



UTTAR PRADESH METRO RAIL CORPORATION LIMITED

**TENDER DOCUMENT
FOR
DESIGN, MANUFACTURING, SUPPLY, INSTALLATION, TESTING
& COMMISSIONING OF FULLY AUTOMATIC CNC UNDER
FLOOR PIT WHEEL LATHE MACHINE FOR KANPUR AND AGRA
METRO DEPOTS**

TENDER “KNAG-01”

APRIL 2020

**UTTAR PRADESH METRO RAIL CORPORATION LIMITED
(MASS RAPID TRANSPORT SYSTEM)
Administrative Building, Vipin Khand, Gomti Nagar
Lucknow-226 010 (Uttar Pradesh)**

Website: www.upmetrorail.com

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NOTICE INVITING TENDER (NIT)

UTTAR PRADESH METRO RAIL CORPORATION LTD.
Administrative Building, Vipin Khand, Gomti Nagar
Lucknow-226010

NOTICE INVITING TENDER

Invitation to Global Tender KNAG-01: Design, Manufacturing, Supply, Installation, Testing & Commissioning of Fully Automatic CNC Under Floor Pit Wheel Lathe Machine for Kanpur and Agra Metro Depots of Uttar Pradesh Metro Rail Corporation Limited.

1. General:

Uttar Pradesh Metro Rail Corporation (UPMRC) Ltd. invites global tenders from eligible applicants from all countries and all areas, for the scope “**Design, Manufacturing, Supply, Installation, Testing & Commissioning of Fully Automatic CNC Under Floor Pit Wheel Lathe Machine for Kanpur and Agra Metro Depots**”.

2. Key Details:

Description of Work	KNAG-01: Design, Manufacturing, Supply, Installation, Testing & Commissioning of Fully Automatic CNC Under Floor Pit Wheel Lathe Machine for Kanpur and Agra Metro Depots
Quantity	04 no.
Cost of Tender Document	21,000/- (inclusive of all Taxes) (In the form of Demand Draft in favour of “U.P. Metro Rail Corporation Ltd” issued by schedule commercial bank based in India, payable at Lucknow.)
Earnest Money/ Tender Guarantee	INR 25,69,314/-
Tender documents on sale from	05.05.2020
Last date & time of submission of bids	08.06.2020 up to 1500hrs
Date & Time of opening of bids	08.06.2020 up to 1530hrs

3. Eligibility Criteria for the above equipments can be referred in the Tender Document-KNAG-01.

4. Sale of Tender Document:

4.1 Non-transferable Bid Document containing description of the items required as also the other terms & conditions are available on payment of non-refundable fee of INR 21,000(Rupees Twenty One Thousand Only) (Inclusive of all taxes) in the form of a crossed Demand Draft / Banker's Cheque drawn on a scheduled

commercial Bank based in India, in favour of 'U.P Metro Rail Corporation Limited', payable at Lucknow, from the office of:

Chief Electrical Engineer (Rolling Stock)
U.P Metro Rail Corporation Limited
Administrative Building, Vipin Khand,
Gomti Nagar, Lucknow (UP)-226010, India

- 4.2 The sale of document will be closed at 17.00 hrs. on previous day to the day of submission of Bids.
- 4.3 Non-transferable Bid Document can also be obtained by post on written request by the bidder on his letterhead duly paying the cost of Bid Document as mentioned above. Tender document can also be downloaded from UPMRC's website www.upmetrorail.com, in which case the cost of the tender document, in the form as mentioned above may be submitted in a separate envelope along with the bid.
- 4.4 Addendum/corrigendum, if any, will not be published in the newspaper and the same will be uploaded on UPMRC's website mentioned above.
5. Tenders shall be submitted to the office of Dy.COS/UPMRC at the address given above not later than mentioned date and time.
6. Please note carefully the requirements for submitting tenders, and the date and time for submittal. Late and delayed tenders will not be accepted.
7. Offers shall be valid for a period of 180 days from the last date of submission of Tenders, and shall be accompanied by Earnest Money/Tender Guarantee as described in Paragraph 6 of the "Instruction to Tenderer".

**Chief Electrical Engineer (Rolling Stock)
On behalf of U.P. Metro Rail Corporation Limited
Administrative Building, Vipin Khand,
Gomti Nagar, Lucknow (UP)-226010, India**

PART- I

INITIAL FILTER CRITERIA

INITIAL FILTER CRITERIA

(A) FILTER OF APPLICANTS – CHECKLIST

Name of Applicant:

S.No.	Criteria	Yes	No
1	Has the Applicant abandoned any work in the last ten(10) years?		
2	Has the Applicant involved in two or more litigations in the concluded/ongoing contracts in the last ten (10) years?		
3	Has the Applicant suffered bankruptcy / insolvency in the last ten(10) years?		
4	Has the Applicant been debarred by Government of India/any state government in India/Central or State government undertaking as on the due date of submittal?(Bidder to furnish a specific under taking to effect)		
5	Has any misleading information been given in this application?		
6	Has the applicant certified that no agent / middleman has been or will be engaged or any agency commission been or will be paid?		
7	Is the Net Worth of the applicant (to be obtained from Balance Sheets Appendix FT-7) in the immediate previous financial year as considered in the bidder's country of origin "POSITIVE"?		
8	Has the Applicant submitted the Statement for Covenant of Integrity as per Appendix FT-11(a) and Declaration/Undertaking in line with Code of Integrity, rule 175 (1)(i)(h) of the General Financial Rules, Government of India as per Appendix FT-11(b)?		

Note:

- 1) "Ten (10) years"/"Last ten(10) years' means the period of last ten(10) years ending on **31st March 2020**.
- 2) A "YES" answer to any question 1, 2, 3, 4, 5, will disqualify the Applicant.
- 3) A "NO" answer to question 6 ,7 & 8 will disqualify the Applicant.
- 4) In the case of a Joint Venture/Consortium/, each Individual member must qualify individually in the 'Filter of Applicants– Check List' except item -7.
- 5) In the case of a Joint Venture/Consortium, each member shall submit the balance sheet and Appendix-FT-7 duly filled. Evaluation for the item. No. 7 above will be done in totality (aggregate of the evaluation of each member) and not as individual member.
- 6) DEBARRED means that the applicant(applies to each member of JV/Consortium) has been black listed or debarred by Government of India/any state government in India/Central or State government undertaking from participating in the tenders for a notified period of time. Copy of the notification of such debarment shall be submitted in the bid. (See the format below):

By virtue of my signature below, I confirm and verify to my best knowledge and belief that the company represented by me for submitting bid against this tender is not DEBARRED as on the date of submission of bid. I also confirm that at any stage of tender evolution if it is found that the above information given by me is incorrect then our offer shall be rejected without further correspondence.

SIGNATURE OF TENDERER

(To be signed by applicant and each member of the group)

Date.....

(B) ELIGIBILITY QUALIFICATION CRITERIA:

- a. The bidder or consortium/JV lead partner must be a proven manufacturer of **Fully Automatic CNC Under Floor Wheel Lathe** who must meet the following conditions on date of opening of tender:

Col 1	Conditions	Quantity
i	The Fully Automatic CNC Under Floor Wheel Lathe, which the bidder or lead partner must have supplied & commissioned in last five years ending on 31st March 2020 .	10
i(a)	Out of 10 nos. of Fully Automatic CNC Under Floor Wheel Lathe, which the bidder or lead partner must have supplied & commissioned minimum numbers of Fully Automatic CNC Under Floor Wheel Lathe that should be in operation outside the country of origin or in India in last five years ending on 31st March 2020 . The tenderer shall submit the complete information as per the enclosed Appendix FT-8.	06
ii	Out of the supplied Fully Automatic CNC Under Floor Wheel Lathe by the bidder or lead partner in the last five years i.e., ending on 31st March 2020 , minimum number of Fully Automatic CNC Under Floor Wheel Lathe that should be in operation with satisfactory performance for a minimum period of 2 years after commissioning as on the date of opening of tender and supported by a recent performance certificate from clients. The tenderer shall attach the certificate from the clients for satisfactory operation of the machine. The certificate should not be older than 6 months on the date of opening of tender.	04
ii(a)	Out of these 04 nos. Fully Automatic CNC Under Floor Wheel Lathe that should be in operation with satisfactory performance for a minimum period of 2 years after commissioning minimum numbers of Fully Automatic CNC Under Floor Wheel Lathe that should be in operation outside the country of origin or in India as on the date of opening of tender and supported by a recent performance certificates from clients, not older than 6 months on the date of opening of tender.	02

The manufacturing unit, where the Fully Automatic CNC Under Floor Wheel Lathe is proposed to be manufactured & supplied against this tender, should have experience of manufacturing of at least **10 nos.** Fully Automatic CNC Under Floor Wheel Lathe in last five years i.e. ending on **31st March 2020**, out of which at least **04 nos.** should have been working satisfactorily after commissioning for a minimum period of two years as on the date of opening of bids. The bidder shall give complete details to establish the credentials of the proposed manufacturing unit as mentioned herein.

- b. If a joint venture or consortium submits the bid, then lead partner should meet the criteria at a [i, i(a), ii & ii(a)] as above.

- c. The bidder if located outside India shall have an Indian associate for defects liability period and post defects liability period obligations, who should have at least 2 years experience of manufacturing the machines for railways/metros applications or of giving after-sales service for machines used in railways/metros or shall be RDSO/Railways approved vendors. In support of the above, relevant certificates from the respective clients should be submitted.
- d. The lead partner shall be fully responsible for supply, installation, testing & commissioning of the machine and training of engineers and also for coordinating maintenance and after sales service during DLP.
- e. A firm can be a partner only in one joint venture or consortium. Bids submitted by joint ventures or consortium, including the same firm, as partners in more than one bid will be rejected.

The firm shall furnish a performance statement as per enclosed Appendices FT-8 and FT-17 attached giving the information on Fully Automatic CNC Under Floor Wheel Lathe supplied by him during the last 5 years.

The technical offer of only those bidders who qualify the eligibility criteria as above shall be evaluated.

In the absence of above informations as per of initial filter Criteria, the offer is liable to be treated as unresponsive and liable to be rejected.

SIGNATURE OF TENDERER

**INSTRUCTIONS TO TENDERERS
(ITT)**

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INSTRUCTIONS TO TENDERERS

1. GENERAL INSTRUCTIONS

1.1 Dy.COS/UPMRC, invites tenders from established and reliable manufacturers for the supply as set forth in the "Schedule of requirements."

1.2 The Tenderer shall bear all costs associated with the preparation and submission of its tender. All offers in the prescribed format at Annexure-1(a) & 1(b) should be submitted by the prescribed date and time fixed for the receipt of offers as set forth in the tender papers. Offers received after the stipulated time and date, are liable to be rejected.

1.3 All information in the offer must be in English. Information in any other language must be accompanied by its authenticated translation in English. Failure to comply with this may render the offer liable to be rejected. In the event of any discrepancy between an offer in a language other than English and its English translation, the English translation will prevail.

1.4 This tender document comprises the following sections:

Part - 1

- a. Notice of Invitation to Tender
- b. Initial filter criteria.
- c. Instructions to Tenderers
- d. General Conditions of Contract
- e. Special Conditions of Contracts

Part – 2

- a. Schedule of Requirements (General Specifications and Particular Specifications)
- b. Form of Tender
- c. Schedules & Appendices

In case of any conflict between the above documents the order of precedence will be as under:

- a. Schedule of Requirements
- b. Special Conditions of Contract
- c. Instruction to Tenderers
- d. General Conditions of Contract
- e. Tenderer's offer

1.5 Clarification of Tendering Documents:-

A prospective Tenderer requiring any clarification of the tendering documents may notify the Employer in writing or by cable (hereinafter, the term cable is deemed to include e-mail, Electronic Data Interchange (EDI) or telefax. Similarly, if a Tenderer feels that any important provision in the documents will be unacceptable; such an issue should be raised at this stage. The Employer will respond in writing to any request for clarification or modification of the tendering documents that it receives no later than twenty-one (21) days prior to the deadline for submission of tenders prescribed by the Employer. Written copies of the Employer's response on tenderer's query (including an explanation of the query but not identification of its source) will be sent to all prospective tenderers

that have received the tendering documents. Foreign tenderers are encouraged to associate any Indian firm/s as a partner in a Joint Venture or consortium.

1.6 Amendment of Tendering Documents

At any time prior to the deadline for submission of tenders, the Employer may, for any reason, whether at its own initiative, or in response to a clarification requested by a prospective Tenderer, amend the tendering documents.

The amendment will be notified in writing or by cable to all prospective tenderers that have purchased the tendering documents and will be binding on them. Tenderers are required to immediately acknowledge the receipt of any such amendment, and it will be assumed that the information contained therein will have been taken into account by the Tenderer in its tender and also submit Appendix –FT-5.

2. INITIAL FILTER & MINIMUM ELIGIBILITY CRITERIA

Bidder should comply the Initial Filter and Minimum Eligibility criteria as given in Part-I of this bidding document. Bid which does not fulfil the Initial Filter Criteria & Minimum Eligibility Criteria will not be further evaluated technically.

3. COMPLIANCE WITH TENDER DOCUMENT

3.1 The equipments offered should be in accordance with the stipulated specifications in “Schedule of Requirements”.

3.2 The tenderer shall indicate his compliance or otherwise against each clause and sub-clause of the Schedule of requirements, ITT, GCC, SCC. The tenderer shall, for this purpose, enclose a separate statement of deviations (Appendix-FT-10) indicating compliance or otherwise of each clause and sub-clause of specifications, which should invariably, be filled in (if there are no deviations, a nil statement should be submitted) and submitted along with the offer. Whenever the tenderer deviates from the provisions of a clause/sub-clause, he shall furnish his detailed justification for the same in the ‘Remarks’ column. Tenderer wishing to offer technical alternatives to the requirements of the tendering documents must first price the Employer’s design of the facilities as described in the tender document, and shall further provide all information necessary for a complete evaluation of the alternatives by the employer, including drawings, design calculations, Schedule of requirements, break-up of prices, proposed installation methodology and other relevant details. Only the technical alternatives, if any, of the lowest evaluated tenderer to the basic technical requirements may be considered by the employer.

4. INDIAN ASSOCIATE & HIS SERVICES/ FACILITIES IN INDIA (APPLICABLE FOR FOREIGN FIRMS/ TENDERERS ONLY)

4.1 The foreign tenderer shall include in his offer the name of the person of the firm who will be acting as his representative / associate company in India in respect of his offer. He shall also indicate the after sales service facilities which he or his representative/ associate company have in India.

4.2 Tenderers of foreign firms should furnish following particulars. Offers which do not comply are liable to be ignored.

(i) The name and address of the local representative/associate company.

- (ii) The precise relationship between the foreign manufacturer/principals and their Indian representative/ Associates.
 - (iii) The mutual interest which the manufacturer/principal and the Indian representative /associates have in the business of each other.
 - (iv) Foreign Tenderer has to submit a certificate that bidder is not having any Commission Agent in India and no agency commission will be paid otherwise it shall be sufficient ground for rejecting of his offer. Indian Associate/representative should also mention Income tax permanent account number.
 - (v) All services (including after sales) to be rendered by the agents/associates whether the general nature or relation to the particular contract and the facilities/infrastructure available with them for the same.
 - (vi) Past performance.
- 4.3 Foreign Tenderer may note that an Indian Associate can represent only one firm in a tender and any Foreign Tenderer cannot submit more than one offer against a tender through different sole selling Indian Associates or one offer directly and other offers through sole selling Indian Associates. In other words, in a tender, either the Indian Associates on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender. In such a situation all the offers will be rejected. Also a “100% Indian Subsidiary” of the foreign firm can-not bid through another agent. The relation between the Principal/OEM & Agent or Indian Subsidiary (100% or otherwise) should be contractually established and clear.
- 4.4 The Indian Associate is official representative of manufacturer/principal/tenderer. Accordingly, manufacturer/principal/tenderer shall be fully responsible for the conduct of their appointed Indian Associates. This may please be noted.
- 4.5 Foreign Tenderers may authorize their Indian Associates to represent them, to bid, negotiate and conclude the contract on their behalf. They must submit valid authorization as per Appendix-FT-4. The order/contract shall be directly placed in the name of foreign tenderers only and they shall be fully responsible for successful execution of contract in all respect.

The Performance Guarantee bond shall be furnished by the successful tenderers necessarily as per clause 7.0 of General Conditions of Contract, Bid Document Part-I.

5. QUALIFYING REQUIREMENTS OF TENDERERS

- 5.1 The tenderer shall provide satisfactory evidence acceptable to the purchaser to show that:
- a. He is a manufacturer, who regularly manufactures the items offered and has adequate technical knowledge and practical experience;
 - b. He has financial strength and resources to meet the obligations under the contract for which he is required to submit duly audited Annual financial statements (Balance sheet, profit & loss account etc.) for the last 3 years or a report from a recognized bank or a financial institution on financial position.
 - c. He has adequate plant and manufacturing capacity to manufacture and supply the items offered within the delivery schedule offered by him;

- d. He has established quality control system and organization to ensure adequate control at all stages of the manufacturing process.
 - e. He satisfies the provisions mentioned in "Special conditions of Contract (Reference Clause)" contained in "Special Conditions of Contract".
- 5.2 For purposes of clause-5.1, the tenderers should additionally submit:
- a. A performance statement as in Appendix-FT-8, giving a list of major supplies of same/similar equipments effected in last 5 years or for such period as specified elsewhere in Tender Document & special conditions of tender of the items offered by him, giving details of the User's name and address, order no. and date and the quantity supplied and whether the supply was made within the delivery schedule. Such period shall be reckoned from the date of opening of tender.
 - b. A statement indicating details of equipment deployed and quality control measures adopted by the manufacturer as in Appendix-FT-6.
- 5.3 In addition to the above, further information regarding his capacity, capability, if required by the Purchaser, shall be promptly furnished by the tenderer and he would offer all facilities to representative of Purchaser for assessing capacity, capability by actual visit to his works/office.
- 5.4 The evidence/documents submitted for meeting the qualifying requirements, if found false/fake/forged/manipulated at any stage during evaluation of offers and or even during the currency of Contract, the purchaser reserves the right to summarily reject the offer or terminate the Contract at his risk and cost and take action as per applicable law including banning of business dealings etc.

6. EARNEST MONEY/TENDER GUARANTEE

- 6.1 Earnest Money/Tender Guarantee for an amount as stipulated in the "Notice of Invitation of Tender" or an equivalent amount in the currency of the country of the tenderer shall accompany each tender. The Earnest Money/Tender Guarantee shall be any one of the following alternative forms subject to the approval of the Purchaser:
- a. A crossed Bank Draft/pay order/banker cheque in favour of the U.P. Metro Rail Corporation Ltd, INDIA from a Nationalized Indian Bank/Scheduled commercial bank (in the case of indigenous offers) or from a reputable commercial Bank of the tenderer's country having their branch in India (in the case of foreign offers). For the bank drafts in currencies as mentioned in NIT (Notice for Invitation of Tenderer) other than Indian Rupees, the validity of the same should be at least 195 days from the date of opening of tender.
 - b. An irrecoverable Bank Guarantee of any Indian Nationalized Bank/Scheduled commercial bank (in case of indigenous offer) or from any scheduled foreign bank in India (in case of foreign offer), in favour of the U.P Metro Rail Corporation Ltd. in the format attached (Appendix-FT-2). It shall be valid for minimum period of 195 days from the date of tender opening of tender.
 - c. Fixed Deposit Receipt of a Schedule Commercial bank/ post Office based in India duly pledged in favour of U.P Metro Rail Corporation Limited.
- 6.2 The Earnest Money/Tender Guarantee shall remain deposited with the Purchaser for the period of 195 days from the date of opening of tenders. If

the validity of the offer is extended, the Earnest Money/ Bank Guarantee duly extended shall also be furnished, failing which the offer after the expiry of the aforesaid period shall not be considered by the Purchaser.

- 6.3 No interest will be payable by the Purchaser on the Earnest Money/Tender Guarantee.
- 6.4 The Tender Guarantee shall be forfeited:
- a. if the Tenderer withdraws his Tender during the period of Tender validity; or
 - b. if the Tenderer does not accept the correction of his Tender price, pursuant to Sub-paragraph 15.2 below; or
 - c. if the Tenderer fails to withdraw conditions, qualifications, deviations etc. proposed by him at the price of withdrawal given in his tender; or
 - d. if the successful Tenderer refuses or neglects to execute the Contract or fails to furnish the required Performance Guarantee within the time specified by the Employer.
- 6.5 The Earnest Money of the successful tenderer will be returned after the Contract Performance Guarantee as required (clause-7.1 of the General conditions of contract) is furnished.
- 6.6 The Earnest Money of all unsuccessful tenderers Shall be discharged/ returned promptly after issue of purchase order.

In case of two-packet tender submission, the tender security will be released in two stages. Tender Security of tenderers who fail in technical evaluation shall be returned after opening of financial package. Tender Security of unsuccessful tenderers in financial evaluation shall be returned after issue of purchase order. Tender security of successful tenderer shall be returned after receipt of PBG, if applicable. Otherwise, the tender security of the successful bidder shall be returned after acceptance of PO.

- 6.7 Any tender not accompanied by Earnest Money in one of the approved forms given in clause 6.1 shall be summarily rejected.

7. QUALIFICATION OF THE TENDERER

- 7.1 The Tenderer to qualify for award of Contract shall submit a written power of attorney authorising the signatories of the tender to commit each member of the partnership, consortium or joint venture. In case of Foreign Partners, Power of Attorney(s) and Board Resolution confirming authority on the persons issuing the Power of Attorney for such actions, shall be submitted duly notarized by the notary public of country of origin and should be stamped by Embassy/High Commission. Tenderers from Member Countries of Hague convention may submit all these documents with "Apostille" stamp instead of Embassy.
- 7.2 Where the Tenderer comprises a consortium or joint venture, the Tenderer shall submit the following additional information to meet the criteria for eligibility:
- a. A Memorandum of Understanding/Consortium Agreement, comprising of all the members, shall be provided duly notarized by the notary public of country of origin and should be stamped by Embassy/High Commission.

Tenderers from Member Countries of Hague convention may submit all these documents with “Apostille” stamp instead of Embassy.

- b. Nomination of one of the members of the consortium or joint venture to be in-charge (Leader); and this authorisation shall be covered in the Power of Attorney signed by the legally authorised signatories of all members of consortium or joint venture;
 - c. Details of the intended percentage participation given by each member shall be provided and reconfirmed and expanded with complete details of the proposed division of responsibilities and corporate relationships among the individual members.
 - d. The partner in charge(Leader) shall be authorized to incur liabilities, receive payments (if provided for in MoU/Consortium Agreement) and receive instructions for and on behalf of any or all partners of the joint venture/consortium;
 - e. All partners of the joint venture/consortium shall be jointly and severally responsible for the execution of the Contract in accordance with the Contract terms.
- 7.3 The Tenderer shall submit with his Tender full details of his ownership and control or, if the Tenderer is a partnership, joint venture or consortium, full details of ownership and control of each member thereof.
- 7.4 Indian Tenderers, or Indian members of a partnership, joint venture or consortium shall submit, a certified copy of the last 3 years (including the latest Financial Year) income tax return, duly acknowledged by Income Tax department in the Technical Package,
- 7.5 Each Tenderer (each member in the case of a partnership, joint venture or consortium) or any associate is required to confirm and declare with his Tender that no agent, middleman or any intermediary has been, or will be, engaged to provide any services, or any other item or work related to the award and performance of this Contract. They will have to further confirm and declare in the submittal that no agency commission or any payment which may be construed as an agency commission has been, or will be, paid and that the tender price will not include any such amount. If the Employer subsequently finds to the contrary, the Employer reserves the right to declare the Tenderer as non-compliant, and declare any Contract if already awarded to the Tenderer to be null and void. Specific declaration to this effect exactly as per Appendix-FT-3 shall be submitted with the Technical Package.
- 7.6 Canvassing or offer of an advantage or any other inducement by any person with a view to influencing acceptance of a Tender will be an offence under laws of India. Such action will result in the rejection of the Tender, in addition to other punitive measures.
- 7.7 The Applicant (including all members of a joint venture) shall not be one of the following:
- (i) A firm or an organization which has been engaged by the Employer to provide consulting services for the preparation related to procurement for or implementation of this project;

- (ii) Any association/affiliates (inclusive of parent firm) of a firm or an organization mentioned in subparagraph (i) above.
- (iii) A firm or an organization who lends or temporarily seconds its personnel to firms or organizations which are engaged in consulting services for the preparation related to procurement for or implementation of the project, if the personnel would be involved in any capacity on the same project.

8. FORM OF TENDER

The Form of Tender shall be completed and signed by a duly authorised and empowered representative of the Tenderer. If the Tenderer comprises a consortium or a joint venture, the Form of Tender shall be signed by a duly authorised representative of each member or participant thereof. Signatures on the Form of Tender shall be witnessed and dated. Copies of relevant powers of attorney as indicated in the 'Note' to 'Form of Tender' shall be attached.

9. SUBMISSION OF OFFERS

9.1 All offers shall be either typed or written neatly in indelible ink.

This is a two packets global tender. Tenderer has to submit their offer in two different packets. One packet will be for technical bid and another packet will be for financial bid”.

i. Technical bid will be opened on due date (as per Notice for Invitation of Tender). This packet must contain:-

- a) Tender guarantee (EMD) in original,
- b) Technical bid
- c) Documents related to qualifying requirement of the tenderer.
- d) Letter of Application
- e) Letter of participation from each member of the group
- f) Form of Tender (with Power of Attorneys but without Appendices).
- g) Contract conditions.
- h) The Structure of the Tenderer including details of ownership and control of the Tenderer (See paragraph 7.3 of ITT) Appendix-FT-1.
- i) Certificate confirming receipt of all Tender Addenda as per proforma as given in Appendix-FT-5.
- j) List of Technical and Commercial Deviations (if any) as per format given in Appendix-FT-10 along with the Undertaking that all the deviations have been listed and priced in the financial offer and Deviations not priced will be treated as Null and Void.
- k) Cost of tender document in the currency as indicated in NIT and undertaking for downloading declaration (Appendix-FT-18) if the tender document is downloaded from UPMRC's website.
- l) Copy of all documents of Financial Package with Prices left blank. If any change is found in the unpriced document submitted along with the technical bid and in the priced financial offer then offer is liable to be rejected.
- m) One set of complete Tender documents (including all Addenda), signed and stamped on right hand bottom corner of each page.
- n) Any further documents which are requested in writing by Employer before submission of the Tender by way of evaluation documents but which are not to form part of the Contract.

ii. Financial bid will be in the separate sealed envelope, which will contain

- a) Price bid as per format of the Tenderers financial offers as given in tender document as Annexure- 1(a)/1(b) for UPMRCs requirement.
- b) Priced Technical and Commercial Deviations (if any) as per format given in Appendix-FT-10 as given in part-II of this tender document along with the undertaking that all the Deviations have been listed and priced in the financial proposal and deviations not priced will be treated as Null and void.
- c) Financial bid will be opened in the presence of bidder only when tenderer's bid qualifies technically and in case tenderer's bid disqualifies technically, tenderers financial bid will be returned in sealed intact condition.

Tenderer has to submit their offer in two copies (one in original copy and another in duplicate copy).

- 9.2 Any individuals signing the tender or other documents connected therein should specify whether he is signing:
 - (i) as sole proprietor of the concern or as attorney of the sole proprietor;
 - (ii) as a partner or partners of the firm;
 - (iii) as a Director, Manager or Secretary in the case of a limited company duly authorized by a resolution passed by the board of directors or in pursuance of the authority conferred by Memorandum of Association.
- 9.3 The original power of attorney or other documents empowering the individual or individuals to sign should be furnished to the Purchaser for verification, if required.
- 9.4 All prices and other information like discounts etc. having a bearing on the price shall be written both in figures and words in the prescribed offer form.
- 9.5 The Tenderer shall seal the Original and Copy of the two parts of his Tender into separate envelopes, duly marking the envelopes as "ORIGINAL TENDER" and "COPY" and clearly state the contents of each with either 'Part A) Technical and Commercial' or 'Part B) Financial' as appropriate. The envelopes shall then be sealed in an outer envelope.
 - 9.5.1 The inner and outer envelopes shall
 - (a) be addressed to the Dy. COS /UPMRC at the address given in the Invitation of Tender, and
 - (b) bear the Contract name indicated in the Invitation of Tender and the statement "**DO NOT OPEN BEFORE [date and time],**" to be completed with the time and date specified in the Invitation of Tender.
 - 9.5.2 The inner envelopes shall also indicate the name and address of the Tenderer so that the Tender can be returned unopened in case it is declared "late."
 - 9.5.3 If the outer envelope is not sealed and marked as required by ITT Sub-Clause 9.5.1 above, the Employer will assume no responsibility for the tenders misplacement or premature opening. If the outer envelope discloses the Tenderer's identity, the UPMRC will not guarantee the anonymity of the Tender submission, but this disclosure will not constitute grounds for Tender rejection.

- 9.6 Offers shall be as per the Schedule of requirements, Instruction to Tenderers and “General Conditions of Contract”, Special condition of contracts given in the Tender documents. However the tenderer shall indicate his acceptance or otherwise against each clause and sub clause of the Schedule of requirements, Instruction to Tenderers and “General Conditions of Contract”, Special condition of contracts. For this purpose, the tender shall enclose a separate statement (Appendix-FT-10) indicating only the deviations from any clause or sub clause of the Schedule of requirements, Instruction to Tenderers and “General Conditions of Contract”, Special condition of contracts, which he proposes with full justification for such deviations. All deviations from the tender documents, remarks, comments etc. shall be included in the Statement of Deviations (Appendix-FT-10). The price of unqualified and unconditional withdrawal of all the conditions, qualifications, deviations etc. as mentioned in (Appendix-FT-10) shall be quoted by the tenderer in the format given in Appendix-FT-10. All implicit and explicit deviations, remarks and comments mentioned elsewhere in the tenderer’s proposal shall be treated as NULL and VOID and considered withdrawn unconditionally. Any clause included in the Statement of Deviations (Appendix-FT-10) but not priced in the Appendix-FT-10, shall be treated as NULL and VOID and will be considered unconditionally withdrawn.
- The Tenderer shall provide a valid and fully compliant proposal for the equipment as detailed in the Employer’s Requirements. The Tenderer shall submit a detailed clause by clause commentary on all the clauses of the Employer’s Requirements.
 - Tenderers shall note that their comments to the clause by clause commentary wherever given shall only be in the following form:
 - Complied : “Complied” shall be indicated by the tenderer where the tenderer is able to comply fully with the clause.
 - Noted : Where a clause merely provides information, and no other comment is necessary, “Noted” will suffice.
 - Not Complied: Where the tenderer is not able to comply fully with the clause or has any observation or proposes an alternative design, “Not Complied” shall be indicated and comments if any of the tenderer shall be indicated in detail. All Clauses with status as “Not Complied” shall be included in the statement of Deviations Appendix-FT-10 and shall be priced in Appendix-FT-10.

Tenderer shall also note that:

- Any comment by the tenderer in the Clause By Clause Commentary, other than either of “Complied”, “Noted” or “Not Complied” shall be treated as “Not Complied”. Unless tenderer prices against such clauses in the Appendix-FT-10, the comment against any clause shall be deemed to have been unconditionally withdrawn with no financial implications and shall be considered as NULL and VOID.
- Any “Not Complied” comment by the tenderer in the Clause By Clause Commentary which has not been included in the Statement of Deviations Appendix-FT-10 shall be treated as “Complied”.
- Any “Not Complied” comment by the tenderer in the Clause By Clause Commentary which has also been included in the Statement of Deviations Appendix-FT-10 but has not been priced in Appendix-FT-10 shall be treated as null and void and deemed to have been unconditionally withdrawn.

- In case price for unqualified withdrawal of any remark, comment, condition, qualification or deviation etc. indicated in Appendix-FT-10(b) is not quoted of financial offer, it shall be considered that the remark, comment, condition, qualification or deviation is unconditionally withdrawn without any financial implication. However, Employer at its sole discretion and option may assess the financial implication of the said remark, comment, condition, qualification or deviation etc. based on best engineering principles and concepts, which shall be binding on the tenderer, and the same may be considered by Employer for financial evaluation.
- A tender without a Clause by Clause Commentary, as stated above, is liable to be rejected.

The Purchaser, however reserves the right to accept or reject these deviations and his decision thereon shall be final.

- 9.7 Offers are required from the actual manufacturers of the stores or their authorized agents, who should submit a letter of authority from their Principals as in Appendix-FT-4.
- 9.8 Each page of the offer must be numbered consecutively, should bear the tender number and should be signed by the tenderer at the bottom. A reference to the total number of pages comprising the offer must be made at the top right hand corner of the first page.
- 9.9 The tenderer should avoid ambiguity in his offer e.g. if his offer to his standard sizes, lengths dimensions, he should specifically state them in details without any ambiguity. Brief descriptions such as 'standard lengths' etc. should be avoided in the offer.
- a. Tenderer shall give a break-up of the prices in the manner and details called in for statement of prices as given in financial offer.

10. LOCAL CONDITIONS

Local Conditions: It will be imperative on each tenderer to fully acquaint himself of all the local conditions and factors which would have any effect on the performance of the contract and cost of the stores. In his own interest, the foreign tenderer should familiarise himself with the Income Tax Act 1961, the Companies Act 1956, the Customs Act 1962 and related Laws in force in India. The Purchaser shall not entertain any request for clarifications from the tenderer regarding such local conditions. No request for the change of price, or time schedule of delivery of stores shall be entertained after the offer is accepted by the purchaser.

11. PRICE BASIS AND INDEMNITY

- 11.1 The equipments shall be installed at various depots as specified in Particular Specification of this tender document. Therefore, Foreign tenderers shall quote their prices on the basis of FOR accordingly.
- 11.2 Under the FOR price, the FOB price and the sea freight charges etc shall be indicated separately.
- 11.3 The terms FOR shall be as defined in the current edition of International Rules for the interpretation of the trade terms published by International Chamber of Commerce, Paris and commonly referred to as INCOTERMS.

- 11.4 Price should not include any type of agency commission payable to India Associate/ Representative. If it is established that any account of agency commission is being paid to any Associate/ Representative in India, it will be sufficient ground for rejection of offers.
- 11.5 In case of invitation of bids on FOR destination basis, the tenderers are required to quote their price indicating the break-up of following items of cost:

A. Foreign Tenderers

- 1) F.O.B. Cost
- 2) Insurance Charges
- 3) Freight Charges applicable from Port of Dispatch to the Indian Port of discharge
- 4) Charges for clearance at the Indian Port including Custom Duty which will be paid in Indian Rupees and claimed from Purchasers at actual
- 5) Charges for despatch in Rupees for shipment of the machine from the Indian Port to the site and the supplier shall be entirely responsible for the receipt of the machine at the destination in good condition.
- 6) If required, charges in Rupees for installation and commissioning of the machine at site.

B. Indian Tenderers

Indian Tenderers are required to quote on "Free delivery at consignee's site" basis. They shall also quote, if required, charges for installation & commissioning of the machine at consignee's site indicating taxes, if any.

12. CURRENCY OF PAYMENT

- 12.1 The Prices shall be quoted by the Tenderer separately in the following currencies:
- (a) For inputs to the Works, which are expected to be supplied from within India, in Indian Rupees.
 - (b) For those inputs to the Works, which are expected to be supplied from outside India, in freely tradable foreign currencies.
 - (c) Maximum Number of currencies of payment shall not be more than three.

The contract price will be paid in the contracted currency or currencies

- 12.2 The prices quoted shall be firm and not subject to any variation.

13. INSURANCE

- 13.1 All risk cover marine insurance shall be arranged by the supplier in case of import of equipment/stores on FOR basis.
- 13.2 In the case of indigenous offers, the supplier will be responsible till the entire stores contracted for arrive in good condition in destination. Where the tenderer intends to insure the goods, he may arrange for it himself and pay insurance charges. The consignee shall advise the contractor within 45 (forty five) days of the arrival of goods and it shall be

responsibility of the contractor to lodge the necessary claim on the carrier and or insurer and pursue the same. The tenderer shall, however at his own cost replace/ rectify the goods lost/ damage to the entire satisfaction of the consignee within 30 days from the date of receipt of intimation from the consignee, without waiting for the settlement of the claim.

14. CLARIFICATION OF TENDERS

To assist in the examination, evaluation and comparison of tenders, the Employer may, at his discretion, ask any tenderer for clarification of his tender. The request for clarification and the response shall be in writing or by facsimile, but no change in the price or substance of the tender shall be sought, offered or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the tenders in accordance with paragraph 15.2.

15. OPENING OF TENDERS

15.1 Opening and Evaluation of Technical Tenders

- i. UPMRC will open the Tenders, including "Withdrawals" and "Modifications" in the presence of Tenderers' designated representatives who choose to attend, at the time, date, and location as stipulated. All Tenderers or their Representatives must bring with them an authority letter on the letterhead of the Tenderer or their Indian Agent (as the case may be) duly signed by Competent Authority to attend the Tender opening. Failing to which they will not be allowed to attend the opening of the Tenders at UPMRC, Lucknow.
- ii. Envelopes marked "WITHDRAWAL" shall be opened first and the name of the Tenderer shall be read out. Tenders for which an acceptable notice of Withdrawal has been submitted shall not be opened.
- iii. Subsequently, all envelopes marked "MODIFICATION" shall be opened and the submissions therein read out in appropriate detail. No Tender shall be rejected at Tender opening except for late Tenders.
- iv. UPMRC shall read out and prepare a record of the tender opening that shall include as a minimum: Tenderers' names, , Tender Modifications and.or Withdrawals, the presence (or absence) of Tender Security, and any such other details as the UPMRC may consider appropriate, will be announced by the UPMRC at the opening.
- v. Tenders not opened and read out at Tender opening shall not be considered further for evaluation, irrespective of the circumstances.
- vi. First Technical Tenders will be opened and examined as per qualifying Criteria of the tender document as mentioned in paragraph 5 and as per Schedule of requirements of the Tender Documents and Financial Tenders will only be opened of those Tenderers, who will qualify in the Technical Tenders in case of two packet system (technical bid & financial bid).
- vii. UPMRC will examine the Tenders to determine whether they are complete, whether the required technical submissions have been included, whether required Securities have been furnished, whether the documents have been properly signed, and whether the tenders are generally in order.

- viii. Prior to the detailed evaluation, the UPMRC will determine whether each Tender is of acceptable quality, is complete and is substantially responsive to the Tender Documents. For purposes of this determination, a substantially responsive Tender is one that conforms to all the terms, conditions and specifications of the Tender Documents without material deviations, objections, qualifications or reservations. A material deviation, objection, qualification or reservation is one (i) that affects in any substantial way the scope, quality or performance of the Contract; (ii) that limits in any substantial way, inconsistent with the Tender Documents, the UPMRC's rights or the successful Tenderers obligations under the contract; or (iii) whose rectification would unfairly affect the competitive position of other Tenderers who are presenting substantially responsive Tenders.
- ix. If a Tender is not substantially responsive, it will be rejected and may not subsequently be made responsive by the Tenderer by correction of the nonconformity. The determination of a Tender's responsiveness is to be based on the contents of the tender itself without recourse to extrinsic evidence.
- x. The UPMRC will carry out a detailed evaluation of the tenders previously determined to be substantially responsive in order to determine whether the technical and commercial aspects including qualifying criteria are in accordance with the requirements set forth in the Tender Documents. In order to reach such a determination, the Employer will examine commercial aspects including qualifying criteria and compare the technical aspects of the Tenders on the basis of the information supplied by the Tenderers, taking into account but not limited to the following factors:
 - a) overall completeness and compliance with the Instruction to Tenderers, Conditions of contract, Schedule of requirements and Drawings;
 - b) deviations from the Schedule of requirements and commercial conditions as identified in **Appendix-FT-10** and those deviations not so identified; suitability of the Facilities offered in relation to the environmental and climatic conditions prevailing at the site; and quality, function and operation of any process control concept included in the Tender. The bid that does not meet minimum acceptable standards of completeness, consistency and detail will be rejected for non-responsiveness.
 - c) achievement of specified performance criteria by the facilities
 - d) type, quantity and long-term availability of mandatory and recommended spare parts and maintenance services.
 - e) compliance with the time schedule provided in the Tender;
 - f) any other relevant factors, if any, listed in the Tender document, or that the UPMRC deems necessary or prudent to take into consideration.

15.2 Opening and Preliminary Examination of Financial Tenders

- i. In case of tenders have been invited in two packet system (technical bid & financial bid) the date, time and place of opening of Financial Tenders will be advised to the Tenderers whose Technical and Commercial offers have been found acceptable, so that they can be present at the time of opening of the Financial tenders. The tenderer is to note that the Financial Tender of the Tender submissions for which the Technical and Commercial offer has satisfied as per requirement of the Tender only, will be opened.
 - ii. UPMRC shall read out and prepare a record of the Tender opening that shall include, as a minimum: the name of the Tenderer and whether there is a Withdrawal, Substitution, or Modification; the Tender Price; including any discounts. The Tenderer's representatives who are present shall be requested to sign the record. The omission of a Tenderer's signature on the record shall not invalidate the contents and effect of the record
 - iii. The UPMRC will examine the Tenders to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the Documents have been properly signed, and whether the tenders are generally in order.
 - a. Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price, which is obtained by multiplying the unit price and quantity, or between subtotals and the total price, the unit or subtotal price shall prevail, and the total price shall be corrected. If there is a discrepancy between words and figures, the amount in words will prevail. If the Tenderer does not accept the correction of errors, its Tender will be rejected and EMD/Tender Security will be forfeited.
 - b. The UPMRC may waive any minor informality, nonconformity or irregularity in a Tender that does not constitute a material deviation, whether or not identified by the Tenderer in Appendix-FT-10 to its tender, and that does not prejudice or affect the evaluation of any Tenderer as a result of the technical and commercial evaluation.
- 15.3 **Tenders** shall be deemed to be under consideration immediately after they are opened and until such time the official intimation of Award of Contract is made by the UPMRC to the Tenderer. While the Tenders are under such consideration, Tenderers and or their Representatives or other interested parties are advised to refrain from contacting the UPMRC by any means. If necessary, the UPMRC will obtain clarifications on the offers by requesting for such information from any or all the Tenderers, in writing by mail/fax/letter, as may be considered necessary. Tenderers will not be permitted to change the substance of their Tenders after they have been opened.
- 15.4 **During** Tender evaluation, the UPMRC/Employer may, at its discretion, ask the Tenderer for a clarification of its Tender. The request for clarification and the response shall be in writing, and no change in the price or substance of the Tender shall be sought, offered or permitted.
- 15.5 The Tenders received will be evaluated by the UPMRC to ascertain the substantially responsive, qualification and lowest Tender in the interest of the Employer, as specified in the specification and Tender Documents.

16. EVALUATION OF THE OFFERS

- 16.1 In case of tenders have been invited in two packet systems (technical bids & financial bids) financial Tender will be opened in the presence of all qualified Tenderers only when Tenderer's Tenders qualifies technically and in case tenderer's Tender disqualifies technically, Tenderers Financial Tenders will be returned in sealed intact condition as unopened.
- 16.2 The lowest acceptance tenderer will be evaluated by the purchaser in accordance with the terms and conditions of this tender specification. Evaluation criteria not mentioned herein but mentioned specifically in the Schedule of requirements will be taken into consideration in the evaluation of offers.
- 16.3 Purchaser will convert all tender prices expressed in the amount in various currencies in the tender prices as payable, to the local currency of Purchaser's country at the B.C selling market exchange rate established by State Bank of India on the due date of tender submittal. If there will be a bank holiday on the date of tender opening then Rate of Exchange will be taken on the day of previous working day of the bank.
- 16.4 Also if a tenderer request for a variation in the payment terms stipulated in Conditions of Contract and if such variation is acceptable to the Purchaser, the same would be evaluated at an interest rate of 12% per annum for all earlier payments for the purpose of comparison with other tenderers offers.
- 16.5 The quotations from indigenous tenderers (who will meet the eligibility qualification criteria) are required for delivery FOR destination indicating the break-up of prices upto FOR final destination basis as mentioned in Annexure- 1(a) for UPMRC (statement of prices for supply within India). Foreign tenderers will quote their rates as per Annexure- 1(b) for UPMRC (statement of prices for supply from abroad).
- 16.6 The offers received from indigenous tenderers should indicate clearly the rate/amount, GST, duties etc. as leviable on particular item. In case concessional duty or taxes are applicable, the tenderer should quote accordingly. However, if the tenderer state in his offer the applicable taxes etc. will be charged as prevailing at the time of supply, then while working out F.O.R destination rates for comparison, the highest rate as applicable on the due date of submittal of tender will be loaded on the offer. Similarly, if concessional rate of GST, Customs Duty or any other levy is applicable due to lower turnover or otherwise, the highest applicable rate on the due date of submittal of tender will be taken for the evaluation of F.O.R destination rates unless the tenderer confirms in the offer that any increase in the GST, Custom Duty or any other levy due to increase in the turnover will be absorbed by the tenderer itself.
- 16.7
- a. Evaluation of offers shall be done for the requirement of material of U.P Metro Rail Corporation Ltd. Order can be given to the lowest successful bidder.
 - b. For overseas supply, evaluation of offers will be done on rates on Final Destination Basis at Kanpur and Agra Metro Depots of U.P Metro Rail

Corporation Ltd, India including loading/ unloading, carriage, insurance, custom duty & taxes etc.

- c. For indigenous supply, tenderer shall quote their rates on final destination basis. Evaluation of offers will be made on FOR destination incl. of all taxes and duties etc.).

- 16.8 The tenderer shall be responsible for quoting the correct rates of taxes and duties. Applicable taxes and duties should be clearly mentioned in the price schedule (Annexure- 1(a) or 1(b)). Offers will be evaluated including applicable taxes, duties etc. If any bidder does not mention the applicable taxes and duties then it will be considered that their prices are inclusive of taxes and duties as applicable on due date of submittal of tender.

In case of foreign offer, if the service provider does not have permanent establishment in India, then the applicable taxes has to be deposited by the service receiver (purchaser) on reverse charge basis. Also, if the service provider does not quote the applicable taxes in his offer, then applicable taxes on service portion will be considered inclusive in the quoted rates as applicable on the due date of submittal of tender. In this case, payment will be made after deducting the applicable taxes that will be paid by service receiver (purchaser).

- 16.9 The Contract Price shall be adjusted to take account of any change, increase or decrease of any taxes and duties including Custom Duties, GST and other Additional Tax etc. enacted by law of the land in India only, affecting the cost of the goods and introduced after the date of submission of the Tender.

In case the tenderer has not quoted the rates of taxes and duties separately and quoted the prices inclusive of taxes and duties and same has been considered for evaluation, UPMRC will not adjust the payment for an upward revision in the taxes and duties during the execution of the contract. However, for any downward revision, the benefit accrued shall be passed on UPMRC.

If a tenderer quotes concessional rates of duties and taxes and subsequently rate of applicable taxes and duties revised by the Government then revision of taxes & duties on concessional rates of taxes & duties quoted by the firm will be adjusted on pro-rata basis.

In the event of exemption or reduction of Custom Duties, GST or any other Cess/Levy being granted by the Government in respect of the works, the benefit of the same shall be passed on to the Employer.

Other terms and conditions for evaluation of financial offers will be as mentioned in Special Conditions of Contract.

- 16.10 Purchase preference shall be applicable to local suppliers in terms of Ministry of Commerce & Industry, Dept. of Promotion of Industry & Internal Trade (Public Procurement Section), Government of India Letter no. P-45021/2/2017-PP (BE-II) dated 29 May 2019.

The extracts of the above mentioned letter are as follows;

- 16.10.1 **'Local Content'** means the amount of value added in India which shall be total value of the item procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties) as proportion to the total value, in percent.
- 16.10.2 **'Local Supplier'** means a supplier or service provider whose product or service offered for procurement meets the minimum local content as prescribed under this order.
- 16.10.3 **Minimum Local Content:** The minimum local content shall ordinarily be 50%.
- 16.10.4 The Margin of Purchase preference shall be 20%
- 16.10.5 Verification of Local Content (Tenderer's are required to submit the self certification / certificate from statutory auditor or cost auditor in Appendix FT-13)
- a. The local supplier at the time of tender, bidding or solicitation shall be required to provide self certification that the item offered meets the minimum local content and shall give details of location(s) at which the local value addition is made.
 - b. In case of procurement for a value in excess of Rs10 Crores, the suppliers shall be required to provide a certificate from statutory auditor or cost auditor of the company (in case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.

17. HIGHER PRICE FOR EARLIER DELIVERY

It should be noted that if a contract is placed on a higher tender as a result of this invitation to tender, the preference to the lowest acceptable offer in consideration of offer of earlier delivery, the Contractor will be liable to pay to the government the difference between the contract rate and that of the lowest acceptable tender on the basis of final price F.O.R. destination including all elements of freight, applicable taxes and duties and other incidentals in case of failure to complete supplies in terms of such contract within the date of delivery specified in the tender and incorporated in the contract. This in addition and without prejudice to other rights under the terms of contract.

18. ACCEPTANCE OF TENDER

- 18.1 The purchaser may accept a tender for all the packages or for a complete package (package shall not be splitted), reject any tender without assigning any reason and may not accept the lowest or any tender. Acceptance of the tender shall be for a complete package.
- 18.2 The Purchaser reserves the right to increase or decrease the quantity up to 25% of the quantity offered by the successful tenderer. The contractor is bound to accept the increase or decrease in the tendered quantity upto 25% under this clause as ordered at the time of placement of contract and/or during the currency of the contract. Purchaser may increase the qty. beyond 25% at the same rate. However, the purchaser reserves the right to operate the increase in qty. beyond 25% at its sole discretion. While operating this clause the quantity shall be rounded off to the next whole no.
- 18.3 Acceptance of tender will be communicated by Cable, Telefax, Telegram, Express Letter or formal acceptance of tender. In case where acceptance is

indicated by Cable, Telefax, Telegram, Express Letter or formal acceptance of tender will be forwarded to the Contractor as soon as possible, but the Cable, Telefax, Telegram, Express Letter should be deemed to conclude the contract.

19. EFFECT AND VALIDITY OF OFFER

- 19.1 The submission of any offer connected with these specifications and documents shall constitute an agreement that the tenderer shall have no cause of action and claim, against the Purchaser for rejection of offer. The Purchaser shall always be at liberty to reject or accept any offer or offers at his sole discretion and any such action will not be called into question and the tenderer shall have no claim in that regard against the Purchaser.
- 19.2 The offer shall be kept valid for acceptance for a minimum period of 180 (one hundred and eighty) calendar days from the date set for opening of tenders.
- 19.3 Offers shall be deemed to be under consideration immediately after they are opened and until such time the official intimation of award of contract is made by the Purchaser to the Tenderer. While the offers are under such consideration, tenderers and or their representatives or other interested parties are advised to refrain from contacting the Purchaser by any means. If necessary, the Purchaser will obtain clarifications on the offers by requesting for such information from any or all the tenderers, either in writing or through personal contacts, as may be considered necessary. Tenderers will not be permitted to change the substance of their offers the offers have been opened.

20. GENERAL

The tenderers must ensure that the conditions laid down for submission of offers detailed in the preceding paras, are completely and correctly fulfilled. Offers, which are not complete in all respects as stipulated above, may be summarily rejected. For tenders guidance in submitting complete offers, a check List has been enclosed with the tender in Appendix-FT-19 which must be filled in and furnished with the tender.

21. LAST DATE OF RECEIPT OF TENDERS

The offers complete in all respects should reach the U.P Metro Rail Corporation Ltd, Lucknow, INDIA, not later than the time and date as specified in the "NIT".

22. CHECK LIST

A check List has been included at Appendix-FT-19 of this document. This has been designed to help the tenderers in submitting complete offers. An incomplete offer is liable to be rejected.

The tenderers must fill the Check List & submit alongwith their offer in their own interest.

**U.P Metro Rail Corporation Ltd
Administrative Building, Vipin Khand,
Gomti Nagar, Lucknow-226010.**

**GENERAL CONDITIONS OF
CONTRACT
(GCC)**

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GENERAL CONDITIONS OF CONTRACT

1.0 DEFINATION AND INTERPRETATION

In the contract, unless the context otherwise requires:

- 1.1. "Acceptance of Tender" means the letter of memorandum communicating to the Contractor the acceptance of his tender and includes "Letter of Acceptance" of his tender;
- 1.2. "Consignee" means where the stores are required by the acceptance of tender to be despatched by rail, road, air or steamer, the person specified in the Acceptance of Tender to whom they are to be delivered at the destination; where the stores are required by the acceptance of tender to be delivered to a person as an interim consignee for the purpose of despatch to another person, such other persons; and in any other case the person to whom the stores are required by the acceptance of tender to be delivered in the manner therein specified ;
- 1.3. "Interim consignee" means the representative of the Purchaser to whom the material is delivered for onward despatch to the consignee and does not include a carrier for the purpose of transmission of the stores to the consignee ;
- 1.4. "Contract" means and includes Bid Invitation, Instructions to Tenderers, General Conditions of Contract, Acceptance of Tender including Letter of Acceptance, Special conditions of contract/tender, Schedule of Requirements, particulars and the other conditions specified in the acceptance of tender(the agreement entered into between the purchaser and the contractor including all attachments and appendices thereto and all documents incorporated by reference therein) and also includes a repeat order, which has been accepted or acted upon by the Contractor and a formal agreement, if executed;
- 1.5. The "Contractor" means the person, firm or company with whom the order for the supply is placed and shall be deemed to include the Contractor's successors (approved by the Purchaser), representatives, heirs, executors and administrators, as the case may be, unless excluded by the terms of the contract;
- 1.6. The "Sub-Contractor" means any person, firm of company from whom the Contractor may obtain any material or fittings to be used in the supply or manufacture of the stores;
- 1.7. "Drawing" means the drawing or drawings specified in or annexed to the Specifications;
- 1.8. "Government" means the Central Government or a State Government as the case may be;
- 1.9. The "Inspecting Officer" means the person or organisation specified in the contract for the purpose of inspection of stores or works under the contract and includes his/their authorized representative;

- 1.10. "Material" means anything used in the manufacture or fabrication of the stores ;
- 1.11. "Particulars" include —
- a) Specifications;
 - b) drawings;
 - c) "Proprietary mark" or "brand" means the mark or brand of a product which is owned by an industrial firm ;
 - d) any other details governing the construction, manufacture or supply of stores as may be pre scribed by the contract;
- 1.12. "Proving Test" means such test or tests as are prescribed by the specification(s) to be made by the Purchaser, or his nominee, either at firm's premises or after erection at site, before the plant is taken over by the Purchaser;
- 1.13. "Purchase Officer" means the officer signing the acceptance of tender and includes any officer who has authority to execute the relevant contract on behalf of the Purchaser;
- 1.14. The "Purchaser" means the U.P Metro Rail Corporation Limited through the Chief Electrical Engineer (Rolling Stock), Administrative Building, Vipin Khand, Gomti Nagar, Lucknow -226 010, INDIA and includes his successors and assignees ;
- 1.15. "Signed" includes stamped, except in the case of an acceptance of tender or any amendment thereof;
- 1.16. "Site" means the place specified in the contract at which any work is required to be executed by the Contractor under the contract or any other place approved by the Purchaser for the purpose;
- 1.17. "Stores" means the goods specified in the contract which the Contractor has agreed to supply under the contract;
- 1.18. "Test" means such test as is prescribed by the particulars or considered necessary by the Inspecting Officer whether performed or made by the Inspecting Officer or any agency acting under the direction of the Inspecting Officer;
- 1.19. "Work" means all the work specified or set forth and required in and by the said specifications, drawings and "Schedule of Requirements", hereto annexed or to be implied therefrom or incidental thereto, or to be hereafter specified or required in such explanatory instructions and drawings (being in conformity with the said original specification(s), drawing(s) and "Schedule of Requirements") and also in such additional instructions and drawings not being in conformity as aforesaid, as shall from time to time, during the progress of the work hereby contracted for, be supplied by the Purchaser;

- 1.20. The delivery of the stores shall be deemed to take place on delivery of the stores in accordance with the terms of the contract, after approval by the Inspecting Officer if so provided in the contract —
- a) the consignee at his premises; or
 - b) where so provided, the interim consignee at his premises ; or
 - c) a carrier or other person named in the contract for the purpose of transmission to the consignee: or
 - d) the consignee at the destination station in case of contract stipulating for delivery of stores at destination station.
- 1.21. “Writing” or “Written” includes matter either in whole or in part, in manuscript, typewritten, lithographed, cyclostyled, photographed or printed under or over signature or seal, as the case may be.
- 1.22. Words in the singular include the plural and vice-versa.
- 1.23. Words importing the masculine gender shall be taken to include the feminine gender and words importing persons shall include any company or association or body of individuals, whether incorporated or not.
- 1.24. ‘The heading of these conditions shall not affect the interpretation or construction thereof.
- 1.25. Terms and expression not herein defined shall have the meanings assigned to them in the Indian Sale of Goods Act, 1930 (as amended) or the Indian Contract Act, 1872 (as amended) or the General Clauses Act, 1897 (as amended) as the case may be.

2.0 PARTIES

The parties to the contract are the Contractor and the Purchaser, as defined in clauses 1.5 and 1.14.

2.1. Authority of Person Signing the Contract on behalf of the Contractor

A person signing the tender or any other document in respect of the contract on behalf of the Contractor without disclosing his authority to do so shall be deemed to warrant that he has authority to bind the Contractor. If it is discovered at any time that the person so signing has no authority to do so, the Purchaser may, without prejudice to any other right or remedy of the Purchaser, cancel the contract and make or authorise the making of a purchase of the stores at the risk and cost of such person and hold such person liable to the Purchaser for all costs and damages arising from the cancellation of the contract including any loss which the Purchaser may sustain on account of such purchase. The provisions of clause 10.0 shall apply to every such purchase as far as applicable.

2.2. Address of the Contractor and notices and communications on behalf of the Purchaser:

- a) For all purposes of the contract, including arbitration thereunder, the address of the Contractor mentioned in the tender shall be the address to which all communications addressed to the Contractor shall be sent, unless the Contractor has notified change by a separate letter containing no other communication and sent by speed post/registered post acknowledgement due to the Purchaser. The Contractor shall be solely responsible for the consequence of an omission to notify a change of address in the manner aforesaid.
- b) Any communication or notice on behalf of the Purchaser in relation to the contract may be issued to the Contractor by the Purchase Officer and all such communications and notices may be served on the Contractor either by speed post/ registered post or under certificate of posting or by ordinary post or by mail or by hand delivery at the option of such officer.

3.0 QUOTATIONS OF RATES BY CONTRACTORS

- 3.1. The price quoted by the Contractor shall not be higher than the controlled price fixed by law for the stores or where there is no controlled price, it shall not exceed the prices or contravene the norms for fixation of prices laid down by Government or where no such prices or norms have been fixed by the Government, it shall not exceed the price appearing in any agreement relating to price regulation by any industry in consultation with the Government. In any case, save for special reasons stated in the tender, the price quoted shall not be higher than the lowest price charged by the Contractor for stores of the same nature, class or description to a Private Purchaser, domestic or foreign as well as Government Purchaser.
- 3.2. If the price quoted is higher than the controlled price or where there is no controlled price, the price usually charged by the Contractor from a private Purchaser, domestic or foreign as well as Government Purchaser for the stores of the same nature, class or description, the Contractor will specifically mention this fact in his tender giving reasons for quoting higher price(s). If he fail to do so or makes any mis-statement it shall be lawful for the Purchaser, (i) to revise the price at any stage so as to bring it in conformity with the sub-clause 3.1 above

4.0 PENALTY FOR DELAY IN COMMISSIONING

The Contractor or his agents shall commission the machine within the stipulated time as shown in the contract. This time frame will be applicable from the date of intimation from the consignee in respect of readiness and installation of the machine in cases where the machine is to be installed by the consignee. The time schedule includes the time for installation in cases where installation is also to be undertaken by the supplier.

The time allowed for commissioning of machine by the Contractor or his agent shall be deemed to be the essence of the contract. In case of delay in commissioning of the machine on the part of Contractor, the Purchaser shall be entitled to recover and the Contractor shall be liable to pay pre estimated liquidated damage at the rate of 2% of the total contract value for each and every month or part thereof for which commissioning is delayed. Provided always that the entire amount of liquidated damages to be paid under the provision of this clause shall not exceed 10% of the total contract value. After expiry of 5 months period from the date of default i.e. from the date of commissioning provided in the contract, purchaser will be at liberty to invoke the PG bond submitted by the supplier.

Continuance of commissioning work after expiry of stipulated time will also not absolve the Contractor from the liquidated damages as stated above.

The decision of the Purchaser, whether the delay in commissioning has taken place on account of reasons attributed to the Contractor shall be final.

5.0 DRAWINGS/SPECIFICATIONS

- 5.1. When tenders are called for in accordance with the drawing/specification, the Contractor's tender to supply in accordance with such drawing specification shall be deemed to be an admission on his part that he had fully acquainted himself with the details thereof and, in no circumstances, will any claim on his part which may arise on account of his insufficient examination of the said drawing/specification be considered.
- 5.2. The Contractor shall be responsible for and shall pay for any alternations for the works due to any discrepancies, errors or omissions in the drawings or other particulars supplied by him whether such drawings or particulars have been approved by the Purchaser or not provided that such discrepancies, errors or omissions be not due to inaccurate information or particulars furnished to the Contractor on behalf of the Purchaser. If any dimensions figuring upon a drawing differ from those obtained by scaling the drawing, the dimensions as figured upon the drawing shall be taken as correct.
- 5.3. Any drawings, tracings or descriptions specified shall, unless otherwise directed, be furnished by the Contractor with the first consignment of the work to which they relate and no payment whatsoever will be made until such drawings, tracings or descriptions have been furnished to the satisfaction of the Purchaser.

6.0 CONTRACT

- 6.1. This contract is for the supply of the stores of the description, specifications and drawings, and in the quantities set forth in the contract on the date or dates specified therein. Unless otherwise specified, the stores shall be entirely brand new and of the best quality and workmanship to the satisfaction of the Inspecting Officer.

- 6.2. The whole contract is to be executed in the most approved, substantial and workmanlike manner, to the entire satisfaction of the Purchaser or his nominee, who, both personally and by his deputies, shall have full power, at every stage of progress, to inspect the stores at such times as he may deem fit and to reject any of the stores, which he may disapprove, and his decision thereon, and on any question of the true intent and meaning of the specifications shall be final and conclusive.
- 6.3. Any variation or amendment of the contract shall not be binding on the Purchaser unless and until the same is duly endorsed on the contract or incorporated in a formal instrument or in exchange of letters and signed by the parties.
- 6.4. The Purchaser or his nominee may require such alteration to be made on the work, during its progress as he deems necessary. Should these alterations be such that either party to the contract considers an alteration in price justified, such alteration shall not be carried out until amended prices have been submitted by the Contractor and accepted by the Purchaser. Should the Contractor proceed to manufacture such stores without obtaining the consent in writing of the Purchaser to an amended price, he shall be deemed to have agreed to supply the stores at such price as may be considered reasonable by the Purchaser.

7.0 PERFORMANCE GUARANTEE BOND

- 7.1. After Letter of Acceptance is issued by the Purchaser, the Contractor shall furnish a Performance Security within 30 days from the issue of the Letter of Acceptance to the Contractor for an amount equivalent to 10% of the value of the contract in the following forms.
 - a) Bank Draft in favour of U.P Metro Rail Corporation Ltd. payable at Lucknow from a Scheduled Commercial Bank based in India, or
 - b) Fixed Deposit Receipt of a Scheduled Commercial bank / Post offices based in India duly pledged in favour of U.P Metro Rail Corporation Ltd., or
 - c) Irrevocable Bank Guarantee in the prescribed format issued by a Scheduled Commercial Bank based in India or from a branch in India of a scheduled foreign bank.
 - d) In case of a joint venture / consortium, the performance security is to be submitted in the name of the JV/consortium. However, splitting of the performance security (while ensuring the security is in the name of JV/Consortium) and its submission by different members of the JV/Consortium for any amount proportionate to their scope of work or otherwise is also acceptable.
- 7.2. In case furnishing of an acceptable Performance Guarantee Bond is delayed by the Contractor beyond the period provided in clause 7.1, and the bond is accepted by the Purchaser, liquidated damages equivalent to 2% of the value of the contract for each month or part of the month subject to max. of 10% of the

value of the contract for the period of delay in submission of the bond, shall be levied. Alternatively, the Purchaser may declare the contract as at an end and enforce clause-10.2 (b). However, total liquidated damages on account of delay in submission of performance guarantee bond and on account of liquidated damages for delay in supply as per clause 10.2(a) will be maximum 10% of the total value of contract.

- 7.3. If the Contractor, having been called upon by the Purchaser to furnish Performance Guarantee Bond fails to furnish the same, it shall be lawful for the Purchaser:
- a) Recover from the Contractor the amount of Performance Guarantee Bond from the pending bills of the Contractor under any contract with the Purchaser or the Government or any person contracting through the Purchaser or otherwise howsoever, or
 - b) To cancel the contract or any part thereof and to purchase or authorise the purchase of the stores at the risk and cost of the Contractor and in that event the provisions of clause 10.2 shall apply as far as applicable.
- 7.4. On the performance and completion of the contract in all respects or after receiving the acceptable bank guarantee for warranty guaranty, the Performance Guarantee Bond will be returned to the Contractor within 90 days without any interest. The bank guarantee for warranty guarantee shall be released within 90 days after expiry of warranty guarantee. If contract is also placed for CAMC, then bank guarantee for warranty guarantee will be returned after getting the PBG of 5% value of the contract for CAMC as specified in the particular specifications as specified in Bid Document part-II.
- 7.5. The Purchaser shall be entitled and it shall be lawful on his part to forfeit the amount of the Performance Guarantee Bond in whole or in part in the event of any default, failure or neglect on the part of the Contractor in the fulfillment or performance in all respects of the contract under reference or any other contract with the Purchaser or any part thereof to the satisfaction of the Purchaser and the Purchaser shall also be entitled to deduct from the amount of the Performance Guarantee Bond any loss or damage which the Purchaser may suffer or be put by reason of or due to any act or other default, recoverable by the Purchaser from the Contractor in respect of the contract under reference or any other contract and in either of the events aforesaid to call upon the Contractor maintain the amount of the Performance Guarantee Bond at its original limit by furnishing fresh Bank Guarantee of additional amount, provided further that the Purchaser shall be entitled to recover any such claim from any sum then due or which at any time thereafter may become due to the Contractor under this or any other contracts with the Purchaser.
- 7.6. The Performance Guarantee Bond shall remain in full force and effect during the period that would be taken for satisfactory performance and fulfillment in all respects of the contract i.e. till satisfactory commissioning of the machine(s) at consignee's works, and shall in the first instance be valid upto twelve months

after the date of last shipment delivery of the goods contracted to be purchased provided that before the expiry of the date of validity of the Performance Guarantee Bond, the Contractor on being called upon by the Purchaser from time to time, shall obtain from the Guarantor Bank, extension of time for validity thereof for a period of six months, on each occasion. The extension or extensions aforesaid, executed on non judicial stamp paper of appropriate value must reach the Purchaser atleast thirty days before the date of expiry of the Performance Guarantee Bond on each occasion.

- 7.7. As and when an amendment is issued to the contract, the Contractor shall, within fifteen days of the receipt of such an amendment furnish to the Purchaser an amendment to the Performance Guarantee Bond rendering the same valid for the contract as amended and upto twelve months beyond the extended delivery date.
- 7.8. The Performance Guarantee Bond and or any amendment thereto shall be executed on a stamped paper of requisite money value in accordance with the laws of the country in which the same is/are executed by the party competent to do so. The Performance Guarantee Bonds executed in India shall also be got endorsed by the Collector under section 32 of the Indian Stamp Act, 1899 for adequacy of the Stamp Duty, by the Contractor.
- 7.9.
- I. The Bank Guarantee to be submitted by the contractor/supplier under this clause, shall be sent directly by the issuing bank to the UPMRC under Registered Post AD or Speed Post or Courier Service.
 - II. In exceptional cases, when the BGs are submitted by the contractors/suppliers etc. through themselves (and not directly by the issuing bank under Registered Post AD or Speed Post or Courier Service), the BG issuing Bank Branch immediately should send by Registered Post AD or Speed Post or Courier Service an unstamped duplicate copy of the Bank Guarantee directly to the UPMRC with a covering letter to enable UPMRC to compare with the original BGs and to confirm that the submitted BG is in order.
- 7.10. NSIC registered firms are not exempted from submission of Performance Guarantee Bond. Hence, they are required to necessarily submit Performance Guarantee Bond in case their offers are accepted and are called upon to do so.
- 7.11. If the contract is also placed for CAMC, then Warranty/Guaranty PBG will be returned after getting the PBG of 5% value of the contract for CAMC as specified in the Particular specifications/Special Condition of Contract.

8.0 DELIVERY

- 8.1. The Contractor shall as may be required by the Purchaser deliver FOR at the place/places detailed in the contract, the quantities of the stores detailed therein

and the stores shall be delivered or dispatched not later than the dates specified in the contract. The delivery will not be deemed to be complete until and unless the stores are inspected and accepted by the Inspecting Officer as provided in the contract.

- 8.2. Notwithstanding any inspection and approval by the Inspecting Officer on the Contractor's premises, property in the stores shall not pass on to the Purchaser until the stores have been received, inspected and accepted by the consignee.
- 8.3. **In the case of indigenous supplies**, the Purchaser shall not be liable to render assistance to the Contractor in securing or to arrange for or provide transport to the Contractor, notwithstanding that transport of the stores, is controlled by or under the orders of the Government.
- 8.4. **In the case of foreign contracts on FOR basis:**

All activities for delivery of Imported as well as Indigenous components like Sea freighting, Insurance, Port clearance, Custom clearance, Inland freighting, Loading & Unloading both on the Vessel as well as consignee's site and thereafter, its complete supply to ultimate consignee, shall be discharged by the supplier or their agent. Custom duty will be reimbursed by UPMRC on proof of documents by the successful bidder.

9.0 NOTIFICATION OF DELIVERY

Notification of delivery or despatch in regard to each and every instalment shall be made to the Purchaser, Consignee and Port Consignee (if applicable) immediately on despatch or delivery. The Contractor shall further supply to the consignee, or the interim consignee, as the case may be, a packing account quoting number and date of the acceptance of tender and date of despatch of the stores. All packages, shall be fully described in the packing account and full details of the contents of the packages and quantity of materials shall be given to enable the consignee to check the stores on arrival at destination. The copy of Railway Receipt/Consignment Note or Bill of Lading or Airway Bill with other shipping documents, if any, shall be forwarded to the consignee and or the port consignee named in the contract, as applicable, by registered post immediately on the despatch of stores. The Contractor shall bear and reimburse to the Purchaser demurrage charges, if any, paid by reason of delay on the part of the Contractor in forwarding the copy of the Railway Receipt, Consignment Note or Bill of Lading and other shipping documents.

10.0 TIME FOR AND DATE OF DELIVERY: THE ESSENCE OF THE CONTRACT

The time for and the date specified in the contract or as extended for the delivery of the stores shall be deemed to be the essence of the contract and delivery must be completed not later than the date(s) so specified or extended:

10.1. Progressing of Deliveries

The Contractor shall allow reasonable facilities and free access to his works and records to the Inspecting Officer, Progress Officer or such other Officer as may be nominated by the Purchaser for the purpose of ascertaining the progress of the deliveries under the contract.

10.2. **Failure and Termination**

If the Contractor fails to deliver the stores or any installment thereof within the period fixed for such delivery in the contract or as extended or at any time repudiates the contract before the expiry of such period, the Purchaser may without prejudice to his other rights:

- a) Recover from the Contractor as agreed pre estimated liquidated damages and not by way of penalty a sum equivalent to 2 per cent of the price of any stores (including elements of taxes, duties, freight etc.) which the Contractor has failed to deliver within the period fixed for delivery in the contract or as extended for each month or part of a month during which the delivery of such stores may be in arrears where delivery thereof is accepted after expiry of the aforesaid period subject to max. of 10% of the contract value. Provided, however, that if the delay shall have arisen from any cause which the Purchaser may admit as reasonable ground for further time, the Purchaser may in his discretion allow such additional time as he may consider to have been required by the circumstances of the case and shall forego the whole or such part, as he may consider reasonable of his claim for such loss or damages as aforesaid; or
- b) Cancel the contract or a portion thereof and if so desired purchase or authorise the purchase of the stores not so delivered or others of a similar description (where stores exactly complying with particulars are not, in the opinion of the Purchaser, which shall, be final, readily procurable) at the risk and cost of the Contractor. It shall, however, be in the discretion of the Purchaser to obtain or not the Performance Guarantee Bond from the firm/firms on whom the contract is placed at the risk and expense of the defaulting firm. However, in respect of contracts where performance guarantee bond of 10% of contract value has been taken, risk purchase clause will not be applicable and in case of default by such firms, the performance guarantee bond submitted shall be forfeited for ***in part or full*** and the quantities unsupplied shall be procured independently without risk and cost of the original contractor and adverse performance of defaulting firm will be taken into account in future tender cases on merit.

Where risk purchase action is taken under sub-clause (b) above, the Contractor shall be liable for any loss which the Purchaser may sustain on that account provided the purchase, or, if there is an agreement to purchase, such agreement is made, in case of failure to deliver the stores within the period fixed for such delivery in the contract or as extended within nine months from the date of such failure and in case of repudiation of the contract before the expiry of the aforesaid period of delivery, within nine months from the date of cancellation of the contract. The Contractor shall not be entitled to any gain on such purchase and the manner and method of such purchase shall be in the entire discretion of the Purchaser. It shall not be necessary for the Purchaser to serve a notice of such purchase on the Contractor.

10.3. Extension of Time for Delivery

If such failure as in the aforesaid clause 10.2 shall have arisen from any cause which the Purchaser may admit as reasonable ground for extension of time, the Purchaser shall allow such additional time as he considers to be justified by the circumstances of the case, and shall forgo the whole or such part, as he may consider reasonable, of his claim for such loss or damage as aforesaid. Any failure or delay on the part of Sub-Contractor, though their employment may have been sanctioned under condition 21.0 hereof, shall not be admitted as a reasonable ground for any extension of time or for exempting the Contractor from liability for any such loss or damage as aforesaid.

10.4. Consequence of Rejection

If on the stores being rejected by the Inspecting Officer or Interim Consignee or Consignees at the destination, the Contractor fails to make satisfactory supplies within the stipulated period of delivery, the Purchaser shall be at liberty to:

- i. require the Contractor to replace the rejected stores forthwith but in any event not later than a period Of 21 days from the date of rejection and the Contractor shall bear all cost of such replacement including freight, if any, on such replacing and replaced stores but without being entitled to any extra payment on that or any other account; or
- ii. purchase or authorize the purchase of quantity of the stores rejected or others of a similar description (when stores exactly complying with particulars are not in the opinion of the Purchaser, which shall be final, readily available) without notice to the Contractor at his risk and cost and without affecting the Contractor's liability as regards the supply of any further installments due under the contract; or
- iii. cancel the contract and purchase or authorise the purchase of the stores or others of a similar description (when stores exactly complying with particulars are not, in the opinion of the Purchaser, which shall be final, readily available) at the risk and cost of the Contractor. In the event of action being taken under sub-clause (ii) above or under this sub-clause, the provisions of clause 10.02 above will apply as far as applicable.
- iv. where under the contract the price payable is fixed F.O.B. port of export or F.O.R. despatching station, the Contractor shall, if the stores are rejected at destination by the consignee, be liable, in addition to his other liabilities, including refund of price recoverable in respect of the stores so rejected, to reimburse to the Purchaser the freight and all other expenses incurred by the Purchaser in this regard.

10.5. Penalty for delays in supplies during delivery period:

In case of failure on the part of supplier to arrange supplies as per the delivery schedule/installments fixed in advance, save force majeure conditions or delays

attributable to Purchaser, the purchaser reserves the right to levy liquidated damages, which shall be levied as per para 10.2 (a) above, for the delayed quantity which have remained unsupplied for that period. This will be applicable both in indigenous and foreign contracts.

- 10.6. Thus the total liquidated damages on account of clause 1.02 (a) and 4.0 above will be maximum 20% of the total contract value.

11.0 FORCE MAJEURE

In the event of any unforeseen event directly interfering with the supply of stores arising during the currency of the contract, such as war, hostilities, acts of the public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics, quarantine restrictions, strikes, lockouts, or acts of God, the Contractor shall, within a week from the commencement thereof, notify the same in writing to the Purchaser with reasonable evidence thereof. If the force majeure condition(s) mentioned above be in force for a period of 90 days or more at any time, the Purchaser shall have the option to terminate the contract on expiry of 90 days of commencement of such force majeure by giving 14 days' notice to the Contractor in writing. In case of such termination, no damages shall be claimed by either party against the other, save and except those which had occurred under any other clause of this contract prior to such termination.

12.0 ACCEPTANCE OF STORES DESPATCHED AFTER THE EXPIRY OF DELIVERY PERIOD

- 12.1. In cases where only a portion of the stores ordered is tendered for inspection at the fag end of the delivery period and also in cases where inspection is not completed in respect of the portion of the stores tendered for inspection during the delivery period because of the reason that adequate notice for inspection in accordance with clause 15.1 was not given by the Contractor, the Purchaser reserves the right to cancel the order for the balance quantity, as per clause 10.2 above without any further reference to him. If the stores tendered for inspection during or at the fag end of the delivery period are not found acceptable after carrying out the inspection, Purchaser is entitled to cancel the contract in respect of the same. If, however, the stores tendered for inspection are found acceptable, the Purchaser may grant an extension of the delivery period subject to the following conditions:

- a) The Purchaser has the right to recover from the Contractor the liquidated damages on the stores, which the Contractor has failed to deliver within the period fixed for delivery.
- b) That no increase in price on account of any statutory increase in or fresh imposition of Customs Duty, GST , Freight Charges or on any account of any other tax or duty leviable in respect of the stores specified in the contract, which takes place after the date of delivery period stipulated in the said Acceptance of Tender, shall be admissible on such of the said stores as are delivered after said date.
- c) That notwithstanding any stipulation in the contract for increase in price on any other ground, no such increase which takes place after the delivery date

- stipulated in the contract shall be admissible on such of the said stores as are delivered after the said date.
- d) But nevertheless the Purchaser shall be entitled to the benefit of any decrease in price on account of reduction in or remission of Customs Duty, GST or on account of any other ground which takes place after the expiry of the delivery date stipulated in the contract. The Contractor shall allow the said benefit in his bills or in the absence thereof shall certify that no decrease in price on account of any of these factors has taken place.
- 12.2. The Contractor shall not despatch the stores till such time an extension in terms of clause 12.1 (a) to (d) above is granted by the Purchaser and accepted by the Contractor. If the stores are despatched by the Contractor before an extension letter as aforesaid is issued by the Purchaser and the same are accepted by the consignee, the acceptance of the stores shall be deemed to be subject to the conditions (a) to (d) mentioned in clause 12.1 above.
- 12.3. In case where the entire quantity has not been tendered for inspection within the delivery period stipulated in the contract and the Purchaser chooses to grant an extension of the delivery period the same would be subject to conditions (a) to (d) mentioned in clause 12.1 above.

13.0 SHIPMENT OF STORES BEYOND THE STIPULATED DELIVERY PERIOD

- 13.1. In the event of the Contractor failing to ship the stores duly inspected and passed within the stipulated delivery, the Purchaser is entitled to cancel the contract in respect of the same as per clause 1002 above or invoke the clauses providing other remedies such as liquidated damages as provided in the contract. However, if he so chooses, the Purchaser may grant an extension of the delivery period subject to :—
- a) The Purchaser recovering from the contractor liquidated damages as stipulated in the conditions of contract for the stores, which the Contractor has failed to ship within the period fixed for delivery after the inspection and passing of the stores.
- b) The Purchaser retaining the right to recover from the Contractor any extra expenditure which might have been incurred by the Purchaser on account of additional bank charges payable for extension/amendment of the Letter of Credit, the increase in Custom Duty and Freight Charges directly relatable to the delay in shipping of the stores, etc.
- c) That any additional expenditure incurred by the purchaser or custom duty, freight charges as also extra cost which may arise on account of variation in exchange rate during the extended delivery schedule shall be borne by the Contractor.
- 13.2. The Contractor shall not despatch the stores till such time an extension in terms of the above is granted by the Purchaser. If the stores are despatched by the Contractor before an extension letter as aforesaid is issued by the Purchaser, the supply of the stores shall be deemed to be subject to conditions set above.

14.0 PROGRESS REPORTS

- 14.1. The Contractor shall, from time-to-time, render such reports concerning the progress of the contract and/or supply of the stores including commissioning in such form as may be required by the Purchaser.
- 14.2. The submission, receipt and acceptance of such reports shall not prejudice the rights of the Purchaser under the contract, nor shall operate as an estoppel against Purchaser merely by reason of the fact that he has not taken notice of/or subjected to test any information contained in such report.

15.0 INSPECTION BY INSPECTING OFFICER

- 15.1. When Inspection during manufacture or before delivery or despatch is required, notice in writing shall be sent by the Contractor to the Inspecting Officer when the stores or material to be supplied are ready for inspection and test, and no stores shall be delivered or despatched until the Inspecting Officer has certified in writing that such stores have been inspected and approved by him. At least four weeks' notice must be given to the Inspecting Officer to enable him to arrange the necessary inspection. The examination of stores will be made as soon as practicable after the same have been submitted for inspection, and the result of the examination will be notified to the Contractor.
- 15.2. In cases where the Inspecting Authority specified in the contract requires on behalf of the Purchaser that inspection of the raw materials to be used and/or stage inspection during the manufacturing process of the component/stores etc. is also to be done, notice in writing shall be sent by the Contractor to the Inspecting Officer to visit his premises/works to test the raw materials and/ or conduct necessary inspection during the manufacturing process of the component/stores etc. as deemed essential.

15.3. Marking of Stores

The Contractor shall, if so required, at his own expense, mark all the approved stores with a recognized Government or Purchaser's mark. The stores which cannot be so marked shall, if so required by the Inspecting Officer, be packed at the Contractor's expense in suitable packages or cases, each of which shall be sealed and marked with such mark.

15.4. Facilities for Test and Examination

The Contractor shall, at his own expense afford to the Inspecting Officer all reasonable facilities as may be necessary for satisfying himself, that the stores are being and/or have been manufactured in accordance with the Particulars. The Inspecting Officer shall have full and free access at any time during the execution of the contract to the Contractor's work for the purpose aforesaid, and he may require the Contractor to make arrangements for inspection of the stores or any part thereof or any material at his premises or at any other place specified by the Inspecting Officer and if the Contractor has been permitted to employ the

services of a Sub-Contractor, he shall in his contract with the Sub-Contractor, reserve to the Inspecting Officer a similar right.

15.5. Cost of Test

The Contractor shall provide, without any extra charge, all materials, tools, labour and assistance of every kind which the inspecting Officer may demand of him for any test, and examination, other than special or independent test, which he shall require to be made on the Contractor's premises and the Contractor shall bear and pay all costs attendant thereon. If the Contractor fails to comply with the conditions aforesaid, the Inspecting Officer shall, in his sole judgment, be entitled to remove for test and examination all or any of the stores manufactured by the Contractor to any premises other than his (Contractor's) and in all such cases the Contractor shall bear the cost of transport and/or carrying but such tests elsewhere. A certificate in writing of the Inspecting Officer, that the Contractor has failed to provide the facilities and the means for test and examination, shall be final.

15.6. Delivery of Stores for Test

The Contractor shall provide and deliver free of charge, at such places as the Inspecting Officer may nominate, such materials as he may require for test by chemical analysis or independent testing machines.

15.7. Liability for Costs of Special or Independent Test

The cost of any special or independent tests to be carried out by the Inspecting Officer at a place other than the Contractor's premises will be defrayed by the Purchaser unless it is stated in the specification that it is to be paid by the Contractor. However, in the event of rejection of stores or any part thereof by the Inspecting Officer in the consequence of the sample thereof which is removed to the laboratory or other places of test, being found on test, to-be not in conformity with the Contract, or, in the event of the failure of the Contractor for any reason to deliver the stores passed on test within the stipulated period, the Contractor shall, on demand, pay to the Purchaser all costs incurred in the inspection and/or test, Cost of test shall be assessed at the rate charged by the laboratory to private person for similar work.

15.8. Method of Testing

The Inspecting Officer shall have the right to put all the stores or materials forming part of the same or any part thereof to such tests as he may think fit and proper. The Contractor shall not be entitled to object on any ground whatsoever to the method of testing adopted by the Inspecting Officer.

15.9. The Contractor shall satisfy the Inspector that adequate provision has been made :-

- i. to carry out his instructions fully, and with promptitude ;
- ii. to ensure that parts required to be inspected before use are not used before inspections; and
- iii. to prevent rejected parts being used in error. Where, parts rejected by the Inspector have been rectified or altered, such parts shall be segregated for separate inspection and approval before being used in the work.

15.10. Powers of Inspecting Officer

The Inspecting Officer shall have the power:

- i. Before any stores or part thereof are submitted for inspection to certify that they cannot be in accordance with the contract owing to the adoption of any unsatisfactory method of manufacture ;
 - ii. To reject any stores submitted as not being in accordance with the particulars ;
 - iii. To reject the whole of the installment tendered for inspection, if after inspection of such portion thereof as he may in his discretion think fit, he is satisfied that the same is unsatisfactory;
 - iv. To mark the rejected stores with a rejection mark, so that they may be easily identified if re-submitted for inspection.
- The Inspecting Officer's decision as regards the rejection shall be final and binding on the Contractor.

15.11. Inspection Certificates

On the stores being found acceptable by the Inspecting Officer, he shall furnish the Contractor with necessary copies of the Inspection certificates duly completed for being attached to the Contractor's bill in support thereof.

15.12. Certification of Inspection and Approval in Case of Foreign Contracts

- i. No Stores will be considered ready for delivery until the Purchaser or the Inspecting Officer nominated by him shall have certified in writing that they have been inspected and approved by him.
- ii. It shall be the responsibility of the contractor to ensure that only such goods as have been duly inspected and approved by the Inspecting Authority, are offered for arranging shipment to the UPMRC's Forwarding Agents and to furnish to them a certificate as under:
"Certified that the goods offered for arranging shipment have been duly inspected and approved by the prescribed authority in accordance with the terms of the contract and a copy of the Inspection Certificate issued in this regard is enclosed."

16.0 PACKING AND MARKING

16.1. Packing

16.1.1. The Contractor shall pack at his own cost the stores sufficiently and properly for transit by rail/road, air and/or sea as provided in the contract so as to ensure their being free from loss or damage on arrival at their destination. He shall decide the packing for the stores by taking into account the fact that the stores will have to undergo arduous transportation before reaching the destination and will have to be stored and handled in tropical climatic conditions (Including Monsoons) before being put to actual use.

16.1.2. Unless otherwise provided in the contract, all packing cases, boxes, tins, drums and wrappings in which the stores are supplied by the Contractor, shall be considered as non-returnable and their cost as having been included in the contract price. Containers used for transportation are returnable.

- 16.1.3. Each package shall contain a packing note specifying the name & address of the Contractor, the number and date of the acceptance of tender and the designation of the Purchase Officer issuing the supply orders, the description of the stores and the quantity contained therein.

16.2. Marking

The marking of all goods supplied shall comply with the requirement of the Indian Acts relating to merchandise marks or any amendment thereof and of the rules made thereunder. The following marking of the materials is required :—

- a) The following particulars should be stenciled with indelible paint on all the materials/packages:
- i. Contract No.
 - ii. Specification No.
 - iii. Item No.
 - iv. Port consignee (wherever applicable)
 - v. Abbreviated Consignee marks.
- b) In addition to the marking as specified above, distinguishing colour marks should be given so as to distinguish the ultimate consignees in India.

16.3. Inspection of Packing/Marking

The inspection officer may reject the stores, if the stores are not packed and/or marked as aforesaid and in case, where the packing materials are separately prescribed, if such materials are not in accordance with the terms of the contract, such rejection of stores by the inspecting officer shall be final and binding on the contract.

17.0 FREIGHT

- 17.1. The stores shall be despatched at public tariff rates. In the case of F.O.R. station of despatch contract, the stores shall be booked by the most economical route and or at the most economical tariff available at the time of despatch as the case may be. Failure to do so will render the Contractor liable for any avoidable expenditure caused to the Purchaser. Where alternative routes exist the Purchaser shall, if called upon to do so, indicate the most economical route available or name the authority whose advice in the matter shall be taken and acted upon. If any advice of any such authority is sought his decision or advice in the matter shall be final and binding on the Contractors for indigenous supplies.

- 17.2. The purchaser will not bear any Octroi charges.

18.0 PAYMENT TERMS

The Standard payment terms subject to recoveries, if any, by way of Liquidated Damages shall be as mentioned in Special Condition of Contracts.

19.0 PAYMENT PROCEDURE

- 19.1. Payment for indigenous suppliers will be made in Indian Rupees against bills preferred by the Contractor. Any payment in the foreign exchange that the

Contractor may have to make for imported components forming part of the tender will be arranged by him direct.

- 19.2. Payments against foreign contractors will be arranged through normal banking channels except where payment through letter of credit has been stipulated in the contract. In the case of payment through the letter of credit, all charges levied by the foreign bank(s) shall be borne by the Contractor.
- 19.3.
- i. Tenderer to give consent in a mandate form for receipt of payment through EFT(Electronic Fund Transfer).
 - ii. Tenderers to provide the details of Bank A/c in line with RBI guidelines for the same. These details will include Bank name, Branch name & Address, Account type, Bank A/c No. and Bank & Branch Code as appearing on MICR cheque issued by bank.
 - iii. Tenderer to attach certificate from their bank certifying the correctness of all above mentioned information (as mentioned in para (II) above).
 - iv. In case of non payment through EFT or where EFT facility is not available, payment will be released through cheque.
- 19.4. In case of payment through direct remittance/letter of credit to foreign contractors they have to submit the certificates/information before opening of the LC or making the payment to them.

20.0 WITHHOLDING AND LIEN IN RESPECT OF SUMS CLAIMED

- 20.1. Whenever any claim or claims for payment of a sum of money arises out of or under the contract against the Contractor, the Purchaser shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the amount of Performance Guarantee Bond and any other Guarantee furnished by the Contractor and for the purpose aforesaid, the Purchaser shall be entitled to encash the Performance Guarantee Bond etc. and also have a lien over the amount of the Performance Guarantee Bond etc. pending finalisation or adjudication of any such claim. In the event of the said amount being insufficient to cover the claimed amount or amounts or if no Performance Guarantee Bond etc. has been taken from the Contractor, the Purchaser shall be entitled to withhold and have lien to retain to the extent of the such claimed amount or amounts referred to supra, from any sum or sums found payable or which at any time thereafter may become payable to the Contractor under the same contract or any other contract with the Purchaser or the Government pending finalization or adjudication of any such claim.

It is an agreed term of the contract that the sum of money or moneys so withheld or retained under the lien referred to above, by the Purchaser will be kept withheld or retained as such by the Purchaser till the claim arising out of or under the contract is determined by the Arbitrator (if the contract is governed by the arbitration clause) or by the competent court as prescribed under clause 3103 hereinafter provided, as the case may be, and that the Contractor will have no

claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to supra and duly notified as such to the Contractor.

- 20.2. For the purpose of clause 20.1, where the Contractor is a partnership firm or a limited company, the Purchaser shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum found payable to any partner/ limited company, as the case may be, whether in his individual capacity or otherwise.
- 20.3. **Lien in respect of Claims in other Contracts**-Any sum of money due and payable to the Contractor (including the amount of Performance Guarantee Bond any other Guarantee) under the contract may be withheld by way of lien by the Purchaser or Government against any claim of the Purchaser or Government in respect of payment of a sum of money arising out or under any other contract made by the Contractor with the Purchaser or Government.

It is an agreed term of the contract that the sum of money so withheld or retained under this clause by the Purchaser or Government will be kept withheld or retained as such by the Purchaser or Government till his claim arising out of in the same contract or any other contracts is either mutually settled or determined by the Arbitrator, if the contract is governed by the arbitration clause or by the competent court under clause 3103 hereinafter provided, as the case may be, and that the Contractor shall have no claim for interest or damages whatsoever on this account or any other ground in respect of any sum of money withheld or retained under this clause and duly notified as such to the Contractor.

- 20.4. In addition to this other remedies under the law and these conditions, the Purchaser shall have a lien on each machine in respect of which the 80% has been paid to secure payment of this amount and recovery of any sum due from the Contractor, should the machine(s) not be successfully commissioned within the time specified as per clause Installation, Commissioning & Proving Tests in the Technical Specifications contained in Bid Documents Part-II.

21.0 RESPONSIBILITY OF THE CONTRACTOR FOR EXECUTING THE CONTRACT

- 21.1. **Risk in the Stores**:- The Contractor shall perform the contract in all respects in accordance with the terms and conditions thereof. The stores and every constituent part thereof, whether in the possession or control of the Contractor, his agents or servants or a carrier, or in the joint possession of the Contractor, his agents or servants and the Purchaser, his agents or servants, shall remain in every respect at the risk of the Contractor, until their actual delivery to the consignee at the stipulated place or destination or, where so provided in the acceptance of tender, until their delivery to a person specified in the contract as interim consignee for the purpose of despatch to the consignee. The Contractor shall be responsible for all loss, destruction, damage or deterioration of or to the stores from any cause whatsoever while the stores after approval by the Inspecting Officer are awaiting despatch or delivery or are in the course of transit from the Contractor to the consignee or the interim consignee as the case may be. The Contractor shall alone be entitled and responsible to make claims

against a Railway Administration or any other carrier in respect of non-delivery, short delivery, misdelivery, loss, destruction, damage or deterioration of the goods entrusted to such carrier by the Contractor for transmission to the consignee or the interim consignee, as the case may be.

- 21.2. **Consignee's Right of Rejection** — Notwithstanding any approval which the inspecting Officer may have given in respect of the stores or any materials or other particulars or the work or workmanship involved in the performance of the contract (whether with or without any test carried out by the Contractor or the Inspecting Officer or under the direction of the Inspecting Officer) and notwithstanding delivery of the stores where so provided to the interim consignee, it shall be lawful for the consignee, on behalf of the Purchaser, to reject the stores or any part, portion of consignment thereof within 90 days after expiry of the stipulated time provided in the contract for the commissioning of the machine or in case the commissioning is completed after the stipulated time, after commissioning of the machine at the place or destination specified in the contract if such stores or part, portion of consignment thereof is not in all respects in conformity with the terms and conditions of the contract whether on account of any loss, deterioration or damage before despatch or delivery or during transit or otherwise howsoever. The rejection advice issued by consignee may be in the standard format as per Store Code Vol-I, para 764.
- 21.3. Provided that where, under the terms of the contract, the stores are required to be delivered to an interim consignee for the purpose of despatch to the consignee, the stores shall be at the Purchaser's risk after their delivery to the interim consignee, but nevertheless it shall be lawful for the consignee on behalf of the Purchaser to reject the stores or any part, portion of consignment thereof upon their actual delivery to him at the destination if they are not in all respects in conformity with the terms and conditions of contract except where they have been damaged or have deteriorated in the course of transit or otherwise after their delivery to the interim consignee.
- 21.4. The provisions contained in clause 28.0 relating to the removal of stores rejected by the Inspecting Officer shall, mutatis mutandis apply to stores rejected by the consignee as herein provided.
- 21.5. The Contractor shall refund any advance/part payment received by him in respect of the rejected stores within 21 days of the receipt of intimation from the consignee about the rejection of the stores. In default, the Purchaser may take steps against Contractor for recovery of such price. This is strictly without prejudice and in addition to the rights provided in clause 10.4.
- i. In case of rejection of pre-inspected supply of goods at consignee end, the material rejection advice/rejection memo should be sent to all concerned i.e. firm, purchaser, pre-inspecting agency, paying authority as per the contract, associate bill paying authority etc. without fail.
 - ii. The concerned paying authority as per the contract and associated bill paying authority should note the rejection advice details in its recovery register for effecting recovery of payments made, as the case may be.

- iii. Joint inspection of rejected lot of goods should be held with pre-inspection agency and firm. In cases of failure of the firm to associate with joint inspection, the same should be held with pre-inspecting agency.
- iv. Firm may be permitted to rectify the rejected goods in its premises only after the firm has deposited the payments already made against the same or equivalent amount has been withheld for this purpose.
- v. In case of replacement supply against the rejected lot of goods, the same should be pre-inspected by the pre-inspecting agency prior to acceptance of the same by the consignee.
- vi. In case of acceptance of replacement supply/ rejected supply after rectification, the material rejection advice/ rejection memo issued earlier should be withdrawn under advice to all concerned.

21.6. **Subletting and Assignment** — The Contractor shall not sublet (otherwise than that which may be customary in the trade concerned), transfer, assign or otherwise part with directly or indirectly to any person or persons, whatever is in this contract, or any part thereof without the previous written permission of the Purchaser or his nominee.

In the event of the Contractor's failure to obtain such permission, the Purchaser shall be entitled to cancel the contract and to purchase the stores elsewhere on the Contractor's account and risk and the Contractor shall be liable for any loss or damage which the Purchaser may sustain in consequence or arising out of such purchase.

21.7. **Changes in a Firm**

- a) Where the Contractor is a partnership firm, a new partner shall not be introduced in the firm except with the previous consent in writing of the Purchaser, which may be granted only upon execution of a written undertaking by the new partner to perform the contract and accept all liabilities incurred by the firm under the contract prior to the date of such undertaking. In the event of the Contractor's failure to comply with this requirement, it shall be lawful for the Purchaser to cancel the contract and purchase or authorise the purchase of the stores at the risk and cost of the Contractor and in that event the provisions of clause 1002 as far as applicable shall apply.
- b) On the death or retirement of any partner of the Contractor firm before complete performance of the contract, the Purchaser may, at his option cancel the contract and in such case the Contractor shall have no claim whatsoever to compensation against the Purchaser.
- c) If the contract is not determined as provided in sub-clause (b) above notwithstanding the retirement of a partner from the firm he shall continue to be liable under the contract for acts of the firm until a copy of the public notice given by him under section 32 of the Partnership Act, has been sent by him to the Purchaser by registered post acknowledgement due.
- d) The decision of the Purchaser as to any matter or thing concerning or arising out of this sub-clause or on any question whether the Contractor or any partner of the Contractor firm has committed a breach of any of the conditions in this sub-clause shall be final and binding on the Contractor.

22.0 RESPONSIBILITY FOR COMPLETENESS

- 22.1. Any fittings or accessories which may not be specifically mentioned in the specifications but which are usual or necessary, are to be provided by the Contractor without extra charge, and the plant must be complete in all details.
- 22.2. The work shall be performed at the place or places specified in the contract or at such other place or places as may be approved by the Purchaser.
- 22.3. In all cases where the contract provides for tests on site, the Purchaser, except where otherwise specified, shall provide, free of charge, such labour, materials, fuels, stores, apparatus and instruments as may be required from time to time and as may reasonably be demanded, efficiently to carry out such tests of the plants, materials or workmanship etc. in accordance with the contract.
- 22.4. In the case of contracts requiring electricity, for the completion of the work and for test on site, such electricity, when available, shall be supplied free to the Contractor at the pressure of the ordinary supply.

However, responsibilities of Purchaser and the contractor required for execution of work at consignees site shall be as defined in bid document Part-II.

23.0 CHARGES FOR WORK NECESSARY FOR COMPLETION OF THE CONTRACT

The Contractor shall pay all charges for handling, stamping, painting, marking, protecting or preserving patent rights, drawings, templates, model and gauges and for all such measures as the Purchaser or the Inspecting Officer may deem necessary for the proper completion of the contract though special provision therefore may not be made in the specification or drawings. The Contractor shall also pay for Dock and Harbour dues, port's rates, export taxes and other fees' or charges, if any, levied because of exportation.

24.0 INDEMNITY

The prices stated are to include all rights (if any) of patent, registered design or trade mark and the Contractor shall at all times indemnify the Purchaser against all claims which may be made in respect of the stores for infringement of any right protected by patent, registration of designs or trade mark; provided always that in the event of any claim in respect of alleged breach of a patent, registered designs or trade mark being made against the Purchaser, the Purchaser shall notify the Contractor of the same and the Contractor shall, at his own expense, either settle any such dispute or conduct any litigation that may arise there from.

25.0 RISK OF LOSS OR DAMAGE TO GOVERNMENT OR PURCHASER'S PROPERTY

- 25.1. All the property of the Government or Purchaser loaned, whether with or without deposit on terms and conditions to be separately agreed upon in respect of each particular contract, to the Contractor in connection with contract shall remain the

property of the Government or the Purchaser, as the case may be. The Contractor shall use such property for the purpose of the execution of the contract and for no other purpose whatsoever.

- 25.2. All such property shall be deemed to be in good condition when received by the Contractor unless he shall have within twenty four hours of the receipt thereof notified the Purchase Officer or the concerned authority to the contrary. If the Contractor fails to notify any defect in the condition or quality of such property, he shall be deemed to have lost the right to do so at any subsequent stage.
- 25.3. The Contractor shall return all such property and shall be responsible for the full value thereof to be assessed by the Purchaser/loaning authority whose decision shall be final and binding on the Contractor. The Contractor shall be liable for loss or damage to such property from whatever cause happening while such property is in the possession of or under the control of the Contractor, his servants, workmen or agents.
- 25.4. Where such property is insured by the Contractor against loss or fire at the request of the Government or Purchaser such insurance shall be deemed to be effected by way of additional precaution and shall not prejudice the liability of the Contractor as aforesaid.

25.5. Safety Measures

- 25.5.1. The Contractor should take all precautionary measures in order to ensure the protection of his own personnel moving about or working on the railway premises, and should conform to the rules and regulations of the Railway.
- 25.5.2. The Contractor should abide by all railway regulations in force from time to time and ensure that the same are followed by his representatives, agents or sub-contractor or workmen.
- 25.5.3. The Contractor should ensure that unauthorised, careless or inadvertent operation of installed equipment which may result in accident to staff and/or damage to equipment does not occur.
- 25.5.4. The Contractor should indemnify and keep the Purchaser indemnified and harmless against all actions, suits, claims, demands costs charges or expenses arising in connection with any accident, death or injury, sustained by any person or persons within the railway premises and any loss or damage to railway property sustained due to the acts or omissions of the Contractor irrespective of whether such liability arises under the workman's compensation act or the fatal accidents act or any other statute in force from time to time.

26.0 CUSTOMS DRAWBACK

If, by reason of a customs notification published after the placing of the contract, the stores to be supplied shall become, on exportation, subject to customs drawback in respect of duty paid on them or on the materials used in their

manufacture, the Contractor shall recover the amount of the drawback and the contract price of the stores shall be reduced by the amount so recovered.

27.0 BOOK EXAMINATION CLAUSE

The Purchaser shall have the right for "Book Examination" as follows:

- 27.1. **The** Contractor shall whenever called upon and requiring to produce or cause to be produced or examination by any Govt. Officer duly authorised in that behalf, any cost or other account book of account, voucher, receipt, letter, memorandum, paper or writing or any copy of or extract from any such document and also furnish information any way relating to such transaction and procedure before the duly authorised Government Officer returns verified in such manner as may be required relating in any way to the execution of this contract or relevant for verifying or ascertaining the cost of execution of this contract. The decision of such Government Officer on the question of relevancy of any document, information or return being final and binding on the parties.

The obligation imposed by this clause is without prejudice to the obligation of the Contractor under any statute, rules or orders and it shall be binding on the Contractor.

- 27.2. The Contractor shall, if the authorised Government Officer so required (whether before or after the prices have been finally fixed), afford facilities to the Government Officer concerned to visit the Contractor's works for the purpose of examining the processes of manufacture and estimating or ascertaining the cost of production of the articles. If any portion of the work be entrusted or carried out by a Sub-Contractor or any of its subsidiary or allied firm or company, the authorised Government Officer shall have the power to examine all the relevant books of such Sub-Contractor or any subsidiary or allied firm or company which shall be open to his inspection as mentioned in clause 27.1.
- 27.3. If on such examination, it is established that the contracted price is in excess of the actual cost plus reasonable margin of profit, the Purchaser shall have the right to reduce the price and determine the amount to a reasonable level.
- 27.4. Where a contract provides for book examination clause, the Contractor or 'its agency is bound to allow examination of its books within a period of 60 days from the date the notice is received by the Contractor, or its agencies calling for the production of documents as under clause 27.1 above. In the event of Contractor's or his agencies failure to do so, the contract price would be reduced and determined according to the best judgment of the Purchaser which would be final and binding on the Contractor and his agencies.

28.0 REMOVAL OF REJECTED STORES

- 28.1. On rejection of any stores submitted for inspection at a place other than the premises of the Contractor, such stores shall be removed by the Contractor at his own cost subject as herein after stipulated, within 21 days of the date of

intimation of such rejection. If the concerned communication is addressed and posted to the Contractor at the address mentioned in the contract, it will be deemed to have been served on him at the time when such communication would in the course of ordinary post reach the Contractor, provided that where the price or part thereof has been paid, the consignee is entitled without prejudice to his other rights to retain the rejected stores till the price paid for such stores is refunded by the Contractor save that such retention shall not in any circumstances be deemed to be acceptance of the stores or waiver of rejection thereof.

- 28.2. All rejected stores shall in any event and circumstances remain and always be at the risk of the Contractor immediately on such rejection. If such stores are not removed by the Contractor within the periods aforementioned, the Inspecting Officer may remove the rejected stores and either return the same to the Contractor at his risk and cost by such mode of transport as the Purchaser or Inspecting Officer may decide, or dispose of such stores at the Contractor's risk and on his account and retain such portion of the proceeds, if any, from such disposal as may be necessary to recover any expense incurred in connection with such disposals (or any price refundable as a consequence of such rejection). The purchaser shall, in addition, be entitled to recover from the Contractor handling and storage charges on the rejected stores after the expiry of the time-limit mentioned above.
- 28.3. The stores that have been despatched by rail and rejected after arrival at destination may be taken back by the Contractor either at the station where they were rejected or at the station from which they were sent, after refunding the price paid for such stores and other charges refundable as a consequence of such rejection. If the contract is placed for delivery F.O.R. station of despatch, the Contractor shall pay the carriage charges on the rejected consignment at public tariff rates from the station of despatch to the station where they are rejected. If the Contractor elects to take back the goods at the station from which they were despatched, the goods shall in addition, be booked back to him freight to-pay at public tariff rates and at Contractor's risk. The Contractor shall be liable to reimburse packing and incidental costs and charges incurred in such return of rejected stores in addition to other charges refundable as a consequence of rejection. The goods shall remain the property of the Contractor unless and until accepted by the Purchaser after inspection.

29.0 CORRUPT PRACTICES

- 29.1. The Contractor shall not offer or give or agree to give to any person in the employment of the Purchaser or working under the orders of the Purchaser any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or having done or forborne to do any act in relation to the obtaining or execution of the contract or any other contract with the Purchaser or Government or for showing any favour or for bearing to show disfavour to any person in relation to the contract or any other contract with the purchaser or Government. Any breach of the aforesaid condition by the Contractor, or any one

employed by him or acting on his behalf (whether with or without the knowledge of the Contractor) or the commission of any offence by the Contractor, or by any one employed by him or acting on his behalf, under Chapter IX of the Indian Penal Code, 1860 or the Prevention of Corruption Act, 1947 or any other act enacted for the prevention of corruption by public servants shall entitle the Purchaser to cancel the contract and all or any other contracts with the Contractor and to recover from the Contractor the amount of any loss arising from such cancellation in accordance with the provisions of clause 10.2.

- 29.2. Any dispute or difference in respect of either the interpretation, effect or application of the above clause or of the amount recoverable there under by the Purchaser from the Contractor, shall be decided by the Purchaser, whose decision thereon shall be final and binding on the Contractor.

30.0 INSOLVENCY AND BREACH OF CONTRACT

The Purchaser may at any time, by notice in writing summarily determine the contract without compensation to the Contractor in any of the following events, that is to say :—

- a) if the Contractor being an individual or if a firm, any partner thereof, shall at any time, be adjudged insolvent or shall have a receiving order or order for administration of his estate made against him or shall take any proceeding for composition under any Insolvency Act for the time being in force or make any conveyance or assignment of his effects or enter into any assignment or composition with his creditors or suspend payment or if the firm be dissolved under the Partnership Act, or
- b) if the Contractor being a company is wound up voluntarily or by the order of a Court or a Receiver, Liquidator, or Manager on behalf of the Debenture holders is appointed, or circumstances shall have arisen which entitle the Court or Debenture holders to appoint a Receiver, Liquidator or Manager, or
- c) if the Contractor commits any breach of the contract not herein specifically provided for.

Provided always that such determination shall not prejudice any right of action or remedy which shall have accrued or shall accrue thereafter to the Purchaser and provided also the Contractor shall be liable to pay to the Purchaser any extra expenditure he is thereby put to and the Contractor shall, under no circumstances, be entitled to any gain on re-purchase.

31.0 LAWS GOVERNING THE CONTRACT

- 31.1. This contract shall be governed by the Laws of India for the time being in force.
- 31.2. Irrespective of the place of delivery and the place of payment under the contract, the contract shall be deemed to have been made at the place in India from where the acceptance of tender has been issued.
- 31.3. Jurisdiction of Courts.—The Courts of the place from where the acceptance of tender has been issued shall alone have jurisdiction to decide any dispute arising out of or in respect of the contract.

31.4. Compliance with provisions of Contract Labour (Regulation and Abolition) Act, 1970 — For Indigenous Supplies:

- i. The Contractor shall comply with the provisions of the Contract Labour(Regulation and Abolition) Act, 1970 and the Contract Labour (Regulation and Abolition) Central Rules, 1971, as modified from time-to-time, wherever applicable and shall also indemnify the Purchaser from and against any claims under the aforesaid Act and the Rules.
- ii. The Contractor shall obtain a valid license under the aforesaid Act as modified from time-to-time before the commencement of the contract and continue to have a valid license until the completion of the contract. Any failure to fulfill this requirement shall attract the penal provisions of the contract arising out of the resultant non-execution of the contract.
- iii. The Contractor shall pay to labour employed by him directly or through Sub-Contractors the wages as per provisions of the aforesaid Act and the Rules wherever applicable. The Contractor, shall notwithstanding the provisions of the contract to the contrary, cause to be paid the wages to labour indirectly engaged on the contract including any engaged by his Sub-Contractors in connection with the said contract, as if the labour had been immediately employed by him.
- iv. In respect of all labour directly or indirectly employed in the contract for performance of the Contractor's part of the contract, the Contractor shall comply with or cause to be complied with the provisions of the aforesaid Act and the Rule; wherever applicable.
- v. In every case in which, by virtue of the provisions of the aforesaid Act or the Rules, the Purchaser is obliged to pay any amount of wages to a workman employed by the Contractor or his Sub-Contractor in execution of the contract or to incur any expenditure in providing welfare and health amenities required to be provided under the aforesaid Act and the Rules or to incur any expenditure on account of the contingent liability of the Purchaser due to the Contractor's failure to fulfill his statutory obligations under the aforesaid Act or the Rules, the Purchaser will recover from the Contractor, the amount of wages so paid or the amount of expenditure so incurred, and without prejudice to the rights of the Purchaser under section 20, sub-section (2) and section 21, sub-section(4) of the aforesaid Act, the Purchaser shall be at liberty to recover such amount or part thereof by deducting it from the amount of the Performance Guarantee Bond and/or from any sum due by the Purchaser to the Contractor whether under the contract or otherwise. The Purchaser shall not be bound to contest any claim made against it under sub-section (1) of section 20 and sub-section (4.) of section 21 of the aforesaid Act except on the written request of the Contractor and upon his giving to the Purchaser full security for all costs for which the Purchaser might become liable in contesting such claim. The decision of the Purchaser regarding the amount actually recoverable from the Contractor as stated above, shall be final and binding on the Contractor.

32.0 ARBITRATION

- 32.1. If conciliation fails, then such disputes or differences, whatsoever arising between the parties, arising out of touching or relating to manufacture, measuring operation or effect of the Contract or the breach thereof shall be referred to Arbitration in accordance with the following provisions:

- i. Matters to be arbitrated upon shall be referred to a sole Arbitrator where the total value of claims does not exceed Rs. 1.5 million. Beyond the claim limit of Rs. 1.5 million, there shall be three Arbitrators. For this purpose Employer will make out a panel of engineers. This panel will be of serving or retired engineers of Government Departments or of Public Sector Undertakings;
- ii. For the disputes to be decided by a sole Arbitrator, a list of three engineers taken from the aforesaid panel will be sent to the Contractor by the Employer from which the Contractor will choose one;
- iii. For the disputes to be decided by three Arbitrators, the employer will make out a list of five engineers from the aforesaid panel. The Contractor and Employer shall choose one Arbitrator each and the two so chosen shall choose the third Arbitrator from the said list who shall act as the presiding Arbitrator;
- iv. Neither party shall be limited in the proceedings before such Arbitrator(s) to the evidence or the arguments put before the Conciliator;
- v. The Conciliation and Arbitration hearings shall be held in Lucknow only. The language of the proceedings that of the documents and communications shall be English and the awards shall be made in writing. The Arbitrators shall always give item-wise and reasoned awards in all cases where the total claim exceeds Rs. One million; and
- vi. The award of the sole Arbitrator or the award by majority of three Arbitrators as the case may shall be binding on all parties.

32.2. Interest on Arbitration Award

Where the arbitral award is for the payment of money, no interest shall be payable on whole or any part of the money for any period, till the date on which the award is made.

32.3. Cost of Arbitration

The cost of arbitration shall be borne by the respective parties. The cost shall, inter alia, include the fees of the Arbitrator(s) as per rates fixed by the Employer from time to time.

32.4. Jurisdiction of Courts

Where recourse to a Court is to be made in respect of any matter, the Employer and the Contractor agree to the sole jurisdiction of courts in Lucknow.

32.5. Suspension of work on Account of Arbitration

The reference to Conciliation/ Arbitration shall proceed notwithstanding that the Works shall not then be or be alleged to be complete, provided always that the obligations of the Employer, Engineer and the Contractor shall not be altered by reasons of arbitration being conducted during the progress of the Works. Neither party shall be entitled to suspend the work or part of the work to which the dispute relates on account of arbitration and payments to the Contractor shall continue to be made in terms of the Contract.

33.0 SECRECY

- 33.1. The Contractor shall take all reasonable steps necessary to ensure that all persons employed in any work in connection with the contract, have full knowledge of the Official Secrets Act and any regulations framed thereunder.
- 33.2. Any information obtained in the course of the execution of the contract by the Contractor,; his servants or agents or any person so employed, as to any matter whatsoever, which would or might be directly or indirectly, of use to any enemy of India, must be treated secret and shall not at any time be communicated to any person.
- 33.3. Any breach of the aforesaid conditions shall entitle the Purchaser to cancel the contract and to purchase or authorise the purchase of the stores at the risk and cost of the Contractor in accordance with the clause-1002 of the General Conditions of Contract, In the event of such cancellation, the stores or parts manufactured in the execution of the contract shall be taken by the Purchaser at such price as he considers fair and reasonable and the decision of the Purchaser as to such price shall be final and binding on the Contractor.

34.0 WARRANTY

- 34.1. The Contractor shall warrant that everything to be furnished hereunder shall be free from defects and faults in design, material, workmanship and manufacture and shall be of the highest grade and consistent with the established and generally accepted standards for goods of the type ordered and in full conformity, with the contract specifications and samples if any and shall if operatable, operate properly.
- 34.2. This warranty shall survive inspection of, payment for and acceptance of the goods and shall expire after 24 month from the date of commissioning of machine at ultimate destination in India, Any approval of acceptance by purchaser of the Stores or of the material incorporated here in shall not in any way limits the contractor's liability.
- 34.3. The contractor's liability in respect of any complaints defects and or claims shall be limited to the furnishing and installation of replacement parts free of any charge or the repair or defective parts only to the extent that such replacement or repairs are attributable to or arise from faulty workmanship or material or design in the manufacture of the stores, provided that the defects are brought to the notice of Contractor with in 3 (Three) months of their being first discovered during the warranty period or 3 (Three) months from the date of expiry of warranty period or at the option of the Purchaser to the payment of the value, expenditure and damage as hereafter mentioned.
- 34.4. The contractor shall, if required, replace or repair the goods or such portion thereof as is rejected by the Purchaser free of cost at the ultimate destination or at the option of the purchaser, the contractor shall pay to the purchaser value thereof at the contract price or in the absence of such price at price decided by

the Purchaser, and such other expenditure and damages as may arise by reason of the breach of the condition herein specified.

- 34.5. All replacement and repairs that the purchaser shall call upon the contractor to deliver or perform under this warranty shall be delivered and performed by the contractor within 1 (one) weeks, promptly and satisfactorily. The warranty period will be extended by the number of days the machine remains under breakdown during the warranty period and the warranty Bank Guarantee would be returned at the end of such extended warranty period for the full machine.
- 34.6. If the Contractor so desires, the replaced parts can be taken over by him or his representative in India for disposal as he deems fit at the time of replacement of goods/parts. No claim whatsoever shall lie on the Purchaser for the replaced parts thereafter.
- 34.7. The warranty herein contained shall not apply to any material which shall have been repaired or altered by the Purchaser, or on his behalf in any way without the consent of the Contractor, so as to effect the strength, performance or reliability or to any defects to any part due to misuse, negligence or accident,
- 34.8. The decision of the Purchaser in regard to Contractor's liability and the amount, if any, payable under this warranty shall be final and conclusive.
- 34.9. The warranty period in the offer shall survive for a period of 24 months from the date of commissioning of machine. If the offer is found with less than 24 months or ambiguous/uncertain on warranty conditions, the tender is liable to be rejected.
- 34.10. The Purchaser, without prejudice, shall be entitled and it shall be lawful on his part to forfeit the amount of the Guarantee Bond furnished in respect of Warranty in whole or in part in the event of any default, failure or neglect on the part of the Contractor in the fulfillment or performance in all respects of the warranty provisions under reference or failure to extend the validity of Guarantee Bond for the period of break down occurred during warranty period and for such part(s) replaced and/or repaired and part(s) immediately connected thereto as per clause 34.5.

35.0 SERVICING AND WAREHOUSING FACILITIES

- 35.1. The tenderer will clearly spell out in the offer the facilities available with him or his agent for providing adequate after-sales service in India during warranty period. The tenderer will also indicate the organisation located at various places in India and the availability of trained staff, maintenance spares etc. at different centres in the country. In the case of imported machines, presence of qualified service engineering personnel with the supplier or his agent will be essential and the bidder should certify in the offer that such service team will be available. This information should be provided by the bidder in relevant Section of Bid document Part-II.

- 35.2. All spares required for the maintenance of these machines should be made available to various consignees for ware-housing in India for a period as specified in Bid Document part-II.
- 35.3. After the warranty period, the manufacturer or his agent shall agree to provide service supports for trouble shooting and obtaining spare parts. The manufacturer shall be obliged to provide spare parts required by the Purchasers for a period of 15 (Fifteen) years or as per codal life of machine mentioned in bid document Part-II from the date of delivery of the machine at the ultimate destination to safeguard against obsolescence.
- 35.4. The following information must be furnished by the Tenderer/Manufacturer regarding facilities for after sale service available in India.
- i. Whether similar types of machines have been sold earlier by the manufacturer through the agents in India, if so the machine model number and details of the customers to whom the machines were sold should be furnished.
 - ii. Whether any trained engineers are available in India either with the firm or with their agents to attend to after sale problems of;
 - a. Control equipment
 - b. Machine and
 - c. Location where these engineers are available in India.
 - iii. If reply to (ii) above is in negative, the nature of after sale service proposed to be provided by the manufacturer during the warranty period and later. The number of service engineers and their location may also be specified;
 - iv. What inventory of spare parts for the control equipment and the machine will be maintained by the manufactures directly or with their Indian Associate in India for the warranty period requirement. The location of proposed warehouse for maintaining the inventory and the approximate value of such inventory may also please be indicated, alongwith the list of such spares.
 - v. Whether repairable parts assemblies like printed circuit boards will be repaired in India or sent to the manufacturer aboard during the warranty period and the modalities for the same,

36.0 OPERATION AND INSTRUCTION MANUALS & SERVICE TROUBLE SHOOTING GUIDES

- 36.1. The supplier shall furnish per machine ordered 4 copies each or such number as specified in Bid Document Part-II of the relevant operating manual, maintenance manual, instruction for both electrical and mechanical equipments, trouble shooting guide, spare parts catalogue with price list, detailed wiring diagram, hydraulic circuit diagram, Lubrication diagram with schedule of lubrication and lubricants to be used. In case of imported machines equivalent indigenously available brands of lubricants hydraulic oils and other consumable and spare parts should be indicated. All technical documents will be in English language.
- 36.2. In addition, one hard copy and one soft copy each of the above mentioned literature shall be supplied to the consignee. All the drawings/diagrams shall be reproducible tracing film.

- 36.3. Dimensions Specifications for rubber spare parts and electronic spare parts should be given.

37.0 Turn-Key contracts

- 37.1. The supplier shall arrange certification by a RCC Consultant, who should be a Chartered Engineer registered with the Institution of Engineers, that:
- a. The design of the machine foundation &
 - b. Construction of the foundation.

is in accordance with the latest version of the relevant part of the Indian Standard for Code of Practice for design & construction of machine foundation as specified in IS:2974.

The original certificate issued by the consultant for certification of both the design & construction of the foundation and a copy of his registration certificate from the Institution of Engineers shall be submitted by the supplier to the consignee.

- 37.2. The supplier shall stand a warranty for the foundation alongwith the machine. He shall arrange to rectify any defects (e.g. sinking or cracking) occurring during the warranty period in the foundation. He shall also be responsible for uprooting and reinstalling the machine if so required for carrying out the repairs to the foundation. The warranty period would be extendable by the time period for which the machine remains out of commission due to the defect in the foundation or a period of one year, whichever is more.
- 37.3. The payment for the construction of the foundation and installation & Commissioning of the machine would be released only after submission of a certificate as required vide Para-3701 above, which has to be certified by the consignee. This certification shall be done while issuing the PTC for the machine.
- 37.4. Detailed specifications of the quantity and quality of the material etc. of the turnkey work is to be specified by the firm alongwith the offer so that these can be incorporated in the contract to ensure right quality as well as quantity of the material etc.

38.0 Post Warranty Maintenance

- 38.1. Tenderers may be required to quote for post warranty Annual Maintenance for a period of 5 years or such period as specified in Bid Document Part-II after expiry of the warranty period of the M&P alongwith their offers.
- 38.2. In such cases, tenderers are required to mention such CAMC schedule of such Annual periodic maintenance alongwith offers giving the charges for CAMC maintenance schedule and other details of items to be used in such preventive maintenance.

**SPECIAL CONDITIONS OF
CONTRACT
(SCC)**

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SPECIAL CONDITION OF CONTRACT

1.0 Payment Terms: (refer clause no. 18.0 of GCC)

Payment terms should be followed strictly as per terms and conditions of bid document.

A. **Foreign Suppliers:** All the payments will be made through an unconfirmed, irrevocable Letter of Credit (LC) payable at site from a bank in India. The standard payment terms subject to recoveries, if any, by way of Liquidated Damages as per clause 10.2 of GCC will be as under :-

(a) 80% of the payment of shipped material value against irrevocable L.C, will be made on proof of inspection certificate and shipment documents within 30 days of receipt of shipping documents as specified. The shipping documents shall consists of:

- i. Two copies of negotiable cum original Bill of Lading/Airway Bill.
- ii. A copy of inspection certificate issued by the inspecting officer.
- iii. Signed/certified commercial invoice (of 100% SHIPPED VALUE) showing the description, quantity and price of stores shipped along with packing list/shipping specification.
- iv. A copy of contractor's letter addressed to the insurer as advance intimation sent by the beneficiary to insurer advising the closing/shipping particulars to enable insurer to arrange insurance.
- v. Certificate for country of origin issued by the appropriate authority.
- vi. A certificate that one set of non negotiable document has been sent to purchaser and ultimate consignee.
- vii. Certificate of purchasers of having receipt of PBG as per Clause no. 7.0 of GCC.
- viii. Any other document apart from i) to vii) above and as per the requirement of the contract.
- ix. Packing List

In case of FOR contracts, 80% payment for supplied material will be made on receipt of the material duly pre inspected and receipted at site by the consignee in good condition. Payment for the imported portion will be made against irrevocable L.C on receipt of the complete consignment in good condition as per specification at ultimate consignee's end.

- (b) In case where dispatch is permitted by road, 80% payment will be made against receipt of the material duly pre inspected and receipted at site by the consignee in good condition.
- (c) i) Balance 20% payment of the shipped material value and payment of installation testing commissioning and training if any will be made through bank transfer on furnishing a Bank Guarantee for an amount equal to 10% of the contract value, as per format fully indemnifying the Purchaser against all losses incurred by the Purchaser during the Warranty period stipulated in the Warranty Clause No. 34.0 within 30 days of the receipt of Bill alongwith

Proving Test Certificate after successful completion of proving test in which the machine performance would have been demonstrated by the supplier or his Indian associate after its commissioning at the consignee's premises. Where, however, the installation and commissioning of the machine is delayed or put off beyond 90 days of the receipt of goods at the ultimate destination due to express written instructions of the Purchaser/Consignee, the balance 20% payment shall be released to the supplier on his furnishing the necessary Bank Guarantee of equal amount i.e. balance 20% valid for the period as asked by the purchaser.

- ii) The Bank Guarantee as mentioned above should be in the prescribed format issued by a Scheduled Commercial Bank based in India or from a branch in India of a scheduled foreign bank.
 - iii) In exceptional cases, when the BGs are submitted by the contractors/suppliers etc. through themselves (and not directly by the issuing bank under Registered Post AD or Speed Post or Courier Service), the BG issuing Bank Branch immediately should send by Registered Post AD or Speed Post or Courier Service an unstamped duplicate copy of the Bank Guarantee directly to the UPMRC with a covering letter to enable UPMRC to compare with the original BGs and to confirm that the submitted BG is in order.
- (d) Payment of maintenance during DLP or CAMC if any will be made quarterly basis against the certificate from the consignee for satisfactorily maintenance of equipment/plant.

B. For indigenous Suppliers:-

The standard payment terms subject to recoveries, if any, by way of Liquidated Damages as per clause 10.2 of GCC will be as under:

- (a) 80% payment of the supplied material value will be made on receipt of the material duly pre inspected and receipted at site by the consignee in good condition.
- (b) i) Balance 20% payment of supplied material value and payment of installation, testing, commissioning, and training if any will be made on furnishing a Bank Guarantee for an amount equal to 10% of the contract value, as per Annexure-11 fully indemnifying the Purchaser against all losses incurred by the Purchaser during the Warranty period stipulated in the Warranty Clause No. 34.0 within 30 days of the receipt of Bill alongwith Proving Test Certificate after successful completion of proving test in which the machine performance would have been demonstrated by the supplier or his Indian associate after its commissioning at the consignee's premises. Where, however, the installation and commissioning of the machine is delayed or put off beyond 90 days of the receipt of the goods at the ultimate destination due to express written instructions of the Purchaser/Consignee, the balance 20% payment shall be released to the supplier on his furnishing the necessary Bank Guarantee of equal amount i.e balance 20% valid for the period ask by the purchaser.
 - ii) The Bank Guarantee as mentioned above should be in the prescribed format issued by a Scheduled Commercial Bank based in India or from a branch in India of a scheduled foreign bank
 - iii) In exceptional cases, when the BGs are submitted by the contractors/suppliers etc. through themselves (and not directly by the issuing

bank under Registered Post AD or Speed Post or Courier Service), the BG issuing Bank Branch immediately should send by Registered Post AD or Speed Post or Courier Service an unstamped duplicate copy of the Bank Guarantee directly to UPMRC with a covering letter to enable UPMRC to compare with the original BGs and to confirm that the submitted BG is in order.

Payment of maintenance during DLP or CAMC if any will be made quarterly basis against the certificate from the consignee for satisfactorily maintenance of equipment/plant.

2.0 EVALUATION CRITERIA

2.1. Total value of the offer will be calculated on the followings:

- 2.1.1. The cost of Supply of 04 set of Supply of Fully Automatic CNC Under Floor Wheel Lathe with Spares as per specifications given in Schedule of Requirement and as per clause 1.2 of Particular Specification.
- 2.1.2. Erection, Testing & commissioning, integrated commissioning of Fully Automatic CNC Under Floor Wheel Lathe and O&M documentation and training to employer's staff and other obligations as mentioned in Schedule of Requirement.
- 2.1.3. Maintenance of equipments for 24 Months of DLP.
- 2.1.4. Comprehensive Annual Maintenance Contract for 5 Years after completion of DLP with terms and conditions as given in Schedule-IX.

2.2. Following items will not be taken into evaluation and may be quoted as optional

- 2.2.1. Deleted

Note:

- a) Above items are required strictly as per specifications given in Schedule of Requirement.
- b) The above prices shall be on 'FOR destination basis' at Kanpur and Agra.
 - i Quoted price against S. No. '2.1.3 above shall be more than or equal to 5% of the total quoted price against S. No. '2.1.1' to 2.1.3'.
 - ii In case quoted price for item no. 2.1.3 is less than 5% of the total price against item no. '2.1.1' to 2.1.3' then for **financial evaluation** and contract execution, the price for item no. '2.1.1' to '2.1.2' shall be reduced on pro-rata basis and price against item '2.1.3' will be so adjusted so as to ensure that the adjusted price of item no. '2.1.3' is equal to 5% of the total revised (adjusted/reduced) price against the items no. 2.1.1 to 2.1.3.

- c)** On supply items applicable taxes and custom duty shall be clearly indicated. These are payable only when tenderer indicate these in their offer clearly. Supplier shall undertake transit insurance and will be responsible for the supply of contracted stores to be delivered in good condition at final destination.
- d)** Payment related to local services if any such as Erection, testing & commissioning, integrated commissioning, O&M documentation, training to employer's staff and Maintenance during DLP shall attract Tax Deduction at Source under the income tax regulations as applicable.
- e)** For indigenous supply, tenderer shall quote their rates on final destination basis. Evaluation of offers will be made on FOR destination incl. of all taxes and duties.
- f)** Purchaser reserves the right to increase/decrease the quantity (to any extent) of procurement of any spare quoted against the Mandatory spares/ RECOMMENDED SPARES. Purchaser at its sole discretion may place order for spares at any time within six months before the expiry of the Defect Liability Period.
- g)** Supplier shall not undertake supply of any spare unless specifically confirmed by the Purchaser.
- h)** Supplier shall indicate the lead time for supply of each item of spares (against Mandatory as well as Recommended) in their offer. In the event of delay of supply of ordered spares beyond the commuted lead time, penalty as per contract conditions shall be leviable.
- i)** For overseas manufacturer, the price shall be on 'FOR destination. Offer without freight charges will be loaded with highest rate of freight charges received against the tender.
- j)** For overseas supply, in case details of Freight charges, Insurance etc are not given, evaluation of offers will be done on CIF + 1% landing charges + total concessional custom duty (Including basic custom duty, applicable IGST, cess & other applicable taxes and duties, if any) as applicable under project import on (CIF + 1%) basis. Insurance charges will be loaded @0.25% of C&F value. Offer without freight charges will be loaded with highest rate of freight charges received against the tender.
- k)** In case of foreign offer, if the service provider does not have permanent establishment in India, then the applicable taxes has to be deposited by the service receiver (purchaser) on reverse charge basis. Also, if the service provider does not quote the applicable taxes in his offer, then applicable taxes on service portion will be considered inclusive in the quoted rates as applicable on the due date of

submittal of tender. In this case, payment will be made after deducting the applicable taxes that will be paid by service receiver (purchaser).

PART- II

SCHEDULE OF REQUIREMENTS

1. GENERAL SPECIFICATIONS

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1. GENERAL DESCRIPTION AND SCOPE OF SUPPLY

1.1 Application of the General Specification (GS)

The provisions contained in the GS shall prevail over the provisions contained in International/European/British/Indian Standards and Codes of Practice and similar documents stated in the contract.

The provisions contained in the Particular Specification (PS) and the Employer's Drawings shall prevail over the provisions contained in this GS.

The GS shall be read in conjunction with the Particular Specification and other documents constituting the contract. This specification will apply to those design features that are part of Particular Specifications.

1.2 Abbreviations

Common abbreviations used in the GS and in the PS shall have the following meanings:

AC	Alternating Current
ACB	Air circuit breaker
BS	British Standard
CAD	Computer aided design
DC	Direct current
UPMRC	Uttar Pradesh Metro Rail Corporation
E	Earth
EMC	Electromagnetic compatibility
EMIP	Environmental mitigation plan
EMU	Electrical multiple unit
EN	Euro norm
FAT	Factory acceptance tests
GCC	General conditions of contract
GS	General specifications
GOW	General overhaul workshop
HRC	High rupturing capacity
HRc	Rockwell hardness
HS/LS	High speed/low speed
HV	High voltage
IEC	International electrotechnical commission
IS	Indian Standard
ISO	International Standards Organisation
ITT	Instruction to Tenderers

LED	Light emitting diode
OHE	Overhead equipment
PS/TS	Particular specification/Technical specification
QAP	Quality assurance plan
SCC	Special conditions of contract
LRW	Light repair Workshop
LV	Low voltage
MCB	Miniature circuit breaker
MCCB	Moulded case circuit breaker
MIG	Metal inert gas
NC	Numerical control
NF	French Standard
PLC	Programmable logic controller
PO	Power outlet
PVC	Polyvinyl chloride
TIG	Tungsten inert gas
UIC	International Union of Railways
US	Ultrasonic
UV	Ultraviolet
VLV	Very low voltage

1.3 Definitions

Words and phrases defined in the GCC or SCC shall retain the same meaning within the GS and PS unless specifically redefined within this GS:

1. "Client, Employer" refers to U.P Metro Rail Corporation (UPMRC) and Manager of the contract to which this tender invitation relates.
2. "Client's Representative, Employer Representative", Engineer refers to responsible persons or parties designated by the Client to act on his behalf in his name for all management tasks or actions concerning the works and installations defined in the contract.
3. "Contractor", "Supplier", Constructor" or "Manufacturer" refers to the party to which this procurement has been awarded.
4. "In Principle": This term signifies that derogation may be granted to the specification to which it is associated.
5. "External" applies to everything not provided under this contract.
6. "Commissioning" refers to the readiness of the equipment for putting into service after successful completion of installation works and Site tests.
7. "Factory tests" refers to the tests to be carried out at the manufacturer's premises before shipment/despatch of the equipment to the site.

8. "Site tests" refers to the tests to be carried out after installation of the equipment at site.

1.4 Scope of work

- 1.4.1 The scope of work includes design, manufacture, supply, installing, testing and commissioning of the Machinery and Plant & training of employer staff.
- 1.4.2 The Contractor for Electrical & Mechanical works shall terminate mains of electric power for battery charging etc, within about 10 m of the designated required place. Contractor shall do all connection from the mains to his machine.

The arrangement of electric power, compressed air and wastewater disposal during the commissioning phase shall be the responsibility of the Contractor. For operational and testing requirements, the Client shall provide, the above.

1.5 Training of maintenance and operation staff

The Contractor shall provide comprehensive training to the Client's staff to enable safe and efficient maintenance and operation of the equipment supplied as part of the contract to achieve maximum reliability and economy of cost. The Contractor shall submit to the Client's Representative for review and approval, a training plan at least 2 months before the readiness of the equipment for commissioning. The training plan shall include:

- schedule of training courses,
- syllabus, size of class and duration of each capsule,
- training facilities to be provided by the Client,
- qualifications and experience level necessary for the trainees,
- instructor's qualifications and competency certificate issued by the OEM.
- normal modes of operation of equipment,
- procedures to be followed for safe and efficient operation of the equipment.

The training shall be held at nominated Depot comprising of :

- (i.) Operational training
- (ii.) Maintenance & Overhauling training,

The training shall consist of classroom training and practical hands on training. The training shall take place in Employer nominated Depot. The Contractor shall depute competent trainers to carry out training with a high degree of proficiency. During the warranty period, the Contractor is responsible for faultfinding and repairs, he shall also provide practical hands on training to the Client's maintenance staff in this regard.

The Contractor shall also provide training courses and training materials to the Client's training instructors to a higher level of competence to allow the instructors to subsequently train the Client's staff in maintenance and operation of the equipment.

1.6 Spares and tools

The Tenderer shall quote in the bid, for the mandatory spares & recommended spares. Details may be seen in Particular Specification.

The manufacturer shall guarantee spare parts' supply support for a period of at least 10 years after completion of the DLP i.e the defect liability period of the last supplied machine.

The Contractor shall provide to the Client, all special tools and instruments required for the maintenance of the machine. These shall be supplied in prescribed tool boxes having padlocking facilities.

All spares shall be manufactured, works tested, calibrated, suitably packed and labelled and delivered to the Site and placed in the Employer nominated Depot store after joint check.

1.7 Use of drawings and data

All data in respect of rolling stock written in this General specification is for information only and there may be slight variations.

The compatibility of the equipment with the rolling stock characteristics is the responsibility of the Contractor and he shall obtain the required data/documents from the respective Rolling Stock Contractors.

All information or documents related to the Rolling Stock and which are deemed necessary are to be obtained by the Contractor from the respective rolling stock supplier.

The drawings shown on the plans define the operating conditions and are provided for indicative purpose only. These may be adapted by the Contractor in consultation with the Client.

1.8 Inscriptions

- The marking and inscriptions mentioned in the technical specifications shall be presented in English.
- Inscriptions shall be engraved or enameled. Painting of inscription will not be permitted.
- Fixations shall be riveted or directly engraved on the support.

1.9 Technical relationships between Client and Contractor

The consultant or the technical bodies, if designated by the Client will be empowered to settle, on behalf of the Client, the technical problems related to the Contract.

1.10 Exchange of information with third parties

Exchange of information may be required between the Contractor and other parties playing a part in execution of the line:

- to finalize matters relative to interfaces or layout of equipment,
- to enable the Contractor to ascertain that the environmental conditions planned for his installations are indeed met (tolerances on power supply, air conditioning etc),

- to achieve this, the Contractor may establish direct contact with these parties, contingent upon prior notification of the Client. The list of relevant contractors shall be advised to the contractor for necessary interface requirements.

1.11 Disclosure of results of design or studies

The Contractor undertakes not to communicate to third parties the results of the studies carried out under this Contract, unless authorized to do so by the Client or his Representative.

1.12 Standards' list

The Machinery and Plant to be supplied shall be new, manufactured according to the best manufacturing practices and according to the latest, state of the art technology.

The machinery and Plant shall be of proven design.

Rigid quality control shall be followed by the main manufacturer of the equipment as well as his subcontractors for the subassemblies.

The main manufacturers of the equipment as well as the suppliers of main assemblies to the main manufacturer should have ISO9000/9001/9002 or equivalent certification.

The International/European/British/Indian Standards to be followed as per GS or PS shall be the latest on the date of award of contract.

Standard N°	Description
EN 60 204-1	Safety of machinery - Electrical equipment of machines – General requirements – 09/1998
NF E 85-101	Items used on industrial installations – Metal railings – 10/1988
NF C 15-100	Low-voltage electrical installations – Rules
ISO 2632	Surface texture – Methods of measurement – Roughness comparison specimens
ISO 1217	Displacement compressors – Acceptance tests – 09/1996
BS 7333	Specification for Jib Cranes - 1990
IS 3938	Hoist class of duty
IS 806	For structure portion of jib crane
IS 4758	Sound level
ISO 1711	Assembly tools for screws and nuts - Technical specifications - Hand operated wrenches and sockets
BS 4568	Specification for steel conduit and fittings metric of ISO form for electrical installations (page 26)
BS 7671	Requirements for electrical installations (page 29) – 1997
BS 6651	Code of practice for Protection of Structures against Lighting (page 30) - 1992
BS 5378	Safety colors and safety signs
ISO 3864	
BS EN 60529	Degrees of protection provided by enclosures (IP code)
IS 4460/1967	Specifications for gears
IS 226 & IS 2062	Specifications for carbon steel
IS 816/823	Welding

IS 325	Electric motors
IS 13947	Degree of protection
IS 2516/1985	Moulded case circuit breakers
IS 8623/1977	Factory built assembled switch gear and control gear
IS 3043	Code of practice for earthing

1.13 Climatic Conditions and operating environment

The equipment shall be required to work under the following climatic conditions:

- Maximum temperature during summer 50⁰ C
- Relative humidity during rainy season 100 %
- Minimum temperature during winter 3⁰ C
- Environment Dusty with industrial pollutants

1.15 Reference Data of Tracks

The trains shall be operated on the tracks with the following specifications. The track specification may however vary slightly and the Contractor shall obtain the details from the Track Work Contractor.

Track Gauge 1435 mm for SG

1.15.1 Reference Data of EMU Coaches

The details of EMU coaches like Number of Coaches in the train, Weight of coach, Length of coach, Width of coach, Height of coach, is placed at Particular Specification of Tender Document.

1.16 Electromagnetic compatibility

Deleted

1.17 General Electrical Requirements

1.17.1 Motors

All equipment shall withstand the local climatic and environmental conditions (temperature, humidity, dust, etc.) defined in para. 1.14 above.

The motors shall be dust and water splash proof and shall be suitable to work on 380 to 440V AC, 50Hz, three phase, 4 Wires supply.

The protection level of the motors shall be at least IP 55 for internal and IP 65 for external motors unless mentioned otherwise in PS.

These shall be ventilated and specially designed for duty ratio and start-ups per hour as per equipment group and shall be fitted with a built-in under-voltage electric brake, wherever required.

The Contractor shall specify but not limited to the following details:

- the brand,

- the type,
- the insulation class : H
- the power,
- the nominal rotation speed,
- the current input at start-up,
- the current input under nominal load,
- the construction of the rotor, stator winding
- the brand of brake,
- the type of brake,
- the mode of action of the brake,
- the nominal braking torque.

1.17.2 The motors shall be sized such as to withstand the start-up forces and sudden braking and accidental blocking forces without damage. They shall be protected on all three phases. The Contractor may also propose a variable power supply wherever felt advantageous.

Electrical cabinet

Material for electrical cabinet shall be stainless steel grade -316L .

Cubicles shall be symmetrically arranged as far as possible

The arrangements of the equipment within each cubicle shall be such that all normal maintenance can be carried out through hinged access doors or removable covers, from the front.

Where a number of different items are in close proximity, the enclosure shall be grouped to form a single suite or a composite enclosure shall be provided.

Each suite of panels or cubicles shall be fitted with a designation label giving identification number, voltage rating and duty. Such labels shall be fitted on the front of the cubicle, and on the sides and/or rear where appropriate.

All electrical and electronic equipment/components used in the plant shall be designed for use in outdoor application in very rough environmental conditions (as specified in TS) (power, control, regulation, etc.) & shall be contained in a dust and water splash tight cabinet and shall be at least IP 56.

An approved method of construction shall be employed and the use of externally visible assembly bolts and screws will not be accepted.

The design of cubicles shall be such as to ensure adequate ventilation and air circulation without permitting the entry of vermin. Dust penetration shall be kept to a minimum by the fitting of recessed rubber seals around doors and removable panels.

Cubicles shall be provided with flush front access doors fitted with lockable handles and lift-off type hinges so arranged that one shank engages before the other to permit ease of fitting. No instruments or relays shall be mounted on the doors unless otherwise specified.

Control wiring within the cubicles shall be neatly looped or contained in purposely designed trunking unless every cable is insulated for the highest voltage present in accordance with the requirements of BS 7671.

The front door of all cubicles shall only be opened when the functional unit is shut off .

Live panel wiring terminations shall have a protective cover and warning labels.

Where the voltage exceeds 110V d.c. or a.c., danger signage with suitable labels shall be fitted to give warning of the potentials contained therein. Where applicable, labels shall be fixed adjacent to the warning label advising isolation and earthing of conductors before removal of the panel. The wording of the labels shall be subject to the approval of the Employer's Representative.

1.17.3 Electrical cabinet equipment

Component layout within panels shall provide a logical arrangement of equipment with the maximum feasible segregation between mains voltage/high current and low voltage/low current components and wiring.

All components within control panels shall be either directly mounted on the back plate by means of screws in tapped holes or onto a "DIN" type mounting rail itself directly mounted on the back plate by means of screws in tapped holes. The arrangement shall be got approved first by the Employer.

For incoming and outgoing power cabling this space shall be increased as necessary to ensure that the bending radius of the conductors is not compromised and segregation between power cabling and control cabling is preserved.

Wiring shall be carried out in a neat and systematic manner and securely fixed by insulated cleats or other approved methods, and arranged so that access to any apparatus or connection point is not impeded.

Where inter-panel wiring passes through panel side sheets the access hole shall be fitted with a suitable rubber grommet.

Identification ferrules shall be fitted on all wires at both ends; numbers and letters used shall correspond with the appropriate wiring diagram and shall be read from the terminals outwards. They shall be legible and durably marked and shall not be affected by oil or moisture. All cables connected to any nodal point shall be allocated with a discrete number which must not be used elsewhere in the associated circuits. The wires shall not be jointed or broken in between terminal points. Wiring for all known future equipment shall be provided and all wires

shall be terminated. Wires of different voltages, AC or DC shall be completely separated. All equipment and terminals associated with voltages in excess of 110V shall be fully shrouded. Isolators, clearly labelled, shall be provided in such positions and connections so that maintenance can be carried out with maximum safety. All power supply terminals and cables shall be marked in accordance with the electrical schematic diagrams.

The functions of the main components shall be identified on engraved labels whose content is identical to that given on the electrical schematic diagrams.

Warning labels shall be fitted in all situations where the removal of covers or access panels may expose live equipment operating at voltages above 50V between circuits or to earth and shall bear the inscription 'Danger - Live Parts' in red letter on a white background. Minimum height of letters is 10 mm.

If the cubicle contains items of equipment which may retain electrical charges after they have been switched off, a warning label shall be provided.

All labels shall be of Formica engraving laminate or similar approved, of ample size and engraved in English characters. A permanent mechanical means of fixing these labels shall be provided, other than by adhesives.

All equipment and apparatus, both inside and outside the switchboard, including instruments, meters, and relays, which is not clearly identified by integral labelling, shall be adequately labelled by means of an engraved label bearing, in black letters on a white background.

Miniature circuit-breakers (MCB's) and moulded case circuit-breakers (MCCB's) shall comply with BS EN 60898 and BS EN 60947-2 respectively. They shall be fitted with latest state of the art over load & short-circuit protections. Earth leakage protection shall be of the current operated type. Unless otherwise specified, the A.C. rated short-circuit capacity for MCB shall not be less than 10 kA, and that for MCCB shall not be less than 25kA. In case of Residual Current Circuit Breakers with Integral Overload Protection, manually operated ON/OFF facilities shall be provided.

Auxiliary switches supplied for indication, protection, metering, control interlocking and supervisory purposes shall be readily accessible and enclosed in a transparent dust-proof cover. Terminal blocks at different voltages shall be segregated into voltage groups and terminal board layouts shall correspond with the wiring diagrams.

Fuses and links shall be provided to enable any circuit to be isolated as necessary for maintenance and test purposes without isolating the whole panel.

Push Buttons shall be coloured as follows:

- (1) "Start" - Green;
- (2) "Stop" Red; All other push buttons shall be black.

Emergency stop push buttons shall be provided and positioned in the immediate vicinity of the associated motor drive

Emergency stop push buttons shall be connected in the control circuits such that they are effective under all conditions, and shall have red mushroom headed stay put on push type pattern. A deliberate reset action shall be required before the drive can be put back into service, but resetting of the push button shall not restart the drive.

All control circuit supplies for contactor starting shall be obtained from a 110V 50Hz internal control transformer contained in the cubicle.

Main drive motor starters shall be suitable for their required frequency duty in line with this Particular Specification. Other motors starters shall also be suitable for their required frequency duty but in no circumstance shall the frequency duty be less than 40 operations per hour. Their performance shall be in accordance with BS EN 60947-4-1. Protective, control, interlock and alarm relays shall be placed in positions readily accessible during operation of the plant.

All the equipment shall be designed to operate in electrified railway environment.

It shall in particular be protected against the following effects:

- the numerous disturbing phenomena due to the proximity of high amperage current liable to be working in switching mode,
- the proximity of equipment generating high frequencies (converters, etc,) various parasitic disturbances, and against power supply anomalies such as: high ripple ratio, high over-voltage, slow voltage or frequency variations, etc.

The equipment shall normally be able to operate at the ambient temperature of the workshop.

All components, and in particular the relays, shall be of the high endurance type whose high degree of reliability shall allow normal operation of the machine over a period of 10000 hours.

1.18 General Mechanical Requirements

1.18.1 Materials- General

All materials incorporated in the Works shall be suitable for the duty concerned and shall be new and of best commercial quality, free from imperfections, and selected for long life and minimum maintenance under the conditions specified.

All material used shall be of current production and well-proven application for the design and intended usage.

Where different components of equipment are interconnected to form a complete system, their characteristics of performance and capacities shall be matched in order to ensure efficient, economical, safe and sound operation of the complete system.

1.18.2 Workmanship- General

Workmanship and general finishes shall be of best quality and in accordance with best workshop practice.

All similar items of Plant and their component parts shall be completely interchangeable. Spare parts shall be manufactured from the same materials as used for the originals and shall fit all similar items or plant. Where machining may be needed before fitting renewable parts, the machining fits with their tolerances shall be shown on the drawings accompanying the instruction manuals.

All revolving parts shall be truly balanced both statically and dynamically so that when running at normal speeds and at any load up to the maximum, there shall be no significant vibration due to out-of-balance forces.

All parts and equipment, which are subject to, wear or damage by dust or moisture in the environment they are installed shall be totally enclosed in housings of the appropriate degree of protection.

All equipment shall operate without excessive vibration and with a minimum of noise.

1.18.3 Materials and Ancillaries

a. Structural Steel Sections: -

- Hot rolled structural steel section shall comply with BS 4: Part 1.
- Corrosion protection shall be by hot dip galvanization with minimum thickness of coating of 85 micron or heavy protective finish as specified in the Specification.

b. Mild Steel: -

- Mild steel for general purposes shall conform with the requirement of BS:4360.
- Steel parts shall be galvanized as appropriate to approved standards and as specified above. Uncoated or non-corrosion resistant steel parts shall not be used unless otherwise approved by the Employer's Representative.

c. Steel Castings and Forgings: -

- All steel castings shall conform with the requirements of BS:3100. Forgings shall conform to BS:29.
- No repair shall be undertaken without prior Approval by the Employer's Representative. Such Approval shall also refer to the procedure for repair. Repairs by welding to steel castings and forgings shall be undertaken only by properly qualified welders and in full accordance with an Approved procedure. All such repairs shall be **subject to stress relief**.

d. Corrosion Resistant Steel: -

- i. Unless otherwise specified or approved by the Employer's Representative, stainless steel tubes, sheets and plates used in this Contract shall be in accordance with the following Standards: -

Austenitic stainless steel tubes shall comply with BS 6323: Part 1 and 8.

Stainless and heat-resisting steel plates, sheet and strip shall comply with BS 1449: Part 2, grade 304 unless otherwise specified.

- ii. Stainless steel shall have good arc-welding properties and low carbon content. Stainless steels adversely affected by welding shall not be used. There shall be no visible welding marks on the exterior surface. All stainless steels shall be subject to Approval by the Employer's Representative.
- iii. Stainless steel protective cover shall be applied on the external surface and retained until installation is completed. Covering materials between seams or panel joints shall be removed before assembly. The protective cover shall be removed by the Contractor as instructed by the Employer's Representative, there shall be no residual covering materials left on the surface or in between seams or panel joints after removal.

All die-cast aluminium components in large quantities shall bear a marking clearly indicating the month and the year of manufacture.

- iv. Aluminium die-casting shall conform to BS 1490.

e. Bronze : -

Bronze castings for bearings, packing boxes, and similar applications shall be of the phosphor bronze type to BS 1400.

f. Copper: -

- i. Copper tubing shall be of the seamless type to BS 2871.
- ii. Copper for electrical purposes shall conform to the requirements of BS1432-4 and BS 1977 as appropriate for the duty.

g. Brass : -

Brass tubing shall be of the heavy gauge seamless type and shall comprise 70% copper, 29% zinc and 1% tin.

1.18.4 Welding and Fabrication

These clauses on welding refer to fabrications in mild steel. If the Contractor supplies any equipment welded from other metals he shall propose the relevant welding standards and procedures for the acceptance of the Client's Representative.

a. Distortion and assembly:

Metal arc welding shall comply with the provisions of BS EN 499 and BS 5135 or equivalent. The temperature of steel shall be more than 10°C when welding is commenced. Finished members shall be true to line and free from twists, bends and open joints.

During the fabrication of a welded assembly, the procedure and sequence shall be such as to minimise distortion and shrinkage. All welds shall be deposited in a sequence that will balance the applied heat as welding progresses.

Members to be joined by welding shall be accurately cut to size to ensure that the finished dimensions are met and, where required, shall be rolled or pressed to proper curvature in accordance with the approved drawings. Edges of members shall be suitably machined for the required type of welding and to permit thorough penetration.

The design of welded joints and connections, and the fabrication of welded steel parts shall conform to the requirements of an acceptable British Standard or equivalent for structural steelwork, and shall also be stress relieved to an acceptable British Standard or equivalent if required. If stress relieving is used then the Contractor shall ensure that no distortion arises as a result of the process and that the finished size of the equipment is within the required tolerances.

Any welding of steel castings to the framework shall conform to BS 4570 or equivalent.

b. Equipment:

Electrodes, fluxes and equipment shall be used in accordance with the manufacturer's instructions. The use of welding processes other than those covered by BS 5135 or equivalent, will be subject to reviewed and acceptance by the Client's Representative. Welding electrodes for manual electric arc welding shall be of the heavily coated type, suitable for all positions of welding.

All welding shall be performed by a process, which will exclude the atmosphere from the molten metal and, whether possible, be under procedure control using automatic machines. Electric arc welding is preferred.

c. Quality assurance:

Procedures in line with ISO 9000 or equivalent shall be followed as part of the Quality Plan for all welding procedures and welder certification. These procedures and certifications shall be in line with BS EN 287 and BS EN 288 or equivalent.

All critical welds, as identified by the Contractor, shall be traceable. The Contractor shall submit weld maps and a sample of weld traceability records. These critical welds shall also be subject to a non-destructive test to be proposed by the Contractor for the review and acceptance of the Client's Representative.

Welding shall be carried out by qualified welders only. Welding procedures and welder certificates in accordance with BS EN 288 and BS EN 287 or equivalents shall be followed by the Contractor.

d. Preparation and cleaning:

Surfaces prepared for welding shall exhibit sound metal without laminations and other injurious defects. Surfaces of plates to be welded shall be free from rust, grease, mill scale and other foreign matter over a distance of at least 25 mm back from weld edges. The Contractor shall indicate on his drawings material grade to be used for all fabrications.

Particular care shall be exercised in aligning and separating edges of members to be joined by butt-welding in order to ensure complete penetration and fusion at the bottom of the joint. Each fully penetrated butt joint shall be finished with a sealing run.

All galvanised surfaces to be welded shall have all zinc coating thoroughly removed by means of angle grinding until bare parent metal is revealed. Care must be exercised not to remove more parent metal than absolutely necessary so as not to weaken the strength of the structure.

After deposition, welds shall be cleaned of slag and shall show uniform sections, smoothness of weld metal, feather edges without overlay and freedom from porosity, inclusions and undercut. As a minimum, visual inspection at the edges and ends of welds shall indicate sound fusion with the parent metal. The Contractor shall propose for the acceptance by the Client's Representative the standards and criteria to be used for weld acceptance. In the case of pressure-tight components, all slag shall be removed by shot-blasting.

1.18.5 Gearboxes and Gearing

All gears shall be heat treated for maximum wear and fracture resistance. High speed gears shall be of helical teeth configuration. Each geared shaft assembly shall be supported on ball or roller bearings.

Gearboxes shall be designed such that the gears will be automatically lubricated at all operating speeds. The box shall prevent escape or contamination of the lubricant. Breathing shall be provided. Where oil replacement is necessary, facilities for filling, drainage and means of indicating clearly the correct oil level shall be provided.

Lifting lug(s) shall be provided for gearboxes where deemed necessary. Gearing shall comply with BS 436, BS 545 and BS 721 or equivalent.

1.19 General Hydraulic Requirements

1.19.1 General

Hydraulic power transmission systems if provided, shall be constructed in accordance with BS 4575 or equivalent. All cylinders, piston rods, pipes, hoses, valves and fittings shall be designed to withstand a static pressure of at least three (3) times the maximum operating pressure without plastic deformation.

The power unit shall be of integral and compact design consisting of all components necessary for the system to function efficiently and safely as intended. It shall be constructed as a self-contained removable module with all components systematically mounted on a structural steel frame for easy maintenance.

The hydraulic system shall be equipped with the following protection devices:

1. Overheating
2. Overpressure
3. Low oil level
4. Surge protection if required

The hydraulic oil proposed shall have characteristics suitable for the intended duties and be compatible with all the components and elastomers used in the system. The oil shall be of appropriate viscosity, correct specific gravity and have good oxidation resistance and good anti-foaming properties. The oil shall not be classified as dangerous goods. The oil shall be readily available in India.

The system shall be designed to ensure that any tripping or transient operation does not result in surge pressures that could cause damage to the system.

The contractor shall achieve Indian equivalent of lubricant & hydraulics oil used in machines.

1.19.2 Hydraulic cylinders and Rams

All hydraulic cylinders and rams shall be designed to sustain axial forces resulting from a pressure equal to 2.5 times the full load pressure. A ram shall not be subject to bending stress or eccentric loading. The rams shall be provided with over centre valves locally fitted at the inlet and outlet ports to prevent creeping of the cylinder when pressure is not applied.

The piston rod shall be constructed of austenitic stainless steel, which is chrome plated and polished.

Cylinders shall be provided with solid metal stops at the end of the stroke, or with other equally effective means to prevent the rod from travelling beyond the limits of the cylinder at maximum speed and maximum operating pressure.

Adjustable cushions shall be provided at the limits of the cylinder stroke. Cushions shall be designed to decelerate the ram from the maximum speed to stop without impact.

All hydraulic cylinders shall be provided with self-aligning clevises at both ends for connection to the system structure.

Rod wipers shall be replaceable without the need to remove the clevis and cylinder from its installed position. The rod bearing and seal of a cylinder shall be mounted in an external cartridge and be replaceable without the need to remove piston.

All cylinders shall be factory tested to 200% of full load pressure for a duration of 5 minutes without evidence of any pressure drop or leakage. This shall be identified in the Factory Acceptance Test and a suitable test certificate provided.

1.19.3 Hydraulic oil storage tanks

Oil storage tanks shall have sufficient capacity to provide an adequate oil reserve to prevent the entrance of air or other gas into the system. They shall be of rigid construction so as to prevent distortion due to

the weight of oil and shall be so designed and constructed that when completely filled, a factor of safety of at least 4, based on the maximum normal pressure in the tank can be sustained without plastic deformation. The return lines shall terminate below the minimum fluid level of the tank.

The tank shall be designed to adequately dissipate heat from the oil under all normal working conditions and provide a slow recirculation of heavy contaminants. The oil returning from the pump intake points shall be separated by baffles or other means ; such baffles shall not hinder the cleaning of the tank.

A transparent indicator of approved design shall be provided for checking the oil level and it shall be accessible without the need to remove any cover or other parts of the equipment.

A breather or other suitable venting arrangement shall be provided at a position to facilitate the venting of air from the tank.

A manually sealable drain valve shall be provided at a position to facilitate the complete draining of oil from the tank.

1.19.4 Hydraulic pipe work and fitting

All pipe work shall be provided in stainless steel. Pipe work shall be so supported that undue stresses are eliminated at joints, bends and fittings, particularly at any section of the system, which is subjected to vibration. Cross-sectional areas of pipe work shall be sufficient to prevent cavitations and starvation.

Hydraulic hoses shall be of adequate strength and be suitable for the type of oil used. Hose connections shall be of the type recommended by the hose manufacturer. The installation of hoses shall be such as to avoid the use of sharp bends and chafing or trapping by moving parts of the machine.

The relief valve shall be located between the pump and the check valve and shall be of such a type and so installed in a by-pass connection, which the valve cannot be shut off from the hydraulic pump. The return from the valve shall be passed directly to the tank and not to the suction side of the pump.

The relief valve pressure setting shall be as low as practical, commensurate with the operating requirements and shall not be greater than 125% of the working pressure of the pump, in order to avoid damage to the motor and hydraulic system. The size of the relief valve and by-pass shall be sufficient to by-pass the maximum rated capacity of the pumps, without raising the pressure more than 20% above that at which the valves open. Relief valves having exposed pressure adjustments shall have their means of adjustment sealed.

Control valve spindles or plungers shall be positively restrained against being forced from the valve casing. Design and installation shall be such that they are fail-safe. Solenoids shall be capable of operating without malfunction within $\pm 10\%$ of the nominal control voltage and be protected against the entry of splashed oil and dirt.

The system shall incorporate continuous full flow removable oil filters. All filters shall have integral bypass valves and provisions for visual

and electrical indication of blockages. The filters shall be durable, with a low resistance to flow, high direct retention rate, high permissible temperature range, high permissible pressure differential and cleanable. The degree of filtration and level of cleanliness shall be consistent with the requirements for the components and environmental conditions.

All filters shall be installed where they are readily accessible and adequate space shall be allowed for element changing. Where suction filters or strainers are used, they shall be accessible for maintenance without draining the oil tank. Suction filters or strainers shall be selected and installed so that the inlet conditions at the pump are within the pump manufacturer's specification.

1.19.5 Screws, springs and Pivots

The use of iron and steel for screws, springs and pivots in the machine shall be avoided as far as possible. All fixing screws shall be of stainless steel.

Springs shall be of non-rusting material (e.g. phosphor bronze or nickel silver) where possible. Pivots or other parts for which non-ferrous material is unsuitable shall be of an Approved corrosion-resistant material.

1.19.6 Bolts, Studs, Nuts and Washers

All bolts, studs and nuts shall be to an Approved Standard and to metric dimensions and shall generally be of stainless steel. Those subject to vibration, high temperature or pressure shall be of high tensile material to the Approval of the Employer's Representative. The use of black grade bolts shall be permitted only at approved locations of minor importance.

Bolts, studs, nuts and washers shall be made of free machining quality stainless steel.

Bolts, studs and nuts shall be suitably machined. Rolled threads will be considered acceptable if conforming to an Approved standard. Washers shall be provided under all nuts and also bolt heads where appropriate. Bolts and studs shall protrude by at least one thread pitch beyond the outside face of nuts.

Jacking and connection screws shall all be of high tensile steel with fine threads of an Approved form.

Nuts, bolts, tap-bolts, set pins and any other item subject to vibration shall be secured with Approved locking devices

1.19.7 Bedplates, Alignment and Levelling

All bedplates of fabricated construction shall, prior to final machining, be fully stress-relieved.

To facilitate the alignment and levelling of larger components, all bedplates shall incorporate jacking screws suitably arranged to provide for movement of driving motors in both axial and transverse directions. Motor seating pads shall be so arranged that single piece machined packers can be inserted in place of shims of required

thickness under each foot, or pair of feet, on completion of alignment.

After final alignment checks have been completed, and the unit run at full output for not less than six hours, the alignment shall be rechecked and the unit securely dowelled to the bedplates.

1.20 General requirements for painting and finishes

1.20.1 Preparation and surface treatment

All metal surfaces external to the equipment except copper, all supporting steel external to the equipment, all pipe work and all ductwork, insulated or bare, and supports shall be painted with protective coatings appropriate for an "Exterior Exposed Polluted Inland" environment and prime coated before painting with the finish coats. All paint and surface treatments shall be appropriate for the proposed design life of the equipment.

Blast cleaning shall be carried out in accordance with BS 7079 or equivalent. The maximum amplitude of the blast cleaned surface shall not exceed 0.1 mm.

Blast cleaned steelwork shall be free from dust, mill scale and adherent particles. The first coat of the protective treatment shall be applied by an approved process with the least possible delay, and in any case within four hours of blast cleaning.

Galvanising shall be in accordance with BS 729 or equivalent. Steelwork shall be chemically pickled, then stoved and dipped in a bath of molten zinc. Each article shall be covered evenly on all sides, to give an additional weight of 0.76 kg/m² of surface covered and shall be free from runs. All holes shall be cleaned and sharp edges removed from the steelwork prior to galvanising. Excess spatter shall be removed after galvanising. Tests shall be carried out on samples of finished product, to verify compliance with this clause when instructed and at no cost to the Client.

The nominal and local thickness of metal coating shall comply with BS EN 22063 or equivalent. The Contractor shall submit the details of the metal coatings for the Client's Representative's acceptance. Sampling and testing shall be carried out in accordance with BS EN 22063 or equivalent.

1.20.2 Deleted

1.21 Nameplates and Labels

The Contractor shall provide and attach to each major piece of equipment a metal name and rating plate to be approved by the Employer's Representative. All nameplates shall be mechanically attached (not adhered) in a manner Approved by the Employer's Representative. Each plate shall quote the name and address of the manufacturer, serial number, full rating data and the date of manufacture.

2 PLANNING, PROGRAMME AND PROGRESS MONITORING

2.1 Preparation and submission of program of work

The Contractor shall interact with Employer / engineer to provide details and obtain approval where necessary on following for supply and installation of Plant & Equipment as per the stipulated schedule:

Activity
Submission of design documents and other technical documents from the manufacturers for approval
Program for manufacture of the equipment (Details of progress chart)
Documents for execution of works relating to installation
Proposal for factory tests (Complete test procedure)
Program for installation (Details of installation programming chart)
Program for tests at site and commissioning (Complete test procedure)
Program for training of staff (Details of training schedule & module)
Program for supply of maintenance manuals and other documents well in advance before despatch of machine)
Program for supply of spares

2.2 Progress Report

The Contractor shall prepare a Progress Report covering all aspects of the execution of works. Such Reports shall be delivered to the Client's Representative as and when necessary or asked for.

2.3 Progress Meetings

In order to ensure execution of the Works in an efficient and proper manner, the Client or the Administration and the Contractor will exchange technical information for approval of the solutions and equipment offered and hold periodical meetings. Two categories of meeting may be held for this purpose

Technical meetings

Attended by engineers and technicians, convened upon request by either party, during which, among other subjects, clarifications of additional information relative to the technical specifications may be provided.

Periodical Progress Review Meetings

To be held as and when required by Engineer during which:

- Certain problems that maybe holding progress of the work may be examined.
- Interface requirement with designated contractors may be discussed.

The Progress Review Meetings are attended, notably by the Contractor's Manager and the Client's or the Administration's discipline Manager or their Deputy.

Progress Review Meetings related to works will be held in Lucknow and the respective site locations and will be the subject of reports, in conditions, which remain to be defined.

3 PACKAGING

The Contractor shall provide suitable packing, crates and marking. In doing so, it shall comply with the following requirements:

- Each packing case/crate shall be water proof, rot proof and insect/rodent proof and of robust construction. The Contractor shall in determining the packaging materials take cognisance of the climatic conditions likely to occur during the period of transport, shipment and storage.
- All items heavier than 100 Kg. shall be marked on the outside of the case to show the gross weight, the points for slinging and where the weight is bearing.
- Care shall be taken to prevent movement of items within cases, crates or packages by the provision of bracing, straps and securing bolts as necessary. Bags of loose items shall be packed in cases and shall be clearly identified by well-secured labels on which the quantity and name of the part and its catalogue or index number have been stamped.
- Electronic circuit boards shall be well protected by using anti static bubble bag etc.
- Rubber products shall be suitably packed to avoid damage due to hardening, deforming and peeling off etc.
- Tubes, cables and conductor ends shall be properly sealed to prevent ingress of moisture.
- Each bulky/heavy case, crate or package shall include wedges for easy loading and unloading by mechanical handling equipment.

4 TRANSPORTATION

The Contractor shall notify the Client's Representative at least 15 days in advance of any expected date of transportation and give further notice of the actual transportation date. This shall be in addition to the inspection requirements as specified in para 6.1.

Two copies of packing list and test certificates shall be delivered along with the package at site and one copy to the Client's Representative.

5 DELIVERY

The Contractor shall deliver all the equipment to be supplied under the contract to the site. The Contractor shall unload all the items at the designated delivery point and positioning or storing them. All documents, operational & maintenance manuals, inspection test procedure drawings and other deliverables shall be supplied to the Client's Representative.

Any parts of the equipment that is damaged shall not be considered as delivered unless repairs or replacements have been made.

6 CHECKS AND TESTS

Testing and commissioning shall comply with all the requirements of the provisions in the Particular Specification (PS). The 'Factory Tests' shall be carried out by the Supplier at the manufacturer's works & supplier shall do modification/ improvement, if any, based on the FAT report before the despatch of machine and 'At Site Tests' after completion of assembly and installation work at site.

6.1 In-Manufacturer's-Plant / Factory tests

The Contractor shall arrange for carrying out the Factory Tests before shipment/despatch of the machine to site. The details of tests to be carried out shall be submitted by the Contractor to the Client's Representative for approval, and a call shall be given 30 days prior to the scheduled Test. The Clients may like to depute his Representative to witness the Factory Tests in some cases. In case the Client's Representative witnesses the factory Tests, he shall be required to sign the test certificates.

The Contractor shall provide for quality checks of supplies on his sub-contractors' premises, prior to delivery of these supplies to his workshops.

Operation of safety and protection devices shall also be checked. The Factory tests shall be elaborated in the PS

6.2 At-Site/Testing and Commissioning

After delivery and assembly of the equipment at site and completion of installation work, tests shall be carried out in presence of a Representative of the Contractor to check that the equipment design makes it suitable to fulfil the scheduled functions.

The purpose of the tests is to record and acknowledge that the equipment is capable of performing regular service under different operating conditions.

The checks and tests to be carried out on the supply shall be elaborated in the PS:

The necessary tools, loads, specimens or equipment required for the tests shall be the responsibility of the Contractor.

2. PARTICULAR SPECIFICATIONS

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Particular Specification for Under Floor Wheel Lathe Machine

GENERAL INSTRUCTIONS

- 0.1 **All pages of the offer shall be serially numbered (for ease of tender evaluation) and signed.** This shall also be applicable for catalogues, drawings and literature submitted along with the offer.
- 0.2 **Bidders are required to give clause-wise comments as per Appendix FT-9 given in Part –II of this bidding document.**
- 0.3 The information/compliance submitted against Schedule-X to Schedule-XII, which are part of this bid document, has to be complete and specific.

1.0 PROJECT AND PERMANENT WORKS

a. Location and Boundaries

The location plans together with the indicative works and Site area boundaries are shown on the Drawings in the Tender Document. The Designated Contractor shall set out the Works and Site area boundaries of the Contract.

b. Climatic Conditions and operating environment

The equipment shall be required to work under the following climatic conditions-

- i) Maximum temperature during summer : 50 degree C
- ii) Relative humidity during rainy season : 100 %
- iii) Minimum temperature during winter : 01 degree C
- iv) Environment : Dusty with industrial pollutants
- v) Water : Hard with high salt content

1.1 Definitions

Words and phrases defined in the GCC or SCC shall retain the same meaning within the General Specification (GS) and Particular Specification (PS) unless specifically redefined within this PS:-

- i) “Client, “Employer” refers to UPMRC, a party to and manager of the contract to which this tender invitation relates.
- ii) “Client’s Representative”, “Employer Representative” refers to responsible persons or parties designated by the Client to act in his name for all management tasks or actions concerning the works and installations defined in the contract.
- iii) “Contractor”, “Supplier”, “Constructor” or “Manufacturer” refers to the party to which this procurement has been awarded.
- iv) “In Principle”: This term signifies that derogation may be granted to the specification to which it is associated.
- v) “External” This applies to everything not provided under this contract.

- vi) "Commissioning" refers to the readiness of the equipment for putting into service after successful completion of installation and Site tests.
- vii) "Factory tests" refers to the tests to be carried out at the manufacturer's premises before shipment/despatch of the equipment to the site.
- viii) "Site tests" refers to the tests to be carried out after installation of the equipment at Kanpur and Agra site.

1.2 General Description of the Works

1.2.1 The Works shall comprise (but not limited to) the design, manufacture, delivery, installation, testing, commissioning and maintenance during DLP (Defects Liability Period) and CAMC (Comprehensive Annual Maintenance Contract) of **4 (four) numbers of Fully Automatic CNC Under Pit Floor Wheel Lathes (UFWLs)** that will be located in a purposely-built structure, in a custom made pit constructed by designated contractors, at Kanpur and Agra Metro Depots. The fully automatic means that machine shall have the following minimum features but not limited to, while working in fully automatic mode-

- i) Automatic job setting and job clamping.
- ii) Pre-measurement of the wheel profile and wheel diameter.
- iii) Complete profile turning operation of the wheel and optimisation of metal removal by comparison with the stored profile to obtain specified surface finish and accuracy. Options to take partial cut and resultant profile with partial cut shall be determined by the system.
- iv) Post measurement of the wheel profile and wheel diameter.
- v) Automatic unclamping for job unloading.
- vi) Display of tread diameters of both wheels of an axle before and after turning.
- vii) All the function shall be carried out by the machine automatically without any interference of operator, i.e. without any human interface.
- viii) Programming of a new profile should be possible.
- ix) Automatic measuring of wear and machining of brake discs.
- x) Centralized monitoring of wheel set management database.

1.2.2 The supply shall include all equipment and accessories even if not particularly mentioned, but are considered necessary to achieve installation and specified operating condition.

1.2.3 UPMRC shall execute only usual civil work as per design submitted by the contractor. Any special material required for grouting /foundation or inter connection shall be supplied by contractor along with the instruction to use.

1.2.4 The equipment/sub-assemblies which are proposed to be used in the plant/machine to be supplied under the contract should have already been used by the contractor in at least 5 (five) such plant/machines supplied worldwide in the last 5 (five) years and should have worked satisfactorily. The contractor shall furnish the details of sub assemblies during the design stage and take prior approval of employer before using in the machine.

1.2.5 Tender value will be calculated for all the items as per Bill of Quantity including applicable taxes, duties, cess, freight charges etc.

1.2.6 Concomitant Accessories

1.2.6.1 The scope of supply shall include the following concomitant accessories for each Under Floor Wheel Lathe, whose cost shall be included in the basic price of one machine (cost of each item should be indicated in the bid)-

- | | | |
|-------|---|--|
| i) | First fill of oils and lubricants (Oils/ lubricants needed shall be specified by the bidder; quantity of each item shall also be indicated in the bid.) | : 1 (one) set |
| ii) | Electrical cables for connecting control cabinet to machine | : 10 m |
| iii) | Maintenance tools (List of tools be furnished in the bid.) | : 1 (one) set |
| iv) | Retractable rails with their drive | : 1 (one) set |
| vi) | Tooling for wheel turning/profiling | : 2 (two) nos. of tool holders (1 left & 1 right) and 50 (fifty) sets of tool inserts (50 nos. each of left & right type, or 100 nos. if left & right tool bits are same) |
| vii) | Tooling for brake disk machining facility (wherever applicable) | : 2 (two) nos. of tool holders (1 left & 1 right) and 25 (twenty five) sets of tool inserts (25 nos. each of left & right type, or 50 nos. if left & right tool bits are same) |
| viii) | Compatible voltage stabilizer (Ref. clause 3.15.3 & Schedule X) | : 1 (one) no. |
| ix) | Compatible ultra isolation transformer (Ref. clause 3.15.3 & Schedule X) | : 1 (one) no. |
| x) | Drive rollers (as spare in addition to those fitted on the machine) | : 1 (one) set of 4 (four) nos. |
| xi) | Conveyor type swarf disposal system (Ref. clause 3.10) | : 1 (one) set |
| xii) | Electrostatic oil filtration equipment (Ref. clause 3.13.1.9) | : 1 (one) no. |
| xiii) | Checking gauges for all wheel profiles mentioned in the drawings as per clause 3.1.2 of particular specification | : 1 (one) set |
| xiv) | Colour Printer compatible with PC provided with the machine CNC for report printing | : 1 (one) no. |
| xv) | Calibration wheel set | : 1 (one) no. |
| xvi) | Wheel set for T&C | : 1 (one) no. |

xvii) Any other accessory considered essential for the operation of the machine to the purpose and capability specified in clause 1.2

1.2.6.2 It is reiterated that the total cost of the above mentioned items shall be included for the purpose of financial evaluation of the bids. **It is expected from the bidders to indicate the individual costs of each and every item in their bids.**

1.3 Detailed Scope of Works

The scope of the Works, in addition to those specified in the General Specification, includes the followings-

1.3.1 This tender covers design, manufacture, supply, installing, testing commissioning and maintenance during DLP and CAMC of fully automatic CNC Under Floor Wheel Lathe at 04 (four) nos. metro trains maintenance depots (02 nos. each) at Kanpur Metro and Agra Metro. The scope of supply shall include all equipment and accessories required to make the machine fully functional when connected to a power source. This specification covers the design parameters and other aspects of scope of supplies and works expected to be executed in the tender.

1.3.2 The General Electrical Design shall be as per Schedule X. The General Design of the Machine shall confirm to Schedule XI. The CNC System of the machine shall confirm to Schedule XII.

1.3.3 Details of Design and Works are described in this specification. Instructions are there regarding preparation and supply of the drawings, documents, samples, specimens and operation and maintenance manuals.

1.3.4 Supply of resources, materials, tools, plant and manpower for delivery, installation and testing of the equipment to meet the intended functions will be responsibility of the bidder. **The contactor (also being called the bidder) shall arrange for all the machines required for installation of the under floor wheel lathes, such as cranes, tools and tackles etc.**

1.3.5 Wherever necessary, the license applications and statutory submissions in accordance with various enactments, up to the commencement of the DLP, are the responsibility of the contractor.

1.3.6 The Under Floor Wheel Lathes are required for re-profiling of Standard Gauge (SG) wheels for Kanpur and Agra Metro rolling stock. **The parameters of Kanpur and Agra Metro Standard Gauge (SG) rolling stocks are given in clause no. 2.17 and 2.18 of this particular specifications, which the equipment shall comply with.** However, the use of Under Floor Wheel Lathe may not be restricted to coaching stock only and may be used for turning/re-profiling wheels of other rail vehicles also falling within the specified design parameters and axle load like diesel locomotive, battery locomotive, battery shunter etc. for which detailed parameters can be intimated during detailed design stage.

- 1.3.7 Back-up of the machine software (CNC programming for re- profiling, along with a standby hard disc with complete machine standard software) shall be provided along with the each Under Floor Wheel Lathe.
- 1.3.8 Training of the employer's staff shall be arranged for each Under Floor Wheel Lathe for each depot separately as described in this specification.
- 1.3.9 Maintenance of the fully automatic CNC Under Floor Wheel Lathe during the DLP and CAMC will be the complete responsibility of the bidder. The costs of all manpower, tools, oils, consumables, spare parts etc. needed shall be borne by the bidder. (Purchaser will only be purchasing tool bits during the DLP and CAMC periods). Electricity, compressed air, water and any M&P available in the depot can be provided by Kanpur and Agra Metro Depots for commissioning and maintenance of the equipments. **However, in case any special machine(s) or tools are needed for maintenance, they should be clearly specified in the bids (cost of these items may get included in the Financial Evaluation of the bid).**
- 1.3.10 The bidder, or the lead partner in consortium or Joint Venture (JV), on whose credential the offer meets the eligibility criteria, or the original manufacturer, will be solely responsible for DLP and CAMC maintenance. **Bids without compliance of this clause shall be treated as incomplete and the offer will be ignored.** The bidder, or the lead partner in the consortium or JV, or the original manufacturer has to submit a commitment to keep at least 2 (two) trained and skilled engineers for DLP and post DLP maintenance. The competency of the trained manpower deputed for the purpose of maintenance during commissioning and DLP, and post-DLP maintenance shall be certified by the Original Equipment Manufacturer (OEM) and the bidder shall also seek Employer's acceptance for the same. Bidder shall submit undertaking as per format placed at Appendix--A.
- 1.3.11 Spares and spare parts catalogue containing details of all equipments, assemblies, and sub-assemblies shall be provided as described in this specification clause no.18.
- 1.3.12 **One calibration wheel set shall be supplied by the firm along with each Under Floor Wheel Lathe.** The calibration wheel set shall be used for calibration as per recommended frequency mentioned by the supplier. A suitable cover to protect the calibration wheel set from all atmospheric adverse effects shall be supplied. Also one wheel set is required to be supplied for T&C purpose with each UFWL.
- 1.3.13 All the bought-out-items which are required to be used in the Under Floor Wheel Lathe shall be procured only after taking employer's approval for the same. As far as possible, they should be as per the **list of preferred vendors/makes of bought-out-items for fitment on the plant/machine placed at Schedule-XIII**, as applicable (any other make shall only be accepted if there is a strong justification regarding superiority of the alternative being proposed). The bidder shall also furnish a list of other bought-out-items/ sub-assemblies/ assemblies/ concomitant accessories/ spares (excluding the items figuring in Schedule-XIII), which are proposed to be fitted in the plant/equipment to be supplied. The firm may be

required to furnish (to the inspecting agency) original purchase orders/ invoices/ bill of lading etc. to establish genuineness of such products/purchases during final inspection of the complete Under Floor Wheel Lathe at the manufacturer's premises.

1.4 Design Responsibility

The Contractor shall be responsible for the design of the permanent Works, which shall include but not be limited to the following-

1.4.1 The development of the design shall be carried out in conjunction with the information contained in the Drawings and shall be in accordance with the Specification set out in the Contract. The contractor shall obtain design approval from the designated Engineer-In-charge before starting the manufacturing of the under floor wheel lathe.

1.4.2 The Contractor will be responsible for the development and completion of the design of any other items of the Works as stated in the Contract, including, without limitation, the updating and amendment of the Drawings from time to time.

1.4.3 The Contractor, co-ordinating with the Engineer and Designated Contractors on all matters relating to design and documentation, shall retain full responsibility for managing such design and for the maintenance of all documentation associated with the design process. The personnel identified to fulfil these roles shall be direct employees of the Contractor.

1.4.4 The Contractor shall determine and verify as appropriate the materials, site measurements and installation criteria before adopting in the design of the equipment.

1.4.5 The Contractor shall ensure that the information contained in the submissions has been co-ordinated with the overall requirements of the Works and the works of the Designated Contractors.

1.4.6 The information that is extracted from the Drawings and adopted by the Contractor in his design shall become the Contractor's design for which neither the Employer nor the Engineer shall be responsible.

1.4.7 The Contractor's designs, whether for Temporary Works or Permanent Works which are subject to the approval of any Relevant Authority, shall before submission to the Relevant Authority, be first submitted to the Engineer for review without objection. The Contractor shall make all due allowances for the requirements of the Relevant Authorities' approval and consent process in the Works Programme and in the timing of the Works.

1.4.8 Responsibility for the Contractor's design proposals submitted to the Relevant Authorities shall remain with the Contractor who must provide sufficient resources to deal with subsequent questions, alterations etc. requested by the Relevant Authorities. All communications with any

Relevant Authority, whether written or oral, must be copied/ recorded to the Engineer.

- 1.4.9 **The contractor may engage local agency for fabrication and installation related works at site subject to prior approval by Employer.** The contractor shall solely be responsible for design, quality of fabrication works, and its installation and shall issue quality certificate for the same. The contractor shall seek design approval of steel and fabrication, other item proposed to be used, from the Engineer in charge.
- 1.4.10 All steel used by the contractor shall be established to have adequate corrosion resistance.
- 1.4.11 **Contractor shall demonstrate that the steel structure and metal component used in the plant/machine will last for 30 years without any corrosion duly supported by quality test certificate during the design of the machine.**
- 1.4.12 Contractor shall solely be responsible for installation, commissioning and testing of the plant /machine and shall depute his engineers during installation, commissioning & testing.
- 1.4.13 **Stress analysis of sensitive structures shall be carried out from a reputed test house & report shall be submitted during design stage.**
- 1.4.14 The Under Floor Wheel Lathe shall be capable of turning wheels having tensile strength up to 110 Kg/mm². The tensile strength of work-hardened spots can be up to 125 Kg/mm². The Under Floor Wheel Lathe using indigenously available throwaway carbide tools shall operate without vibrations or chatter at all loads.

1.5 Tenderer's Technical Proposal

- 1.5.1 The tenderers required to submit clause by clause compliance of Tender Document in the format given in **Appendix FT-9**. They also required to submit his technical proposal along with deviations, conditions, if any, as per Schedule -I, Schedule-II & Schedule-V enclosed in the tender documents be part of technical part.
- 1.5.2 The cost for the unconditional withdrawal of the deviations/conditions shall be given as per, **Schedule-III**, enclosed in the tender documents, which shall be part of financial bid.
- 1.5.3 All deviations from the tender documents, remarks, comments etc. shall be included in the Statement of Deviations (Schedule-II).
- 1.5.4 The price of unconditional withdrawal of all the conditions, qualifications, deviations etc. as mentioned in (Schedule-II) shall be quoted by the tenderer in the format given in Schedule-III.
- 1.5.5 All implicit and explicit deviations, remarks and comments mentioned elsewhere in the tenderer's proposal shall be treated as "NULL and VOID" and considered withdrawn unconditionally.

- 1.5.6 Any clause included in the Statement of Deviations (Schedule-II) but not priced in the Schedule-III, shall be treated as “NULL and VOID” and will be considered unconditionally withdrawn.
- 1.5.7 The tenderer shall provide a valid and fully compliant proposal for the UFWL as detailed in the Employer’s Requirement. The Tenderer shall submit a detailed clause by clause commentary on all the clauses of the Employer’s Requirement.
- 1.5.8 Tenderers shall note that their comments to the clause by clause commentary wherever given shall only be in the following form-
- i) **“Complied”** shall be indicated by the tenderer where the tenderer is able to comply fully with the clause.
 - ii) Where a clause merely provides information, and no other comment is necessary, **“Noted”** will suffice.
 - iii) Where the tenderer is not able to comply fully with the clause or has any observation or proposes an alternative design, **“Not Complied”** shall be indicated and comments if any of the tenderer shall be indicated in detail. All Clauses with status as “Not Complied” shall be included in the Statement of Deviations Schedule-II and shall be priced in Schedule-III.
- 1.5.9 Tenderer shall also note that-
- i) Any comment by the tenderer in the Clause-by-Clause Commentary, other than “Complied”, “Noted” or “Not Complied” shall be treated as “Not Complied”. Unless tenderer prices against such clauses in the Schedule-III, the comment against any clause shall be deemed to have been unconditionally withdrawn with no financial implications and shall be considered as “NULL and VOID”.
 - ii) Any “Not Complied” comment by the tenderer in the Clause-by-Clause Commentary that has not been included in the Statement of Deviations Schedule-II shall be treated as “Complied”.
 - iii) Any “Not Complied” comment by the tenderer in the Clause-by-Clause Commentary which has also been included in the Statement of Deviations Schedule-II but has not been priced in Schedule-III shall be treated as null and void and deemed to have been unconditionally withdrawn.
 - iv) In case price for unqualified withdrawal of any remark, comment, condition, qualification or deviation etc. indicated in Schedule-II is not quoted in Schedule-III, it shall be considered that the remark, comment, condition, qualification or deviation is unconditionally withdrawn without any financial implication. However, Employer at its sole discretion and option may assess the financial implication of the said remark, comment, condition, qualification or deviation etc. based on best engineering principles and concepts, which shall be binding

on the tenderer, and the same may be considered by Employer for financial evaluation.

1.5.10 A tender without a Clause-by-Clause Commentary, as stated above, is liable to be rejected.

1.6 Preliminary Works

The Contractor shall inspect the Designated Contractors' enabling works and satisfy himself that all works required to be carried out by the Designated Contractors are in accordance with the interface requirements as specified in the interface specification.

2.0 GENERAL DESIGN REQUIREMENTS

The following general requirements on equipment design shall apply to all equipment-

- 2.1 The Equipment shall be of proven design. Major structural elements of the Under Floor Wheel Lathe, e.g. column, cross rail, tool slide etc. that are subjected to cutting loads, must be cast structural as detailed in clause 3.0 of particular specification and shall be designed for a 30-year design life of heavy-duty workshop use and shall be available throughout the year without any limitation in day to day wheel re-profiling of the rolling stock.
- 2.2 Equipment that requires an electricity supply shall be compatible with the supply voltage in the range from 360 to 440V, surge protection, low voltage protection to be included whenever necessary, three phase neutral, 3-phase, 47.5 to 51.5 Hz frequency. Any regulation or protection required shall be in the scope and the responsibility of supplier.
- 2.3 Equipment shall incorporate means of adjustment in order to allow for building movement and concrete beam deflections. The maximum expected movement of any section of any building will be ± 25 mm vertically, ± 25 mm longitudinally and ± 25 mm laterally.
- 2.4 Work related to the production of the equipment shall comply with the relevant European Standards, Codes of Practice and latest Statutory Requirements of India, including the following-
 - i) BSEN287 : Approval testing of welders for fusion welding
 - ii) BSEN288 : Specification and approval of welding procedures for metallic materials
 - iii) BS4575 : Fluid power transmission and control systems
 - iv) BS5304 : Code of practice for safety of machinery
 - v) BS5395 : Stairs, ladders and walkways
 - vi) BS5950 : Structural use of steelwork in building

- vii) BSEN60073 : Specification for coding of indicating devices and actuators by colours and supplementary means
 - viii) EN60204 : Electrical equipment
 - ix) BSEN60529 : Specification for degrees of protection provided by enclosures (IP code)
 - x) ISO9001-3:1991 : Guideline for the Application of ISO9001 to the Development, Supply and Maintenance of Software
- 2.5 The layouts given on the Drawings shall be used for conceptual purposes. The Contractor shall furnish their requirements in accordance with the Schedule of Key Dates in the Particular Specification.
- 2.6 The contractor shall closely study the ambient condition of Kanpur and Agra with special attention, like high temperature reaches up to 50 degree C within the covered shed, heavy dust and poor quality of water (with high salt content) and shall suitably consider for such consideration during design of the equipment.
- 2.7 The equipment shall be designed and/or selected to allow operation without over stressing, damaging or interfering in any way whatsoever with other equipment in the Depot.
- 2.8 Components of equipment of similar construction or similar application shall be mutually interchangeable.
- 2.9 The Contractor shall, to the extent that he is responsible for the design or for the selection of particular components of equipment items, recognise and implement all safety requirements and ensure that the design and performance of the equipment are compatible with the appropriate international safety standards and ambient condition specified.
- 2.10 Equipment shall be “fail-safe” and “overload protected”. The equipment shall incorporate all necessary safety devices to protect the equipment, operators, and all other people and things in the vicinity of the equipment. No failure of the equipment shall cause or give rise to any damage or catastrophe of any nature whatsoever.
- 2.11 Equipment design shall take into considerations of fire protection, elimination of dust and dirt by means of suitable traps or the like, minimum maintenance requirements and ease of access for cleaning, routine maintenance and general disassembly.
- 2.12 Guards shall be fitted to all exposed moving parts of the equipment where the environment and working processes dictate that there is a foreseeable risk of injury or causing health hazard to personnel from sources such as moving parts, electricity, coolant, swarf, noise and vibration, dust and fumes, etc.
- 2.13 Moving parts of the equipment shall be efficiently lubricated to ensure quiet operation as well as durable and reliable life. Lubrication points shall be clearly identified for easy replenishment with minimum removal of other equipment components. A Centralised lubrication system shall be designed to last for 30 years of operation.

- 2.14 The environment within which the equipment is to be operated shall be taken into consideration in the equipment design.
- 2.15 The UFWL shall also be capable of re-profiling of the wheel set assembly with unbalance wheel loadings as permitted in international standards.

2.16 Use of drawings and data

- 2.16.1 All data in concern with the rolling stock written in this specification is for information only and there may be slight variations.
- 2.16.2 The compatibility of the equipment with the rolling stock characteristics is the responsibility of the Contractor and he shall obtain the required data/documents from the Rolling Stock Contractors.
- 2.16.3 All information or documents related to the Rolling Stock deemed necessary are to be taken from the rolling stock supplier by the Contractor.
- 2.16.4 The drawings shown on the plans define the operating conditions and are provided for indicative purpose only. These may be adapted by the Contractor in consultation with the Employer.

2.17 Reference Data of Tracks

- 2.17.1 The coaches (and locomotives, wagons, rail-cum-road vehicles etc.) shall be operated on the tracks with the following specifications-
 - i) Track Gauge : 1435 mm for SG
 - ii) Max. gradient : 4%
 - iii) Curve radius : 90m for SG in depot
 - iv) Empty rail car weight (DT/M): See notional vehicle dimensions
 - v) Max. Axle load : 16 tons
 - vi) Rail Profile : UIC 60 (861-3)
- 2.17.2 It should be noted that these data are indicative only and finalised data will be supplied during the detailed design stage. The track specification may vary slightly and the Contractor shall obtain the details from the Track Work Contractor.

2.18 Principal Notional Vehicle Dimensions

- 2.18.1 The UFWL shall comply with the following configurations-

Principal Notional Vehicle Dimensions

Description	Dimension
Gauge	1,435 mm
Maximum Length over couplers for all cars	23,000 mm
Minimum Length over couplers for all cars	21,400 mm
Maximum Width over Body	2900 mm
Minimum Passenger Saloon Headroom	2,050 mm
Maximum Floor height above rail level of any unloaded vehicle	1,130 mm
Minimum Floor height above rail level of fully loaded vehicle	1,100 mm
Maximum height of coupler above rail level for unloaded vehicle	815 mm
Minimum height of coupler above rail level for fully loaded vehicle	740 mm
Bogie wheel base	Maximum 2500 mm

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	Minimum	2200 mm
Distance between bogie centres	Maximum	15000 mm
	Minimum	14,600 mm
Centre to centre distance between Bogie 2 of DMC and Bogie 1 of TC	Minimum	6700 mm
Wheel diameter	New	860 mm
	Fully worn	780 mm
Maximum axle load		16 Tonne(including all tolerances as per IEC 1133-1992)

2.18.2 It should be noted that the above notional vehicle dimensions of the rolling stock are indicative only, which will be confirmed during detailed design stage.

2.18.3 The machine should be designed for-

- i) Cutting speed (infinitely variable) : 10 to 120 m/min.
- ii) Feed (infinitely variable) : 0.1 to 2 mm/rev.

3.0 SPECIFIC REQUIREMENTS

3.1 The Under Floor Wheel Lathe (UFWL) should be able to fulfil the following requirements-

- i) The UFWL shall be of robust construction capable of withstanding severe duty over long years of service. All major castings like columns, cross rail, tool slides shall be of cast iron grade FG-260 of IS: 210 or better and of rigid structure to ensure vibration free operation.
- ii) UFWL shall be built in rigid dual column construction with both columns connected by rigid cross rail. In case the tenderers prefers to offer any other better construction method , it will have to be a proven technology which will have to be demonstrated with documents and test report to the satisfaction of clients in the technical offer.
- iii) UFWL shall be equipped with four driving rollers each having individual drive and each capable of individual vertical movement to effectively take care of irregularities of un-machined wheel set.
- iv) UFWL shall be equipped with axle box support jack and hold down device both capable of operating through CNC pendant. Similarly, box type hardened and ground guide ways matching with slide ways having SKC - 3 lining shall be used for tools slides to ensure durable and vibration free operation.
- v) UFWL columns, cross rail, tool slides structure shall be of specified casting so as to nullify the effect of vibration on performance during lifetime of UFWL. Constructional details and material specification shall be furnished in the bid.
- vi) The UFWL shall be so designed to ensure an effective and efficient work sequence. Single operator placed between the columns of the

machine shall be able to control all the operation of the machine from the single centralized CNC operator pendant and shall have full and clear view of both the cutting points of both sides of rollers. Productivity requirements specified at clause 3.1.3 shall be possible employing single operator.

- vii) Each work phase shall be reliable, durable and safe in operations. Following is a description of the operation of the fully automatic CNC under floor wheel lathe. The level of functions shall be completed under the Contract.

3.1.1 Operating requirements

- i) The UFWL shall be capable of re-profiling in situ & also in isolation, simultaneously at both wheels of a wheel set, old work hardened and new wheels of all types of rolling stocks without the need of removing any components such as wheel sets, bogie brake gear, axle box covers etc.
- ii) It shall be capable of measuring the wear in brake discs and machining wheel mounted brake discs or axle mounted brake discs in situ and otherwise. For this, exact and complete arrangement shall be provided during detailed design stage. The tenderer shall provide details of machining procedure for brake disc machining of both the discs.
- iii) UFWL shall be capable of machining the inside faces of the wheels in continuation of the profile turning of the wheel tread. In addition, it shall also be capable of re-profiling wheel sets removed from the coaches by means of suitable holding down devices.
- iv) It should be possible to control cut manually so as to achieve some intermediate profile. MMI (Man–Machine Interface) / HMI (Human-Machine Interface) should enable to determine the profile with cuts of different depths.
- v) The UFWL shall be able to calculate the required depth of cut after measuring the wheels parameter of a given axle.

3.1.2 Following should be considered-

- i) Kanpur and Agra Metro shall use the UFWL for re-profiling the wheels and machining of brake discs (in some depots) of its coaching rolling stock of Standard Gauge, and also for diesel locomotives, battery locomotives etc (**UIC profile EN 13715-S1002**). Various CAD drawing of wheel profiles of the above-mentioned vehicles running on the systems shall be supplied by Kanpur and Agra Metro. The UFWL's Computerised Numeric Control (CNC) system shall have the capability to store various wheel profiles.
- ii) The employer's staff shall be trained to convert any desired wheel profile into a CNC system compatible profile and to store it in the UFWL memory for wheel profiling purpose. UFWL shall be able to generate all the above mentioned profiles electronically.

- iii) **The UFWL shall have the intermittent profiles of variable flange thickness from 28.5-32.5 of UIC profile EN13715 S1002, with proper operational manuals for different profile cutting.**
- 3.1.3 Different vehicles of different weights/ axle load (within maximum specified) may have to be re-profiled. The UFWL should either automatically set different relevant parameters or the contractor shall furnish detail procedure for such adjustment to Kanpur and Agra Metro and impart training to employer's staff to do such adjustment in the UFWL.
- 3.1.4 **The UFWL shall have the capacity to re-profile the 4 (four) wheel sets of a coach in less than 4 (four) hours from a fully worn profile to a completely new profile, considering removal of maximum of 8 mm material radially (diameter reduction up to 16 mm) from the wheels. The total time of a single complete cycle required for a wheel set with normal worn wheels in one cut and heavy worn wheels in 2 to 3 (two to three) cuts shall be optimized for efficient operation. Details of calculation of cycle time in order to complete the same within the target time shall be described and same shall be demonstrated by the contractor at site during the commissioning. The claimed productivity shall be achieved within the accuracies as specified in clause no. 3.9. The exact sequence of operation, including multiple cuts, shall be explained in the offer.**
- 3.1.5 The UFWL shall have the capacity to machining of brake discs of one axle in less than one hour considering removal of maximum 3-4 mm material from brake discs with a surface finish as mentioned in clause no-3.9.
- 3.1.6 The details of automatic mode of operation of UFWL during one complete cycle, the number of operators required for achieving the specified productivity and the cutting parameters, type and make of tools, and speed and feed should be indicated in the bid. The above productivity indicated at clause no. 3.1.4 shall be achieved employing single operator.
- 3.1.7 The UFWL shall have the provision of manual over ride in re-profiling to generate the intermittent profile.
- 3.1.8 The fully automatic CNC under floor wheel lathe shall be capable to perform, even without the integration of the shunting electric shunter.
- 3.1.9 The UFWL shall have remote diagnostic feature to enable remotely interaction with manufacturer/supplier end for rectification of faults. The contractor shall provide all the Software and Hardware for remote diagnostic and provide hands on training to client's staff to enable the same. The UFWL supplier, or its Indian counterpart, shall be responsible for provision of communication set-up to enable the supplier and employer to interact remotely with the UFWL computer for rectification of faults.
- 3.1.10 The UFWL shall have the facility for centralized remotely monitoring of wheel set data base management and health monitoring system of UFWL at employee's premises.

3.1.11 Supply of application software and its backup, hardware and the training as required to generate tooling path profiles for re-profiling of wheels of vehicles mentioned shall be provided to employer's staff and change in application oriented parameter to be mutually decided during design stages.

3.1.12 The UFWL shall have the facility to oversee the entire cutting operation clearly by the operator.

3.1.13 The UFWL shall be designed such a way so that no chips cutting shall fall out of the machine area and it should get accumulated in the chips crusher chamber.

3.2 Machine control

3.2.1 Operation of the fully automatic CNC under floor wheel lathe and related equipment shall be by computerised numerical control (CNC). The CNC control system shall comply with all the provision as mentioned in Schedule-XII. All functions of the UFWL shall be controlled from a single centralised ergonomically designed control panel through both soft keys and push buttons. The control panel/operator pendant shall allow a full and clear view of the cutting points and the drive rollers to the operator. The control panel shall be preferably pendent type and shall not be floor mounted. Independent machining controls one on either side shall be provided on each wheel. Details of CNC controller shall be described in offer.

3.2.2 Main functions of the CNC software shall be-

- i) Interface with the operator.
- ii) Command of UFWL and accessories.
- iii) Control on the safety device.
- iv) Data storage for profile and history of profiled wheel sets.
- v) Profiling cycle.
- vi) Auto diagnosis of UFWL and accessories.
- vii) Printing or exporting of profile reports.
- viii) Data exchange with wheel sets management database.

3.3 Principle of the UFWL operation cycle

3.3.1 The railway vehicle shall be driven inside and moved out of the UFWL building by means of a remote controlled electric shunter. On operators command through remote controller from the pit, the electric shunter shall position the wheel set for re-profiling on the UFWL running on their flanges on retractable rails within the tolerance of ± 25 cm. The operator pendant

- shall allow a full and clear view of both the cutting points and both side drive roller to the operator.
- 3.3.2 The pair of mobile rails with automatic translation shall ensure the continuity of the rail track over the UFWL for positioning of the wheel sets. Thereafter the load of wheel sets shall be taken over on to a pair of friction rollers. Hydraulic jacks shall be interlocked with the retraction of mobile rails. These rails shall be electrically insulated from the UFWL.
- 3.3.3 Profiled friction rollers shall then drive the train wheels on the UFWL. The rollers shall be equipped with anti slip system. The wheel sets shall be kept in position laterally by a pair lateral guide rollers.
- 3.3.4 The axle box supports shall be commanded by the CNC and shall be integrated in the operation cycle of the UFWL. These shall be in locked position during the machining processes to keep the axle boxes steady, even in case of power failure.
- 3.3.5 Axle box hold down device shall allow increasing the pressure between the driving rollers and the wheel sets to increase the torque during the re-profiling. The CNC shall calculate the hold down force required according to the wheel set load.
- 3.3.6 Before the actual profiling cycle, the operator shall perform a pre measurement of all wheel sets. After calculation of wheel set dimensions and of acceptable tolerances, **the UFWL shall propose an economical depth of cut for re-profiling wheel sets to the operator.**
- 3.3.7 The UFWL shall be operated for profiling via a CNC control panel so that the operator shall have continuous access to all UFWL functions for the safety and efficiency. During re-profiling, the 4 (four) driving roller arms shall be made independent by CNC to compensate the wheel tread wear and defects, e.g. wheels with heavy wear, normal wear and others like profiling flat tread, brake disc, only flange, tread with or without the flange.
- 3.3.8 Measurement shall be done after completion of machining. The whole parameters defining the wheel set geometry shall be measured. The new dimensions of the profiled wheels shall be displayed on the CNC control panel.
- 3.3.9 The CNC shall compute and deliver a complete profiling report, which shall be printed by an industrial printer.
- 3.3.10 All the data concerning to re-profiling cycle shall be stored in the CNC of the PC hard drive and thus shall be protected against electrical shut down.
- 3.3.11 The profiling report stored in the PC hard drive shall be able to be exported to and industrial laptop via USB port. The dedicated software for the data downloading shall be provided by the supplier. The provisions to be made for data transfer thru Asset management software like MAXIMO.

3.4 Description of measurement cycles

3.4.1 Wheel profile measurements, including measurement of wheel diameter, should be done as under-

- i) Each tool post of UFWL shall be equipped with suitable contact type electronic measuring device (retractable type) of proven design. Contact type scanning of wheel profile of worn wheel from the flange top to outer edge shall be determined by CNC UFWL for optimum cutting depth, and electronic measurement of wheel set's circumference shall be determined by CNC in order to determine the actual diameter.
- ii) The UFWL shall be able to measure the parameters like flange height, flange thickness, wheel back to back distance, tread diameter, root wear, flange wear, tread wear, qR (the distance, in millimetres, measured parallel to the axis of the axle, between points on the wheel flange 10 mm above the tread datum position and 2 mm below the tip of the flange) etc.

3.5 Description of machining cycle

3.5.1 Wheel machining

Following should be achieved-

- i) The UFWL first measure the profile of wheel set to be machined. Rail-wheel contact causes different types of wear on the wheel tread and on the active sides of the flanges. Certain limits are prescribed for the allowed variation from one wheel set to another in a bogie and from one bogie to another and from one coach of rake to another.
- ii) The UFWL shall measure the actual profile of worn wheels and CNC control system determines the new optimum wheel set diameter by means of measured data. This nominal machining diameter is indicated at the operator control console, and it can be accepted and rejected by operator. The machine shall compare the measured actual profile with the nominal machining diameter and determine the optimum cutting depth and automatically perform preliminarily and finished cuttings. The alteration by operator shall be allowed. The profile shall be user programmable. Machine shall be capable of machining newly manufactured un-mounted wheel sets using centres and hold down device.
- iii) During wheel machining, tool damaging or sudden cycle stopping actuated by the machine station shall take place with retraction of tool. This provision shall make it possible to replace tools, etc. **Automatic tool retraction and backup power to HMI in case of power failure shall be provided.** The scheme employed for this shall be explained in bid.

3.5.2 Screen page

3.5.2.1 The CNC display shall be operator friendly and the screen page shall display the pre- and post-machining values to the operator simultaneously.

3.5.2.2 Following **Display Principle** may be adopted-

OP = given by the operator

NC = given by the numeric control system

- | | |
|--|------------------------------------|
| 1- Vehicle number | : OP |
| 2- Type of vehicle/equipment | : OP |
| 3- Line number | : OP |
| 4- Date and time | : NC, operator correction possible |
| 5- Axle number | : OP |
| 6- Axle position | : OP |
| 7- Faults | : NC |
| 8- Remainder of wheel diameter | : NC |
| 9- Wheel position (left or right) | : OP / NC |
| 10- Wheel diameter | : NC |
| 11- Height, thickness, QR dimensions
of flanges, wheel wrap | : NC |
| 12- Wheel profile | : NC |

3.5.2.3 Depending on the accepted tolerances for the wheels of a given vehicle, it is possible that the wheels already machined would be out of tolerance, thus requiring re-machining. To avoid this, the UFWL will have capability to measure four wheels of a same bogie in a coach and decide the optimum turning requirement.

3.5.2.4 The software shall store the new measurements of an axle already machined and replace with the previous measurements with post machining.

3.6 Machine configuration

The UFWL shall comply with the configurations as mentioned in PARTICULAR SPECIFICATION.

3.6.1 Mechanical part

3.6.1.1 The machining technique should normally restore the worn wheel profile to true profile conditions. However, it should be possible to restrict the cuts depth without achieving the true profile. The profile obtained shall not depend on the wheel wear status and shall be in accordance with the specified tolerance.

3.6.1.2 The additional mechanical installation shall make it possible to simultaneously re-profile two wheels of a given axle, dress the inner sides of the wheels, machining of inner and outer sides of brake discs on wheels or brake discs mounted on axle.

3.6.1.3 For all these machining works, no dismantling will be required on wheel; axle box and the wheel drive system.

3.6.2 Setting up the axle

The operational sequence shall be fully described in the offer, considering the full safety of the system, which should be as per the following-

- i) The railway vehicle shall be hauled inside the UFWL building by means of a Battery operated Electric shunter (). The operator commanding remotely from the machine pit at the machine control panel shall be able to position the wheel set for re profiling within a tolerance of ± 25 mm and to achieve facility necessary interface with the supplier of Battery operated Electric shunter (RRM) shall be done
- ii) The wheels shall be positioned for re-profiling shall run on their flange on mobile retractable rails (hydraulically actuated and operation interlocked with the vehicle movement from the machine control panel).
- iii) The axle boxes shall be supported by lifting with hydraulic actuated jack.
- iv) The wheel set shall be positioned and centred by synchronised lifting of the driving rollers.
- v) The mobile rails shall be retracted to home position.
- vi) The hold down arms shall hold the axle boxes in position by applying force from top.
- vii) The wheel sets shall be kept in position laterally by a pair lateral guide rollers.

3.6.3 Axle centering

3.6.3.1 During centre-less profile turning

- i) Axle centring during centre-less re-profiling shall be achieved by means of the drive rollers and lateral guide rollers locating the axle in the vertical and horizontal planes. Only one train wheel setting-up operation shall be required for a particular type vehicle.
- ii) Concentricity of the profile shall be provided by the vertical movements of the drive rollers mounted on the slide blocks by suitable arrangement, which shall be described in detail along with the offer.
- iii) Irregularities in the wheel treads may be flats, thermal cracks, splits or out-of round areas. All these faults should be corrected in a **single machining pass** with minimum tool wear/damage.

- iv) During machining, the axis of the axle shall not move, in any case whatsoever, in the track direction. The Contractor shall give full details on the method used to impede any longitudinal movement.

3.6.3.2 Between-centre turning

- i) The UFWL shall be designed for mounting of bare axles between rotating centres. The rotating centre shall be easy to remove and shall be replaceable with hold down arm from their support and shall be fitted with handling rings. The revolving centres (weight <25 kgs) shall be fitted by replacing the hold down device. Centre points shall be machined to 60 or 90 degrees.
- ii) The supports of the rotating centres shall be located in the axis of the lathe. Centres shall be adjustable upwards and side wards to enable machining of wheel set of different types of axles.
- iii) The supports and the rotating centres shall be designed to handle the vertical turning reactions and the loads from the drive rollers applied to the wheels.

3.6.4 Axial support of the axle

3.6.4.1 Centre-less profile turning

- i) A side-securing device for axles shall be designed and proposed by the Contractor for facing turning. In particular, this device should:
 - Lift the wheel set from retractable rails.
 - Maintain the axle in the axis of the lathe during turning,
 - Enable movement of the axle to position it in the axis of the lathe,
 - Centre the axles, no matter what might be the spacing between the inner sides, wheels.
 - Transfer of torque from drive roller onto the wheel set during machining.
- ii) The loads applied to the inner sides of the wheels shall not cause deformation of the wheel.
- iii) This device shall be designed to leave operators with very good visibility and to make it possible monitor tools during wheel machining.

3.6.4.2 Between-centre turning

The axle shall be held sideways by rotating centres for between-centre turning.

3.6.5 Axle drive

- 3.6.5.1 The UFWL shall rotate the wheels by means of a pair of rollers on the wheel tread/flange. UFWL shall be equipped with four driving rollers. Each drive roller shall be capable of independent vertical movement & fitted with an individual drive motor for positioning the wheel set. AC motor with variable speed drive shall be used for roller drive. This will be integrated with the CNC supplier.
- 3.6.5.2 Each machining head shall be provided with an independent drive unit. Both the drive units shall be fully synchronized. Arrangement provided shall be explained in the bid. Drive to the wheels shall be from a set of two drive rollers on either side. Drive rollers shall be of suitably heat-treated alloy steel. Distance between the drive rollers shall be designed to accommodate all wheel sets.
- 3.6.5.3 Considering the maximum torque required for wheel re-profiling, especially at hard points on the wheel tread at the tool, it is necessary that all provisions be taken so that the drive roller-wheel adherence remains effective in all configurations.
- 3.6.5.4 The axle drive shall be monitored to avoid any slippage during turning. Any slippage conditions shall warn the operator by displaying an error message, stop the feed or retract the tools depending on the extent of the slippage.
- 3.6.5.5 The drive arrangement shall be direct driven by servo-motor or AC-motor. Details shall be described in the offer.

3.7 Tooling

- 3.7.1 The UFWL shall be capable of turning wheel profiles with throw away type carbide inserts with built in chip breakers. The chips that are yielded from the machining process shall not exceed 300 mm in length before entering the chip crusher. The total number and type of inserts required for each tool holder shall be indicated. The tools and tool holders shall preferably be available in India. Sandvik/Widia make tooling shall be accepted.
- 3.7.2 The profiling tool saddle shall be of standard reversible tools, designed to provide short broken chips. The saddles horizontal & vertical motions shall be obtained with ball screws controlled by AC motor and transducer. In case of power failure CNC shall command the retraction of the tool holder.
- 3.7.3 Tool-holders shall be easy to remove and their positioning on the tool-holder carriages shall be very precise to provide accurate machining of wheels.
- 3.7.4 Each tool-holder carriage shall be fitted with a spare tool-holder. Interchanging tool-holders shall not require readjustment of the UFWL.
- 3.7.5 Cutting tools shall be mounted vertically between the drive rollers.

3.7.6 Special care shall be taken in the design and construction of the tool holder carriages to facilitate any disassembly required for maintenance purposes or for replacement of components, e.g. ball screw, screw block, etc.

3.7.7 Spare cutting tools

Spare sets of cutting tools shall be supplied as per clause no 1.2.6.1(vi).& (vii)

3.8 Wheel Measurement Devices

3.8.1 The UFWL shall be fitted with suitable retractable type of proven design to make the wheel measurements. The devices shall be designed to protect from dust and chips. The Contractor shall indicate the selected types of protection systems. UFWL should be able to measure-

i) Wheel Diameter

The UFWL shall be provided with suitable retractable type of proven design for wheel diameter measurement device. The contractor shall spell out detailed methodology in the offer.

ii) Wheel Profile

Measurement facility shall be provided for measuring wheel profile before and after machining. The facility shall be capable of pre-loading of reference profiles, comparing the measured data with reference profiles, displaying the comparison and recording the results. Standard Test piece shall be used for calibration.

3.8.2 A wheel set and an axle for the calibration of the UFWL numeric controls shall be supplied along with the machine. The UFWL shall be capable to recalibrate the 3-axis using above test pieces. The wheel set and axle shall be pre calibrated and certified from a reputed test house only. A suitable stand shall be provided for keeping the wheel axle set when not in use. Calibration schedule, procedure and tools requirement shall be supplied

3.8.3 Result editing

3.8.3.1 After the machining or measurement operations have been performed on a vehicle (from 1 to 4 axles), the pre- and post-machining measurement results shall be printed on an A-4 size sheet of paper in table form of details parameters like flange height, flange thickness, wheel back to back distance, tread diameter, root wear, flange wear, tread wear etc of newly profiled wheel. A printer compatible to CNC UFWL shall be supplied for the same.

3.8.3.2 The profiling reports that are stored in the UFWL hard drive shall be possible to be exported to an Industrial laptop/ microcomputer via interface software with hardware like USB port.

3.9 Machine Performance Requirements

3.9.1 After wheel machining, the difference between the profile obtained and the theoretical profile should not exceed ± 0.1 mm on the wheel tread and the active side of the flange. The facility shall be available for pre-loading the reference profiles, comparing the measured data with reference profiles, displaying the comparison and recording the results

3.9.2 Maximum tolerances are as follows-

- i) Difference between the diameters of the wheels of a given axle : ≤ 0.2 mm
- ii) Difference between the diameters of the wheels of a given bogie : ≤ 0.3 mm
- iii) Out-of round : ≤ 0.2 mm
- iv) Surface finish : ≤ 25 μ m (Ra)
- v) Surface finish for Brake disc : ≤ 2.5 μ m (Ra)

3.9.3 A suitable load meter to indicate load on the UFWL shall be provided. The load meter shall have an indication to indicate the maximum load the UFWL can take.

3.9.4 **Suitable templates shall be provided to check each profile after machining.**

3.10 Chip Disposal

3.10.1 Chip Crusher

3.10.1.1 An integrated chip crusher of proven design shall be provided to crush the chips produced from turning the wheels to small chips with a maximum length of 100 mm.

3.10.1.2 The chip crusher shall be capable to handling a volume of chips produced under any machining condition of the machine.

3.10.1.3 The crusher shall be a box type steel casing with number of high-grade special steel blades running at slow speed. It shall be mounted under the fully automatic CNC under floor wheel lathe hopper. The construction of a linking duct between this hopper and the crusher shall form part of the supply.

3.10.1.4 The structure of the crusher shall have strength for long lasting operation without denting and deformation. The plate thickness shall not be less than 3 mm.

3.10.1.5 The crusher shall incorporate with safety measures to handle the blocking situation of chips at the crusher or the chip conveyor.

- 3.10.1.6 The electrical switchboard and other accessories, which require operator to attend during operation, shall be located at safe places and protected from human injuries.
- 3.10.1.7 An electrical overload load trip shall be provided to save the crusher against accidental overload due to some foreign material. Detail design of chip crusher shall be described in the offer.

3.10.2 Chip conveyor

- 3.10.2.1 A chip conveyor shall be provided in the gallery under the lathe for chip removal. The chips shall be conveyed and discharged to a skip located outside the fully automatic CNC under floor wheel lathe pit/shed. It needs to be designed as per the site drawings.
- 3.10.2.2 A wheeled chip trolley with unloading by tilting mechanism shall be provided.
- 3.10.2.3 An electrical contactor shall be provided in order to slave its operation to that of the lathe machining cycle. Nonetheless, manual control shall be allowed.
- 3.10.2.4 The flow capacity of chip conveyer shall not be less than 20 Kg/hr or weight of chip cutting per hour.

3.11 Rails

- 3.11.1 A track rail running from one side of the pit wheel lathe shed to the other shall be used to enter and exit trains.
- 3.11.2 All sliding rails and fixed rails, which are an integral part of the Wheel Lathe, shall be supplied and laid by the Contractor.
- 3.11.3 The foundation and columns supporting the track and attachment of the columns to the ground are the responsibility of the Contractor. Its design shall be interfaced with designated contractors for the required civil work.

3.12 Holding Down devices

- 3.12.1 Holding down devices shall be applied to the external axle box cases at locations scheduled for this purpose in order to make re-profiling of un-mounted wheel sets and the lightest vehicle wheels possible, also re-profiling of mounted wheel sets.
- 3.12.2 All types of adaptation tooling/claws shall be designed and made available for various types of axle boxes on the Kanpur and Agra Metro coaches, locomotives, wagons, rail-road vehicles and any other railway vehicles.
- 3.12.3 Contractor shall design and supply the adaptation tooling/claws for various types of rolling stock. The required data for designing of the same may be taken during detailed interface requirement. The travel distances of hold

down device shall make it possible to apply the loads on the various types of axles involved.

3.12.4 It should be clear of the **Kinematic profile of the train coach is as per Schedule-VI** and that of other vehicles as mentioned above, when shunting is being done. This will need an interface between the Rolling Stock Supplier and collection of data for other vehicles from Engineer.

3.13. Hydraulic Installation

3.13.1 Hydraulic unit

3.13.1.1 The unit shall be preferably inbuilt and integrated into the UFWL and mounted at a height sufficient for easy drainage.

3.13.1.2 The unit shall be fitted with temperature and level control systems. Filters shall be compatible with distribution and regulation apparatus and pumps (filtering less than 12 microns). A pan shall be provided to recover fluid in the event of leakage.

3.13.1.3 The hydraulic system shall be equipped with the following protection devices-

- i) Overheating
- ii) Overpressure
- iii) Low oil level
- iv) Surge protection, if required

3.13.1.4 Preferably, hydraulic pumps shall operate during controlled movements. Accumulators shall compensate for component movement during machining and any possible leaks. Other solutions may be suggested.

3.13.1.5 Commissioning of the hydraulic installation shall be the responsibility of the Contractor who, consequently, shall provide the hydraulic fluid recommended by the manufacturer of the hydraulic unit, for-

- i) Initial filling
- ii) Initial draining after operation of the number of hours scheduled by the manufacturer of the hydraulic unit.

3.13.1.6 The Contractor shall perform all operations recommended by this manufacturer, e.g. replacement of filters, cleaning of the hydraulic unit tank, etc.

3.13.1.7 The complete hydraulic power pack shall be from proven supplier like Yuken, Rexroth or equivalent.

3.13.1.8 Filter clogging alarms shall be provided to warn the operator.

3.13.1.9 Hydraulic unit tank filling shall be via a port protected with a filter (12 microns).

3.13.1.10 The oil shall be readily available in India.

3.13.1.11 Electrostatic oil filtration equipment:

In addition to regular filters (incorporated in the hydraulic system), suitable for filtering particles of size 10 micron and above, an electrostatic oil filtration equipment with provision of moisture absorption shall also be provided. It will draw oil from tank and return it after passing through filtration media. Suspended particles of size more than 0.01 micron present in hydraulic oil shall be removed from oil through the electrostatic oil filtration equipment. Details of equipment shall be furnished in the offer.

3.13.2 Hydraulic gear

3.13.2.1 Hydraulic gear shall be homogeneous throughout the entire installation.

3.13.2.2 As much as possible gear shall be installed close to the UFWL and shall be grouped on distribution blocks for easy access for maintenance purposes. Additional outlets shall be provided for future extension.

3.13.2.3 Piping shall be integrated within the UFWL enclosure or run in the gutter and the technical ducting. It should be concealed and suitably protected.

3.13.2.4 Each hydraulic circuit shall be fitted with an easy to access test plug.

3.13.2.5 All supplies, assembly of pipes and connection components concerning the hydraulic installation are the responsibility of the Contractor.

3.13.2.6 All supplies shall be physically identified (riveted labels or numbers stamped on components). The same identification shall be indicated on electrical and hydraulic diagrams and in supply nomenclatures.

3.13.3 Jacks

3.13.3.1 All hydraulic and pneumatic jack pistons shall be protected from dust and chips. Scrappers shall stop foreign bodies from entering into the jack barrels. Jacks shall be easy to access for maintenance operations.

3.13.3.2 Jack links by rigid piping or hoses shall be of easy access for all maintenance operations.

3.13.4 Pressure sensors

3.13.4.1 Pressure sensors shall be installed on the drive roller-holder sliding block supply piping. Sensors shall be connected to the converters, which shall indicate the load in tons with a precision to within two decimal points. Calibration shall provide a zero display reading when the roller-holder sliding blocks, not loaded, are lifted. The converters shall be integrated in the control panel.

3.13.4.2 Pressure sensors shall be installed on any hydraulic circuit requiring permanent monitoring for good UFWL operation.

3.14 Lubrication

3.14.1 The UFWL shall be provided with an automatic lubrication system for lubrication of sliding/rolling surfaces. The system shall be complete including filters, level indicator etc.

3.14.2 The UFWL guide ways shall be lubricated for life and shall require no wet lubrication from the system.

3.14.3 Arrangement shall be provided to indicate failure of the lubricating system and displaying the adequate information on control panel for the operator and protecting the UFWL. If it endangers the safety of UFWL, the operation shall stop.

3.14.4 The lubrication system shall be explained in the bid with a lubricating diagram. Following should also be mentioned-

- i) Periodicity of cleaning/replacement of filters
- ii) Periodicity of replenishing lubricating oil in the sump
- iii) Any other necessary information

3.14.5 Indian equivalent of lubricant and hydraulic shall be advised.

3.15 Electrical parts

All the electrical supply components shall comply with the General Specification (Electrical) as provided in Schedules-X & XI.

3.15.1 Numeric control

3.15.1.1 The numeric control shall be built to satisfy the technical specification. The workstation screen is proposed to be 15" LCD or better. Tenderer shall give the standard scheme available with their design of UFWL.

3.15.1.2 Each tool-holder carriage shall be independent during the turning operations.

3.15.1.3 The numeric control shall be designed for maximum reliability and easy maintenance.

3.15.1.4 The control shall be protected from the effects of overheating by operator alarm and by power cut off.

3.15.1.5 To facilitate numeric control use and maintenance, the following types of diagnostic and test circuitry shall be provided-

- i) System integrity diagnostics (verification of the software, UFWL adjustment data, tool corrections, part program, etc.) at equipment power-up

- ii) Hardware diagnostics (cards fitted, normal operation of critical cards, power supply current and voltage)
- iii) Non-resident diagnostics (test bands which may be loaded in the equipment to locate a defective card)
- iv) Test circuits (display of machine position and tracking error, display of memory contents, etc.)
- v) Access to the various BUSES for connection of an analyser

3.15.1.6 Emergency thresholds and limits shall be provided to avoid feeding the tool in the UFWL and in the axle to be re-profiled.

3.15.1.7 The numeric control shall be designed in such a manner that the modification of the profile of a wheel, the replacement of a profile, the modification of a cycle or basic data concerning the definition of profile, can be carried out. Program for modifications should be available.

3.15.1.8 In guided operator mode-

- i) Connectors for the addition of a data input keyboard, an RS-232 connector output and a laser printer shall also be provided. The software shall be designed to enable the hardware.
- ii) The operator-machine dialogue shall be by means of a keyboard and display control touch in operator panel/pendant.
- iii) Operation running cycles and sequences shall be displayed in real time and in plain English language on screen pages. A screen page per operation (setting up of an axle, measurement, machining etc.) shall be provided.
- iv) Interrupts in the sequence shall be reported. Manual sequences shall be guided by means of operator messages.
- v) Parameter input shall be by means of masks intended to guide the operator.

3.15.2 Roller drive motor

3.15.2.1 UFWL shall be equipped with four driving rollers. Each drive roller shall be capable of independent vertical movement and fitted with an individual drive motor for rotating the wheel set.

3.15.2.2 The adherence of the wheels-drive rollers is provided by the weight of the vehicle and additionally by the axle box holding down devices as required.

3.15.2.3 The circumferential speed of the drive rollers (cutting speed of the tooling) is proposed to be adjustable from 10 to 120 m/min for wheel machining. Tenderer shall propose speeds as per their design to meet

the specified output. The maximum cutting load for each wheel shall be 2,000 daN.

- 3.15.2.4 The difference in the diameters of the wheels to be re-profiled on a given axle may be relatively important. UFWL should be capable to handle diameter difference up to 16 mm, i.e. a difference of 50.26 mm in circumference.
- 3.15.2.5 AC motor of proven design with variable speed drive shall be used for roller drive. This will be integrated with CNC system. Ventilation of motors is left to the initiative of the Contractor. However, the Contractor shall supply the maintenance and technical documentation.
- 3.15.2.6 Axis motors and axis coders shall be designed to suit the required machining precision.

3.15.3 Voltage Stabilising Device

An ultra Isolation Transformer with Servo Voltage Stabilizer of suitable capacity, according to the UFWL load shall be provided along with UFWL to stabilize the input power in particular the fluctuation of the voltage of the incoming supply as detailed at Schedule-X.

3.15.4 Control panels

- 3.15.4.1 Panels shall be provided for control and monitoring of the UFWL and shall be sized to take environmental conditions into account. The panel shall be dust and water splash tight and the ambient temperature outside may go up to 50 deg. C. The IP level for the control panel shall be at least IP55.
- 3.15.4.2 All panels shall be designed to accommodate ambient temperature and humidity conditions, by having heating cum air conditioning systems of reputed international makes only.
- 3.15.4.3 The design shall suitably consider all aspects, which shall be discussed and tested during design stages. In addition, the panels shall have the following-
 - i) It shall have an earthing terminal.
 - ii) It shall comply with the regulations in force.
 - iii) The front panel shall be fitted with three indicating lights for the three incoming phases of power supply, lit when power on.
 - iv) All the control panels should include special button for testing mode.
 - v) A three-pole isolating switch pad lockable in the open position will supply power to the installation.
 - vi) Doors will have removable keys and compartments for storage of electrical diagrams.

- vii) Material for cabinet shall be metallic anticorrosion and painted / powder coated.
- viii) Wire marking must be engraved type.
- ix) The Contractor shall provide galvanic insulation between the different components. The electronic blocks and boards must be quickly replaceable without requiring dismantling of any other neither component nor removal of a cable or set of cables.
- x) The sub-assemblies performing the same function shall be strictly identical and interchangeable.
- xi) The design of the electronics shall be such as to facilitate troubleshooting; in particular, for the technical boards.
- xii) The functions shall be distributed on boards connected to the cabling by connectors, this distribution shall be designed so as to limit the troubleshooting time (each function clearly delimited per board).

3.15.4.4 The cabinet shall comprise of-

- i) A main three-pole isolating switch which can be padlocked in the open position, fitted each with high rupturing capacity (HRC) fuses and single-phasing preventer
- ii) A main circuit breaker
- iii) An isolating switch for each component
- iv) The contactors and relays used for operation of the installation
- v) Magnetic/thermal protection specific to each movement
- vi) A programmable logic controller (type and brand to be specified), the transformer shall be designed with protection as per European standard EN 60 204, the 415 V/230 V transformer (lighting, PLC or relays, etc. A light shall be interlocked with cabinet door opening.
- vii) The dimensions of the cabinet shall be designed for future expansion by about 20%.

3.15.4.5 All the electrical equipment specifications to be submitted for approval, before assembling.

3.15.5 Electrical switchboards

3.15.5.1 All control and regulation electronic and electrical devices, etc. shall be mounted in dust-proof switchboards of IP-55 protected and shall include an earthing terminal. Switchboards shall be designed so that inspection, repair and maintenance shall be easy after doors have been opened.

3.15.5.2 Switchboards shall be in accordance with the regulations in force and on the front fitted with power on indicators.

3.15.5.3 A general three-pole isolating switch, latchable in open position, supplies the installation.

3.15.5.4 The inside of the switchboards shall be illuminated by means of compact florescent tubes controlled by door opening. Doors shall be locked with removable keys. Locations shall be provided for storage of electrical diagrams. All glands to the panel shall be of double compression type.

3.15.5.5 A power socket shall be installed separately from the power source.

3.15.6 Switchboard equipment

3.15.6.1 Electronic cards or blocks must be designed for quick and easy replacement without requiring disassembly of other apparatus or gear, or the movement of a cable or bundle of cables.

3.15.6.2 Sub-assemblies performing the same function must be fully interchangeable and perfectly identical.

3.15.6.3 Machine electronics must be designed to facilitate repair and troubleshooting.

3.15.6.4 The equipment shall normally be able to operate at the ambient temperature of the workshop.

3.15.6.5 In particular, with regard to the technical cards-

- i) Functions shall be distributed on cards connected to cabling with connectors
- ii) Distribution shall be studied to limit the troubleshooting and repair time (functions effectively limited per card)
- iii) During card replacement, adjustments must be limited to those which are strictly necessary
- iv) Technologies used by the various sub-contractors must be homogeneous (same card format, same connectors, etc.)

3.15.6.6 A time counter shall be installed on the roller drive control and on movements of all mobile components of the under floor wheel lathe.

3.15.7 Machine wiring

3.15.7.1 All outside cables shall be protected from any damage, which could be caused by chips, oil and grease. Protection sheaths shall be mounted on the machine so as not to hinder or retain machining chips. Connections made on protection sheaths and components controlled or junction boxes shall be of a mechanical type and removable, e.g. with screws and nuts.

3.15.7.2 The maximum amount of machine wiring shall be laid inside the machine frame.

3.15.7.3 Machine, panel and electrical switchboard wiring shall be laid inside the machine frame.

- 3.15.7.4 Limit switches shall be installed in areas where chips do not reach. Protection systems shall be installed in all areas where there are hazards.
- 3.15.7.5 All cables, apparatus, gear and terminal strips shall be identified with relation to each connection. The same identification system shall be marked on the hydraulic and electrical diagrams.
- 3.15.7.6 Cabling and connection of the installation are the responsibility of the Contractor.

3.15.8 Machine Earthing

The fully automatic CNC under floor wheel lathe equipments shall be earthed as per relevant IS standards, and shall have loop earthing.

3.15.9 Data processing Equipment

- 3.15.9.1 The data processing equipment of the machine shall have the following minimum configuration-
 - i) The UFWL CNC shall be PC based and shall offer all PC interface like LAN/WAN connectivity and shall have ample storage capacity to store wheel profiling data. It shall be compatible with IBM standard software, suitable for remote diagnostic
 - ii) 102-key Keyboard
 - iii) 15" LCD
 - iv) Windows OS, latest version
 - v) Industrial grade Laser-jet Printer, or equivalent
 - vi) Provision of Uninterrupted Power Supply (UPS) for PC system with 1 hour back up time
- 3.15.9.2 The Contractor will provide the programming consoles, application software, which should be compatible with and seen on windows platform and should be upwardly compatible. It shall be possible for engineers to modify specific parameter through application software. Full access to the application software should be provided to this extent. The engineers shall be fully trained for using application software to its full potential. The application programs designed for micro-controllers, PLD and PLA devices shall be supplied. All the PLC used on the workshop equipment have to be unified for maintenance and spare parts as far as possible, including 20% of input/output for future extension and 20% for spare equipment.

3.15.10 Maintenance and upkeep conditions

- 3.15.10.1 All component parts of the UFWL must be appropriately protected to stop ingestion of metal dust and chips. All covers, slide caps, hoods and neighbouring boxes of tool holders shall be made sufficiently hermetic to

stop metal dust from entering into these areas. All covers and hoods shall be easy to remove.

- 3.15.10.2 The UFWL and its accessories (hydraulic unit, electrical switchboards, numeric control system cabinets, etc.) shall be designed to facilitate maintenance operations.
- 3.15.10.3 All anomalies shall be reported to the operator by means of messages on the numeric control system screen.
- 3.15.10.4 A centralised and automatic lubrication device, with pressure and flow control for each lubrication point and display of faults on the numeric control system screen, shall lubricate the maximum number of moving components. Non-centralised lubrication points shall be located so that they do not call for the removal of any components to obtain access.

3.15.11 Requirements of Interlocking with Electric Shunter

The UFWL shall have the provision of wireless interlocking with an electric shunter for the movement of the Rolling stocks during the re-profiling of wheel sets, i.e. the machine shall be able to generate and propagate signal (radio wave) through an antenna, which can be traced by the shunter supplier for making the necessary adjustment in the control circuit of Electric shunter for disabling the movement either by remote, or local panel. The wheel lathe supplier shall co-ordinate with the shunter supplier during the detailed interface. Details interface requirement shall be provided at the time of detailed design.

3.15.12 Dust /Fume exhaust system

The dust and fumes emitted during the machining of wheels are needed to be disposed, situated in direct distance the machining area.

4.0 PROTECTION AND SAFETY

4.1 Machine safety

- 4.1.1 The sliding rails shall be locked in the extended and retracted positions.
- 4.1.2 A device shall be provided to impede any accidents during sliding rail operation if an obstacle is encountered.
- 4.1.3 The following conditions must be satisfied for vehicle hauling-
 - i) Continuity of the track provided by the sliding rails
 - ii) Mobile parts of the machine, viz. roller-holder sliding block, tool-holder sliding block, read head, etc., in retracted position
- 4.1.4 Safety devices shall be provided to impede any damage to the machine and serious personnel injury in the event of false manoeuvres.
- 4.1.5 Interlocking of Electric Shunter with lathe machine shall ensure that-

- i) The shunting will not take place when the lathe is working on Rolling Stock wheel.
- ii) When the shunting is being done using the electric Shunter, the UFWL shall not work and its rails shall be in closed position.

4.2 Personnel safety

4.2.1 In relation to operator's protection, the machine shall meet the following conditions-

- i) The machining area and workstation shall be appropriately illuminated.
- ii) Protection against movement of vehicle when retracting rails are not locked.
- iii) Automatic tool retraction device to withdraw the tool in the event of sudden power failure.
- iv) Arrangement to ensure adequate support to the vehicle in the event of sudden power failure or failure of the hydraulic system. In these eventualities, the vehicles shall continue to be securely supported.
- v) Protection against faulty sequence of operation shall be provided.

4.2.2 Emergency Stop push-buttons (key lockable) shall be installed on following locations-

- i) On the control panel
- ii) At the workplace
- iii) At the chip disposal system

4.2.3 Protection against chips, the machine shall have the system of Swarf-Protection Guards against the direct influence of chip from the cutting area.

4.2.4 Proper Work Ergonomics should be provided. Operators stand should be located in a way for allowing optimum use of area of pit type foundation.

4.3.3 Fire Protection should be provided on the basic body of the machine. The design parameter of electrical installation shall be in safe range to protect from fire.

4.3.4 Mechanical Protection to be provided against dangerous state of break in track continuity over the machine (displaced retractable rails of the machine).

4.3.5 Tenderer shall provide details of the complete scheme being proposed.

5.0 Noise Level

The noise level of machine shall not exceed 75 dBA when measured at a distance of 7 meter from the machine in free field condition as per IS 4758-1968 and ISO test code 230 part-5. Minor variation to above limits is acceptable on discretion of employer. This will not include the noise of chip removal.

6.0 FINISH

6.1 Painting

6.1.1 The machine and related equipment (electrical switchboards, sliding rails, piles, hydraulic unit, etc.) shall be painted in a colour to be defined. The exact colours shall be determined during the execution study.

6.1.2 The following shall be provided-

- i) 1 (one) polyurethane primer coat; thickness 40 microns dry)
- ii) 2 (two) polyurethane lacquer top coats; thickness 50 microns dry each

6.1.3 Paint touch-ups shall be provided after assembly.

7.0 Identification

7.1 All machine components (pump, electro-valve, etc.) shall be identified and marked, corresponding to the panel, by means of durable engraved labels.

7.2 The manufacturer's identification plate and the year of manufacture shall be affixed to the machine.

8.0 PLANNING, PROGRAMME AND PROGRESS MONITORING

8.1 Preparation and submission of program of work

The Contractor shall interact with Employer / Engineer to provide details and obtain approvals, wherever necessary, on following for supply and installation of plant/machine and equipment as per the stipulated schedule-

Activity
Submission of design documents and other technical documents from the manufacturers for approval
Program for manufacture of the equipment
Documents for execution of works relating to installation
Proposal for factory tests
Program for installation
Program for tests at site and commissioning
Program for training of staff

Program for supply of maintenance manuals and other documents
Program for supply of spares

8.2 Progress Report

The Contractor shall prepare a Progress Report covering all aspects of the execution of works. Such Reports shall be delivered to the Employer's representative on monthly basis.

8.3 Progress Meetings

8.3.1 In order to ensure execution of the Works in an efficient and proper manner, the Employer or the Administration and the Contractor will exchange technical information for approval of the solutions and equipment offered and hold periodical meetings. Two categories of meeting may be held for this purpose:

8.3.1.1 Technical Meetings

Attended by engineers and technicians, convened upon request by either party, during which, among other subjects, clarifications of additional information relative to the technical specifications may be provided.

8.3.1.2 Periodical Progress Review Meetings

To be held as and when required by Engineer, during which-

- i) Certain problems that maybe holding progress of the work may be examined.
- ii) Interface requirement with designated contractors may be discussed.

8.3.2 The Progress Review Meetings are attended, notably by the Contractor's Manager and the Employer's or the Administration's discipline Manager or their Deputy.

8.3.3 Progress Review Meetings related to works will be held at Lucknow, Kanpur & Agra.

9.0 PACKAGING

9.1 The Contractor shall provide suitable packing, crates and marking. In doing so, it shall comply with the following requirements-

- i) Each packing case/crate shall be water proof, rot proof and insect/rodent proof and of robust construction. The Contractor shall in determining the packaging materials take cognisance of the climatic conditions likely to occur during the period of transport, shipment and storage.
- ii) All items heavier than 100 Kg shall be marked on the outside of the case to show the gross weight, the points for slinging and where the weight is bearing.
- iii) Care shall be taken to prevent movement of items within cases, crates or packages by the provision of bracing, straps and securing bolts as

necessary. Bags of loose items shall be packed in cases and shall be clearly identified by well-secured labels on which the quantity and name of the part and its catalogue or index number have been stamped.

- iv) Electronic circuit boards shall be well protected by using anti static bubble bag etc.
- v) Rubber products shall be suitably packed to avoid damage due to hardening, deforming and peeling off etc.
- vi) Tubes, cables and conductor ends shall be properly sealed to prevent ingress of moisture.
- vii) Each bulky/heavy case, crate or package shall include wedges for easy loading and unloading by mechanical handling equipment.

10.0 TRANSPORTATION

- 10.1 The Contractor shall notify the Employer's Representative at least 15 days in advance of any expected date of transportation and give further notice of the actual transportation date. This shall be in addition to the inspection requirements as specified in clause 12.1.
- 10.2 2 (two) copies of packing list and test certificates shall be delivered along with the package at site and one copy to the Employer's Representative.

11.0 DELIVERY

- 11.1 All documents, operational and maintenance manuals, inspection test procedure, drawings and other deliverables shall be supplied to the Employer's Representative 1 month before the despatch of the machine.
- 11.2 Any parts of the equipment that is damaged shall not be considered as delivered unless repairs or replacements have been made.
- 11.3 **Contractor's local associate shall take care of, keep a watch on and guard the machines/materials on arrival of machines at their respective depots of Kanpur and Agra Metro till the time the machines get installed and commissioned by the contractor at site in all respect.**

12.0 CHECKS AND TESTS

12.1 In Manufacturer's Plant

- 12.1.1 Checking of the assemblies and the supply prior to assembly on the machine shall be done at manufacturer's plant. The Contractor shall carry out all checks of supplies on his sub-contractors' premises prior to delivery of these supplies to his workshops.

- 12.1.2 **Before despatch of machine to the consignee sites, checks and tests shall be carried out on the machine and its sub-assemblies by the Employer's representative in the Contractor's plant. These checks shall be done for one UFWL or for all 04 nos. of UFWL and will be decided by the Employer, that shall be communicated accordingly. All**

the travelling, lodging cost of Employer's representative for the inspection of UFWL at manufacturer's plant shall be borne by the Employer.

12.1.3 The machine shall be fully assembled in the Contractor's workshop and tests carried to verify the functions.

12.1.4 The supply shall be entirely checked by Employer's representative to ensure that the supply is in accordance with the technical specification and with the approved design documents.

12.1.5 Final adjustment shall be made possible by wheel re-profiling on un-mounted wheels to be arranged by contractor at the place of testing by submitting indemnity bond to the employer if required to be taken from employer. The cost of transportation will be borne by the contractor. The supplier shall provide all documents pertaining to FAT to the engineer for verification before FAT.

12.1.6 All quality checks shall be carried out by the Employer as required, during manufacture on the Contractor's or on the sub-contractors premises.

12.2 Checks at Site

12.2.1 This check will be done to acknowledge that the equipment is capable of performing regular service under normal operating conditions. The check will be conducted at individual locations on each of the UFWLs installed.

12.2.2 The machine performance shall be demonstrated by the supplier after successful commissioning at the consignee's works. Thereafter, the consignee shall watch performance of the machine for a period of 2 (two) month or re-profiling of 2 (two) trains, whichever is later, before the final proving test certificate is issued for each UFWL commissioned at the depots.

12.2.3 Following checks and tests are to be carried at site-

i) Calibration test with a wheel set and an axle for the calibration of the machine numeric controls and also to recalibrate the three axis using above test pieces. The wheel set and axle shall be pre calibrated and certified from a reputed test house only.

ii) All specified parameter's accuracy should be demonstrated with results.

12.2.4 Integration tests shall be carried out with railcars and electric shunter to verify the specified functions and performance.

12.2.5 The contractor will have to arrange all required testing equipment to check the accuracy of different machining parameters, e.g. surface finish, out of round etc.

13.0 DOCUMENT SUBMISSION

All documents shall be provided in English. For each equipment set 04 (four) sets of hard copy of documents and 04 (four) sets of soft copies in CD shall be submitted by the Contractor.

13.1 For Execution of Builder's Work

13.1.1 The Contractor shall obtain an Engineer's consent on the interface and builder's work requirement for installation of the System. The documents shall include the followings:

Detailed dimensional builder's works drawings and interface technical information including machine loads, pit configuration, foundations, cast-in items, electrical and mechanical provisions.

13.2 For Execution of Work

Prior to manufacture of equipment, the Contractor shall send the following documents-

- i) A detailed design documents, drawings, diagrams, part lists etc. to Engineer-in-Charge for approval prior to manufacturing of the equipment (01 set hard copy + 01 set soft copy).
- ii) A detailed technical note, notably indicating the weight of components and removable parts, and including a list of all parts with the respective sub-contractor's references
- iii) General drawings, detailed assembly drawings, detailed drawings of mechanical parts
- iv) Descriptive and operating note with a description of the machine cycle and the operator input screen pages
- v) Detailed hydraulic diagrams with markings
- vi) Detailed electrical diagram and electronics for troubleshooting including cable index
- vii) Control scheme, circuit diagram, flow chart of software and logic diagram
- viii) Connection diagram with markings
- ix) List of basic spare parts to be kept in stock for repairs
- x) Documentation, drawings, notes and references of suppliers and sub-contractors
- xi) Installation and commissioning procedure
- xii) Schedule of work and completion period

- xiii) A life cycle cost plan of the equipment covering capital costs, operation costs and maintenance costs

13.3 At Completion of Work

13.3.1 The Contractor shall provide the entire documentation for review and approval by the Engineer, which should include-

- i) The list or complete nomenclature of general drawings and detailed drawings of electronic and electrical diagrams
- ii) The general nomenclature of the supply including sub-contractors & parts catalogue
- iii) Mechanical drawings, electrical, hydraulic and electronic diagrams required for maintenance and troubleshooting of the machine
- iv) Illustrated lists of mechanical and electrical parts itemised in accordance with the diagrams and drawings mentioned above and including the addresses of the various contractors
- v) Maintenance and adjustment manual with summary of circuits and functions and among other information, a lubrication manual including location of lubrication points, type of lubricants along with technical specification, frequencies and quantities
- vi) An operating manual (start and user's instructions) including the numeric control system
- vii) Complete documentation of equipment from sub-contractors (including read and display apparatus, diameter measurement apparatus and numeric control system)
- viii) Complete documentation on motors and major components
- ix) Spare part list with quantities for three years after handover of the Works, anticipated frequency of replacement and prices with a one-year validity period
- x) The flow charts, the assembly listings and the copy of the source programme on a hard disk for the software
- xi) Manual for hardware and software tools required for making changes in the application software
- xii) Spare parts catalogue
- xiii) Vendor details

13.3.2 It should be noted that the layout of the elementary diagrams shall include the schematic with a maximum of significant information (voltage, signal shape, etc.), location and nomenclature of components, printed circuit drawing with representation of components.

14.0 Training

14.1 The Contractor shall provide comprehensive training to the Employer's staff to enable safe and efficient maintenance and operation of the equipment supplied as part of the contract to achieve maximum reliability and economy of cost. The Contractor shall submit to the Employer's Representative for review and approval a training plan at least 2 (two) months before the readiness of the equipment for commissioning. The training plan shall include-

- i) Schedule of training courses
- ii) Syllabus, size of class and duration of each capsule
- iii) Training facilities to be provided by the Employer
- iv) Qualifications and experience level necessary for the trainees
- v) Instructor's qualifications

14.2 Trainings shall be conducted at each of the 4 (four) nominated depots of Kanpur and Agra Metro

14.3 The contractor shall provide training on operation and maintenance aspects of the machine of 40 trainee man-days (approx. 8 hours per day) each at all of the employer's nominated depots (total 4 locations; 2 in Agra and 2 in Kanpur) to the trainee batches of employers' staff (the number of employer's staff/trainee in each batch may be 5 to 10).

14.3.1 The **operation training** shall cover-

- i) all operation aspects of the machine covering full features including safety features.
- ii) Minor faults diagnosis and quick remedial
- iii) Remote diagnostic and operator guidance
- iv) Real time re-profiling of trains under supervision of the instructor

14.3.2 The **maintenance and overhauling training** shall cover-

- i) for day-to-day maintenance, servicing of fully automatic CNC under floor wheel Lathe, along with electric shunter RRM including major overhaul.
- ii) extensive training on maintenance and trouble shooting of machine lubrication system, hydraulic system, pneumatic system, safety interlocking, panel AC, electrical and control electronics, programmable PLC, CNC including programming of wheel profiling, software reloading and similar other aspects.

- 14.4 The training shall consist of classroom training and practical hands on training. The Contractor shall depute competent trainers to carry out training to a high degree of proficiency with competency certificate issued by OEM. During the warranty period when the Contractor is responsible for faultfinding and repairs, he shall provide practical hands on training to the Employer's maintenance staff.
- 14.5 The Contractor shall also provide training courses and training materials to the Employer's training instructors to a level of competence to allow the instructors to subsequently train the Employer's staff in maintenance and operation of the equipment.
- 14.6 All expenses of trainers, including travel and lodging, shall be borne by the contractor. The cost of training material to trainees shall also be borne by the contractor.
- 14.7 Any gadget, e.g. laptop, projector etc., needed for the training shall be arranged by the contractor. Employer shall be providing halls/rooms, complete with furniture, electric points etc., for the classroom trainings free-of-cost. Onsite training will be done on the commissioned machines.

15.0 Maintenance during DLP

- 15.1 The fully automatic CNC under floor wheel lathe shall be maintained for the scheduled and unscheduled maintenance by the successful tenderer during the Defect Liability Period (DLP) of 24 months from the date of handing over of installed and commissioned plant/machine to the Employer **(for Kanpur Metro and Agra Metro)**. Tenderer shall submit in the offer details on how to carry out the maintenance during this defect liability period, including the proposed organisation structure.
- 15.2 The tenderer shall have to meet the following time frame for breakdown/corrective maintenance from the time of reporting of the defect-
- i) Response time (to check the defect) - within 12 hours
 - ii) Attending time (to make fit the machine) - within 48 hours of expiry of the response time
- 15.3 Delay in attending defects (and making fit the machine) on the part of the contractor will invite penalty of Rs. 10,000 per day, and/or part thereof (calculated proportionally for hours of delay) from the time of expiry of 'attending time' (as mentioned in above clause 15.2), subject to a limit of 10% of the contract price of the machine as specified in clause no. 10.2 of the "general conditions of contract". The calculation of penalty for the delay will start from expiry of maximum allowable attention time (60 hours from reporting of defect by the Employer) for both minor and major defects.
- Note: In case the penalty reached to 10% cost of machine and the machine is still found defective, then contractor's PBG of all the machines shall be en-cashed and other penal action shall be initiated as deemed fit.

- 15.4 The contractor shall maintain a bank of spares with Kanpur Metro and Agra Metro to minimise the machine down time. The contractor shall not claim any charge for transportation, loading/unloading, spares, lubricant and other consumables, machinery and plants, tools/tackles, labour, garbage disposal etc. required for attending the break down/maintenance of the machine.
- 15.5 During maintenance the contractor shall follow all statutory acts, regulation and code of practices in force like IE rules and Acts etc.
- 15.6 The schedule maintenance activity envisages quarterly. Annual maintenance activity shall be more elaborate. The machine shall not remain out of service for more than 1 days during each quarterly and not more than 4 days during annual maintenance schedules.
- 15.7 The equipment entrusted to contractor for repair at their workshop shall be at the risk and cost of the contractor. If any deduction is required to compensate any loss in this account, the same shall be adjusted from balance payments or by means of forfeiting the warranty bank guarantee.
- 15.8 Separate head of payment for maintenance have been indicated in the bid. Payment against it shall be made quarterly basis subject to issuance of certificate by Engineer-in-Charge on the basis of satisfactory maintenance and availability of spares and consumables for schedule maintenance & valid competency certificate of maintenance engineer issued by the contractor (OEM).

16.0 Warranty

Refer GCC clause no. 34.

17.0 Spares and tools

17.1 Contractor shall provide spares as mentioned below-

- i) Consumable spares and spares for schedule/unscheduled maintenance during DLP. (Details of spares to be supplied must be provided in Appendix FT-15)
- ii) Deleted.

17.2 Consumable DLP spares and spares for scheduled/unscheduled maintenance

17.2.1 The consumable spares shall include lubricants, oil, greases, sealants, filter medias, gaskets and any other items whose declared life is less than one year.

17.2.2 Tenderer shall provide all the consumable spares at employer's work for the smooth functioning of equipment and also any of the spares required for scheduled maintenance and unscheduled repair of equipment during Defects Liability Period (DLP) **Whose price shall be included in the supply part of basic equipment.**

- 17.2.3 Tenderer shall give a list of spares to be maintained by him at employer's works for the scheduled maintenance and unscheduled repair of equipment during DLP in the technical packages.
- 17.2.4 If spares provided fall short than the requirement, or those which have not been included in the list but shall be required during DLP, they shall be made available by the supplier at his cost at the earliest.
- 17.2.5 The contractor's payment shall not be entertained without the physical supply of DLP spares as per list. Contractor shall also provide the list of consumables required for the machine.
- 17.2.6 Cost of all defective parts (including consumables needed for changing such defective parts) required for breakdown maintenance and/or compulsory periodic overhaul, during the DLP and CAMC period, will be borne by the contractor.
- 17.2.7 The cost of topping of oils due to losses on account of some breakdown, or preventive maintenance schedule, or completion of life cycle needs to be borne by the contractor.

17.3 Recommended spares

Deleted

- 17.4 **The manufacturer shall guarantee supply support of spares and tools for a period of 10 years after completion of the DLP, i.e. the Defect Liability Period of the last machine.**

- 17.5 The Contractor shall provide to the Employer all special tools and instruments required for the maintenance of the equipment. These shall be supplied in protective boxes provided with padlocking facilities.

- 17.6 All spares shall be manufactured, works tested, calibrated, suitably packed and labelled and delivered to the Site and placed in the Nominated Depot store (for Kanpur and Agra Metro) after joint check.

- 17.7 Deleted

18.0 Part catalogue

Tenderer shall provide part catalogue for Fully automatic CNC Under Floor Wheel Lathe, containing details of all equipments. The first subsection shall be on alphanumeric part list, which shall include the following for every item of UFWL-

- i) Part no.
- ii) Description.
- iii) Name and contact address of manufacturer
- iv) Quantity and unit
- v) Part of next higher assembly
- vi) Cross reference to figure no.
- vii) General or specific purpose
- viii) Purchase and technical specification

19.0 COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT (CMAC)

- 19.1 The tender provides that the tenderer shall quote the price for comprehensive annual maintenance contract (CAMC) for the scheduled and unscheduled maintenance of the fully automatic CNC under floor wheel lathe after the DLP (for Kanpur Metro and Agra Metro). The duration of the comprehensive maintenance contract will be for 5 years after expiry of the DLP. It is mandatory for tenderer to quote for this comprehensive maintenance contract, without which their offer will be treated as incomplete and non-responsive. **Detailed terms are placed in Schedule-IX.**
- 19.2 The CAMC will include the supply of spares and all types of consumables (for periodic and unscheduled maintenance) and services that will be required to keep the plant/machine fully operational with all features. The contract agreement and requirement of performance guarantee etc. are detailed in the document.
- 19.3 Tenderer shall submit in the offer details/organization how to carry out the maintenance during the CAMC period. The firm shall carry out minimum 4 (four) nos. schedule maintenance per year on quarterly basis after unscheduled maintenance of the plant/machine whenever requirement arises. Payment shall be made on quarterly basis after completion of schedule maintenance of the plant /machine and issue of satisfactory performance report by the consinee

**20.0 INTERFACE AND COORDINATION
(For both Kanpur Metro and Agra Metro)**

20.1 Interface with Designated Depot, Civil, E&M Contractor

Scope of work	Under floor wheel lathe Supplier	Civil, E&M Contractor
Design of Installation of machinery and plant	Supply of detailed interface GA drawings including detail foundations, drain point and other Civil works, electrical power requirements etc.	To prepare Civil and Electrical works drawings for execution of work by Civil/Electrical contractor.
Civil Works	Supply of cast in items. The cast in items shall include any base plates fixing bolts & other for Installation of equipment. Installation of Machinery and Plant.	Construction of the pits foundations pit drainage and other civil work required for equipment/ machine. Positioning and casting of cast in items supplied by Machinery Supplier. Temporary/ Permanent

		Road approach for the pit lathe shed.
Electrical works	Shall provide details about power requirement for the fully automatic CNC under floor lathe machine.	Provision of electric connections as per Machinery Supplier requirement.

20.2 Interface with Designated Track Work Contractor

Scope of work	Under floor wheel lathe Supplier	Track Work Contractor
Installation of track in pit wheel lathe shed	Demarcation and alignment of the track with rail installation	Supply of detailed interface drawings. Install track.

20.3 Interface with Rolling Stock Contractor-

Scope of work	Under floor wheel lathe Supplier	Rolling Stock Contractor
Design of wheel lathe equipment	Supply of fully automatic CNC under floor wheel lathe meeting wheel machining requirement of Rolling Stock	Provide wheel, bogie, brake disc and rolling stock details required for design of machine.

20.3.1 It should be noted that for knowing the rolling stock details of the existing stock, the contractor shall interface with Engineer.

20.4 Interface with Electric shunter Contractor-

Scope of work	Under floor wheel lathe Supplier	Electric bogie Tractor Supplier
Design Interlocking of lathe with shunter	Provide the relevant design interface information for inter locking system with Electric bogie Tractor as per requirement of clause no 3.15.11 of PS.	Implementation of inter locking system on electric shunter with under floor lathe as per requirement of clause no 2.16 of PS.

21.0 SCHEDULE OF KEY DATES

21.1 The schedule of key dates for different depots is indicated in the tables given below-

21.1. SCHEDULE OF KEY DATES for KANPUR and AGRA METRO

Key Date No.	Requirement	Key Date
KD – 1	Obtain Engineer's approval on machine layout drawing, electrical supply details and machine foundation requirement drawing.	04 Weeks from the date of issue of LOA
KD – 2	Submission of machine detailed design drawings.	04 Weeks after KD1
KD – 3	Supply of 01 Fully automatic CNC Under Floor Pit Wheel Lathe Machine at Priority Depot of Kanpur Metro along with O&M manuals set, supply of DLP spares.	Wee of April 2021
KD – 3(1)	Supply of the 01 Fully automatic CNC Under Floor Pit Wheel Lathe Machine at Priority Depot of Agra Metro along with O&M manuals set, supply of DLP spares.	Week 1 st of September 2021
KD–3(2)	Supply of remaining 02 Fully automatic CNC Under Floor Pit Wheel Lathe Machine, one each at remaining Depots of Kanpur and Agra Metro along with O&M manuals set, supply of DLP spares.	June 2023
KD – 4	Complete installation, testing, commissioning, operation training & supply of complete spare part catalogue as per Particular Specification of Fully Automatic CNC Under Floor Pit Wheel Lathe Machine of 01 set for priority depot of Kanpur Metro	Week 1 st June 2021
KD – 4(1)	Complete installation, testing, commissioning, operation training & supply of complete spare part catalogue as per Particular Specification of Fully Automatic CNC Under Floor Pit Wheel Lathe Machine 01 set for priority depot of Agra Metro.	Week 1 st of November 2021
KD-4(2)	Complete installation, testing, commissioning, operation training & supply of Complete spare part catalogue as per Particular Specification of Fully Automatic CNC Under Floor Pit Wheel Lathe Machine of 01 set each for remaining two depots of Kanpur and Agra Metro.	August 2023

21.2 It should be noted that all Key Dates are subject to Liquidated Damage.

21.3. It should be noted that Key dates for KD-3(2) & KD-4(2) are tentative in nature and shall be confirmed by the purchaser atleast one and half year before the Key Dates mentioned in KD-3(2) & KD-4(2).

22.0 SCHEDULE OF ACCESS DATES

22.1 The tables shown below set out the access dates when Site Areas will be made available to the Contractor, together with the dates by which they must be vacated by the Contractor. These should be taken into account in the works programme.

22.1.1 SCHEDULE OF ACCESS DATES FOR KANPUR METRO (Priority Depot)

Site areas	Access date	Vacate date	Reason for vacation
Fully automatic CNC under floor wheel lathe building	April 2021	June 2021	Completion of the Works of the Contract

22.1.2 SCHEDULE OF ACCESS DATES FOR AGRA METRO (Priority Depot)

Site areas	Access date	Vacate date	Reason for vacation
Fully automatic CNC under floor wheel lathe building	September 2021	November 2021	Completion of the Works of the Contract

Schedule of access dates for remaining 02 depots (01 each) of Kanpur and Agra Metro shall be notified later.

22.2 Deleted.

22.3 The precise duration and location of access requirements shall be developed and be mutually acceptable to the Contractor and Designated Contractor all as required by General Specification.

22.4 The areas of the Site to which the interface access dates apply are indicated within the Schedule of Access Dates, Specification and Drawings.

22.5 Not less than two weeks or an appropriate period before access is due and on the date for access to an area of interface, the Contractor, the relevant Designated Contractor, the Engineer and/or Relevant Authority shall inspect, assess, confirm and record the state of readiness achieved to the permanent works, temporary works, access arrangements and provision of attendances.

FORM OF TENDER

TENDER No. _____

FORM OF TENDER

Date:

To,
Dy. COS
U.P Metro Rail Corporation Limited
Administrative Building, Vipin Khand
Gomti Nagar, Lucknow-226010
India.

Sub: Design, Manufacturing, Supply, Installation, Testing & Commissioning of Fully Automatic CNC Under Floor Pit Wheel Lathe Machine for Kanpur and Agra Metro Depots.

GENTLEMEN,

1. Having inspected, examined the Employer's Requirements, General Conditions of Contract, Special Conditions of Contract, Tender Drawings and Instruction to Tenderers including Pricing Document, and addenda thereto (if any) issued by the UPMRC for "**Design, Manufacturing, Supply, Installation, Testing & Commissioning of Fully Automatic CNC Under Floor Pit Wheel Lathe Machine**" and having completed and prepared Appendices hereto, we hereby [jointly and severally]* offer to "**Design, Manufacturing, Supply, Installation, Testing & Commissioning of Fully Automatic CNC Under Floor Pit Wheel Lathe Machine** and remedying any defects therein, in conformity with the above documents for the sum stated in the Pricing Document as completed by us and appended hereto.
2. We undertake [jointly and severally]* to complete and deliver the whole of the Works and achieve all Stages, within the times stated in 'Particular Specifications hereto.
3. We undertake [jointly and severally]*:
 - (a) to keep this Tender open for acceptance without unilaterally varying or amending its terms for the period stated in Notice of Invitation to Tender hereto [(the withdrawal of any member or any other change in the composition of the partnership/joint venture/consortium on whose behalf this Tender is submitted shall constitute a breach of this undertaking)]*; and
 - (b) if this Tender is accepted, to provide Guarantees, Undertakings & Warranties for the due performance of the Contract as stipulated in the General Conditions of Contract, Special Conditions of Contract and hereto; and
 - (c) to hold in confidence all documents and information whether technical or commercial supplied to us at any time by or on behalf of the UPMRC in

connection with this Tender or with the above-mentioned Works and, without your written authority or as otherwise required by law, not to publish or otherwise disclose the same.

4. We submit with this Tender a duly executed Tender Guarantee in respect of our obligations under this Tender.
5. We understand that you are not bound to accept the lowest or any tender you may receive.
6. We declare that the submission of this Tender confirms that no agent, middleman or any intermediary has been, or will be engaged to provide any services, or any other item or work related to the award and performance of this Contract. We further confirm and declare that no agency commission or any payment which may be construed as an agency commission has been, or will be paid and that the tender price does not include any such amount. We acknowledge the right of the Employer, if he finds to the contrary, to declare our Tender to be non-compliant and if the Contract has been awarded to declare the Contract null and void.
7. This Tender shall be governed by and construed in all respects according to the laws for the time being in force in India. The courts at Lucknow will have exclusive jurisdiction in the matter.

We are, Gentlemen,
Yours faithfully,
Signature:
Date:
Name:
Address:
For and on behalf of

Witness1
Signature:
Date:
Name:
Address:

Witness2
Signature:
Date:
Name:
Address:

*** Note:**

If the Tenderer comprises a joint venture or consortium:

- (a) the provisions marked with an asterisk are to be retained subject to deletion of the brackets and inapplicable descriptions (i.e. joint venture or consortium)
- (b) the liability of each member under the Tender, and under any contract formed upon its acceptance, will be joint and several;
- (c) an authorized representative of each member must sign the Tender.

- (d) Signature on the Form of Tender shall be witnessed and dated.
- (e) Duly notarized# Power of Attorney issued in favour of Authorized representative of each member of Joint Venture/Consortium shall be attached.
- (f) Duly notarized#, irrevocable Power of Attorney issued by each member of Joint Venture/Consortium in favour of Leader of the Joint Venture/Consortium for participation in this tender shall be attached.
- (g) Power of Attorney of the authorized representative of each member of Joint Venture/Consortium who issues the Power of Attorney in favour of Leader of the Joint Venture/Consortium, with clear evidence that the person is authorized to issue such Power of Attorney shall be attached.

Regarding notarization requirements, please refer ITT Clause 7.2.

SCHEDULES & APPENDICES

TENDERER'S TECHNICAL PROPOSALS

The Tenderer shall submit documents for EACH of the numbered items in the following paragraphs to enable evaluation of the Technical Proposals. Each of the numbered items shall be addressed with either submission of documentation or confirmation of "not applicable". The Tenderer shall include any further information necessary to demonstrate the suitability of his proposal. Offer shall be submitted with information against each of the specified items.

Tenderer also submit all the information as required, mentioned in particular specifications against each clause and also fill the information as per Schedule-5.

A. General	
A1	A list of all sub assemblies, accompanied with brief technical descriptions.
A2.	A list stating limitations, conflicting requirements and non-compliance of the offered equipment in respect to the specified equipment
A3	Deleted.
A4	Brief plans for delivery, Testing and Commissioning of Plant and Equipment.
A5	Method of interfacing and final integration of equipment with relevant Designated Contractors.
B Description of Offered Equipment	
B1	A detailed technical note including description of the equipment and all important assemblies, main dimensions of the equipment etc.
B2	Sufficient drawings to make a reasonable assessment of:- (i) The equipment as a whole (ii) The working system
B3	References and characteristics of main parts,
C Spare Parts, Special Tools, Test Equipment and Maintenance Facilities	
C1	Lists of spare parts for commissioning and defect liability period special tools and test equipment as part of the scope of supply under the Contract.
C2	Deleted
C3	A list of spare parts for 10-year operation shall be submitted as recommended spares, mentioning the names of suppliers and/or local agents, anticipated frequency of replacement, delivery periods for re-ordering, recommended quantities.
C4	For firms out of Lucknow or foreign firms, the details of the local maintenance office including: Company profile; Maintenance facilities in Lucknow; Number of years maintaining similar equipment/ machines/plant Repair arrangement for faulty components on emergency basis.

D	Contractor Organisation
D1	The Tenderer shall demonstrate his capabilities to manufacture offered equipment.
D2	<p>The details of the Tenderer including the following:</p> <p>Company profile;</p> <p>Date of formation of company;</p> <p>Relevant registered license;</p> <p>Number of years of manufacturing similar equipment;</p> <p><i>List of references where similar equipment has been supplied along with performance certificate.</i></p> <p>Sample submission documents, which are extracted from their previous similar projects, include design drawings and testing procedures.</p>
D3	<p>The details of the Principal Manufacturer including the following:</p> <p>Manufacturer's Company profile;</p> <p>Country of origin;</p> <p>Equipment catalogues of items offered;</p> <p>Number of years manufacturing similar equipment;</p> <p>Number of years supplying similar equipment;</p> <p>A list of references including project title, year of project, employer's name and references of the sub-contractors;</p>

STATEMENT OF DEVIATIONS

REFER Appendix FT-10(a)

Deviations, Conditions, Qualifications etc.

REFER Appendix-FT-10(b)

Deleted

Schedule-V

Technical Details of Fully Automatic CNC Under floor wheel lathe (applicable for SG) –

Item	Description	Specified	Indicative	Offered
1	Manufacturer			
	a) Country of Origin			
2	Equipment Weight			
	a) Total Weight of all Equipment [kg]			
	b) Lathe Machine c/w Base Frame [kg]			
	c) Chip conveyor [kg]			
	d) Chip crusher [kg]			
	e) Deleted			
	f) Track rails [kg]			
	g) Heaviest Piece during Transportation [kg]			
	h) Heaviest Piece during Operation [kg]			
	i) Heaviest Piece during Maintenance [kg]			
3	Equipment Dimensions			
	a) Overall Machine Dimension [LXWXH] [mm]			
	b) Drive Roller Diameter [mm]			
4	Machine Capability			
	a) Maximum Axle Load [tonnes]	16		
	b) Minimum Wheelbase [mm]			
	c) Wheel Diameter [mm]	700 - 1000		
	d) Holding Down Force on Free Wheelset [kN]			
5	Operation Time			
	a) Complete cycle for normal worn wheel			
	b) Complete cycle for heavy worn wheel			
	c) Electric Tractor and fine positioning			
	d) Setting up			
	e) Machining			
	f) Unclamping			
6	Roller Drive			
	a) Make of Drive Motors			
	b) Country of Origin of Drive Motors			
	c) Number of Motors			
	d) Rating of Motor [kW]			
	e) Material of Drive Motors			
7	Cutting Capacity			
	a) Cutting Speed for Profile Machining [m/min]		120	
	b) Cutting Speed provision with Brake Disc Machining [m/min]		200	
	c) Cutting Force [kN]			
	d) Type of Cutting Tip			
	e) Make of Cutting Tip			

Item	Description	Specified	Indicative	Offered
8	Measuring Capacity			
	a) Measuring Speed [m/min]			
	b) Measuring Accuracy [%]			
	c) Measuring Time of all Data of a Wheel set [sec]			
9	Machining Accuracy			
	a) Radial Runout of Wheel Tread [mm]	≤0.2		
	b) Wheel Profile [mm]	≤0.2		
	c) Wheel Diameter Difference within Wheelset [mm]	≤0.2		
	d) Wheel Diameter Difference within Bogie [mm]	≤0.3		
	e) Radial Surface Finish Roughness [um]	≤25		
10	Deleted			
11	Chip Conveyor			
	a) Make			
	b) Country of Origin			
	c) Driving Power [kW]			
	d) Conveying Speed [m/min]			
	e) Flow Capacity [kg/hr]	200		
	f) Cross Section of Conveyor [WxH] [mm]			
	g) Material of Construction			
12	Chip Crusher			
	a) Make			
	b) Country of Origin			
	c) Crushing Power /Motor capacity			
	d) Maximum Length of Chips after Crushing [mm]	100		
13	Control Provision			
	a) Type of Control Device			
	b) Make of CNC Control Device			
	c) Model of CNC Control Device			
	d) Screen Dimension for CNC Control [mm]			
	e) Make of PLC Control Device			
	f) Model of PLC Control Device			
	g) Screen Dimension for PLC Control [mm]			
	h) Dimension of Electrical Cabinet [WxDxH] [mm]			

Item	Description	Specified	Indicative	Offered
14	Electrical Power Supply			
	a) Total Power Consumption [kVA]			
	b) Roller/Cutting Drive Consumption [kVA]			
	c) Electric Tractor Consumption [kVA]			
	d) Chip Conveyor Consumption [kVA]			
	e) Chip Crusher Consumption [kVA]			
	f) Maximum Running Current [A]			
	g) Maximum Starting Current [A]			
15	Equipment Overhaul			
	a) Major Overhaul Interval [Year]		20	
	b) Major Overhaul Downtime [Day]			
	c) Minor Overhaul Interval if Required [Year]			
	d) Minor Overhaul Downtime [Day]			
16	Operator Requirement			
	a) Number of Operators Required		1	
	b) Duty of First Operator			
	c) Duty of Second Operator			
	d) Duty of Third Operator [if required]			
17	Noise generated in duty operation (as measured 7m. from the machine at ground level without any particular acoustic treatment to the machine pit.) [dBA].	75		
18	Axle load for machining without hold down device and depth of cut for each axle load at a feed of 1mm/rev.			
19	Maximum height between the rails by which the machine protrudes above the rail level with location of protrusion.			
20	Cutting speeds for turning wheels having tread diameter of 800mm, 900mm			

SOD to be shared at Design Stage.

Please refer Para 2.17 and 2.18 of this particular specifications.

***These values are indicative only & it will be confirmed during design stage.**

Deleted

**COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT OF
FULLY AUTOMATIC CNC UNDER FLOOR WHEEL LATHE MACHINE FOR
KANPUR AND AGRA METRO DEPOTS**

CHAPTER-1: INSTRUCTIONS TO TENDERER

1 INTRODUCTION

- 1.1 Tenderers are required to quote for a comprehensive Annual Maintenance Contract for the fully automatic CNC under floor wheel lathe supplied against this specification for a period of five years on yearly basis giving the rates for each year i.e. first year, second year so on, **which will be inclusive of all spares, consumable for periodic/unscheduled maintenance, material and labour costs but excluding the tool bits for daily use.** The comprehensive maintenance contract is for period after the DLP (either original or in extended form) is over. Employer can exercise this option either at the stage of award of the supply contract or within the said DLP of the contract. The duties and taxes as applicable should be indicated separately. All consumables except Diesel/ fuel, lubricating oils or coolant shall form a part of the scope of comprehensive AMC. Rates for AMC shall be quoted by the tenderer on yearly basis, which will remain applicable during the duration of AMC and not subject to any variation except any statutory changes in taxes and duties as compared to quoted rates.
- 1.2 The tenderer must provide AMC services at the consignee location without any precondition. The AMC should include complete responsibility for the bought out sub assemblies and components like CNC system, Electrical motor, Electrical equipments AC unit etc.
- 1.3 The comprehensive maintenance contract for five years extendable to further. Various provisions of the conditions of contract as for the supply contract will apply for the comprehensive maintenance contract also.
- 1.4 This complete comprehensive maintenance contract document consist of following:
- Chapter-1: Instructions to tenderer
 - Chapter-2: Special Conditions of maintenance Contract
 - Chapter-3: Scope of work.
 - Proforma A : Purchaser's Certificate for Quarterly Work Done Under AMC
 - Appendix-5A: A. Proforma for the Performance security
B. Proforma for the Contract Agreement
- 1.5 Annual maintenance contract shall be governed in accordance with the instructions given herein. **The payment is proportionately made on quarterly basis on the basis of completion of the activity envisaged in the maintenance contract.**
- 1.6 Nominated officer and address for correspondence relating to execution of this comprehensive maintenance contract is given below:

**Dy. General Manager/Rolling Stock,
KANPUR / AGRA METRO DEPOT**

2 PERFORMANCE SECURITY

- 2.1 Please refer Clause no-908 of COC.

3 SIGNING OF AGREEMENT

- 3.1 The Employer shall prepare the agreement in the performa included in this document, duly incorporating all the terms of agreement between the two parties. Within 45 days from the date of intimation for exercise of this comprehensive maintenance contract option, the contractor will be required to execute the Contract Agreement.
- 3.2 The Employer will supply to the contractor one copy of the Agreement duly signed by the Employer and the authorized signatories of the contractor.

CHAPTER –2: SPECIAL CONDITIONS OF CONTRACT (MAINTENANCE)

1 SPECIAL ATTENTION

- (i) The Contract is awarded to the supplier of fully automatic CNC under floor wheel lathe supplier on OEM basis.

2 RIGHT OF WAY

- (i) Right of way (KANPUR/AGRA METRO) to the work site will be provided to the Contractor.

3 COORDINATION WITH OTHER CONTRACTORS

- (i) The contractor for this package shall plan and execute work in coordination and in co-operation with other contractors working for adjacent/other packages as well as Kanpur & Agra Metro staff responsible for the trains and their operation.

4 SUFFICIENCY OF TENDER

- (i) The Tenderer shall be entirely responsible for sufficiency of rates quoted by him in for AMC.
- (ii) The Contractor shall be paid for only at quoted/accepted rates for the activities given in the Schedule of work and as per specifications.

5 NOTICES AND INSTRUCTIONS

- (i) The Contractor shall furnish to the Employer/Engineer the postal address of his office at Kanpur and Agra Metro. Any notice or instructions to be given to the Contractor under the terms of the contract shall be deemed to have been served on him if it has been delivered to his authorized agent or representative at site or if it has been sent by registered post to the office, or to the address of the firm last furnished by the Contractor.

6 RESPONSIBILITY FOR SPECIFICATIONS

6.1 Specifications

- (i) The specification of the machine is provided in the tender document.
- (ii) The Contractor shall provide the operation and maintenance instructions and check sheets to Engineer for normal upkeep of the machine and its equipments. The various schedules for the maintenance shall be suitably integrated in the AMC.

7 SUPPLY OF MATERIALS, TOOLS & PLANT AND EQUIPMENT:

- (i) No material, tools, machinery, plant and equipment shall be supplied by the Employer except as mentioned in the Tender Document. The Contractor has to arrange all tools, equipment as well as cleaning reagents and consumables required for the work.
- (ii) If any local associates are engaged by the contractor, the contractor should ensure that they have the capability by means of trained personnel with valid competency certificate issued by the contractor (OEM) duly accepted by UPMRC for Kanpur and Agra Metro and infrastructure to keep the equipments in good fettle.

8 USE AND CARE OF SITE

- (i) The Contractor shall not demolish, remove or alter structures or other facilities on the site without prior approval of the in-charge.
- (ii) All garbage/debris shall be removed from site daily or as they accumulate. All garbage/debris shall be disposed to the approved locations. The necessary materials required i.e. cartoons/ dustbins etc to be provided by the contractor at his cost. The transportation for disposing the debris shall also be arranged by the contractor. The Waste disposal shall be done in sealed condition without affecting the Environment.

- (iii) All Electrical and Electronic equipments shall be cleaned under the supervision of an authorized representative of Kanpur and Agra Metro.
- (iv) The contractor shall clean only these areas of the Electrical / Electronic & other specified equipments which are either mentioned in the specifications or are permitted by the Employer or mentioned by the authorized representative of the Employer.
- (v) **Accidents/ Damages:** - It shall be the entire responsibility of the contractor to adopt all the safety measures & deploy only those personnel during maintenance of the equipments under AMC, who are adequately trained in safety. If any accident occurs due wrong operations during maintenance or due to negligence on the part of the contractor's personnel, it shall be the full responsibility of the contractor. In case by the negligent act of contractors or officials of contractor, there is loss / damage to Kanpur/Agra Metro property, the contractor will be solely responsible. Kanpur/Agra Metro reserve the right to recover such amount along with damage from the bills of contractor or through legal proceedings. Employer's decision in this regard will be final and binding.

9 DUTIES, TAXES, OCTROI, ROYALTY ETC

- (i) The rates quoted by the Tenderer for all materials, required to be purchased for the satisfactory performance of this contract, shall be deemed to be inclusive of all duties, taxes, octroi, royalties, rentals etc., where payable.
- (ii) The Contractor shall ensure full compliance with tax laws of India with regard to this contract and shall be solely responsible for the same. He shall submit copies of acknowledgements evidencing filing of returns every year and shall keep the Employer fully indemnified against liability of tax, interest, penalty etc, of the Contractor's in respect thereof, which may arise.

10 HOUSING FACILITIES:

- 11** The Employer shall provide for housing facilities for his staff / engineers and room for storing of spare parts at depot premises.

12 SUPPLY OF WATER AND ELECTRICITY

- (i) The Employer shall make arrangements for Water supply and Electricity, pneumatic supply necessary for the Works.
- (ii) The contractor shall make his own arrangements to tap the Electricity from the nominated sockets / points. The contractor shall tap the Electricity as per IE Rules & IE Act (Latest) duly following all safety precautions.
- (iii) The contractor shall submit full scheme for the requirement of Electricity & water. If scheme mentions Electricity requirement which is beyond the capacity of the Employer, in that case the contractor shall make his own arrangements / alternative arrangements.
- (iv) The Contractor should make his own arrangements to draw the water from the available water point to the working place in such a manner without affecting the premises.
- (v) The Contractor should make his own arrangements for Electricity and Water if the Employer fails to provide Electricity and Water supply due to technical or any other reasons beyond the control of the Employer.

13 ACCESS ROADS AND HAUL ROADS

- (i) Existing roads and other public roads may be used by the Contractor to carry out required maintenance activities, with prior approval of the competent authority.
- (ii) The Contractor shall repair any damage to the road or bear the cost thereof due to movement of contractor's plants and equipment, vehicles etc. to the specifications and satisfaction of Engineer.

14 DEDUCTIONS TO BE MADE FROM CONTRACTOR'S BILL

- (i) Deduction towards income tax and any other tax will be made at source from each on-account progress bill by the Employer as may be directed by Income-Tax Department or as provided in the Income Tax Act or other relevant Act, Rules and Circulars and directions issued there under.

15 COMPREHENSIVE ANNUAL MAINTENANCE

- (i) The Contractor shall prepare and submit his detailed working programme.
- (ii) Employer at its sole discretion or due to unsatisfactory maintenance may terminate the contract at any point of time.
- (iii) Initially the period of contract is only for 5 years and on mutual understanding it can be extended every year thereafter.
- (iv) The maintenance activities have to be done during non-operational hours of above plants & equipments, time for which will be intimated to the Contractor.

16 SECURITY MEASURES

- (i) Security arrangements for the work shall be in accordance with general requirements and the Contractor shall confirm to such requirements and shall be held responsible for the action or inaction on the part of his staff, employees.
- (ii) Contractor's employees and representatives shall wear safety/protection wear as required at site.

17 PAYMENT

- (i) For the purpose of stage payment, the contractor shall submit detailed activities carried out as per scope of work recorded in measurement sheets, abstract sheets along with recorded bill for the item actually executed for checking and payment. Payment will be effected based on rates as approved in the contract.
- (ii) The contractor shall submit copies of check sheet as per **Proforma-A** jointly signed with nominated depot official, showing quantity of maintenance and consumables brought to site for in-charge's record.
- (iii) If any activities are not carried out as per the schedule of work the proportionate amount will be withheld or deducted from the bill. Applicable penalty will be levied by the Employer as per Clause No.8 of chapter 3.
- (iv) The payment shall be made on a quarterly basis. At the end of the period, the contractor shall submit necessary documents & Bill in the standard format for payment.

18 CONTRACTOR'S OFFICE

- (i) The Contractor shall establish an office in Kanpur or Agra in consultation with the In-charge for planning, co-ordination and monitoring the progress of the Work and intimate the same in writing to In-charge. In addition, the Contractor may set up field offices at convenient and approved locations for co-ordination and for monitoring the progress of fieldwork at his own cost.
- (ii) The maintenance engineer deployed for the maintenance activities should be qualified and trained in the relevant work with valid competency certificate issued by the contractor and have the knowledge of safety procedures. The Personnel deployed shall be covered with all statutory requirements at the cost of the contractor.

19 NOISE AND DISTURBANCE / POLLUTION

- (i) All works shall be carried out without unreasonable noise and disturbance. The Contractor shall indemnify and keep indemnified the Employer from and against any liability for damages on account of noise or other disturbance created while carrying out the work, and from and against all claims, demands, proceedings, damages, costs, charges, and expenses, whatsoever, in regard or in relation to such liability.

- (ii) Subject and without prejudice to any other provision of the Contract and the law of the land and its obligation as applicable, the Contractor shall take all reasonable precautions.

20 ADVANCES

- (i) **No advances shall be paid to the Contractor.**

21 PRICE VARIATION CLAUSE

- (i) **Price variations clause is not applicable in this contract.**

MAINTENANCE RECORDS:

Contractor and employer's staff will have to maintain proper records of Comprehensive Annual Maintenance of fully automatic CNC under floor wheel lathe as per direction of In-charge. Some of the records to be maintained are as follows:

- (i) Deployment of manpower for preventive maintenance schedules.
- (ii) Deployment of manpower for breakdown calls.
- (iii) Availability of Machines/Plants/Equipments.
- (iv) Utilization of Machines/Plants/Equipments.
- (v) Spares details & utilization of them.
- (vi) Quarterly summary of work carried out as per schedule of work.

22 SOFTWARE UP GRADATION IN THE MACHINE

Any software up gradation in the machine which is required to be done within 7 years from the date of commissioning of the machine shall be executed by the contractor and the cost for the same shall be included in the basic cost of the machine.

CHAPTER-3: SCOPE OF WORK: COMPREHENSIVE MAINTENANCE

1. Tenderers are required to quote for a comprehensive Annual Maintenance Contract for the subject machines, which will be inclusive of all spares, material and labour costs.
2. Deleted.
3. The tenderer's bid to offer AMC services at consignee's locations as mentioned above shall be without any preconditions.

4. .

The tenderer will be responsible for comprehensive maintenance (Electronic- Control & Drives, Pneumatic, Hydraulic, Electric and all other peripherals) of the machine and downtime shall be calculated from the time of reporting the failure. The co-ordination with the sub contractors, if any, shall be the responsibility of the tenderer.

5. The details of preventive maintenance services proposed to be provided by the tenderer under AMC shall be submitted in the following format along with the technical bid ;

S.No.	Type of preventive schedule	Periodicity	Items to be checked	Item of Replacement	Expected Machine down time

Preventive maintenance shall preferably be conducted on weekends through mutual agreement with the consignee. Each preventive maintenance schedule normally shall not exceed one day. The total shutdown time for preventive maintenance should be kept as low as possible but not more than 60 hours/month (averaged over the quarter) including time for cleaning, weekly, fortnightly, monthly, quarterly schedules etc. The preventive maintenance regime offered must be aimed at achieving minimum 85% uptime of the plant excluding the plant down time for preventive maintenance schedules.

6. The tenderer shall ensure that when a failure is reported by consignee's representative, a qualified service engineer visits the site within 48 hours from the time of reporting the failure. This period of 48 hours after report of failure shall be treated as grace period, which will not count towards plant down time for up to one failure per quarter and a maximum of 4 failures per annum. In case, the number of failures exceeds one during any quarter or four during any year of AMC, grace period of only 2 days will be permissible for such additional failures. Complaints can be lodged by consignee on phone, fax, e-mail or per bearer at address given by the tenderer & then it will be considered for calculating the grace period. The responsibility to keep the failure reporting address details current will rest with the tenderer.
7. In case, preventive maintenance is carried out along with breakdown maintenance, preventive maintenance time will be deducted from the total down time of the machine.

8. Penalty Clause:

Penalty shall be levied on the tenderer in case machine uptime falls below the limit of 85% calculated on working days basis, after discounting for grace period and preventive maintenance period. Penalty shall be calculated as %age of quarterly payment and will be deducted from the respective quarterly payments. Penalty calculation will be done over quarterly payment period.

S.No	Availability Slab	Applicable Penalty
1.	85% to 75%	1% for every 1% (or part thereof) REDUCTION IN availability of machine below 85%.
2.	Below 75%	2% for every 1% (or part thereof) reduction in availability of machine below 75%.

A Bank Guarantee (BG) as mentioned in clause no 908 of COC shall be submitted by the tenderer at the commencement of AMC, which will be returned on completion of AMC period. The BG for AMC will have the validity of 5 years 6 months. In case the tenderer fails to provide AMC services successfully; the BG will be forfeited. This will be in addition to penalty as per clause 8 above.

9. Machine up time of less than 75% for two consecutive quarters will constitute complete failure of tenderer to provide the AMC services successfully, and will lead to forfeiture of BG. This will be in addition to penalty Clause 8 above for the period of actual performance.
10. Adequate stock of Spares, as per past experience, shall be stocked by the tenderer either at site or in the agency and no delay on this account will be permissible. However in case a required spare is available with Kanpur and Agra Metro, it will be the sole consideration of the consignee to issue the same to the tenderer for performing repair and maintenance. However, all spares/items borrowed by the tenderer for maintenance, shall be returned within one month from the date of issue from the consignee's store. Cost of outstanding spares will be deducted from pending bills/Bank Guarantee by the consignee.
11. a) In all cases of machine failure except as mentioned in clause 11(b), any other spare part or material necessary to restore the machine to proper working order will be arranged by the tenderer as a part of AMC.
b) In case of damage to the machine on account of any external factor, viz., floods, earthquake, fire, arson or sabotage, entire cost of spare parts and material necessary for repair of the plant shall be borne by the consignee. However, the tenderer shall provide services of their engineers free of cost as a part of AMC to restore the plant to working order.
c) In case of damage to the machine as mentioned in para 11(b), any spare parts and material necessary to restore the plant to proper working order shall be arranged by the tenderer and charged on actual basis duly certified by consignee's authorized engineer in the next quarterly bill. The rates charged for such spare parts shall be based upon the current OEM's published spare parts rate list. The tenderer shall furnish the above to support the rates charged for spare parts used for repair under para 11(b).
12. Normally, quarterly payment under AMC will be made to the tenderer within 30 days from the end of that quarter subject to submission of the following documents by the tenderer to the paying authority assigned by the consignee:
 - a) Consignee's certificate for work done as per Proforma A with calculation of down time and penalty as applicable.

- b) A certificate by consignee that no spares part is due with the tenderer as per clause 11 above.
- c) Bills submitted by the tenderer and accepted by consignee.
- d) Attested photocopy of the BG.

13. The contract shall be terminated in following ways:

- i) Notice in writing by either party, giving 3 months clear notice period. Dues, if any, will be settled in accordance with the conditions of this agreement.
- ii) Consignee may terminate the contract in the event of failure of tenderer to provide AMC services in terms of clause 10 of the AMC agreement.

14 MAINTENANCE WORK:

- (i) The maintenance work is based on scheduled service visits at three-month intervals. Any intermediate visit required by the Contractor for attending the unscheduled maintenance requirement will be the obligation of the Contractor under this comprehensive maintenance contract.
- (ii) The Contractor shall educate the Employer's staff to carry out the routine maintenance as required during the period Contractor's staff is not visiting the site. Routine preventive maintenance check sheets shall be prepared for the employer's staff to carryout daily, weekly checks. The Contractor shall be in regular contact with the Depot officials for smooth running of the machine and its associated accessories, etc.
- (iii) At the end of the visit the contractor shall submit a detailed checklist of the completed activities. The Contractor shall provide all the required service engineers. However, the Employer will provide the operator of the machine and a helper during the visit of service engineers. The Contractors shall attend the machine within the specified time failing which the penalty clause as advised in the document will apply.

14.1 Material required:

The contractor will decide equipment and materials normally required during the servicing. However following list of items is expected to be required:

- Lubrication Pipe, Metering Valves & Fittings as required.
- 'Covers & Guards' Fixing Screws as required
- Probe Wipers.
- Wipers for Slide ways as required.
- Locking Screws for the Tool Body & Cartridges
- Guide Roller Wipers
- Drive Roller Bolts & washers
- Bulbs for indicator lamps as required
- Outboard Axle box support wipers.

The tenderer shall provide the list of spares they plan to store at the employer's premise or their local office for the maintenance of the machine as per the format given below:-.

S.N	Description	Qty

14.3 Time Frame:

The Machine will not be out of service for more than 1 day during each quarterly schedules and 4 days during annual schedule.

14.4 Details of Routine Maintenance

It is important to have regular maintenance of fully automatic CNC under floor wheel lathe to ensure the best possible reliability of the machine. Routine cleaning and checking of various functions will be carried out. This program of routine maintenance is generic in nature and will be tailored by the contractor specific to certain features and equipments of the machine supplied. Further, the contractor based on the R.A.M.S. data gathered for the machine from previous supplies, shall prepare the check sheets for quarterly and annual checks and maintenance. Following are the broad guidelines to prepare the check sheets.

Tool slide Assemblies

- (i) Remove any trapped swarf from the assemblies
- (ii) Check condition of vertical axis telescopic covers for wear & damage
- (iii) Check condition of horizontal axis telescopic covers for war & damage
- (iv) Slide back both horizontal and vertical telescopic covers and visually inspect and record condition of tool slides.
- (v) Visually inspect that lubrication oil is being supplied to 2 axis ball screw nut.
- (vi) Remove any swarf entangled with electrical cables & guarding
- (vii) Examine slides for wear & damage
- (viii) Check & adjust horizontal gab to take up any wear
- (ix) Check condition of wipers, repair / replace if required.
- (x) Inspect lubrication pipes for damage & oil presence, repair any leaks & blockages
- (xi) Visually inspect that lubrication oil is being pumped to the slideways
- (xii) Repair any damage to guards, replace any missing fixing screws
- (xiii) Examine tool bodies & cartridges for wear & damage. Supply new locking screws only.
- (xiv) Check condition of drag chains, repair / replace as required.
- (xv) Perform ballscrew accuracy check & record results. Adjust bearing loads as required.
- (xvi) Check Machine for backlash in Axis Encoder Mechanism

Probes Assemblies

- (i) Remove any trapped swarf from the probe assemblies
- (ii) Remove back to back probe covers and visually inspect and record condition
- (iii) Ensure back-to-back probe is moving freely. Check condition of springs and remove any obstruction if required.
- (iv) Ensure back to back roller is rotating freely
- (v) Remove vertical probe cover and visually inspect and record condition
- (vi) Ensure probe wheel is rotating freely.
- (vii) Check vertical probe housing is adequately greased. Remove excess if required.
- (viii) Check condition of vertical probe shaft seal. Replace if required.

Axial Guide Roller Assemblies

- (i) Remove any swarf entangled with electrical & hydraulic cables.
- (ii) Clean off swarf around guarding
- (iii) Check that the Axial Guide Rollers revolve freely & re-grease
- (iv) Check that the Flange Rollers revolve freely, Inspect for grooving & damaged bearings
- (v) Examine Slides for war & damage
- (vi) Adjust Taper Slips to take up any wear
- (vii) Check Keep Plate Screws & tighten up as required
- (viii) Check condition of Wipers. Repair / Replace if required
- (ix) Replace Felt Top Wiper
- (x) Inspect Lubrication Pipes for damage & oil presence. Repair any leaks & blockages
- (xi) Repair damage to guards & replace missing fixing screws
- (xii) Check Hydraulic Cylinders for damage to rods & inspect for leaks
- (xiii) Bleed Axial Advance & Retract Hydraulic Cylinder
- (xiv) Check condition of Drag Chains. Repair / replace as required
- (xv) Ensure that the Diameter Readout Arms lift & lower freely. Examine Discs for wear & damage
- (xvi) Ensure that the Diameter Readout Discs revolve freely and set on gauge line

- (xvii) Check Diameter Readout Encoder Cable and Conduit for damage

Axle Supports – Outboard

- (i) Check condition of Main Support Shafts; Wet & Dry high spots, wipe clean
- (ii) Remove any swarf entangled with electrical cables around switches & bottom bearing.
- (iii) Inspect lubrication pipes for damage & oil presence; Repair any leaks & blockages
- (iv) Replace felt Washer in Outboard Main Shaft
- (v) Oil Bottom Bearing & regrease inboard top piece
- (vi) Check Electrical Switches – Fully down & Fully Up.

Driving Head Clamps

- (i) Inspect Lubrication Pipes for damage & oil presence. Repair any leaks & blockages
- (ii) Examine for Hydraulic Oil Leaks
- (iii) Check Spring Covers Move Freely.

Machine Safety Guarding

- (i) Inspect guarding for loose fixings
- (ii) Ensure door latches are engaging correctly.
- (iii) Ensure that mechanical interlocks on doors/guards are working correctly.

Lubrication Reservoir

- (i) Top up with oil.
- (ii) Check lubrication points for correct functionality.

Driving Heads

- (i) Top Up Gearboxes with oil
- (ii) Drain & Refill Gearboxes
- (iii) Clean off swarf from around Raise & Lower electrical switches
- (iv) Remove trapped swarf from Hydraulic cylinders
- (v) Remove any swarf entangled with Electrical & Hydraulic Cables.
- (vi) Check Hydraulic Cylinders for damage to rods & inspect for leaks
- (vii) Check Diameter Counting Sensors & electrical cable for damage
- (viii) Re-Tension Drive Belts & check for wear on both Belts & pulleys
- (ix) Examine Drive Rollers for wear
- (x) Replace Drive Roller Bolts & Washers with new. Correctly Torque
- (xi) Replenish with Grease Top & Bottom Cylinder Pivot Pins

Hold Down and Claw

- (i) Examine Slides for Wear & Damage. Apply a thin film of oil for rust protection
- (ii) Check Condition of Drag Chains, Repair /replace as required
- (iii) Check Keep Plate Screws & Tighten Up if required
- (iv) Check Condition of Wipers. Repair / Replace if required
- (v) Inspect Lubrication Pipes for damage & oil presence. Repair any leaks & blockages
- (vi) Remove any swarf entangled with Electrical / Hydraulic cables & cylinders.
- (vii) Check Hydraulic Cylinders for damage to rods & Inspect for leaks
- (viii) Check Condition of Main Chute
- (ix) Check Electrical Switches – Fully Down and Fully Up.
- (x) Replenish Main Centre Bearings with Oil / Grease
- (xi) Check Main Centres for free rotation
- (xii) Check Hold down Claws for damage

Hydraulics

- (i) Examine Hydraulic Tank & Solenoid Station for leaks.
- (ii) Examine Quality of Oil, Drain, flush out & refill if necessary
- (iii) Clean the Filter Cap & Mesh Filter with solvent
- (iv) Replace the Oil Filters
- (v) Check that Hydraulic Tank is not running at an excessively high temp – Pre Run for 6 hours.

Sliding and Bridging Rails

- (i) Inspect for damage & wear; remove any trapped swarf
- (ii) Check hydraulic cylinders for damage to rods & inspect for leaks
- (iii) Retighten all top & guide rails

- (iv) Check condition of wipers/scraper set on front ends of sliding rails. Replace if required.
- (v) Check condition of sliding rail guide pads. Adjust if required.
- (vi) Check hold down bolts on sliding and bridging rail assemblies. Ensure spherical washers can be rotated by hand.

Conveyors

- (i) Remove conveyor covers and inspect steel belt for wear & re-tension.
- (ii) Remove any trapped swarf
- (iii) Check motor gearboxes for leaks.

Swarf Crusher

- (i) Pull back front steps and release locking screw on swarf crusher. Roll crusher back and inspect.
- (ii) Remove any trapped swarf
- (iii) Top up gearboxes with oil
- (iv) Inspect cutting blades.
- (v) Remove end cover of crusher and tighten drive shaft locking screws to 160Nm.

Fume Extraction

- (i) Examine ducting for damage and remove swarf from nozzles.

Electrical

- (i) Open doors and visually check for damage to plugs and cables.
- (ii) Check functionality of all emergency stop buttons.
- (iii) Check all lamps & replace bulbs as necessary
- (iv) Inspect fans in main cabinet for correct operation
- (v) Check filters in fans in main cabinet.
- (vi) Check operation of air conditioning unit in the main cabinet.
- (vii) Inspect door seals and latches for integrity.
- (viii) Remove aircon filter and clean with compressed air.
- (ix) Check control desk for damage.

Painting

- (i) Touch Up / Repair Paintwork damage.

Operation Checks

- (i) Test out wheels to prove machine function & accuracy (customer supplies gauges)
- (ii) Check Diameter measuring using calibration wheel set – Record Results.

Purchaser's Certificate for Quarterly Work Done Under AMC

1. Name of Machine:

2. Consignee

3. UPMRCL PO No.

4. Name of the Contractor

5. Quarterly charges for AMC (Standard): ₹

As per AMC agreement no.dated

6. Quarter for which bills are preferred:

From:..... To.

7. No. of Breakdown during the quarter:

8. Calculation of Penalty and Net AMC charges payable to Contractor for the uarter:

I. Total Plant Down Time (in days):

ii. Standard down days for preventive maintenance (in days/quarter):

iii.Total grace period for breakdown:

iv.Net down time for the plant [(i)-{(ii)+(iii)}]

v. 100% Availability for the quarter (in days) :

vi. Actual availability [= (v)-(iv)] :

Actual availability in %age [= {(vi)1(v)}x 100]:

vii. Calculation of penalty:

a. %age availability below 85% to 75%:

b. %age availability below 75%:

c. Penalty[={(vii a)x(5)x0.01 +(vii b)x{5)x0.02}]:

viii. Net amount payable as AMC charges to [= (5)-(vii c)]

9 It is certified that spares borrowed by the contractor for the previous quarter have been returned in good condition.

Performa for the Performance Security

Deleted

Proforma for the Contract Agreement
(on the non-judicial stamp paper of Rs 100)

FORM OF AGREEMENT

This Agreement is made on the _____ day of _____ 20XX Between UPMRC, hereinafter called "the Employer" of the one part and _____ (Name and Address of Contractor) _____ hereinafter called "the Contractor" of the other part.

Whereas the Employer is desirous that (***) certain Goods and Services should be provided and certain Works should be executed, viz comprehensive maintenance contract [contract number] for nominated depots of Kanpur and Agra Metro Project hereinafter called "the Works" and has accepted a Tender by the Contractor for the execution and completion of such works (***) as well as guarantee of such works) and the remedying of defects therein.

NOW THIS AGREEMENT WITNESSETH as follows:

1. In this Agreement words and expression shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz:
 - (i) Letter of acceptance
 - (ii) General Conditions of Contract
 - (iii) Special Conditions of Contract
 - (iv) Special Conditions of maintenance Contract
 - (v) Form of Tender with prices for the works
 - (vi) Other conditions agreed to and documented as listed below:
 - (a) Tenderer's Work Schedule as amended if required
 - (b) Correspondences on the maintenance works (if applicable)
 - (c) Any other item as applicable
3. In consideration of the payments to be made by the Employer to the Contractor, the Contractor hereby covenants with the Employer to execute and complete the works by **_____ and remedy any defects therein in conformity in all respects with the provisions of the Contract.
4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the works and the remedying of defects therein, the Contract Price of **Rs_____ being the sum stated in the letter of acceptance subject to such additions thereto or deductions there from as may be made under the provisions of the Contract at the times and in the manner prescribed by the Contract.
5. **OBLIGATION OF THE CONTRACTOR**

The contractor shall ensure full compliance with tax laws of India with regard to this contract and shall be solely responsible for the same. The contractor shall submit copies of acknowledgements evidencing filing of returns every year and shall keep the Employer fully indemnified against liability of tax, interest, penalty etc. of the contractor in respect thereof, which may arise.

The staff/labour recruited by the Contractor for work will be the sole responsibility of the Contractor and Kanpur/Agra Metro will not be involved in it in any way. The staff / labour so recruited by the Contractor will not have any right whatsoever at any stage to claim employment in Kanpur and Agra Metro.

6. JURISDICTION OF COURT

The Courts at Lucknow shall have the exclusive jurisdiction to try all disputes arising out of this agreement between the parties.

IN WITNESS WHEREOF the parties hereto have caused their respective Common Seals to be hereunto affixed / (or have hereunto set their respective hands and seals) the day and year first above written.

For and on behalf of the Contractor

For and on behalf of the Employer

Signature of the authorised official

Signature of the authorised Official

Name of the official

Name of the official

Stamp/Seal of the Contractor

Stamp/Seal of the Employer

SIGNED, SEALED AND DELIVERED

By the said

By the said

_____ Name

_____ Name

on behalf of the Contractor in the presence of:

on behalf of the Employer in the presence of:

Witness _____

Witness _____

Name _____

Name _____

Address _____

Address _____

Note :

- + To be made out by the Employer at the time of finalization of the Form of Agreement.
- ** Blanks to be filled by the Employer at the time of finalization of the Form of Agreement.
- *** to be deleted if not applicable

MINIMUM PERIODIC PREVENTIVE MAINTENANCE

1. Quarterly

- a. Checking and tightening of all screws of electrical connections on items like contactors, MPCB, relays, connectors, control panel etc.
- b. Cleaning of contactors and control panel
- c. Checking and cleaning of check valves, control valves, inter locks, filter elements of hydraulic system, electrostatic oil filtration unit and lubrication system etc.
- d. Topping up of hydraulic oil and lubricating oil, if required.
- e. Greasing of bearings and lubrication of other elements, if required.

2. Half yearly

- a. Replacement of filter elements of lubricating system and hydraulic system
- b. Replacement of wipers of all guide ways

3. Yearly

- a. Replacement of hydraulic oil, gear box oil etc.
- b. Replacement of AC filters
- c. Replacement of sealing rings of hydraulic system if required
- d. Checking of drive rollers and replacement if required.

SCHEDULE-X

GENERAL SPECIFICATION (ELECTRICAL)

1. The provision of this General Specification shall apply.
2. All equipments and material shall comply with appropriate Indian Standards (latest) or National Standards of the country of origin provided the latter are equivalent to do better than the former. For items for which Indian Standards are not published, National Standards shall be acceptable. The tenderer shall indicate the Standards applicable. The following standards are applicable in particular.

(Corresponding International Standards like ASA, NEMA, BSS, DIN etc. may also be quoted).

IS :	325-1979 (latest)	Three phase induction motors (corresponding to IEC
IS :	1248 (Latest)	Direct acting indicating analogue electrical measuring instruments and their accessories (corresponding to IEC Pub-51) (Latest).
IS :	1231-1974 (Latest)	Dimensions of three phase induction motors (corresponding to IEC Pub-72-1) (Latest).
IS :	1271-1985 (Latest)	Classification of insulation material for electrical machinery & apparatus in relation to their thermal stability in service (corresponding to IEC-Pub-85) (Latest).
IS :	6875 (Latest)	Push Buttons and related control switches corresponding to IEC Pub/73) (Latest).
IS :	375-1963 (Latest)	Marking and arrangement of switch gear, bus bars, main connection & auxiliary wiring.
IS :	996-1979 (Latest)	Single phase small AC and universal electrical motors.
IS :	1356 (Latest)	Electrical equipment of machine tools.
IS :	2516 (Latest)	Circuit breakers (corresponding to IEC Pub-56) (Latest)
3. Unless specified in the main specification, the AC motors and starters shall be of the following type. Tenderer is, however, free to give alternative proposal along with justification, if in his view alternative proposal is warranted by site conditions. Type of motor type of starter.

TYPE OF MOTOR	TYPE OF STARTER
3.1 Any type of AC motor starting current of which does not exceed 75 amps	Direct on line.
3.2 AC squirrel cage, introduction motors, starting current of which is above 75 amps. if started direct on line.	Star delta or Auto transformer type.
3.3 AC slip ring type motor	Resistance type air/fan cooled
3.4 AC synchronous or synchronous induction motor.	Suitable makers standard.
3.5 DC motor	Resistance/Thyristor type.

4. The control gear for AC/DC motors shall incorporate the following protection devices as concomitant accessories.
 - 4.1 **No Voltage Protection** - No voltage protection shall be provided so that machine will not start up again by itself when, following an interruption the supply is restored.
 - 4.2 **Short Circuit Protection** - To protect against short circuits due to insulation failure of faulty connections HRC fuses shall be provided for each motor. The rating of the fuse shall be such as to take care of the over current due to motor starting.
 - 4.3 **Over Load Protection** - To prevent motors from overloading, overload protection shall be provided separately for each motor. Three phase motors shall be protected by overload tripping devices on each phase.
 - 4.4 **Single Phasing Protection** - A separate current sensitive delayed action single phasing preventor shall be provided for each motor separately. Overload protection shall not be treated as single phasing preventor.
5. Control equipment shall be mounted in separate drip proof enclosures. Control enclosures and compartments are to be so designed as to give adequate protection against ingress of dust, oil, coolant or chips. All control devices like contractors etc. shall be front mounted on a rigidly fabricated metal panel for ease of operation. All other electrics shall be in installed that they are readily accessible when the doors and covers are opened. Hinged covers shall be interlocked with the machine tool control to prevent operation of the machine when cover is open.
6. The motor shall be totally enclosed with or without fan cooled frame. Screen protected drip proof type motor may be provided if it is mounted inside protective enclosures.
7. The electrical equipments shall comply with the requirement of Indian Electricity Act and Rules.
8. All instruments shall be of the Industrial Grade "A" (IS-1248) switch board type the range of the instrument shall be such that the maximum

load expected in the circuit shall produce a deflection of 60% to 80% of the full scale.

9. The supplier shall furnish 3 sets of complete electrical and electronic wiring diagrams in full details to enable the maintenance staff to locate faults in the circuits, 3 sets of part catalogues, maintenance manuals operating instructions with details of coils and windings, used in the equipment to facilitate repairs and maintenance should also be supplied.
10. For main motor class "B" insulation shall be provided. If any other class of insulation is proposed, detailed justification for providing different class of insulation shall be given.
11. Motors shall be designed to withstand frequent starts, stops and reversals as demanded in the operation of the machine.
12. Two earthing terminals shall be provided on all electric motors including the control gear.

13. POWER SUPPLY

13.1 The machine shall be suitable for operation on 415 volts 3 phase 50 cycles AC 3 wire or 4 wire system with neutral solidly earthed. The supply voltage may vary upto + 10%. The frequency may vary upto + 3%. However, full rated power of the motor shall be available at the lower voltage. Voltage stabilizer as specified against clause 13.2 below shall not be required for machine having electrical motor power requirement upto 30 KW.

13.2 In case of machine not equipped with NC, CNC and thyristor controlled devices a suitable servo controlled voltage stabilizer of adequate capacity to cater for entire electrical load of the machine having electrical load requirement exceeding 30 KW shall be offered along with machine as a concomitant accessory. Voltage stabilizer from reputed sources, subject to confirmation by DMRC, are acceptable. The voltage stabilizer shall conform to :

- | | | |
|------|-----------------------------------|---|
| i) | Input voltage | 320 to 460 volts 3 phase 4 wire |
| ii) | Output voltage | 415 volts |
| iii) | Regulation | + 1% from No load to Full load. |
| iv) | Rate of correction | 20 volts per second per phase. |
| v) | Wave form distortion | NIL |
| vi) | Efficiency | Not less than 97%. |
| vii) | Winding and class of insulation - | Copper wire wound with "B" class of insulation or better. |

13.3 In case of machines equipped with NC,ss CNC, Thyristor controlled devices and other sophisticated electronic gadgets including microprocessors etc. which are susceptible to power line spikes and surges, a suitable voltage stabilizer and ultra isolation transformer of adequate capacity to cover for the entire electrical load of the machine shall be offered as a concomitant accessory conforming to Specification for voltage stabilizer as mentioned in clause 13.2 above and isolation transformer to the parameters mentioned below. Indigenous make voltage stabilizer and isolation transformer from the reputed manufacturers are acceptable.

- i) Transformer ratio - 1:1
 - ii) Wording Copper wire wound with "B" class insulation
 - iii) Protection To arrest spikes and surges to the order of 3 200-400 micro seconds duration.
 - iv) Common mode noise rejection - 110 dB
 - v) Isolation Capacitance 005 Pf: resistance greater than Mega Ohms.
- 13.4 Voltage stabilizer shall be equipped with a protective relay to trip to trip the AC power supply to the machine instantaneously with audio and visual indication to the operator. Settings of the protective relay for low and high voltage shall be 320 volts and 460 volts respectively. Protective relay shall be provided as concomitant accessory on the machines having electrical load below 30 KW.

14. ATMOSPHERIC CONDITIONS

- 14.1 The ambient temperature at the site at which the machine will be installed may vary from +0 degree C. to +50 degree C. over the year. The relative humidity maybe as high as 100%. The atmosphere is expected to be dusty. The machines offered shall be suitably tropicalised to work under these atmospheric conditions without any adverse effect on their performance.
15. The temperature rise shall not reach such a value that there is a risk of injury to any insulating material or adjacent parts.
16. The drive shall be capable of operating at any one of the speed required independent of the load in accordance with the requirements of the machine.
17. The enclosed Annexure A, B & C gives technical data which shall be completed and submitted with the tender, separately for each motor/control gear.

ANNEXURE "A" TO SCHEDULE-X

TECHNICAL PARTICULARS OF A.C. MOTORS AND CONTROL GEAR

1. MOTOR

- 1.1 Manufacturer's Name
- 1.2 Type of enclosure
- 1.3 Type of duty (Ref. IS: 325) (Latest)
- 1.4 Rating-Continuous intermittent
- 1.5 Output (KWBHP)
- 1.6 AC voltage across phases, number of phases & frequency.
- 1.7 Speed in RPM
- 1.8 Class of insulation
- 1.9 Normal full load current
- 1.10 Starting current
- 1.11 Maximum current at the time of change over from lower speed to higher speed
- 1.12 Type of motor-Squirrel cage/slip ring (wound rotor)
- 1.13 Temperature rise of windings and other parts allowed above an ambient temperature of 50 degree C.
- 1.14 Frame size of motor
- 1.15 End use of motor

2. CONTROL GEARS

- 2.1 Manufacturer's Name
- 2.2 Type of control gear (Direct on line/Star Delta/Auto-transformer etc.)
- 2.3 Rating of starting gear in KW & amps.
- 2.4 Are the following provided :
 - 2.4.1 Short circuit protection
 - 2.4.2 No volt trip
 - 2.4.3 Overload trip
 - 2.4.4 Delayed action current sensitive single phasing preventor

3. Standard specifications to which the motor control gear and its ancilliary offered conform to

4. Any other special features.

ANNEXURE "B" TO SCHEDULE-X

TECHNICAL PARTICULARS OF D.C. MOTORS AND CONTROL GEARS

1. MOTOR

- 1.1 Manufacturer's Name
- 1.2 Type of enclosure
- 1.3 Type of duty (Ref. IS: 4722) (Latest)
- 1.4 Rating-Continuous/intermittent
- 1.5 Output (KW/BHP)
- 1.6 DC voltage across phases, number of phases & frequency
- 1.7 Method of excitation whether shunt, series, compound or separately excited, if separately excited state excitation voltage.
- 1.8 Speed in RPM
- 1.9 Class of insulation
- 1.10 Normal full load current in amps.
- 1.11 Starting current
- 1.12 Temperature rise of windings and other parts allowed above an ambient temperature of 50 degree C.
- 1.13 Frame size of motor
- 1.14 End use of motor

2. CONTROL GEARS

- 2.1 Manufacturer's Name
- 2.2 Type of control gear (Direct on line/Resistance type/Thyristor type)
- 2.3 Rating of starting gear in KW & amps.
- 2.4 Are the following provided:
 - 2.4.1 Short circuit protection
 - 2.4.2 No volt trip
 - 2.4.3 Overload trip
3. Standard specifications to which the motor control gear and its ancillary offered conform to
4. Standard specification to which control gear conforms to
5. Any other special features.

ANNEXURE "C" TO SCHEDULE-X

TECHNICAL PARTICULARS OF VOLTAGE STABILISER, ULTRA ISOLATION TRANSFORMER

1. VOLTAGE STABILISER

- 1.1 Manufacturer's Name
- 1.2 Type of voltage stabilizer:
 - a) DC servo motor type
 - b) AC servo motor type
 - c) Solid state
- 1.3 Rated capacity in KVA
- 1.4 Nos. of phases & frequency
- 1.5 Type of input supply unbalanced
- 1.6 Input voltage
- 1.7 Output voltage
- 1.8 Rate of correction
- 1.9 Class of insulation & winding (only copper wound is acceptable)
- 1.10 Type of control circuitry
- 1.11 Class of duty
- 1.12 Type of cooling
- 1.13 Indicating instruments and their ranges
- 1.14 Safety features

2. ULTRA ISOLATION TRANSFORMER

- 2.1 Manufacturer's Name
- 2.2 Rated capacity
- 2.3 Ratio of input/output voltage
- 2.4 Class of insulation
- 2.5 Arrangement for suppression of power line surges, spikes, transients and noises
- 2.6 Type for cooling.

GENERAL CHARACTERISTICS

1. RIGIDITY AND STABILITY

- 1.1 The machine shall be robust, rigid and of sturdy construction. It shall be designed to meet heavy duty demands of various operations on the machine under normal Workshop environment for such machines. It shall be free for vibrations even when working at full capacity.
- 1.2 All machine castings shall be made of close grained high grade cast iron like Meehanite or equivalent materials meeting IS-210 Standards to ensure durability and rigidity. The casting shall be thermal stress relieved to ensure stability and continued accuracy.
- 1.3 All machine fabrications of critical load bearing assemblies like beds, columns etc. shall be adequately strengthened and stress relieved.
- 1.4 Change in ambient temperature shall not affect the performance of the machine.
- 1.5 There shall be no change in the performance of the machine either on switching on the machine or after continuous running.
- 1.6 There shall be no resonant vibrations throughout the working range of the machine at all load levels.

2 SAFETY CONTROLS

- 2.1 The machine shall incorporate safety devices to provide protection to the operator and machine against all possible operational and machinery failures.
- 2.2 Suitable interlock shall be provided to prevent machine operations in the event of:
 - Faulty sequence of operation.
Fluctuation in supply voltage.
 - Resumption of power supply after power failure.
Non-positioning of safety guards.
Failure of hydraulic system (where applicable)
 - Failure of lubricating system (In case of automatic including drop in pressure lubrication)
- 1.3 A fault or damage in the control circuit or interruption re-establishment after an interruption of fluctuation in whatever manner in the power supply to the machinery must not lead to dangerous situations in particular. The machinery must not start unexpectedly.
 - The machinery must not be prevented from stopping if command has already been given.
No moving part of the machinery or piece held by the machinery shall fall or be ejected.
 - The protection devices must remain effective.
- 2.4 The machine shall be fitted with an emergency stop device to enable actual or impending danger to be averted. This device must be
 - Conveniently located.
 - Clearly identifiable.

– Stop the machine as quickly as possible without causing additional hazards.

The emergency stop must remain engaged. It should be possible to disengage it only by appropriate operation. Disengaging the control must not restart the machinery but only permit restarting.

25 Safety features shall also include.

Safety device against overload for all mechanical and electric items to the extent possible.

Safety stops against over-running of slides.

2.6 Guard and protection devices shall protect exposed persons against risks related to moving transmission parts (such as pulleys, belts, gears, rack and pinion, shafts etc.) and moving parts directly involved in the process to the extent possible. This shall meet the following requirements: -

Be of robust construction

Not give rise to any additional risk

Not be easy to by pass or render non-operational

Be located at an adequate distance from danger zone

Cause minimum obstruction to the view of the production process. Rigidly connected and not prone to rattling.

Enable essential work to be carried out without the guard or protection device having to be dismantled.

2.7 A load meter shall be provided to indicate the load on the machine. The meter shall have a suitable mark to indicate the maximum load the machine can take. Full details of the above and other safety features indicating how each one functions must be explained in the offer.

3. OPERATIONAL CONTROLS

3.1 The operation of the machine shall be by push buttons or levers. The basic rules for the direction of operation of controls and the corresponding direction of movements of the machine tools shall be as per IS: 2987-1985.

3.2 The control devices shall be

– Clearly visible and identifiable.

– Ergonomically positioned for safe operation without hesitating or loss of time, and without ambiguity.

4. LIGHTING

4.1 Integral lighting suitable for the operations concerned where its lack is likely to cause a risk despite ambient lighting of normal intensity shall be provided.

4.2 The manufacturer must ensure that there is no area of shadow likely to cause nuisance, that there is no irritating dazzle and that there are no dangerous stroboscopic effects due to lighting provided by the manufacturer.

4.3 Integral parts requiring frequent inspection and adjustment and maintenance areas must be provided with appropriate lighting.

4.4 The machine lighting should be of low voltage so as to prevent any hazard.

5. MACHINE MAINTAINABILITY

5.1 The machine shall be so designed as to require minimum possible and to give

- trouble free service.
- 5.2 All assemblies/parts of the machine shall be easily accessible for maintenance.
 - 5.3 The machine shall not require major dis-assembly for checking and replacement of a particular part, especially for parts requiring periodical check up and replacement.
 - 5.4 The manufacturer must provide means of access e.g stairs, ladders, cat walks etc. to allow access safety to all areas used for production, adjustments and maintenance operations.

6. WEAR COMPENSATION ADJUSTMENT

- 6.1 The original built in accuracy of the machine shall be capable of being maintained conveniently and economically by suitable adjustments for taking up wear on slides, bearings and load screws.
The system of adjustments incorporated shall be explained in the offer.

7. COOLANT SYSTEM (WHERE APPLICABLE)

- 7.1 Suitable coolant system with pump, motor, tank, filter etc. shall be provided. The coolant pump shall be as per IS: 2161-1962. The filter shall be of reusable type and indigenously available. If reusable filter cannot be offered the filter cartridge shall be readily available in India. Source of supply shall be indicated. Adequate no. of filters for 2 years working on double shift basis shall be offered as spare. Details of the coolant system shall be indicated in the offer.
- 7.2 The supply of coolant shall be in ample volume. Provision to re-circulate the coolant shall be available. A chip and coolant tray shall be provided. The volume of coolant flow shall be indicated. It shall be adjustable.
- 7.3 An enclosure shall be provided to prevent the coolant from splashing outside the machining zone. Details of enclosure shall be provided. Specific requirements of coolant system for grinding machines etc. shall be clearly indicated.

8. LUBRICATION SYSTEM (WHERE APPALICABLE)

- 8.1 The machine shall be provided with an automatic lubricating system for ensuring delivery of adequate quantity of lubricant to areas requiring continuous lubrication. Suitable arrangements must be provided for indication of failure of the lubricating system.
- 8.2 The system shall be provided with interlock to prevent machine operating/starting in the event of the failure lubrication system.
- 8.3 Reusable filters capable of filtering chips, dust particles etc. shall be provided. Indicators for showing clogged condition of filters shall be available. The filters shall be indigenously available. If reusable filter cannot be offered the filter cartridge shall be readily available in India. Source of supply shall be indicated. Adequate no. of filters for 2 years working on double shift basis shall be offered as spare.
- 8.4 Lubrication and filter cleaning chart shall be displayed on a metal plate at a conspicuous location on the machine indicating: -
Specific location of points on the machine to be oiled lubricated/greased.
Periodicity of lubrication of these points.
 - a. Filter to be cleaned.

- b. Periodicity of cleaning filters.
 - c. Periodicity of replenishing lubricating oil for the centralized system.
 - d. Any other similar relevant information.
- 8.5 Points where manual lubrication is needed shall be separately indicated. Frequency of lubrication shall be also clearly mentioned.
- 8.6 Lubricating oils used in the machine shall be available in India. Successful tenderer will be required to indicate brand names of approved oils manufactured by various Indian Oil Companies.
- 8.7 First fill of lubricating oils used in the machine shall be provided with the machine. Details of lubricating system provided shall be indicated.

9. PNEUMATIC SYSTEM (WHERE APPLICABLE)

- 9.1 The compressed air supply will be provided by the customer at the machine within pressure range of 4.5-7.5 kg.cm² and a moisture content or 1000 ppm. The pneumatic system of the machine should be designed accordingly. An alarm shall be provided for low air pressure.
- 9.2 Suitable filter/moisture trap shall be provided by the contractor in the system of pneumatic air intake. The filter shall be reusable type and indigenously available. If reusable filter cannot be offered, the filter cartridge shall be easily available in India. Source of supply shall be indicated. Adequate no. of filters for 2 years working on double shift basis shall be offered as spare.
- 9.3 Air pressure regulator, if necessary, shall be provided by the tenderer.
- 9.4 The make of pneumatic control equipment shall be of reputed make. The makes shall be indicated.

10. HYDRAULIC SYSTEM (WHERE APPLICABLE)

- 10.1 Hydraulic circuit must be equipped with the following safety and inspection equipments:
- a. Pressure gauges at all places, where pressure has to be set up or inspected.
 - b. Safety valves for hydraulic circuit if relief valve does not fulfill this function.
 - c. Equipment for checking of temperature in the circuit or in the pump wherever necessary.
 - d. Arrangement to show if the filters (including those in the pump set) are choked and need cleaning. The filters shall be of reusable type and indigenously available. If reusable filter cannot be offered, the filter cartridge shall be readily available in India. Source of supply shall be indicated. Adequate no. of filters for 2 years working on double shift basis shall be offered as spare.
 - e. Alarm for low oil level.
- 10.2 The sump aggregate shall have the following:
- a. Oil level sight gauges or any other equipment showing the minimum and maximum oil levels in sump.
 - b. A drain plug at the lowest portion of the tank.
 - c. It shall be possible to drain the oil from the tank without disconnecting any pipes or other fittings.
- 10.3 The temperature of oil in hydraulic circuits shall not exceed 60 degrees C in any case. Suitable arrangement shall be incorporated to ensure that the oil is not

- overheated under local weather conditions at continuous normal working of the machine.
- 10.4 Facilities for bleeding of air in case of air lock shall be provided.
 - 10.5 The hydraulic reservoir, pump and allied equipment shall be suitably segregated from the machine in order to remove major source of heat.
 - 10.6 Hydraulic oils used on the machine shall be available in India. Successful tenderer will be required to indicate brand names of approved oils supplied by various Indian Oil Companies.
 - 10.7 First fill of hydraulic oils used on the machine shall be provided with the machine.
 - 10.8 The hydraulic system elements shall be from reputed Indian manufacturers like M/s. REXROTH, Vickers-Sperry, Yuken, L&T etc. The make of different elements shall be clearly indicated. Details of Hydraulic system shall be indicated.

SCHEDULE- XII

CNC CONTROL

1. The machine shall be provided with a micro processor based CNC control over the number of axes adequate for the capability of the machine mentioned at para 1.2 of particular specification. Simultaneous control over these axes shall be available. (No. of axes provided shall be indicated in the bid).
2. There shall be provision of a LCD/TFT screen of app. 15 inches screen size.
3. Status output shall be available on the LCD/TFTscreen indicating automatic operation mode selected, manual operation mode selected, automatic operation status, program edit status, axis movement/dwell status, auxiliary function, spindle speed, feed rate, tool offset, emergency stop. Current position display giving position in local co-ordinate system, work co-ordinate system, machine co-ordinate system and residual amount of movement shall be provided.
4. It shall be possible to operate the machine automatically through memory and/or MDI.
5. Facility of machine lock, machine lock on each axis, auxiliary function lock and dry run shall be available for checking the program.
6. The CNC control shall perform various diagnostic checks and display error status in English text.
7. Data protection key shall be provided. It shall prevent the program offset parameters, data etc. from being registered, modified or deleted erroneously.
8. Part program editing and background editing shall be available.
9. The number of registered programs possible shall be 50 minimum. CNC user memory for program and data should be 2GB or more.
10. Facility for program search using program name or program number shall be available. It shall be possible to select the sequence number required to be searched.
11. It shall be possible to store program number and program name for identifying the program. The number of characters in program name shall be indicated.
12. For symmetric work pieces, facility of programmable mirror image shall be available.
13. To facilitate programming, it shall be possible to program angles, chamfers, corner rounding values from machining drawings by direct input of these values.
14. For repetitive machining particular to the type of machine built in boring, turning, facing, grooving and drilling cycles shall be provided.

15. To facilitate programming of family of similar work pieces custom macro/parametric functions shall be available.
16. Stored stroke limit shall be provided thus enabling creation of forbidden zones where the cutting tool may not travel.
17. It shall be possible to return the machine tool to the reference point through program commands as well as manually.
18. Facility of optional block skip shall be available. It shall be possible for the operator to skip a block at his discretion.
19. Provision of 100 tool offsets to compensate for the difference of tool actually used to the imaginary tool used in programming shall be available. It shall also be possible to enter tool offsets through programmable command.
20. Compensations for cutter radius, tool length and tool nose radius shall be available (Nos. shall be indicated in the offer).
21. It shall be possible to control the movement of tool with respect to machine zero through the machine co-ordinate system.
22. It shall be possible to set up work co-ordinate system using tape command. It should also be possible to set up adequate number of work co-ordinate systems (app.6) through the MDI and select any of these in the program.
23. It shall be possible to set up local co-ordinate systems with respect to work co-ordinate systems which have been set up through MDI.
24. Absolute/incremental programming shall be available. It shall be possible to use both of them in the same block.
25. It shall be possible to use decimal point programming.
26. The input resolution (least input increment) should be 0.01mm or 0.001mm (selectable) for linear axes. The position control resolution (least command increment) shall be 0.01mm or 0.001mm (selectable) for linear axes.
27. It shall be possible to move the machine tool along any axis in incremental mode. The increment shall be selectable (0.001mm, 0.01mm, 0.1mm, 1mm and 10mm).
28. For precise adjustment of the feed rate, provision of manual pulse generator shall be available.
29. For spindle speed, feed rate and rapid traverse, manual over-ride shall be available from 0-120%.
30. Input shall be in metric system.

31. Linear/circular interpolation shall be available.
32. Feed rate command shall be available in mm/min.
33. The manufacturer's infrastructure for repair and maintenance of controls in India, in particular for repair of PCBs shall be commented upon in detail in the tender.
34. CNC control cabinets shall be suitably air-conditioned.
35. Facility of buffer storage shall be available in the control so that machine waiting time is avoided while the next programmed instruction is being read into the control system.
36. Provision of pitch error compensation and backlash compensation shall be available.
37. The part program shall be protected in the event of power failure. Automatic tool withdrawal facility in the event of power failure shall also be available.
38. RS 232 C port / USB 2.0 or better port to directly download programs from PC shall be provided.
39. CNC control should indicate run hours.
40. Constant surface speed programming shall be available.
41. Emergency stop button provided on the panel should stop all the machine movements if operated.
42. Parametric program should be available.
43. Simultaneous execution of different programmes in each spindle in auto mode should be possible.
44. Even when one CNC spindle is stopped for any reason including repairs, the other spindle should work in auto mode. Self diagnostics like fault messages, internal status of PLC, counter monitor, spindle monitoring and display of operator's message should be available.

Schedule-XIII

SN	Bought out Items	Makes
1.	Ball bearing, roller bearing & main thrust bearings	SKF/FAG/NBC/Timken/NTN
2.	Electromagnetic clutch	Vortex
3.	Toolings	Sandvik/Kennametal-Widia/Taegu-Tec/Iskar
4.	A.C. Motors	NGEF/BBL/ABB/KEC/Crompton/ Siemens/ Allen Bradley
5.	Brake motors	Siemens/KEC/Crompton/NGEF/BBL
6.	Proximity Switch	Elap/Schneider/Omron/Scanner
7.	Contactors	Siemens/BCH/ABB/Schneider/L&T
8.	Limit switches	BCH/Siemens/L&T/Teknic/Euchener/Honeywell, USA
9.	Push button	Teknic/Siemens/ Schneider/BCH
10.	'O' Rings & rubber seals	Merlin/Parker/Busak/Hunger/Merkel/Soloseal/Walkersolo/Halite
11.	Hydraulic pumps & valve	Yuken/Rexroth/Vickers/Mico Bosch/ Parker / Atos/Voith
12.	Pneumatic Control Equipment	Festo/Shavo Norgen/Shradder Scovil/Electro Pneumatics/Parker/SMC Pneumatics
13.	Control gears	L&T/Siemens/BCH/ABB/Schneider
14.	Filters	Hydac/Hydroline/Parker/Rexroth/EPE, Germany/Vickers/Purolator
15.	Belts	Fenner/Hilton/Dunlop
16.	Cable/wire	Siemens/Indramat/ Hubershauer/ Finolex/Havells
17.	Gear reducer	Elecon/Greaves/Shanthy/ZF/New Allenbury/ Bongfilivali
18.	Chains	T.I. Diamond/Rollon
19.	Sprocket	Rollon/T.I. Diamond
20.	Voltage stabilizer & ultra isolation transformer	Neel/Servomax

21.	AC Drive	Fanuc/Siemens/ABB/Allen Bradley /Schneider
22.	AC servo motor	Fanuc/Siemens/ABB/Allen Bradley /Schneider
23.	PLC	Siemens/Messung/Hitachi/Mitsubishi/ ABB/Allenbradley/Fanuc/Schneider
24.	Couplings	Fenner/Love Joy Inc., USA
25.	Hour Meter	L&T/ Havells
26.	Ammeter & Voltmeter	AE/ Mecco
27.	Ball screw	THK/INA/Rexroth/Star/Shenberger/NTN/ Tsubaki/ Gamfier
28.	Centralised lubrication system	Vogel/Cenlub/Rexroth
29.	Rubber sheets	Rubber Products Ltd.
30.	Air circuit breaker	Siemens/L&T
31.	Connectors	Harting/Kontakt/L&T/Omron
32.	Hydraulic oil air cooler type heat exchanger	Rittal/Werner finley/Pfamenberg
33.	Chiller type heat Exchanger	WARKIN/ADVANCE COOLING/SPAN ASSOCIATES/FREEZTECH
34.	Feed back Devices	Heidenhain/Ballerf/Fagor/Sony/Siemens/ Fanuc
35.	Hydraulic Oil	IOCL/BPCL/HPCL/Castrol/ESSO
36.	Hydraulic seamless tubes	Parker/Maharashtra seamless/Indian seamless
37.	MCCB	Schneider/ABB/Siemens/L&T
38.	Electric shunter(RRM)	Zephir,Windhoff,Niteq

Note: In case any other reputed make is offered, satisfactory justification for the same will have to be given in the offer.

LETTER OF UNDERTAKING

TENDER NO-

We hereby undertake that incase of our being the preferred bidder we would set up maintenance facility in Kanpur or Agra either directly or through local associate company, who shall be having at least 3 years experience of manufacturing the machine for railways/metros application or of giving after-sales service for machine used in railways/metros. We commit to maintain at least 2 trained and skilled engineers for each plant, for catering to complete maintenance requirement of UPMRCL as per the specification.

We shall certify the competency of the trained manpower deputed for the purpose of maintenance during DLP period, as specified in the tender documents

Signed:

For and on behalf of
(Name of Tenderer/Joint Venture)

STRUCTURE OF THE TENDERER

The Tenderer shall supply a chart particularising the structure of the Tenderer (identifying all companies comprising the Tenderer in the event that the Tenderer is a joint venture or consortium) and the ownership of each of the companies comprising the Tenderer, identifying all respective intermediate and ultimate holding companies.

COMPOSITION OF THE TENDERER

1. A notarised copy of Memorandum of Understanding (MOU) relating to the composition of the Tenderer shall be submitted. For guidance, if the Tenderer is a joint venture or a consortium then the joint venture or consortium agreement is to be submitted by the Tenderer. Should the Tenderer be an entity established or to be established to tender for this Contract, details of the shareholders' agreement or proposed shareholders' agreement shall be supplied together with the percentage participation and percentage equity in the agreements.
2. The contractual arrangements and copies of agreements in relation thereto must, as a minimum, provide information on all members or participants involved, their respective participation in the Tenderer, the management structure, ownership and control of the members or participants comprising the Tenderer and if, appropriate, the name of the member or participant who would have overall lead management responsibility for the Works, the registered addresses of all parties and the names of their respective senior partners, chairmen or managing directors as appropriate. Such agreements should also reflect the joint and several liabilities of the members to the Employer in the event that the Contract is awarded to them and provide "deadlock" provisions in the event that decisions of the joint venture or consortium cannot be reached by unanimous agreement.
3. The Tenderer shall provide written confirmation that:
 - (a) The agreement or agreements submitted represent the entire agreement between the members or participants comprising the Tenderer as to the Tenderer's legal persona;
 - (b) There is or are no other agreements relating to the Tenderer's incorporation, powers or organization which may affect in any way his ability to carry out the Works; and

No changes will be made to any such agreements during the tender period or during the contract period (if contract awarded) without first obtaining the Employer's agreement to the proposed change or changes.

PROFORMA OF BANK GUARANTEE FOR TENDER GUARANTEE
(ON NON-JUDICIAL STAMP PAPER OF RS. 100, WITH STAMP OF BANK)

Ref.

Date

Bank Guarantee No.....

To,
U.P Metro Rail Corporation Ltd.,
Administrative Building, Vipin Khand,
Gomti Nagar, Lucknow -226010.

Dear Sir,

In accordance with your invitation to tender No. M/s
..... hereinafter called the
tenderer with the following Directors on their Board of Directors/ Partners of the firm :

- | | | | |
|----|----|-----|--|
| 1. | 2. | | |
| 3. | | 4. | |
| 5. | | 6. | |
| 7. | | 8. | |
| 9. | | 10. | |

Wish to participate in the said tender for the supply of

As a Bank Guarantee against Bid Guarantee for a sum of

..... (in words &

Figure s) valid for (195days) one hundred and eighty days from the date of opening of the Tender viz is required to be submitted by the tenderers as a condition for the participation, this bank hereby guarantees and undertakes during the above said period of (195days) one hundred and ninety five days to immediately pay, on demand by the General Manager (Finance), U.P Metro Rail Corporation Ltd., Administrative Building, Vipin Khand, Gomti Nagar, Lucknow -226010, **INDIA** in writing the amount of (in words & figures) to the said General Manager (Finance), U.P Metro Rail Corporation Ltd., Administrative Building, Vipin Khand, Gomti Nagar, Lucknow -226010, **INDIA**, and without any reservation and recourse, if :-

- (i) the tenderer after submitting his tender, modifies the rates or any of the terms and conditions thereof, except with the prior written consent of the purchaser; or

- (ii) the tenderer withdraws the said bid within 180 days after opening of bid; or
- (iii) the tenderer having not withdrawn the bid, fails to furnish the Contract Performance Guarantee within the period provided in the Conditions of Contract.

This guarantee shall be irrevocable and shall remain valid upto 4.00 P.M. on If further extension to this guarantee is required, the same shall be extended to such required periods on receiving instructions from M/son whose behalf this guarantee is issued.

Date

Signature

Place

Printed Name

Witness :

1.

(Designation)

(Bank's Common Seal)

**PROFORMA OF BANK GUARANTEE FOR BID GUARANTEE (SUBMITTED BY INDIAN AGENT ON BEHALF OF BIDDER)
(ON BANK'S LETTER HEAD WITH ADHESIVE STAMP)**

Ref

Date.....

Bank Guarantee No

To,
U.P Metro Rail Corporation Ltd.,
Administrative Building, Vipin Khand,
Gomti Nagar, Lucknow -226010.

Dear Sir,

In reference to letter no..... datedof "Bidder"
M/s.....(Name & Address of bidder)
authorizing M/s.....(Name & Address of Indian associate) as
Bidder's Indian Associate and in accordance with your invitation to tender
No.....for supply ofwe,
M/s.....(Name of Indian Associate) hereinafter
called the Indian Associate of the bidder with the following Directors on their
Board of Directors/partners of the firms:

- | | |
|----|-----|
| 1. | 2. |
| 3. | 4. |
| 5. | 6. |
| 7. | 8. |
| 9. | 10. |

Agree to submit this bank guarantee for and on behalf of the "Bidder" who wish to participate in the said tender for the supply of I/We, the Indian Associate of the bidder assume and own the responsibility for payment of the dues under this Bank Guarantee. As a Bank Guarantee against Bid Guarantee for the sum of..... (in words & figures) valid for (225days) two hundred and twenty five days from the date of opening of the tender viz is required to be submitted by the tenderer as a condition for the participation, this bank hereby guarantees and undertakes during the above said period ofdays to immediately pay, on demand by the U.P Metro Rail Corporation Ltd., Administrative Building, Vipin Khand, Gomti Nagar, Lucknow -226010, **INDIA**, India in writing the amount of (words & figures) to the said U.P Metro Rail Corporation Ltd., Lucknow, India, and without any reservation and recourse, if :-

- (i) the tenderer after submitting his tender, modifies the rates or any of the terms and conditions thereof, except with the previous written consent of the purchaser ; or
- (ii) the tenderer withdraws the said bid within 195 days after opening of bid ; or
- (iii) the tenderer having not withdrawn the bid, fails to furnish the Contract Performance Guarantee within the period provided in the General Conditions of the contract.

This guarantee shall be irrevocable and shall remain valid upto If further extension to this guarantee is required, the same shall be extended to such required periods on receiving instructions from M/Son whose behalf this guarantee is issued.

Date

Signature

Place

Printed Name

Witness:

1.

(Designation)

.....
(Bank's Common Seal)

Bank Address:

Telephone No.:

Fax No.:

E-mail:

**PROFORMA OF BANK GUARANTEE
(FOR CONTRACT PERFORMANCE GUARANTEE BOND)**

Ref

Date

Bank Guarantee No.

To,
U.P Metro Rail Corporation Ltd.,
Administrative Building, Vipin Khand,
Gomti Nagar, Lucknow-226010.

1. Against contract vide Advance Acceptance of the Tender No..... dated covering supply of (hereinafter called the said contract') entered into between the, U.P Metro Rail Corporation Ltd., Lucknow (hereinafter called the Purchaser) and (hereinafter called the "Contractor"), this is to certify that at the request of the Contractor we, Bank, Ltd., are holding in trust in favour of the Purchaser, the amount of (write the sum here in words) to indemnify and keep indemnified the Purchaser against any loss or damage that may be caused or likely to be caused to or suffered by the Purchaser (**India**) by reason of any breach by the Contractor of any of the terms and conditions of the said contract and/or the performance thereof. We agree that the decision of the Purchaser, whether any breach of any of the terms and conditions of the said contract and/ or in the performance thereof has been committed by the Contractor and the amount of loss or damage that has been caused or suffered by the Purchaser shall be final and binding on us and the amount of the said loss or damage shall be paid by us forth with on demand and without demur to the Purchaser.

2. We, Bank Ltd., further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for satisfactory performance and fulfilment in all respects of the said contract by the Contractor i.e. till (viz the date upto 12 months after the date of last shipment/ delivery of the goods ordered) hereinafter called the 'said date' and that if any claim accrues or arises against us,Bank Ltd., by virtue of this guarantee before the said date, the same shall be enforceable against us Bank Ltd., notwithstanding the fact that the same is enforced within six months after the said date. Payment under this letter of guarantee shall be made promptly upon our receipt of notice to that effect from the Purchaser.

3. It is fully understood that this guarantee is effective from the date of the said contract and that we,Bank Ltd., undertake not to revoke this guarantee during its currency without the consent in writing of the Purchaser.

4. We, Bank Ltd., further agree that the Purchaser shall have the fullest liberty, without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said contract or to extend time of performance by the

Contractor from time to time or to postpone for any time or from time to time any of the powers exercisable by the Purchaser against the said Contractor and to forbear or enforce any of the terms and conditions relating to the said contract and We.....Bank Ltd., shall not be released from our liability under this guarantee by reason of any such variation or extension being granted to the said Contractor or for any forbearance and or omission on the part of Purchaser or any indulgence by the Purchaser to the said Contractor or by any other matter or thing what-so-ever, which, under the law relating to sureties, would but for this provision have the effect of so releasing us from our liability under this guarantee.

5. We,Bank Ltd., further agree that the guarantee herein contained shall not be affected by any change in the constitution of the said Contractor.

Date

Place.....

Witness:.....

Signature.....

Printed Name

.....

(Designation)

.....

(Bank's Common Seal)

**FORM OF DECLARATION FOR NON-ENGAGEMENT OF ANY AGENT,
MIDDLEMAN OR INTERMEDIARY**

We hereby jointly and severally declare that the submission of this Tender confirms that no agent, middleman or any intermediary has been, or will be engaged to provide any services, or any other item or work related to the award and performance of this Contract. We further confirm and declare that no agency commission or any payment which may be construed as an agency commission has been, or will be paid and that the tender price does not include any such amount. We acknowledge the right of the Employer, if he finds to the contrary, to declare our Tender to be non-compliant and if the Contract has been awarded to declare the Contract NULL and VOID.

SIGNATURE OF THE TENDERER

Appendix-FT-4

(Please See Clause-9.7 of 'Instruction to Tenderers')

PROFORMA FOR AUTHORITY FROM MANUFACTURERS

No.

Date

To,
Chief Electrical Engineer (Rolling Stock)
U.P Metro Rail Corporation Ltd.
Administrative Building, Vipin Khand,
Gomti Nagar, Lucknow-226010
India.

Dear Sir,

Sub :-

We, an established and reputable manufacturers of having factories at and offices at do hereby authorise M/s (Name and address of Agents) to represent us, to bid, negotiate and conclude the contract on our behalf with you against Tender No.

No company/ firm or individual other than M/sare authorised to represent us in regard to this business against this specific tender.

Yours faithfully,

(NAME) for & on behalf of M/s

(Name of Manufacturers)

Note: This letter of authority should be on the Letter-Head of the manufacturing concern and should be signed by a person competent and having the power of attorney to bind the manufacturer.

FORM OF CERTIFICATE CONFIRMING RECEIPT OF ALL TENDER ADDENDA

This is to certify that we, M/S [* Name of the Company] have received all Tender Addenda to Tender No-, as listed below:

- 1. Addendum No.
- 2.
- 3.
- 4.

.
. .
. .

SIGNATURE OF TENDERER

* In case of a joint venture or consortium, to be submitted by each constituent member.

PROFORMA FOR EQUIPMENT AND QUALITY CONTROL
EMPLOYED BY THE MANUFACTURER

Tender No. Date of Opening

1.0 NAME OF THE FIRM

2.0 LOCATION

2.1 Postal Address.

- i. Head Office
- ii. Works/ Factory

2.2 Telephone No. (with ISD/STD code).

- i. Head Office
- ii. Works/ Factory

2.3 Telegraphic address & Telex/ Fax

- i. Head Office
- ii. Works/ Factory

3.0 DESCRIPTION OF FACTORY / WORKS

- i. Total Land area (in Sq. meters)
- ii. Total covered area (in Sq. meters)
- iii. Different sub-units (with details of covered/ uncovered area, etc.)
- iv. Special features, if any:

4.0 NO. OF PERSONNEL EMPLOYED (CATEGORY-WISE)

- i. Managerial *
- ii. Supervisory*
- iii. Skilled artisans
- iv. Unskilled

* The qualification may also be indicated.

5.0 GENERAL INFORMATION-TECHNICAL

5.1 Description of different departments in the Factory/ Works and function of each department, along with an organisational chart

5.2 Detailed description of machinery and Plant in each department (make and year of procurement/ commissioning to be provided. For special type of equipment copy of Pamphlets/write ups to be furnished so as to supplement the description.

5.3 Details of raw-materials held in stock (state whether imported/ indigenous).

5.4 Production capacity of the quoted items

- i. Per month
 - ii. Per year
- 5.5 List of other items, which the firm regularly manufactures and corresponding production capacity.
- 6.0 DESIGN CAPABILITY
- 6.1 Details of Qualified Personnel (indicating qualification and experience)
- 6.2 Other facilities available.
- 7.0 MANUFACTURING PROCESS
- 7.1 Level of In-house Facilities
- 7.2 Important items of Work done by Outside Vendors
- 7.3 Brief details of manufacturing process relevant to the items quoted.
- 8.0 QUALITY ASSURANCE
- 8.1 Is the firm certified for ISO 9000 or equivalent?
If so, please give certification details.
(If firm is certified for ISO 9000 or equivalent, no further information on para 8 is required to be filled in).
- 8.1.1 If no, does the firm contemplate to obtain ISO 9000 certification? What steps have been taken by the firm in that direction.
- 8.2 Does the factory have an established Quality Assurance programme? If yes, please enclose a copy of the write-up if not, what plans are there, if any, for setting it up?
- 8.3 Details of Quality Assurance Organisation.
Names of key personnel, their qualifications, designations and position in overall management structure (explain with organisation chart, if necessary).
- 8.4 Quality control testing Facilities and Laboratory equipment available.
- 8.5 Availability of gauges (Please give details)
- 8.6 Calibration of laboratory / test equipment/ gauges, indicated in para 8.4 and 8.5 above.
- i. How is the calibration done?
 - ii. Frequency of calibration.
 - iii. System to ensure that calibration of above equipments does not fall overdue.
 - iv. Action taken if such calibration has Fallen overdue.

- 8.7 Source of procurement of raw-materials, important bought-outs, steps taken to ensure their quality.
- 8.8 Details of inspection/ checks done on material during various stages of the above manufacturing process.
- 8.9 Have acceptable values for the parameters Inspected during above stage checks have been laid down? If yes, the action taken if value of the parameters inspected does not meet the desired laid-down value.
- 8.10 System for documentation of the results of the above stage checks.
- 9.0 AFTER-SALES-SERVICE
- 9.1 Facilities Available at works and Branch Offices.
- 9.2 Assessment of Quality of service including Response Times.

Signature

Name

Designation

No	Financial Information in Rupee equivalent	Last Financial Year		
		i.e from _ to _		
		In respective currencies	Exchange rate	Rupee equivalent
1.	Total Assets			
2.	Total Liabilities (excluding Shareholder's funds including reserves and surplus)			
3.	Shareholder's Funds or Net worth (Net Worth=Total assets at S.No.1 – Total Liabilities at S.No.2 above)			

This information should be extracted from the Annual Financial Statements and Banking Reference. (The information should be duly certified and signed by the qualified Chartered Accountant)

NOTE: The exchange rate, wherever mentioned, in this questionnaire shall be taken as the 'B.C Selling Rate of Exchange of the currencies at the close of business of the State Bank of India', applicable on the respective financial year ending date.

PAST PERFORMANCE OF BIDDER

Tender No.....

Date of opening...

1. Ref Para a. of B of ELIGIBILITY QUALIFICATION CRITERIA

Details of orders for design manufacture and supply and commissioning of Fully Automatic CNC Under Floor Pit Wheel Lathe Machine executed during the last five years

SI No.	Full address of purchaser with contact name and telephone Nos	Order No_ and Date	Machine particulars	Qty	Name and address of Manufacturing unit (where plant was manufactured)	Date of supply	Date of commissioning	Commissioning certificate to be attached in proof in commissioning of machine. Performance certificate to be attached in proof of satisfactory performance of machine for 2 years after commissioning of the machine.
								Note: Tenderer shall ensure that required numbers of Commissioning certificates & Performance certificates are provided in the offer as per eligibility qualification criteria.

2. **Ref Para a/ii of B of ELIGIBILITY QUALIFICATION CRITERIA:** Performance certificate from end users and not from the mediator/intermediate agency with specified details.

3. **Ref Para b. of B of ELIGIBILITY QUALIFICATION CRITERIA:** The manufacturing unit where the **FULLY AUTOMATIC CNC UNDER FLOOR PIT WHEEL LATHE** shall be manufactured and credentials of manufacturing for number of such plants manufactured and their performance report shall be provided.

Note A: In case performance /commissioning certificate is not in English language then English translated copy authenticated by the government authorized translator duly notarized shall be provided.

B. All certificates shall be from the end user and not from the mediator/ intermediate agency. The certificate given by intermediate agency shall not be considered.

C. The Certificate issued from Government agency should be signed by not below the Gazetted Officer.

Signature.....

Name.....

Designation.....

FORMAT FOR FURNISHING CLAUSE-WISE COMMENTS

Ref. Clause/ sub clause. No.	Complied/not complied

PROFORMA FOR STATEMENT OF TECHNICAL DEVIATIONS

Title	Clause Number	Details of Deviations	Remarks

1. We hereby confirm that the pricing for unconditional withdrawal of the above deviations has been given in the Financial **Tender**.
2. We hereby confirm that all implicit and explicit deviations, comments and remarks, mentioned elsewhere in our **Tender**, shall be treated as NULL and VOID and stand withdrawn.
3. We hereby confirm that the deviations noted in the Annexure – 10(a) & 10(b), our **Tender** is fully and fully compliant.

Date (Signature)

Place (Printed Name)

(Designation).....

(Common Seal).....

NOTE: Where there is no deviation, the statement should be returned duly signed with an endorsement indicating “No Deviations”.

PROFORMA FOR STATEMENT OF TECHNICAL DEVIATIONS WITH COST OF UNCONDITIONAL WITHDRAWAL OF DEVIATIONS

Title	Clause Number	Details of Deviations	Price for deviation withdrawal

1. We hereby confirm that the pricing for unconditional withdrawal of the above deviations has been given in the Financial **Tender**.
2. We hereby confirm that all implicit and explicit deviations, comments and remarks, mentioned elsewhere in our **Tender**, shall be treated as NULL and VOID and stand withdrawn.
3. We hereby confirm that the deviations noted the Annexure 10(a) & 10(b), our **Tender** is fully and fully compliant.

In case price for unqualified withdrawal of any remark, comment, condition, qualification or deviation etc. indicated in Annexure -10(a) and 10(b) is not quoted in financial tender, it shall be considered that the remark, comment, condition, qualification or deviation is unconditionally withdrawn without any financial implication. However, Employer at its sole discretion and option may assess the financial implication of the said remark, comment, condition, qualification or deviation etc. based on best engineering principles and concepts, which shall be binding on the tenderer, and the same may be considered by Employer for financial evaluation.

Date (Signature)

Place (Printed Name)

(Designation).....

(Common Seal).....

NOTE: Where there is no deviation, the statement should be returned duly signed with an endorsement indicating “No Deviations”.

FORM OF TENDER– APPENDIX FT-11 (a)
STATEMENT FOR COVENANT OF INTEGRITY
to the Promoter from a Tenderer, Contractor, Supplier or Consultant to be
attached to its Tender
(or to the Contract in the case of a negotiated procedure)

"We declare and covenant that neither we nor anyone, including any of our directors, employees, agents, joint venture partners or sub-contractors, where these exist, acting on our behalf with due authority or with our knowledge or consent, or facilitated by us, has engaged, or will engage, in any Prohibited Conduct (as defined below) in connection with the tendering process or in the execution or supply of any works, goods or services for [*specify the contract or tender invitation*] (the "**Contract**") and covenant to so inform you if any instance of any such Prohibited Conduct shall come to the attention of any person in our organisation having responsibility for ensuring compliance with this Covenant.

We shall, for the duration of the tender process and, if we are successful in our tender, for the duration of the Contract, appoint and maintain in office an officer, who shall be a person reasonably satisfactory to you and to whom you shall have full and immediate access, having the duty, and the necessary powers, to ensure compliance with this Covenant.

If (i) we have been, or any such director, employee, agent or joint venture partner, where this exists, acting as aforesaid has been, convicted in any court of any offence involving a Prohibited Conduct in connection with any tendering process or provision of works, goods or services during the five years immediately preceding the date of this Covenant, or (ii) any such director, employee, agent or a representative of a joint venture partner, where this exists, has been dismissed or has resigned from any employment on the grounds of being implicated in any Prohibited Conduct, or (iii) we have been, or any of our directors, employees, agents or joint venture partners, where these exist, acting as aforesaid has been excluded by any major Multi-lateral/Bi-lateral Development Bank/ Agency including World Bank Group, African Development Bank, Asian Development Bank, European Bank for Reconstruction and Development, European Investment Bank or Inter-american Development Bank etc from participation in a tendering procedure on the grounds of Prohibited Conduct, we give details of that conviction, dismissal or resignation, or exclusion below, together with details of the measures that we have taken, or shall take, to ensure that neither this company nor any of our directors, employees or agents commits any Prohibited Conduct in connection with the Contract [*give details if necessary*].

In the event that we are awarded the Contract, we grant the Project Owner, the funding agency and auditors appointed by either of them, as well as any authority or institution or body having competence under applicable law, the right of inspection of our records and those of all our sub-contractors under the Contract. We accept to preserve these records generally in accordance

with applicable law but in any case for at least six years from the date of substantial performance of the Contract.”

For the purpose of this Covenant, Prohibited Conduct includes,

- **Corrupt Practice** is the offering, giving, receiving or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party.
- **Fraudulent Practice** is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation.
- **Coercive Practice** is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of any party to influence improperly the actions of a party.
- **Collusive Practice** is an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party
- **Obstructive Practice** is
 - (a) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or
 - (b) acts intended to materially impede the exercise of the funding agency's contractual rights of audit or access to information or the rights that any banking, regulatory or examining authority or other equivalent body may have in accordance with any law, regulation or treaty or pursuant to any agreement into which the funding agency has entered in order to implement such law, regulation or treaty;
- **Money Laundering**
- **Terrorist Financing**
- **Project Owner** means the person designated as such in the tender documents or the Contract.

SIGNATURE OF TENDERER

FORM OF TENDER – APPENDIX 11 (b)
STATEMENT FOR CODE OF INTEGRITY AS PER
Rule 175 (1) Code of Integrity, General Finance Rule

Bidder shall act in contravention of the codes which includes;

(i) prohibition of

(a) making offer, solicitation or acceptance of bribe, reward or gift or any material benefit, either directly or indirectly, in exchange for an unfair advantage in the procurement process or to procurement process.

(b) any omission, or misrepresentation that may mislead or attempt to mislead so that financial or other benefit may be obtained or an obligation avoided.

(c) any collusion, bid rigging or anticompetitive behaviour that may impair the transparency, fairness and the progress of the procurement process.

(d) improper use of information provided by the procuring entity to the bidder with an intent to gain unfair advantage in the procurement process or for personal gain.

(e) any financial or business transactions between the bidder and any official of the procuring entity related to tender or execution process of contract; which can affect the decision of the procuring entity directly or indirectly.

(f) any coercion or any threat to impair or harm, directly or indirectly, any party or its property to influence the procurement process.

(g) obstruction of any investigation or auditing of a procurement process.

(h) making false declaration or providing false information for participation in the tender process or to secure the contract;

(ii) disclosure of conflict of interest.

(iii) Disclosure by the bidder of any previous transgressions made in respect of the provisions of sub-clause (i) with any entity in any country during the last three years or of being debarred by any other procuring entity.

SIGNATURE OF TENDERER

Annexure FT-12
Deleted

**SELF CERTIFICATION / CERTIFICATE FROM STATUTORY
AUDITOR OR COST AUDITOR FOR MINIMUM LOCAL CONTENT IN
OFFERED ITEM**

Refer Clause No. 16.10.5 of ITT

Deleted

Detail of Spares to be Supplied

S.N	Description	Qty

Date:

Place:

Signature:

Printed Name:

Designation:

Common Seal:

Deleted

COMPLETE ADDRESS OF PROPOSED MANUFACTURING UNIT/PLANT FROM WHERE EQUIPMENT/MACHINE IS PROPOSED TO BE SUPPLIED AGAINST THIS TENDER.

The complete address of proposed manufacturing unit/plant is as given below:

S. No.	Description of Equipment/ Machine	Name & Address of Proposed Manufacturing Unit along with Tel. No./E-mail	Remarks

Signature & Seal of the Manufacturer/ Tenderer

UNDERTAKING FOR DOWNLOADING THE TENDER DOCUMENTS FROM WEBSITES

I/We have downloaded the Tender documents from the Internet site www.upmetrorail.com and I/we have not tampered / modified the Tender documents in any manner. In case, if the same is found to be tampered / modified, I/we understand that my/our Tender will be summarily rejected and the money deposited will be forfeited and I am/we are liable to be banned from doing business with UPMRC and/or prosecuted.

Signature & Seal of the Manufacturer/ Tenderer

IMPORTANT NOTICE

- (A) The following check list is intended to help the Tenderers in submitting offer which are complete. An incomplete offer is liable to be rejected. Tenderers are advised to go through the list carefully and take necessary action.
- (B) Tenderers are also required to submit copy of the checklist, duly marked, along-with their offer.

CHECK LIST

1.	Have you submitted a complete offer? It should consist of followings :	
(a)	Quotation in prescribed Performa as per Annexure 1(a) & 1(b).	Submitted / Not Submitted
(b)	Letter of Authority if required Appendix-FT-4	Submitted / Not Submitted
(c)	Tender Guarantee if required Appendix-FT-2(i).	Submitted / Not Submitted
(d)	Statement of Deviations from Tender Conditions Appendix-FT-10(a) and 10(b)	Submitted / Not Submitted
2	Have you submitted other supporting documents to establish your eligibility? It may consist of the followings :	
(a)	<ul style="list-style-type: none"> • Documents relates to Initial filter criteria, required numbers of Certificates. • All appendices from FT-1 to FT-19. 	Submitted / Not Submitted
(b)	Submission of offer as per ITT clause no-9.	Submitted / Not Submitted
(c)	Net worth statement Appendix-FT-7, Income Tax Clearance Certificate	Submitted / Not Submitted
(d)	Clause wise comments on Particular specification, ITT, GCC, SCC, as per Clause 3.2 "Instructions to Tenderers"	Submitted / Not Submitted
(e)	Any other document asked by the purchaser if submitted, specify the Documents OR Any other document which the Tenderer Considers relevant.	Submitted / Not Submitted
(f)	Tenderer has to submit structure of tender as per Appendix –FT-1	Submitted / Not Submitted
(g)	Tenderer has to submit the complete address of manufacturing unit from where the machine/plant/equipment will be manufactured as per Appendix-FT-17.	Submitted / Not Submitted
3.	If you are a foreign firm have you submitted the detailed particulars of your agent and agency agreement- clause 4.2 of "Instructions to Tenderers"	Submitted / Not Submitted

**Signature & Seal of the
Manufacturer/ Tenderer**

**BILL OF QUANTITY
(BOQ)**

BILL OF QUANTITY

S.N .	Item Description	Qty
A	Supply Part	
1	Supply of Fully Automatic CNC Pit Wheel Lathe Machine with specification as given in Schedule of Requirement for Kanpur and Agra Metro Depots.	04 Set

S.N .	Item Description	Qty
B	Service Part	
2	Erection, Testing & commissioning, integrated commissioning Fully Automatic CNC Pit Wheel Lathe Machine and O&M documentation and training to employer's staff and other obligations as mentioned in Schedule of Requirement.	04 set
3	Maintenance of Fully Automatic CNC Pit Wheel Lathe Machine for 24 Months of DLP.	04 set
4.	Comprehensive Annual Maintenance Contract for 5 years period after completion of DLP with terms and condition as given in Schedule –IX.	04 set

TENDERER'S FINANCIAL PROPOSAL

Annexure- 1 (a)

TENDERER's FINANCIAL OFFER(Applicable for **Indian Company** who meet eligibility qualification criteria independently)**STATEMENT OF PRICES for Supply of Fully Automatic Under Floor Pit Wheel Lathe from Indian Company for Kanpur Metro and Agra Metro Depots of UPMRC
(All prices in INR)**

S.N.	Item Description	Qty	Ex-works Rate/unit	GST	Freight charges if any	FOR final destination total price/unit Incl. of all
(I)	(II)	(III)	(IV)	(VI)	(VII)	(VII)
A	Supply Part					
1	<i>Supply of Fully Automatic under floor pit wheel lathe along with interlocking with shunter except supply of shunter, specification as given in Schedule of Requirement.</i>	04 Set				
2	Total Price under column (VII) in FIGURES	04 Set				
	Total Price under column (VII) in WORDS					

S.N.	Item Description	Qty	Rate/unit	GST	Rate/unit incl. of all
(I)	(II)	(III)	(IV)	(V)	(VI)
B	Service Part				

3	<i>Erection, Testing & commissioning, integrated commissioning of Fully Automatic under floor pit wheel lathe and O&M documentation and training to employer's staff and other obligations as mentioned in Particular specification</i>	04 Set			
4	<i>Maintenance of Fully Automatic under floor pit wheel lathe for 24 Months of DLP</i>	04 Set			
5	<i>Comprehensive Annual Maintenance Contract for 5 years period after completion of DLP with terms and condition as given in Schedule –IX</i>	04Set			
5a	<i>1st year after DLP</i>				
5b	<i>2nd year after DLP</i>				
5c	<i>3rd year after DLP</i>				
5d	<i>4th year after DLP</i>				
5e	<i>5th year after DLP</i>				
6	Total Price (B = 3+4+5) under column (VI) in FIGURES	04 Set			
	Total Price (B = 3+4+5)under column (VI)in WORDS				

7	Grand Total Price (A+B = 1+3+4+5)under column (VII)of table (A) and column (VI)of Table (B) in FIGURES	04 Set			
	Grand Total Price (A+B = 1+3+4+5)under column (VII)of table (A) and column (VI) of Table (B) in WORDS				

1. Above items are required strictly as per specifications given in Schedule of Requirement.
2. The above prices shall be on 'FOR destination basis at Kanpur and Agra Metro Depots.
- 3.i Quoted price against S. No. '4' above shall be more than or equal to 5% of the total quoted price against S. No. '1' to '4'.

- 3.ii In case quoted price for item no. 4 is less than 5% of the total price against item no. '1' to '4' then for **financial evaluation** and contract execution, the price for item no.'1' to '3'shall be reduced on pro-rata basis and price against item '4' will be so adjusted so as to ensure that the adjusted price of item no. '4' is equal to 5% of the total revised (adjusted/reduced) price against the items no. 1 to 4.
4. On supply items, Taxes and Duties shall be clearly indicated. These are payable only when tenderer indicate these in their offer clearly.' Purchaser shall not undertake any transit insurance and the supplier will be responsible for the supply of contracted stores to be delivered in good condition at final destination.
5. Payment related to local services if any such as Erection, testing & commissioning, integrated commissioning, O&M documentation, training to employer's staff and Maintenance during DLP shall attract Tax Deduction at Source under the income tax regulations as applicable.
6. For indigenous supply, tenderer shall quote their rates on final destination basis. Evaluation of offers will be made on FOR destination incl. of all taxes and duties.
7. Supplier shall not undertake supply of any spare unless specifically confirmed by the Purchaser.

Date:

Place:

(Signature).....

Printed Name.....

Designation.....

Common Seal

TENDERER'S FINANCIAL OFFER(Applicable for **Off-shore Company** who meet eligibility qualification criteria)**STATEMENT OF PRICES for Supply of Fully Automatic Under Floor Pit Wheel Lathe from ABROAD for Kanpur Metro and Agra Metro Depots of UPMRCL**

S.N.	Item Description	Qty	Currency	Unit price (FOB port of dispatch)	Unit price of Sea freight, Insurance & Inland haulage charges from port of dispatch to ICD Kanpur (Uttar Pradesh , India) and from ICD Kanpur (Uttar Pradesh) to the Site	Custom Duty	Total Price at FOR basis
(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)
A	Supply Part						
1	<i>Supply of Fully Automatic under floor pit wheel lathe along with interlocking with shunter except supply of shunter, specification as given in Schedule of Requirement.</i>	04 Set					
2	Total Price under column (VIII) in FIGURES	04 Set					
	Total Price under column (VIII) in WORDS						

S.N.	Item Description	Qty	Currency	Rate/unit	GST	Total Price/unit incl. of all
	(II)	(III)	(IV)	(V)	(VI)	(VII)

(I)						
B	Service Part	Qty				
3	<i>Erection, Testing & commissioning, integrated commissioning of Fully Automatic under floor pit wheel lathe and O&M documentation and training to employer's staff and other obligations as mentioned in Particular specification</i>	04Set				
4	<i>Maintenance of Fully Automatic under floor pit wheel lathe for 24 Months of DLP</i>	04 Set				
5	<i>Comprehensive Annual Maintenance Contract for 5 years period after completion of DLP with terms and condition as given in Schedule -9</i>	04Set				
5a	<i>1st year after DLP</i>					
5b	<i>2nd year after DLP</i>					
5c	<i>3rd year after DLP</i>					
5d	<i>4th year after DLP</i>					
5e	<i>5th year after DLP</i>					
6	Total Price (B = 3+4+5) under column (VII) in FIGURES	04 Set				
	Total Price (B = 3+4+5) under column (VII) in WORDS					

7	Grand Total Price (A+B = 1+3+4+5) under column (VIII) of table (A) and column (VII) of Table (B) in FIGURES	04 Set				
	Grand Total Price (A+B = 1+3+4+5) under column (VIII) of table (A) and column (VII) of Table (B) in WORDS					

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1. Above items are required strictly as per specifications given in Schedule of Requirement.
2. For overseas manufacturer, the price shall be on 'FOR' destination at Kanpur and Agra. Offer without freight charges will be loaded with highest rate of freight charges received against the tender.
- 3.i Quoted price against S. No. '4' above shall be more than or equal to 5% of the total quoted price against S. No. '1' to '4'.
- 3.ii In case quoted price for item no. 4 is less than 5% of the total price against item no. '1' to '4' then for **financial evaluation** and contract execution, the price for item no.'1' to '3'shall be reduced on pro-rata basis and price against item '4'will be so adjusted so as to ensure that the adjusted price of item no. '4' is equal to 5% of the total revised (adjusted/reduced) price against the items no. 1 to 4.
- 4.i Custom Duty to be quoted in column (vii) above includes basic custom duty, applicable IGST, cess and other applicable taxes and duties (if any). Custom Duty will be reimbursed by UPMRCL on proof of documents.
- 4.ii In case details of Freight charges, Insurance etc are not given, evaluation of offers will be done on CIF + 1% landing charges + total concessional custom duty (Including basic custom duty, applicable IGST, cess & other applicable taxes and duties if any) as applicable under project import on (CIF + 1%) basis. Insurance charges will be loaded @0.25% of C&F value. Offer without freight charges will be loaded with highest rate of freight charges received against the tender.
- 5 Payment related to local services if any such as Erection, testing & commissioning, integrated commissioning, O&M documentation, training to employer's staff and Maintenance during DLP shall attract Tax Deduction at Source under the income tax regulations as applicable.
- 6 All expenses made in India shall be paid in Indian currency only.
- 7 In case of foreign offer, if the service provider does not have permanent establishment in India, then the applicable taxes has to be deposited by the service receiver (purchaser) on reverse charge basis. Also, if the service provider does not quote the applicable taxes in his offer, then applicable taxes on service portion will be considered inclusive in the quoted rates as applicable on the due date of submittal of tender. In this case, payment will be made after deducting the applicable taxes that will be paid by service receiver (purchaser).
- 8 Supplier shall not undertake supply of any spare unless specially confirmed by the Purchaser.

Date:

Place:

(Signature).....

Printed Name.....
Designation.....

Common Seal

SITE DRAWINGS
(To be shared at Design Stage)