, and that it shall continue to be enforceable till the company certifies that the terms and conditions of the said tender documents have been fully and properly carried out by the said bidder and accordingly discharge the guarantee.

Any claim or dispute arising under the terms of these documents shall only be enforced or settled in the courts at Bhopal only.

Any lastly the \_\_\_\_\_ Bank undertake not to revoke this guarantee during its currency except with the previous consent of the company in writing.

The Bank hereby declares that it has power to issue this guarantee under the Bank's memorandum and Article of Association and undersigned has full powers to do so on its behalf under the power of attorney dated. \_\_\_\_\_ granted to him by the proper authorities of the Bank.

Dated \_\_\_\_\_ the \_\_\_\_\_ day of \_\_\_\_\_ Bank by its constituted attorney.

(Signature of the person duly  
Authorised to sign on behalf of the Bank)

## **ANNEXURE-2**

### **GENERAL TERMS AND CONDITIONS FOR INVITING RECONDITIONING & UPGRADATION TENDERS AND AWARING CONTRACT.**

#### **1. DEFINITIONS:**

- a) "Company or Corporation" shall mean Bharat Heavy Electricals Limited having its registered office at New Delhi and includes a duly authorised representative of the company/Corporation or any other person empowered in this behalf by the company or Corporation to discharge all or any of its functions.
- b) "Accepting Authority" shall mean the Head of the Maintenance Division or any other person authorised by him.
- c) "The contract" shall mean the notice inviting the tender and acceptance thereof and the formal agreement if any, executed between the Bharat Heavy Electricals Ltd. Bhopal and the contractor together with the documents referred to there in including these conditions, and any special conditions, specifications, designs, drawings etc. All these documents taken shall be deemed to form one contract and shall be complementary to one another.
- d) The "Contractor" shall mean the individual of firm or company whether incorporated or not, undertaking the work and shall include legal representatives of such individual or persons composing such firm or incorporated company or successors of such person, firms or company as the case may be and permitted assignee of such individual or firm or company.
- e) The "Contract sum" shall mean the lump sum for which the tender is accepted.
- f) A "Day shall mean a day of 24 hours from midnight" to midnight irrespective of the number of hours worked in that day.
- g) A week shall mean seven days without regard to the number of hours worked in any day in the week.
- h) The "work" shall mean the work to be executed in accordance with the contract or part(s) thereof as the case may be and shall include all extra, additional, altered or substituted work or temporary and urgent work as required for performance of the contract.
- i) Engineer-in-charge shall mean the Engineering officer appointed by the Accepting Authority, who shall direct, supervise and be in-charge of the works for purpose of this contract.

#### **2. CONTRACT DOCUMENTS:**

The contractor shall be furnished, free of charge, two certified true copies of the contract documents. He shall keep one Copy of this document on the site in good order and the same shall at all reasonable times be available for inspection and use by the Engineer-in-charge, his representatives or by other Inspecting officers.

2.1 None of the document shall be used by the contractor for any purpose other than that of this contract.

2.2 The contractor shall take necessary steps to ensure that all persons employed on any work in connection with this contract have noticed that Indian Official Secrets Act, 1823, applies to them and shall continue so to apply even after the execution of such work under the contract.

#### **3. THE WORK TO BE CARRIED OUT:**

The work to be carried out under the contract shall except as otherwise provided in these conditions, include all labour, replacement of parts which may be required for full and entire execution and completion of the work.

3.1 The contractor shall have his own tools & tackles, instruments, consumables etc. required for the execution of work to the entire satisfaction of Engineer-in-charge.

3.2 Decision to replace or repair the worn out part shall be mutual on consent of the Engineer-in-charge or his any representative and the contractor. In the event of any controversy, the decision of the Accepting Authority shall be final and binding.

#### **4. INSPECTION OF WORK BEFORE SUBMISSION OF TENDER :**

The contractor shall examine the quantum of work and shall satisfy himself before submitting his tender. He may get information regarding nature of defects but this shall not be the basis of quotation unless specified so. He shall himself, assess the requirement of material, replacement of worn out components, repairs, contingencies and other circumstances, which may affect or influence his tender. No extra charges on any misunderstanding or otherwise shall be allowed.

#### **5. SUFFICIENCY OF TENDER :**

The contractor shall be deemed to have satisfied himself before tendering as to correctness and sufficiency of his tender, the work and prices. This shall, except as otherwise provided, all obligations under the contracts and all matters and things necessary for the proper completion and maintenance of the work.

#### **6. DISCREPANCIES AND ADJUSTMENT OF ERRORS:**

The several documents forming the contract are to be taken as mutually explanatory of one another. If there are varying or conflicting provisions made in any one document forming part of the contract, the accepting authority shall be the deciding authority with regard to the intention of the document. Any error in description, quantity or rate or any commission these form shall not initiate the contract or release the contractor from execution of whole or any part of work comprised. These are according to drawings and specification or from any of his obligation under the contract.

#### **7. TIME AND EXTENSION FOR DELAY:**

The time allowed for execution, which shall be mutually agreed between the BHEL and the contractor and mentioned in the work order, along with these conditions shall be of the essence of the contract. The execution of the work shall commence from the 15th day after the date on which the Engineer-in-charge issues written order to commence the work on from the date of handing over the plant whichever is later unless specified otherwise elsewhere. If the contractor, commits default in commencing the execution of the work as aforesaid, company/corporation shall without prejudice to any other right or remedy be at liberty to cancel the order.

7.1 As soon as possible after the contract is concluded, the Engineer-in-charge and the contractor shall agree upon a time and progress chart. The chart shall be prepared in direct relation to the time stated in the contract documents for completion of the work. It shall indicate the forecast of the dates of commencement and completion of various activities to be done for completion of the work as per contract. This may be amended as necessary by agreement between the Engineer-in-charge and the contractor within the limitations of time imposed in the contract document and further to ensure good progress during the execution of the work. The contractor shall in all cases in which the time allowed exceeds one month complete 1/8th of the whole of the work before 1/4th of the whole time allowed in the contract has elapsed, 3/8th of the work before 1/2 of such time has elapsed and 3/4th before 3/4th of such time has elapsed.

7.2 If the work were delayed due to:

- a) Force majeure or
- b) Serious loss or damage by fire or
- c) Delay on the part of other contractor or company/corporation in executing work not forming part of contract or
- d) Non-availability of stores which are the responsibility of Company / Corporation to supply or
- e) Any other causes which in the absolute discretion of accepting authority is beyond contractor's control.

Then upon the happening of any such delay the contractor shall immediately give notice thereof in writing to the Engineer-in-charge but shall nevertheless constantly his best endeavours to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-charge to proceed with the work.

7.3. Request for extension of time to be eligible for consideration shall be made by the contractor in writing within fourteen days of the happening of the event causing delay. The contractor may also, if practicable, indicate in such a request the period for which the extension is required.

7.4. The accepting authority may give a fair and reasonable extensions of time for completion of work, such extension shall be communicated to the contractor by the Engineer-in-charge in writing within the month of the date of the receipt of such request.

## **8. CONTRACTOR'S LABOUR WHILE WORKING INSIDE BHEL PREMISES:**

8.1. The contractor shall engage sufficient staff of the quality to ensure workmanship of the degree specified in the contract and to the satisfaction of the Engineer-in-charge. The contractor shall not employ indirectly or through subcontractor any staff whatsoever. Written consent of the contractor in this behalf has to be incorporated in to the offer or otherwise is liable to be rejected.

8.2 The contractor shall furnish to the Engineer-in-charge a complete list of the persons engaged on the work giving the following details.

(a) Name                      (b) Age                      (c) Trade

Change over subsequently if any, shall be furnished by the contractor to the Engineer-in-charge.

8.3. The contractor shall comply with the provision of the payment of wages Act, 1936 Minimum Wages Act 1949, Employees Liability Act 1938. Workmen's compensation Act 1923, Industrial Dispute Act, 1947, Maternity act 1961 or any modification thereof or other rules relating thereto and rules and regulations from time to time.

8.4. The contractor shall indemnify to the company /corporation against any payments to be made under and for observance of the regulations aforesaid without prejudice to his right claim indemnify from his subcontractors.

8.5. The contractor shall at his own expense arrange for the safety provisions as required by the Engineer-in-charge, in respect of all worker directly or indirectly employed for the work and shall provide all facilities to make arrangements and provide necessary facilities in connection there with. In case the contractor fails to make arrangements and provide necessary facilities the Engineer-in-charge shall be entitled to do so and recover the cost there of from the contractor.

8.6. The contractor shall not any time do, cause or permit any nuisance on the work site or do anything, which shall cause unnecessary disturbance or inconvenience to other workers.

8.7. The contractor shall either himself supervise the execution of the work or shall appoint competent man approved by the Engineer-in-charge to act on his behalf.

8.8. No work shall be carried out during night, factory weekly off and public holidays without the prior written permission of Engineer-in-charge.

## **9. INSPECTION AND APPROVAL:**

9.1. All work embracing more than one process shall be subject to examination and approval at each stage there of and the contractor shall give due notice to the Engineer-in-charge or his authorised representative when each stage is ready.

9.2. No work shall be covered up or put out of view without the approval of Engineer-in-charge or his representative and the contractor shall afford full opportunity for examination of any work, which is about to be covered up or put out of view. In the event of the failure of the contractor to do as aforesaid, if required by Engineer-in-charge he shall uncover such work at contractor's own expenses.

9.3. Company/corporation officers concerned with the contract shall have powers at any time to inspect and examine any part of the work and the contractor shall give such facilities as may be required for such inspection and examination.

## **10. COMPENSATION FOR DELAY:**

10.1. If the contractor fails to maintain the required progress in terms of work order or to complete the work and clear the site on or before the contract or extended date or period of completion, he shall without prejudice to any other right or remedy of the company on account of such breach pay as agreed compensation amount calculated as stipulated below:-

(a) ½% (half percent) per week subjected to maximum of 10 percent of contract value.

**11. PAYMENT TERMS:** As per Clause 3 Tender enquiry.

## **12. DEFECTS LIABILITY PERIOD:**

- a) The contractor shall guarantee the executed work for satisfactory performance for one year on two-shift basis to the accuracies and performance excluding mal-operation and accidents. This period shall commence from the date of successful installation commissioning and prove out of the machine at BHEL Bhopal.
- b) No. TA or out of pocket, expenses will be given to the engineer/staff of the Contractors while they are asked to attend the machines during the guarantee period.

## **13. CANCELLATION OF CONTRACT IN FULL OR PART:**

If the contractor,

- a) At any time make default in proceeding with the work with diligence and continues to do so after a notice of 7 days in writing from Engineer-In-Charge, or
- b) Commits default in complying with any of the terms and conditions of the contract and does not remedy it or take effective steps to remedy in with in 7 days after a notice in writing is given by Engineer-In-charge in that behalf of, or
- c) Shall after or give or agree to give to any person in M/S BHEL Bhopal service or to any other person on his behalf any gift or consideration of any kind as on inducement or reward for doing or for bearing to do or for having done or for borne to do any act in relation to the obtaining or execution of this or any other contract for the company/corporation or
- d) Shall obtain a contract with the company/or corporation as a result of ring tendering or other non- bonfire methods competitive tendering the accepting authority may without prejudice to any other right to remedy can cancel the contract in full or part.
- e) In case the contractor abandons the work in between, the company without prejudice to any other right or remedy be at liberty to get the unfinished work completed at the risk and cost of the contractor/reconditioning agency.

## **14. ARBITRATION AND LAW:**

Except where otherwise provided for the contract, all questions and disputes relating to the meaning of the specification, designs, drawings and instructions here in before mentioned and as to the quality of workmanship of materials used on the work or as to any other question, claim, right matter or thing whatsoever in any way arising out of or relating to the contract, design, drawing, specifications, estimates, instructions, orders, or these conditions or otherwise concerning the works or the execution or failure to execute the same whether arising during the progress of the work or after the completion or abandonment there of shall be referred to the sole arbitration of the General Manager of BHEL and if the General Manager, is unable or unwilling to act to the sole arbitration, some other person appointed by the General Manager willing to act as an such arbitrator, there will no objection if the arbitrator appointed is an employ of BHEL and that had to deal with the matters to which the contract relates ” and that in the course of his duties, as such he had expressed in the course of his duties, as such he had expressed views on all or any of the matters in dispute or difference. The arbitrator to whom the matter is originally referred being transferred or vacating his office or being unable to act for any reason, such General Manager as aforesaid at the time of such transfer, vacation of office or inability to act, shall appoint another person to act as arbitrator in accordance with the terms of contract. Such person shall be entitled to proceed with the reference from the stage at which his predecessor left it. It is also a terms of this contract that no person other than a person appointed by such General Manager, as aforesaid should act as arbitrator and if for any reason, that is not possible, the matter is not to be referred to arbitration at all. In all case where the amount of the claim in dispute is Rs 50,000/-the claim in dispute is Rs.50, 000/- (Rupees Fifty Thousand only) and above, the arbitrator shall give reason for the award.

Subject as aforesaid the provision of the arbitration and conciliation Act 1996, or any statutory modification/reconditioning or re-enactment thereof and the rules made there under, and for the time being in forces shall apply to the arbitration proceeding under this clause.

It is a term of the contract that the party invoking arbitration shall specify the dispute or disputes to be referred to arbitration under this clause together with the amount or amount claimed in respect of such dispute. The arbitrator (s) may from time to time will consent of the parties enlarge the time for making and publishing the award.

The work under the contract shall if reasonably possible continue during the arbitration proceedings and on payment due or payable, to the contractor shall be with held on account of such proceedings. The arbitrator shall be deemed to have entered on the reference on the date the issues notify to both the parties fixing the date of the first hearing. The arbitrator shall give a separate award in respect of such dispute or difference refereed to him. The venue of arbitration shall be such place as may be fixed by the arbitrator in his sole discretion. The award of the arbitration shall be final, and binding on all parties to this contract.

**15. JURISDICTION:** The jurisdiction in all cases shall be at Bhopal. Indian laws shall be applicable on all the statutory matters

**16. SECURITY DEPOSIT:**

a) The contractor shall permit the company at the time of making any payment to him for the work done under the contract to deduct such amount as will along with the E/M already deposited amount as per the prevailing rules of BHEL (The max. amount of the security deposit will be at the rate of 5%).

b) Refund of Security Deposit - The security deposit refundable to the contractor worked out on the basis of the value of work completed shall be refunded to the contractor on the Engineer-in-charge certifying in writing that the work has been completed as per work order against the submission of B/G as stated at payment terms for final stage.

c) On expiry of the guarantee period of one year on Two-shift basis from the date of successful handing over of reconditioned and retrofitted machine, the BG will be returned to the contractor on his demand by BHEL after satisfying with the performance of the machine.

**17. PRICE BID:**

It should include the total price of the offered package.

The Price Bid should contain only the price as indicated above. All the scope and terms and conditions should be indicated in the Techno-commercial separately.

Material cost and the labour cost should be quoted separately indicating taxes, duties & other charges separately.

The price of all the major items should be indicated separately.

Both the bids should be submitted separately in separate envelopes. The envelopes should be marked. To enable us to avail MODVAT credit for excise duty, all the relevant papers are to be submitted to BHEL.

The contractor would submit excise invoice cum gate pass in duplicate in the name of BHEL Bhopal to CRX Division at BHEL Bhopal. CRX Division would forward these documents to excise cell after affixing the consignment note number in the same.

**18. SHORT CLOSURE:**

“BHEL” reserves the right to accept the offer in Part or in “Full”, cancel the tender enquiry or short close the contract without assigning any reason”.

**19. RISK & COST :**

“If the work is not executed or partly executed within the agreed execution period. BHEL reserves the right to cancel the order and get the work executed from alternate source(s) at the risk and cost of the contractor. In such an event, it shall be obligatory on the part of contractor to make good any loss suffered by BHEL”

**20. FORCE MAJEURE:**

“Notwithstanding anything contained in the contract, neither BHEL nor the contractor shall be held responsible for total or partial non-execution of any of the contractual obligations, should the obligation become unreasonably onerous or impossible due to occurrence of a ‘Force Majeure’ which directly affects the obligations to be performed by the BHEL or the contractor; Such events include war, military operations of any nature, blockages, revolutions, insurrections, riots, civil commotions, insurgency, sabotage, act of public enemy, fires, explosion, epidemics, quarantine restrictions, floods, earthquake, or act of God, restriction by Govt. authorities; over which the BHEL or the contractor has no control.

The party claiming to be affected by force majeure shall notify the other party in writing without delay, within two weeks from the occurrence of such situation and on the cessation thereof. Extension of time sought by the contractor along with supporting evidence and so granted by BHEL for the work affected, if any, shall not be construed as waiver in respect of remaining execution. Rescheduling of execution on account of force majeure conditions, if so agreed by BHEL, will not entail the contractor to claim any increase in the price on whatsoever account.

Notwithstanding above provisions, BHEL shall reserve the right to cancel the contract, wholly or partly, in order to meet the overall project schedule and make alternative arrangements. If deems necessary, BHEL may takeover partly processed work at a mutually agreed price”



## **ANNEXURE-3**

### **INSTRUCTIONS TO CONTRACTOR FOR STATUTORY COMPLIANCES FOR JOB / WORK / LABOUR CONTRACT (Ref: - 10/99/PER (Fy) CLC)**

#### **1.0 Statutory registrations and clearances**

Contractor shall commence the work only after obtaining valid Labour Licence, independent Provident fund no., ESI Registration no., Income tax no. and Clearance Certificate in respect of Provident Fund, ESI and Income Tax from respective enforcement authorities.

#### **2.0 Appointment and termination of workers by contractor**

2.1 Contractor shall make appointment of his Employees only for a specific period and same shall be recorded in employment card. Appointment letter should clearly state that the services shall stand terminated on expiry of contract period or completion of the work.

2.2 Contractor shall have the sole discretion to decide on employing, rewarding or terminating the services etc. of his employees. However, his employees must possess such qualifications, experience, age requirement and medical and physical standards as required for the work awarded to the contractor.

2.3 In case of termination of services of any employee of contractor, the contractor will ensure that wage payment and other dues to his employee is made within 48 hours of termination of services of such employee. While termination of the services of any of his employee, the contractor will discharge all formalities as per the Industrial Dispute Act such as payment of retrenchment compensation and gratuity as due and admissible.

#### **3.0 Leave with wages**

3.1 Contractor shall allow Annual leave with wages as under

3.2 One-day leave for every 20 days of work performed during preceding calendar year after completing 240 days of service in preceding calendar year.

3.3 Un-availed leave can be carried forward to next Calendar year but carry forward should not exceed 30 days. Leave should not be taken more than 3 times in a Calendar year and for which application before 15 days should be made.

3.4 In addition, 7 festival and 3 National Holidays and 7 days Casual leave shall also be availed by employee of contractor during the Calendar year.

3.5 Contractor shall maintain leave record register.

#### **4.0 Attendance & Identification Card**

4.1 Contractor has to provide attendance card to his employee who will obtain endorsement of time of arrival at the work place and time of leaving the work place. The contractor shall maintain Attendance card which will be retained by his employee and will be handed over to the contractor after the end of each wage month.

4.2 Contractor shall provide to each of his employee an identification card which shall have his photograph verified by contractor, his name, place of work and name of the contractor.

#### **5.0 Statutory obligations**

5.1 Contractor shall engage only adult workers who have attained the age of 18 years and female workers shall not be employed between 7 PM to 6 Am on all days including Sundays and Holidays.

5.2 Contractor shall observe local laws. As far as possible unskilled workers shall be engaged from the local areas only in which work is being executed.

5.3 Contractor shall not employ any inter-state migrant workmen as defined in the Inter-State Migrant Workmen Act in the establishment except by prior permission of the Principal Employer.

5.4 Contractor shall observe Provisions of the Factories Act in respect of working hours, holidays, rest intervals, leave and overtime to his employee. No work shall be done on second/third shift, overtime, Sundays or on other declared holidays without written permission.

5.5 In case a contractor employs women as his employee, he will discharge his obligation under law in respect of such women workers such as prohibition of engaging them during night-hours, prohibition of employing them for more than 9 hours per day, provision of crèche facility, grant of maternity leave as per rules etc.

5.6 Payment of bonus under the Payment of Bonus Act, Payment of gratuity under the payment of Gratuity Act, will be the sole responsibility of the contractor.

## **6.0 PF & ESI Contribution & Returns**

6.1 Contractor shall remit Provident fund contribution of employee's together with Employer's within 15 days from the date of disbursement of wages to his employee. Monthly and annual returns in 3A & 6A prescribed forms should be submitted to the RPFC office, Bhopal. Present rate of employer share of PF is 13.61% and employee share is 12%.

6.2 Contractor shall remit ESI contributions of employee's together with employer's within 21 days of the last day of the calendar month in which the contribution falls due and shall send a return of contribution in Form 6 before 12<sup>th</sup> May and 12<sup>th</sup> November of every year along with receipted challans to ESI office. Present rate of employer share is ESI 4.75% and employee is 1.75%

6.3 Contractor shall submit a copy of latest PF& ESI returns and inspection reports from statutory authorities along with a copy of challans for having deposited PF & ESI contributions every month.

6.4 Contractor shall submit following Certificate for each contract separately.

"It is certified that PF challans of the amount ----- pertains to my workers whose names are appearing in the wage sheet of the month ----- and these workers are engaged in -----  
--- (type of work) against work order no. ----- in ----- (name of department).

Signature of Contractor

Note: - Similar certificate shall be submitted for ESI also.

6.5 Contractor shall fully comply with all other formalities as per the PF & ESI statutory provisions and submit a copy of the same for replying to statutory authorities in case of any complaints.

## **7.0 Contribution M.P. Welfare Board**

7.1 Contractor should ensure payment of contribution as per section 9 of "The M.P. Shram Kalyan Nidhi Adhiniyam 1982. Both employee's contribution and employer's contribution should be paid every year before 15<sup>th</sup> day of July and 15<sup>th</sup> day of January.

7.2 Presently, if the name of employee stands on the register of an establishment on 30<sup>th</sup> June and 31<sup>st</sup> December respectively, the amount of contribution payable every six month by every employee shall be ONE RUPEES only and by an employer shall be THREE RUPEES payable every six months. The contribution payable by employer every six month shall not be less than Rs. 150/-

## **8.0 Medical care in case of accident**

8.1 It is the responsibility of contractor to undertake necessary care and make arrangement for transportation and the treatment of his employee at ESI Hospital. Medical treatment in emergency cases on written request of contractor shall be done in Kasturba Hospital for which the charges should be deposited in advance or BHEL is authorised to deduct the medical expenses from the bills of the Contractor. BHEL will have the right to deduct the medical expenses from the bills of the contractor.

8.2 Contractor should assist and guide his employees for claiming lawful benefits from ESI.

## **9.0 Supervision**

Contractor shall employ adequate number of competent and qualified supervisors to supervise and control his employee at the work spot during execution of work for effective supervision. They will also identify their employee and regulate entry at gate at the time of entering and leaving the factory. Name and address of the Supervisor shall be submitted to the concerned department by the contractor.

## **10.0 Payment of wages**

10.1 Payment shall be made by the contractor to his employees as per their category & nature of work, which shall not be less than the rates declared from time to time under Minimum Wages Act, by Govt. of M.P.

10.2 Over and above the daily wage rate, payment shall be made for leave with wages.

10.3 Contractor shall be responsible for making payment of wages before expiry of 7 days from the last day of wage period and to ensure disbursement of wages in the presence of the authorised representative of contract operating division who shall record under his signature at the end of entries in the Register of wages in the following form

“Certified that the amount shown in column no. .... has been paid to the workers concerned in my presence on date ..... at time.....”.

Signature of representative

10.4 Contractor shall distribute wage slip to his employee one day before the last day of the month.

10.5 Contractor shall furnish a copy of the Wage Bills after disbursement of wage to his employee duly witnessed by the nominated representative of the contract operating division. The contractor must note that this copy will be used by BHEL to make payment of wages for the subsequent month in the event of failure on the part of contractor to make payment of wage within the prescribed period. If payment of wage through this method in the absence of any other available document results in excess payment than what is due and admissible to the employee of the contractor, the responsibility for such excess payment will be that of the contractor.

## **11.0 Safety and disciplinary action**

11.1 Contractor shall ensure that his employee does not indulge in any unsafe or hazardous practices. They use safety equipment such as safety belts, safety shoes, goggles, helmet and masks where use of such equipment is required in day-to-day operations. All such safety gadgets will be provided by the contractor failing which the contract operating division will provide safety equipment to such employee of the contractor at the cost of the contractor to be recovered from his bills. Contractor shall fully indemnify BHEL against any claim for damages for injury to person or property resulting from such accidents.

11.2 Contractor shall take prompt disciplinary action as per “Model Standing Orders “on the advice of Contracting officer.

## **12.0 Records & information to be furnished by contractor**

12.1 Contractor shall maintain neatly, completely and legibly registers, records, reports and returns for inspection by various authorities at short notice.

12.2 Contractor shall submit the details of work awarded to him by other departments indicating work order No., nature of work and maximum number of workers employed etc.

12.3 Contractor shall provide information as required in respect of all of his employees employed by him to enable the Contract operating division to monitor compliance of P.F./ESI and also to enable him to furnish information to Ministry and Labour department as may be required.

12.4 Contractor shall provide full particulars of each employee employed by him before start of the work and from time to time. He will also endorse a copy of returns furnished by him to the Labour Department under the Contract Labour (Regulation and Abolition) Act 1970.

### **13.0 Security deposit & Indemnity Bond**

13.1 Contractor shall make Security Deposit to use this security amount to discharge any legal obligations otherwise cast on the contractor under the Contract Labour (Regulations and Abolition) Act, The Factories Act, Workmen Compensation Act, The Minimum Wages Act, The Payment of Wages Act, The Interstate Migrant Workmen Act or any other law for the time being in force. Security money shall remain upto 3 months after termination/ completion of contract. No interest shall be payable on such Security deposit.

13.2 Notwithstanding the above, in case of any financial loss incurred by company on account of contravention of Provident fund, ESI, Minimum Wages Act or any other act, rule and regulations the contractor shall be responsible to make good the loss incurred by the company.

13.3 The contractor will not engage any sub-contractor without a specific permission in writing and where so permitted he will furnish an Indemnity Bond. Indemnifying the BHEL from any actions of his sub-contractor(s) which may be involving extra financial liabilities.

### **14.0 Abandoning the work**

In the event of contractor abandoning the work or BHEL revoking the contract, BHEL shall deserve the right to get the unfinished work completed at the contractor's risk and cost.

### **15.0 Termination of Contract**

Contract awarded is liable for termination for any contravention of statutory provisions or any other reasons without assigning any explanation or notice to the contractor.

### **16.0 Compliance of Statutory provisions**

16.1 Contractor shall fully comply with the provisions of the following enactments and other enactments as applicable for such contracts.

Contract Labour (R&A) Act 1970 and rules 1971.  
Payment of Wages Act.  
Minimum Wages act 1948, M.P. Rules 1958  
Employees State Insurance Act 1948, Rules and regulations 1950  
Employees Provident Fund Act 1952 and Pension Scheme 1995  
Workmen's Compensation Act 1923  
M.P. Industrial Relations Act 1960.  
Factory Act 1948  
Maternity Benefit Act 1961  
Equal Emolument Act 1976  
M.P.Shram Kalyan Nidhi Adhiniyam 1982  
Payment of Bonus Act 1963  
Payment of Gratuity Act 1971  
Inter State Migrant Act

## **GUIDE LINES IN CASE OF ACCIDENT**

### **A. Steps to be followed:**

- 1) Locate the contractor & also inform CLC with the full details of the injured person and accident.
- 2) Take the injured person immediately hospital for first aid to.
  - A) ESI Hospital
  - B) OHS of BHEL
- 3) The contractor should report the accident in form 16 to Manager (ESI), Sonagiri, Bhopal within 24 hours of accident.
- 4) After First aid treatment, the contractor should immediately take his employee for further treatment & admission at ESI Hospital, if required. In case of hospitalisation in Kasturba Hospital, the contractor shall deposit necessary amount in the hospital, for getting the treatment & get his employee discharged as soon as possible for further treatment in ESI hospital.
- 5) Contractor should inform the concern department & contract labour cell in case where absence is more then 48 hours.
- 6) Contractor should inform the date of joining to the CLC for informing the statutory authority.

### **B) Benefits from ESI as per ESI Act**

- 1) Disablement benefits at @ 70% of wages for his absence from work, if the injured person avails the medical treatment in ESI hospital.
- 2) In case of partial / permanent disablement the compensation as judged by Medical Board will be paid by ESI for life, proportionate to the loss of earning capacity.

As the disablement benefit / sickness benefit is given by ESI, it is advisable that the contractor should help the injured employee to take treatment in ESI Hospital only and also for availing all statutory benefits.

### **C) Reporting of Accident by concerned department**

Procedure as being followed for regular employee in BHEL Bhopal should be followed for employees of the contractor also.

## **COMPENSATION IN CASES OF DEATH/ PERMANENT INCAPACITATION:-**

Compensation in cases of death/permanent incapacitation of person due to unintended/unforeseen occurrences during the manufacturing/ operation and works incidental thereto at BHEL factories/ offices and precincts thereof, project execution, erection and commissioning, services, repairs and maintenance, trouble shooting, serving, overhaul, renovation and retrofitting, trial operation, performance guarantee testing undertaken by the company or during any works /during working at BHEL Units! Offices/ townships and premises! Project Sites.

BHEL shall recover the amount of compensation paid to victim(s) by BHEL towards loss of life/ permanent disability due to an accident which is attributable to the negligence of contractor, agency or firm or any of its employees as detailed below.

**Victim:** Any person who suffers permanent disable mentor dies in an accident as defined below.

**Accident:** Any death or permanent disability resulting solely and directly from any unintended and unforeseen injurious occurrence caused during the manufacturing/operation and works incidental thereto at BHEL factories/ offices and precincts thereof, project execution, erection and commissioning, services, repairs and maintenance, trouble shooting, serving, overhaul, renovation and retrofitting, trial operation, performance guarantee testing undertaken by the company or during any works /during working at BHEI/Units/Offices/townships and premises/Project Sites.

Compensation in respect of each of the victims:-

In the event of death or permanent disability resulting from Loss of both limbs: Rs. 10,00,000/- (Rs. Ten Lakh)

In the event of other permanent disability. Rs.7,00.000/- (Rs. Seven Lakh)

Permanent Disablement: A disablement that is classified as a permanent total disablement under the provision to Section 2 (I) of the Employee's Compensation Act, 1923."

Signature of Contractor

## **ANNEXURE- 4**

### **GST COMPLIANCE**

1. Wherever bidders are required to supply services at project, site party has to submit GST registration no. of state in which project site is located along with copy of registration certificate at the time of submission of Bid. In case the same is not available at the time of submission of bid, the contractor has to give an undertaking that the same will be arranged before award of work order.
2. HSN Code/SAC, rate of the tax under GST and applicable GST (IGST, CGST/SGST/UTGST) and GSTIN shall be clearly mentioned by the Bidder.
3. GST portion of the invoice shall be released only upon:-
  - 3.1 All invoices raised by contractor/Vendor must be GST Compliant Tax invoices as per GST invoice rules.
  - 3.2 Contractor declaring such invoice in his GSTR-1 or any modified return as notified by government
  - 3.3 Receipt of goods/service and Tax Invoice by BHEL and
  - 3.4 Confirmation of payment of GST thereon by contractor on GSTN portal.
  - 3.5 Alternatively , contractor has to submit BG of appropriate value which shall be valid at least one month after the confirmation of date of payment of GST by contractor on GSTN portal and receipt of TAX invoice and receipt of Services, Whichever is later. Contractor has to give an undertaking in this regards
  - 3.6 Contractor has to give an undertaking to BHEL that they have declared invoice in his return and paying GST within timeline prescribed for availing ITC by BHEL.

Payment to contractor for GST portion will be released only after compliance of above activity and on availment of ITC by BHEL.

4. Bidder has to ensure and give an undertaking that in case tax credit is delayed/ denied to BHEL due to non/delayed receipt of service/goods and /or tax invoice or expiry of the timeline prescribed in tax laws for availing such ITC, or any other reasons not attributable to BHEL, tax amount shall be recoverable from the contractor along with interest levied/ leviable on BHEL.
5. Bidder has to give an undertaking that in case he delays in declaring such invoice in his return and GST credit availed by BHEL is denied or reversed subsequently as per GST Law, GST amount paid by BHEL towards such ITC reversal as per GST Law shall be recoverable from them along with interest levied/ leviable from BHEL. Hence payment of GST portion along with interest portion will be payable only after the last date/chance for availing ITC.

6. Contractor has to submit monthly reconciliation statement to ensure minimum mismatches and avoid delay in availment of ITC by BHEL.

#### **7. Reverse Charge under GST**

- 7.1 In respect of goods, reverse charge liability to pay GST shall arise at the earliest of date of receipt of goods or date of payment to supplier or date of immediately following 30 days from the date of issue of invoice by the supplier.
- 7.2 In respect of services, reverse charge liability shall arise at the earliest of date of payment to service provider or 60 days from the date of issue of invoice by service provider.
- 7.3 Any GST liability arising on BHEL under reverse charge before actual receipt of goods and/or invoice thereof would be subject to recovery of interest leviable for the period between the date of such liability and actual date of eligibility of ITC based on receipt of goods, receipt of invoices and other condition specified in GST Law.

#### **ANTI-PROFITEERING**

8. Bidder has to give an undertaking that any reduction in the rate of GST and/or benefits of ITC under the provision of GST. Law shall be passed on to BHEL by way to commensurate reduction in price of goods/services.

This may be due to

- Any reduction in the rate of GST or the benefits of ITC accrue to vendor/contractor.  
Availability of ITC for interstate supplies under GST which are not available in existing law (like CST) or ITC reversal under the existing law for stock transfer or on account of common credit etc.
- Any element of taxes like Excise, service Tax, VAT, CST, Entry Tax etc. embedded into price of goods or service under contract/work order/PO placed under the existing law.
- The above shall be taken into account for working out the benefits to be passed on to BHEL.
- A self-certified detailed declaration on anti-profiteering shall be submitted by bidder along with invoice in the prescribed format.

9. Penalty /LD shall be charged as per the NIT condition. GST applicable on the same shall be charged extra.

10. GSTN, SAC and rate of tax may be confirmed.



## ANNEXURE – 6 PRICE BID FORMAT

NIT: - WE&CS/CNC/2020/EN01

Date: -

### “RECONDITIONING AND UPGRADATION OF CNC SYSTEM ON 3D-COORDINATE MEASURING MACHINE 14/A/2093 OF TGM.”

#### 1. NATURE OF WORK: -

To accomplish all the activities mentioned in the NIT as per the scope of work single price by contractor is as follows:-

S.No	Description	Rate in Rupees
1	Material cost	
2	Installation (Labour) cost	
	Total ( Word & Figure)	

#### 2. DISCREPANCY IN WORDS AND FIGURES:

- a. If, in the price structure quoted for the required goods/ services / works, there is discrepancy between the unit price and the total price (Which is obtained by multiplying the unit price by the quantity), The unit price shall be prevail and the total price corrected accordingly, unless in the opinion of the purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the total price is quoted shall govern and the unit price corrected accordingly.
- b. If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
- c. If there is a discrepancy between words and figures, the amount in word shall be prevail, unless the amount expressed in word is related to an arithmetic error, in which case the amount in figures shall prevail subject of (a) and (b) above.
- d. If there is such discrepancy in an offer the same shall be conveyed to the bidder with target date upto which the bidder has send his acceptance on the above lines and if the bidder does not agreed to the decision of the purchaser, the bid is liable to be

#### Notes:-

1. Strictly avoid over writing, cutting or unclear writing.
2. This rate will be taken up as final rate including of PF, ESI, all other statutory Levies, but Excluding GST.
3. The bidder shall follow BHEL Terms and Condition.
4. The GST shall be paid extra, as per the Govt. rules, as applicable.
5. Evaluation of L1 bidder shall be done on overall cost to BHEL.
6. The price bid submitted in any other format is liable to be rejected.
7. Any price bid lower than the statutory minimum daily wages (including PF, ESI, Bonus and Welfare fund) is liable to be rejected.

# ANNEXURE-5

## SPECIFICATION OF WORK

<b><u>RECONDITIONING AND UPGRADATION OF CNC SYSTEM ON 3D-COORDINATE MEASURING MACHINE</u></b> <b><u>14/A/2093 OF TGM</u></b>	
<b>SNO</b>	<b>DESCRIPTION</b>
<b>A</b>	<b>MACHINE DESCRIPTION</b>
<b>A.1</b>	Make: <b>CARL ZEISS, GERMANY</b>
<b>A.2</b>	Type: <b>3D COORDINATE UNIVERSAL MEASURING MACHINE , MODEL : UMC 850</b>
<b>A.3</b>	X-axis traverse: <b>850mm</b>
<b>A.4</b>	Y-axis Traverse: <b>1800mm</b>
<b>A.5</b>	Z-axis Traverse: <b>600 mm</b>
<b>A.6</b>	Resolution: <b>0.0002 mm</b>
<b>A.7</b>	Uncertainty of Length Measurement $U_{95} < \text{or} = (2.5 + L/250)$ <b>Microns, L= measured length</b>
<b>A.8</b>	Probing System: <b>Universal 3D</b> (For Static Transmission of Measured Value and scanning operation)
<b>A.9</b>	DC Servo motor for X, Y & Z axes: <b>CEM DC Motor</b>
<b>A.10</b>	Measuring Force (Selectable): <b>0.1 / 0.2 / 0.4 N</b>
<b>A.11</b>	Permissible Workpiece Weight: <b>2100 KG</b>
<b>A.12</b>	Software: <b>Universal Measuring Software , Curve Measuring Software &amp; Gear Measuring Software</b>
<b>A.13</b>	Accessories: <b>PC HP9836, Probe Kit</b>
<b>B</b>	<b>REQUIREMENTS:</b>
<b>B.1</b>	Machine should be completely reconditioned & upgraded with latest CNC system with Controller Workstation PC & softwares with antivirus.
<b>B.2</b>	The system should be capable of taking measurements in point to point as well as in continuous scanning mode with same Probe Head
<b>B.3</b>	The upgraded machine should be capable of processing all the geometric measured parameters including Nominal/Actual comparison and complete evaluation of all form and position errors in accordance with ISO 10360-2 / ISO 1101. viz : Straightness, Perpendicularity, Run outs, Concentricity, Roundness, Cylindricity, Circularity etc etc.

SNO	DESCRIPTION
B.4	For each individual job, the machine should generate a customised printout to BHEL requirement, detailing all actual dimensions as inspected. Dimensions deviating from the laid out tolerances (facility for tolerance band) are to be indicated specifically in RED, with magnitude of deviations, including tolerance band utilization.
B.5	Geometrical accuracies of the existing machine are to be restored within the admissible values as specified by the OEM as per clause K.
B.6	A CNC Controller with PLC should be able to carry out all the axes movements & auxiliary functions of the machine.
B.7	All Servo Motors along with Servo Drives are to be replaced with new ones.
B.8	Existing Probing head is to be replaced with new one.
B.9	Complete positional feedback system must be replaced with new one.
B.10	Temperature Correction:- Suitable/Accurate integrated Temperature sensors to be provided for machine temperature and job temperature for applying temperature correction. Suitable software programme should be available as standard.
B.11	Complete air bearing set of UMC 850 S.
B.12	X,Y & Z axes covers to be replaced.
<b>C</b>	<b>SCOPE OF SUPPLY:</b>
C.1	A 3D CMM CNC Controller with PLC, ideally suitable for the machine and applications should be supplied.
C.2	Servo Motors with matching Servo Drives of suitable rating, for X, Y & Z axes alongwith power and signal cables.
C.3	Linear scales of Heidenhain/Renishaw/Zeiss make and of suitable lengths along with scanning heads and interface cables, should be provided for X, Y, & Z axes position feedbacks.
C.4	PC based Workstation with Laser network Printer. Latest hardware and firmware at the time of delivery should be supplied.
C.5	High precision 3D Scanning Probe head along with fittings and interface cable.
C.6	Portable operating panel with joysticks and function key should be provided for motorised and manual movement in all axes and full CNC programmed measuring traverse for automatic measurement. The operating panel should have all the function for operation of machine.Feature for speed control during the CNC and joystick mode should be provided .
C.7	Application Software for Geometric elements, Complicated elements, Element links, Form & Position measurements, Measurement of Conic section, Alignment facility, Self Teaching facility, Universal curve measuring system & Statistics clause F.4 complete.
C.8	Ceramic Calibration sphere with sphere mounting plate should be provided for calibration of probe tips along with 1 Master probe for calibration purpose in separate box.

SNO	DESCRIPTION
C.9	On-line UPS (of internationally reputed make) with 20 Minutes backup should be provided.
C.10	Air bearings for all the axes suitable to existing 3D CMM Machine.
C.11	Cable ducts, conduits and cable drag chains of reputed make should provided as per requirement, for routing of cables.
C.12	All the pneumatic pipes, hoses & valves are to be replaced with new compatible ones.
C.13	Bellow covers of X,Y & Z axes to be replaced with new ones.
C.14	All the limit switches, timing belts, gauges are to be replaced.
C.15	All the Mechanical & Electrical items required for reconditioning and upgradation of the machine shall be provided by the vendor
C.16	All electrical wirings are to be replaced with new ones.
C.17	<b>DOCUMENTATION :-</b> consisting of
C.17.1	Electrical circuit diagram – 3 sets.
C.17.2	PLC printout in ladder form with symbols & comments in English – 3 sets.
C.17.3	O&M manuals (hard copy) for CNC, PLC, Drives & Measuring systems – 3 sets.
C.17.4	Programming manual (hard copy) for CNC system – 3 sets.
C.17.5	Machine data (NC, PLC, Setting & Alarm texts), Drives data & PLC program (soft copy) – 3 sets.
C.17.6	O&M manual for all mechanical BOIs – 3 sets.
C.17.7	Mechanical drawings of parts which are replaced/modified – 3 sets.
C.17.8	Spare part list containing mechanical, pneumatic and electrical parts – 3 sets.
C.17.9	DVD containing soft copies of all documents mentioned from C17.1 to C17.8 - 3 sets.
C.17.10	Complete Ghost backup of the machine after successful commissioning.
C.17.11	Application Software Hardcopy (3 Sets) and softcopy (1 sets) to be provided.
<b>D</b>	<b>SCOPE OF WORK:</b>
<b>D.1</b>	<b>Mechanical reconditioning:</b> The machine should be completely reconditioned & modified to suit the fitment of CNC system on the machine and thereafter achieve positioning accuracies & repeatability as mentioned in Clause K. Emphasis is to be given on the following works while doing the reconditioning:
D.1.1	The mechanical accuracies of the slides X,Y & Z axes are to be restored .
D.1.2	Present feed traverse arrangements of the machine are to be reconditioned.
D.1.3	Installation of new air bearings of X,Y & Z axes slides.

SNO	DESCRIPTION
D.1.4	Installation of the replacement feed motors for all linear axes of the machine.
D.1.5	Fitment/ installation of Pneumatic pipes, Valves, Timing belt of motors, Bellow Cover of slides and Safety/ protection covers.
D.1.6	Adjustments/Levelling of all axes and granite bed leveling and active dampers checking to achieve the desired accuracies as per OEM specifications.
D.1.7	A relevant test piece is to be checked for proving out the accuracy of the machine at BHEL, Bhopal.
<b>D.2</b>	<b>CNC RETROFIT:</b>
D.2.1	Installation of new CNC controller & electrical cabinet(s).
D.2.2	Installation of new operator pendant.
D.2.3	Installation of Workstation PC & Laser network printer
D.2.4	Interfacing & commissioning of the CNC, PLC, & Feed drives systems
D.2.5	Installation of the New linear scales with scanner for X, Y & Z axes.
D.2.6	Prove-out of the main functions axes.
D.2.7	Prove-out of the alarms and message prompts.
D.2.8	<p><b>Prove-out of the checking of components with part program in automatic mode :-</b>Vendor shall be fully responsible for prove out of acceptance test of the machine with calibrated GAUGES / MASTER as per National/ international norms. Vendor should also prove machine capability . vendor shall be responsible to prove out as per specific BHEL drawings and its components in CNC part programming for automatic measurements at BHEL works. proveout components shall be provided by BHEL. Vendor shall be fully responsible for dimensional measurements and related form &amp; position tolerances of prove out components as per drawing and other requirements specified by BHEL to the full satisfaction of BHEL. Clarifications, if any required by vendor, regarding accuracy requirements of the proveout components, whether specified or not, should be discussed during Retrofitting of machine at BHEL works.</p>
<b>E</b>	<b>CNC FEATURES:</b>
	<b>The CNC controller should be offered with following features:</b>
E.1	Minimum 3 axes continuous path control system for 3D Universal measuring operations.
E.2	Mode selection through a mode selector switch/keys.
E.3	Colour 21” TFT monitor for display or latest display approved by BHEL
E.4	Graphic simulation.
E.5	Display of NC & PLC Alarms.

SNO	DESCRIPTION
E.6	Full alphanumeric key board for input of part programs.
E.7	USB / RS 232 C serial port for communication for data input/output .
E.8	Background editing of programs.
E.9	Part program renaming & copying facility.
E.10	Kit Measuring system.
<b>F</b>	<b>OPERATIONAL FEATURES</b>
<b>F.1</b>	<b>The stand-alone pendent /control desk with the CNC operator panel should have the following operational features either on the Machine Control Panel (MCP) or provided additionally.</b>
F.1.1	Axes selection keys X,Y & Z,
F.1.2	Directional keys + & - for axis movement in jog
F.1.3	Rapid traverse key.
F.1.4	Emergency stop Push Button.
F.1.5	Reset facility.
F.1.6	Optional program stop toggle switch.
F.1.7	Hand Held Unit Selection key
<b>F.2</b>	<b>OPERATING PANEL (JOYSTICK CONTROL UNIT):</b>
<b>F.2.1</b>	Portable operating panel with 2 individual joysticks or single lever Joystick and function key should be provided for motorised movement in all axes. The Operating Panel should have LCD/TFT screen with proper illumination for showing important functions/Dialogues etc
F.2.2	Regulator knob for speed control of the axes (both for CNC and Joystick mode) should be provided.
F.2.3	Directional keys + & - for axis movement in jog
F.2.4	Emergency Stop push button should be located at such a position that it is easily accessible in case of emergency conditions.
F.2.5	Prob head Clamp / Unclamp switch in Jog Mode.
<b>F.3</b>	<b>WORKSTATION BASED COMPUTER SYSTEM</b>

SNO	DESCRIPTION
F.3.1	Computer should be with the latest hardware and Windows based Operating system menu driven with user friendly with latest version with updates.Windows10 based software suitable for data transfer to CAD/CAM software features prevalent at the time of delivery.
F.3.2	Processor: Intel Xeon W-2195 or higher
F.3.3	RAM: ≥ 8GB
F.3.4	Hard disk: ≥ 2TB SATA (Preferably SSD)
F.3.5	Optical Drive: DVD RW Combo
F.3.6	USB Ports
F.3.7	PCI Slot:
F.3.8	PCIe X1 slot:
F.3.9	Graphic card 4GB
F.3.10	10/100 PCI Lan Card : 1no.
F.3.11	Full HD, LED Backlit Computer Monitor, Screen Size ≥ 21.5 inch. Make: HP, Dell or Lenovo only.
F.3.12	Windows 10 Professional 64 bit with lifetime license.
F.3.13	Norton/MaAfee Antivirus Software with 3 years subscription.
F.3.14	Printer: Laser Jet (Network Printer) of HP, Epson or Canon make only.
F.3.15	USB Keyboard, Optical scrolling mouse, speakers
F.3.16	Additional USB Hard disk: ≥ 2TB
F.3.17	Input power supply: 220 ±10 VAC, 50 Hz, Three pin Indian standard socket.
F.3.18	PC make and model must be specified (in details) in the bid
F.4	<b>APPLICATION SOFTWARE :</b> <b>CMM manufacturer/Supplier should have it's own application software to insure future upgradability of software at later stage. Universal geometric measuring program for both manual and CNC operation, including component misalignment compensation in plane and space form and position tolerance calculations, Maximum Material Condition (MMC) and least provision, self teach capability.</b> <b>Application Software should have the following features</b>
F.4.1	<b>Operating Modes</b>
F.4.1.1	Direct joystick measurement.

SNO	DESCRIPTION
F.4.1.2	Self teach programming.
F.4.1.3	3D CNC programming.
F.4.1.4	Offline programming with CAD model preparation of part programmng directly on work piece as well as based on CAD model. Linking of different elements should be possible, Different evaluation such as distance, intersection points and conic sections segmental radiues measurement etc. should be possible,Possiblity to import CAD model for making off-line programming.
F.4.1.5	Scanning Mode: Form Measurement, Roundness, Circularity, Concentricity, Perpendicularity & Parallelism etc.
F.4.2	<b>Intelligent Measurement:</b> Import of CAD file with Geometric Dimensions and Tolerance (GD&T) data for measurement and programming.
F.4.3	<b>Graphical programming</b>
F.4.3.1	Inspection programs to be created from CAD data.
F.4.3.2	3D solid model part and fixture visualization.
F.4.4	<p>i)Comprehensive software for 2D &amp; 3D profile/curve analysis package with visual representation of scanned profile, profile values at required station, actual to nominal deviation, best fit etc. Digitizing of 2D and 3D curves. Measurement of 2D Curves &amp; 3D Curves against nominal data. The nominal data of the curve can be input manually by keying in the data from the table given in the drawing or from the CAD files. Then the measurement is done against this nominal data.</p> <p>ii) Deviation calculation from nominal &amp; measured curves.(The difference between the nominal and the measured data in the normal vector direction is calculated as deviation.</p> <p>iii) Best fit calculation of measured curves and output of deviations .</p> <p>iv) Graphical presentation of nominal curves , measured curves &amp; deviations.</p>
F.4.5	Software to be compatible to latest version/ updates as per quotes of manufacturer/ supliers for retrofitting.
F.4.6	<b>Self Teaching Facility:</b>
F.4.6.1	Easy preparation of programs by the movement of probes.
F.4.6.2	The format of such programs are to be in simple English and easily understandable.
F.4.6.3	Editing facility includes adding, deleting, inserting and copying of program.
F.4.6.4	Preparation of subroutines (Macros), to be called in the main program or outside of the program.
F.4.6.5	Creation of loop in teach-in facility.
F.4.6.6	Creation of profile on the monitor and also the display of probing point.
F.4.6.7	Provision for offline programming.
F.4.6.8	Provision for instruction in the form of text in the program for operator guidance.



SNO	DESCRIPTION
F.4.7	<b>Measurement of basic Geometric elements:</b> Application software should support direct measurement of the features of: Point, Line, Plane, Circle, Cylinder, Cone, Sphere, Ellipse, Arc of a Circle ( Segmental radius program, Cone program etc., Graduated circles, Inscribe circles, Point of intersection and all geometrical features.
F.4.8	<b>2D Curve measurement:</b> During unknown 2D curve measurement, it should be possible to give coordinates of unknown curve at required grid section. The input would be a start point, direction point & end point in case of an open curve and start point & direction point in case of a closed curve (with probe compensation in curve true vector direction). Software should be capable of scanning the unknown curves at definite interval in point to point scanning mode and continuous scanning mode.
F.4.9	<b>3D Surface measurement:</b> Software should be capable of scanning any complex 3D surfaces. During unknown 3D surface measurement, coordinate points of unknown 3D surface to be given with true vector compensation of probe.
F.4.10	<b>Measurement of Complicated Element:</b> Thread measurements in self-centering double flank mode for pitch. Dia, effective diameter with permissible tolerance for Metric ISO thread, BSW thread, Buttress thread with corrective calculation with respect to effective dia and comparison against nominal dimensions.
F.4.11	<b>Element Links:</b> Distance, Connected lines, Perpendiculars (Line to point, Plane to point, Circle to point, Cylinder to point, & Cone to point), Angles, Connecting planes, Parallels, Intersection between plane & sphere, Plane and Cylinder and plane and cone and Symmetry etc.
F.4.12	<b>Measurement of Conic sections:</b> Plane to Sphere, Plane to Cylinder, Plane to Cone, Sphere to Sphere, Sphere to Cylinder, Sphere to Cone, Cylinder to Cone in Cartesian & Polar coordinate system etc.
F.4.13	<b>Alignment facility:</b> 3D alignment, Axis alignment, Datum, Rotation, Best fit alignment on given geometry, Mirror, Off-set, storing & recalling facility.
F.4.14	<b>Statistics:</b> Possible to mark features for statistical analysis with different colours on the monitor and same can be printed and plotted for display of Run chart, Histogram, X-bar charts, Probability charts & Pareto charts etc.
F.4.15	Software should have provision for plotting all geometric elements, showing actual and nominal size with form and positional tolerances.

SNO	DESCRIPTION
F.4.16	<b>Application software certification:</b> Application Software should have certification from International certifying agency like PTB, Germany / NIST, USA or equivalent (Software certification copy to be supplied).
F.4.17	<b>Licence for application software:</b> The software shall be supplied along with unconditional license to BHEL. In case of need in future, the license key should be provided free of cost.
F.4.18	Automatic generation of probe path and measuring parameters for CNC program from the CAD model.
F.4.19	CNC part program and parameters for CNC runs are automatically generated during manual Measurement. Hence part programming is simplified
F.4.20	Movement of the machine should be possible in work piece co-ordinate system.
F.4.21	Intermediate results should be possible with graphical assistance in CAD window
F.4.22	Machine should have online facility to apply temperature correction. A separate temperature sensor integrated with the machine should be available for measurement of part temperature .
F.4.23	Anything which is not covered in the spec should be mandatorily covered as a part of spec.by the vendors should be included in the offer..

F.5	<b>HIGH PRECISION 3D SCANNING PROBE HEAD:</b>
F.5.1	<b>Probe head should be of fixed type . It must have point to point and continuous scanning facility.Digital Scanning Probe head should have facility for measurements of deep bores, leading edge and small sharpe contours.Note:Provision of Probe head by vendors must meet the measurement requirement of BHEL components during measurements of jobs the long extensions with stylus provided on probe head must be balanced,it should not be unbalanced.</b>
F.5.2	Probe system should be able to perform rapid single point probing for all typical measurement tasks, self-centering and continuous high speed scanning for form and profile measurement.
F.5.3	Probe should be able to measure orthogonal to the contact surface in X, Y & Z directions simultaneously.
F.5.4	Measurement range: 1 mm in all X, Y and Z axes.
F.5.5	Measuring Direction: 6 Ways.
F.5.6	Stylus length holding capability: Vertical $\geq$ 150 mm, Horizontal $\geq$ 50 mm
F.5.7	Should be able to carry probe tips up to 500 gm / 800 mm extensions suitable as per manufacturer's supplied probe head.
F.5.8	The probe head sensor should have active weight balance mechanism for compensating the effect of different weights of probe configurations.

SNO	DESCRIPTION
F.5.9	Probe head mechanism should have excellent thermal stability and reliability
F.5.10	Minimum probe head defelection range should be 2.5 mm or more for collision protection
F.5.11	Smallest styli tip dia that can be connected to probe head is 0.3 mm, complete probe kit with various extensions upto 800mm length should be made available.
F.5.12	Measuring Force : 0.05 upto 1N . Operator should able to select the measuring force from computer depending on the requirement .
F.5.13	<p><b>Probe /styli kit for large compenents having minimum diameter probes as follows</b></p> <ol style="list-style-type: none"> <li>1) Probe dia 8 mm with minimum L=350 mm or more - 2 nos</li> <li>2) Probe dia 8 mm with minimum L=100 mm - 4 nos</li> <li>3) Probe dia 5 mm with minimum L=50 mm - 4 nos</li> <li>4) Probe dia 3 mm with minimum L=58 mm - 2 nos</li> <li>5) Probe dia 2.5 mm with minimum L=34 mm - 2 nos</li> <li>6) Probe dia 1 mm with minimum L=22.5 mm - 2 nos</li> <li>7) Probe dia 0.5 mm with minimum L=22 mm - 2 nos</li> <li>8) Probe dia 0.3 mm with minimum L=21.80 mm - 2 nos</li> <li>9) Star Probe ready made dia ruby 5 mm. - 1 nos</li> <li>10) Extension 10 mm / 20 mm / 100 mm / 400 mm - 2 Nos. each</li> <li>11) Special Extension 600 mm 2 pieces as Standard .</li> <li>12) Universal Joint for adjusting angle of of Probe Styli : 8 Nos.</li> </ol> <p><b>Note:</b> For making probe combinations suitable adaptors, Angle knuckle, cell centring adaptor detachable styli Holder 6 nos etc. of diffrent sizes should be provided to meet BHEL requirements.</p>
F.5.14	Offer should include 1 complete probe kit to BHEL requirements with magnetic plates/detachable styli holder along with multi sensor Rack/ if required automatic probe changer.
F.6	<b>Monitoring:</b>
F.6.1	Any abnormality on the machine should be indicated by indicating lamps along with buzz or beep, PLC alarms & message prompts.
F.6.2	PLC alarms & messages should include the device number and/or the operand.
F.6.3	Online editing facility of PLC program.
F.7	<b>Safety Features should include</b>
F.7.1	Fuses & Overloads of appropriate ratings for all primary & auxiliary circuits
F.7.2	Limit switches & sensors to avoid over-travel & collision of any part of the machine.

SNO	DESCRIPTION
F.7.3	Pressure switches to ensure proper functioning of pneumatic systems.
<b>G</b>	<b>MEASURING SYSTEM:</b>
G.1	Suitable linear measuring system of Heidenhain / Renishaw / Zeiss make should be provided for X, Y & Z axes .
G.2	The linear scales must have accuracies no lesser than 0.2 Micron per meter .
<b>H</b>	<b>FEED SYSTEM:</b>
H.1	At present feed system of the X,Y& Z axes are to be replaced with new one.
H.2	For the proposed CNC system the servo motors for X,Y & Z axes should be coupled directly or indirectly (through belt pulley arrangement) so as to generate sufficient torque for the required operation. The feed drive-motor system must have spares and service centre in India.
<b>I</b>	<b>ELECTRICAL SYSTEM:</b>
I.1	Electrical panel(s) along with switchgear, relay, contactors, overloads, fuses, MCB's should be suitably positioned and all compartments should be illuminated for ease of maintenance and proper airconditioning ensured for the cooling of the devices.
I.2	The switchgear (MCBs, Overloads, Contactors, Relays etc) should be of makes of international repute.
I.3	Electrical Cabinet & Operator Panel both of should be vermin proof and suitably air conditioned to maintain the internal temperature within 25 Degree Centigrade.
I.4	The operator's pendant/control desk, handheld pendants should be suitably positioned for ease of operation & maintenance.
I.5	All the panels, Junction boxes, devices should have nomenclatures and individual wires ferruled as per the electrical schematics.
I.6	The wiring of the entire machine should be replaced by new ones of adequate capacity and reputed make.
I.7	220VAC, 15A plug points should be provided in the Electrical Cabinet.
<b>J</b>	<b>GENERAL OPERATING CONDITIONS:</b>
J.1	Temperature: 5 Degree C to 50 degree C
J.2	Humidity: 0 - 95% RH
J.3	Power Supply: 415V +/-10%, 50 Hz +/- 3%, 3 Phase, 3wire without neutral.

SNO	DESCRIPTION
<b>K</b>	<b>ACCURACY AS PER OEM :</b>
<b>K.1</b>	Machine Accuracy for Linear, Volumetric & positioning accuracies & repeatability measurement as per As per ISO 10360 / VDI/VDE 2617 for 3D- CMM UMC 850 S should meet.
<b>K.2</b>	Measuring Uncertainty independent of the position of the spindle as per ISO 10360-2 Length Measuring Error: $MPE_E: 2.5 + L / 250$ microns or better (L in mm)
<b>K.3</b>	Probing Error: $MPE_P: 2.5$ micron or better
<b>K.4</b>	Scanning Probing Error with time: $MPE_{THP} : 4.5$ micron or better, Time T = 50 Sec.
<b>K.5</b>	Form measurement error (Roundness) $RONt(MZCI) = 2.5$ micron or better as per ISO/VDI/VDE
	<b>Note:-</b> 1) Length of the probe to measure the above measuring uncertainties to be specified. 2) All the accuracies of 3D CMM to be proved as per the governing standards ISO/VDI/VDE at BHEL. 3) The above mentioned accuracies should be checked with supplied probe heads & Probe kit. 4) The gauges/Artifact used for proving of accuracies should be traceable to national / International standard with calibration certificates (one cpy of calibration certificate should be provided to BHEL).
<b>L</b>	<b>COMPLETION:</b>
<b>L.1</b>	Upon completion of the scope of supply and scope of work, successful measuring of BHEL components shall constitute the FINAL HAND-OVER of the machine and completion of the job.
<b>M</b>	<b>PERIOD OF RETROFIT:</b>
<b>M.1</b>	20 (Twenty) Weeks maximum from the date of release of machine. Upon receipt of the Work Order, the party must plan out the procurement of materials, transportation (if required) and execution of the work with a detailed project schedule. The date of release of the machine will be decided on mutual consent of BHEL and the party.
<b>N</b>	<b>TRAINING:</b>
	The vendor should provide

SNO	DESCRIPTION
N.1	One week training for 2 machine operators at supplier's training centre in India or at BHEL, Bhopal during/after execution of the work.
N.2	One week training for 1 person in the programming aspects of CNC controller at Training centre.
N.3	One week training for 1 person in the operation & maintenance aspects of CNC controller, PLC and Drives at Training centre.
N.4	One week training for 2 persons on mechanical maintenance after execution of the work.
<b>O</b>	<b>GUARANTEE:</b>
O.1	Vendor shall stand guarantee for smooth functioning of the machine, including all the items and parts employed in retrofitting, for a period of <b>one year</b> from the date of FINAL HAND-OVER of the machine.
<b>P</b>	<b>PRE QUALIFYING CRITERIA:</b>
<b>P1</b>	<b>Technical Qualifying Requirement for MSME &amp; Non-MSME Vendors :</b>
P.1.1	<p>Only those vendors who have successfully Manufactured / Reconditioned &amp; Upgraded at least <b>two</b> CNC 3D CMM machine (As mentioned in Clause P.1.2) during last <b>5 years</b> as on date of opening of the Tender and the referred machine (As mentioned in Clause P.1.2) should be presently working satisfactorily at their customer works.</p> <p>The party must submit copy/copies of Purchase/Work Order(s) for award of work(s) and Performance Certificate(s) of the machine(s) from the customer's along with the offer. The performance certificate should have been issued within ONE year from the date of opening of tender.</p> <p>The vendor shall coordinate the visit of BHEL team (if required) for verification at the customer's works.</p>
P.1.2	<b>CNC 3D CO-ORDINATE MEASURING MACHINE</b> of Traveses of axes $X \geq 850\text{mm}$ , $Y \geq 1800\text{ mm}$ , $Z \geq 600\text{ mm}$
<b>P.2</b>	<b>Financial Qualifying Requirement for Non-MSME Vendors :</b>
P.2.1	The average <b>Annual Financial Turnover</b> during last 3 years ending 31.03.2019 should be at least <b>23.10 Lakhs</b> . Party must submit their last three years financial statement like Profit & Loss account, and Balance sheet as proof of average annual turnover.

SNO	DESCRIPTION
P.2.2	<p>The vendor should have experience of <b>successfully</b> executed similar works in any of the following ways:</p> <p>(a) <b>One</b> similar completed work of order value not less than <b>Rs. 61.60 Lakhs <u>OR</u></b></p> <p>(b) <b>Two</b> similar completed works of order value not less than <b>Rs. 38.50 Lakhs each <u>OR</u></b></p> <p>(c) <b>Three</b> similar completed works of order value not less than <b>Rs. 30.80 Lakhs each.</b></p> <p>Copy of Purchase Order/Work Order along with Completion Certificate /Performance Certificate from end user to be submitted in Technical bid.</p> <p><b>Note:</b> Similar work refers to "<b>Manufacturing / Reconditioning</b> of CNC 3D Coordinate Measuring Machine of Traverse of axes <b>X ≥ 850mm, Y ≥ 1800 mm, Z ≥ 600 mm</b>".</p>
P.3	<p><b>No Financial Qualifying Requirement for MSME Vendors.</b></p> <p><b>Note:</b> This is to comply the relaxation as per the prevailing guidelines issued by Government Of India</p>
<b>NOTE: Bidders are strongly advised to study the machine and its documents before submitting the bids.</b>	