

TENUGHAT VIDYUT NIGAM LIMITED
(A GOVT. OF JHARKHAND UNDERTAKING)
HINOO, DORANDA, RANCHI-834002
TELE: 0651- 2252160 - 62

Website: www.tvnl.in

CST NO:229C	TIN NO:200992201429	PAN NO:AACCT1197L
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NIT No. - 36/OP/W/TVNL/RAN /2021-22

Due on - 31-01-2022 at 14:00 Hrs

SRM RFx No. - 1000005980



TENDER DOCUMENT

SUBJECT: Annual maintenance contract for operation, testing and maintenance of SWASS room, DM Plant, DMPT Plant, Clarified pump house, CWPT plant, DM make up pump (operation only), Boiler Fill Pump (Operation only) of 2 x 210 MW at TTPS, Lalpania.

TENUGHAT VIDYUT NIGAM LIMITED

तेनुघाट विद्युत निगम लिमिटेड

(A GOVT. OF JHARKHAND UNDERTAKING)

HINOO, DORANDA, RANCHI-834002, JHARKHAND



Ref No. 869/21-22

Dated : 06-01-2022

NOTICE INVITING TENDER
NIT NO- 36 /OP/W/TVNL/RAN/2021- 22
SRM RFx No. - 100005980

For and on behalf of TENUGHAT VIDYUT NIGAM LIMITED (TVNL), Ranchi tenders in two parts (Part-I Technical & Commercial Bid, Part-II Price Bid to be submitted in TVNL Web portal Only) (A-Requisite cost of Tender Document & Earnest Money of specific value to be submitted to TVNL, contact person well before submission deadline, B-Technical & Commercial) are invited online through SAP-SRM,TVNL web portal: webdispatcher.tvnl.in/srmprd from experienced, reputed and financially sound firms for Annual maintenance contract for operation, testing and maintenance of SWASS room, DM Plant, DMPT Plant, Clarified pump house, CWPT plant, DM make up pump (operation only), Boiler Fill Pump (Operation only) of 2 x 210 MW at TTPS, Lalpania., Dist. Bokaro, Jharkhand, the details of which are as follows:-

Description of Work	Annual maintenance contract for operation, testing and maintenance of SWASS room, DM Plant, DMPT Plant, Clarified pump house, CWPT plant, DM make up pump (operation only), Boiler Fill Pump (Operation only) of 2 x 210 MW at TTPS, Lalpania.
Estimated Cost (Rs.) For Two Year Period	Rs. 1, 88, 00,432.18 (One crore eighty eight lakh four hundred thirty two and paise eighteen) only Plus GST as applicable.
Cost of Tender Documents to be deposited only through payment gateway link in TVNL website (Non Refundable)	Rs. 15,000/- (Rupees Fifteen thousand) only.
Amount of EM to be deposited in the form BG or to be deposited in TVNL website through payment gateway only	Rs. 3, 76,000/- (Rupees Three lakh seventy six thousand) only.
Downloading of Tender Paper from TVNL website	From 07-01-2022
Last Date & Time for receipt of Tender / Bid	31 -01-2022 , up to 14:00 Hrs.
Date & Time of Opening of Part-I of Tender	31 -01-2022 , at 16:00 Hrs.
Place of submission of bid documents and address for communication	Electrical Superintending Engineer (C&M), Tenughat Vidyut Nigam Limited, Hinoo, Ranchi-834002.

1. The bidder should have the following Qualifying Requirements (QR)

Technical Qualification requirements :-

a. The bidder should have executed the work of operation / maintenance of equipments/ operation, testing and maintenance of SWASS room, DM Plant, DMPT Plant, Clarified pump house, CWPT plant, DM make up pump (operation only), Boiler Fill Pump (Operation only) in thermal power Plant of capacity not less than 100 MW in any Govt. / Semi Govt. / CPSU/SPSU/ SEB's/ Reputed private organization.

b. The bidder should have experience of having successfully completed similar work during last seven years ending last day of month previous to the one in which application are invited. Bidder has to submit copy of work order with work completion certificate. The successful completed similar work shall be either of the following:

- Three similar completed works each costing not less than the amount equal to Rs 37.61 lakh.
OR
- Two similar completed works each costing not less than the amount equal to Rs 47.00 lakh.
OR
- One similar completed works costing not less than the amount equal to Rs 75.21 lakh.

Similar order means, the bidder must have executed the work of operation / maintenance of equipments/ operation, testing and maintenance of SWASS room, DM Plant, DMPT Plant, Clarified pump house, CWPT plant, DM make up pump (operation only), Boiler Fill Pump (Operation only) in thermal power Plant of capacity not less than 100 MW of any Govt. / Semi Govt. / CPSU/SPSU/ SEB's/ Reputed private organization.

c. The bidder should have valid Employee Provident Fund code no., GST registration certificate and ESI Registration on their firm name.

d. Bidder has to submit a self declaration that the agency has not been blacklisted from any Govt/Semi Govt./ CPSUs (NTPC)/SPSUs/SEB's/ Reputed Private company at the time of bid submission.

Financial Qualification requirements:-

e. The average annual financial turnover of bidder during the last 03 (three) years, ending 31st March 2020 should be at least Rs. 28.21 Lakh. The bidder should submit authenticated copies of Profit & Loss and Balance sheet of last three financial years. In case where audited results for the last financial year are not available, certification of financial statements from a practicing Chartered Accountant shall also be considered.

f. The bidder should have financial credibility /capacity of at least Rs 9.41 Lakh Bidder may submit Bank Solvency Certificate issued within current financial year, of any Indian Nationalized / Scheduled Commercial Bank in support of their financial credibility /capacity.

2. The tender document is to be downloaded from the TVNL website www.tvnl.in / www.jharkhand.gov.in Tenders will have to be submitted in TVNL Web Portal only <http://webdispatcher.tvnl.in/srmprd> For easy reference "**Vendor Bidding Manual for Open Tender**" can be downloaded/viewed from the TVNL website homepage.
3. After advertisement of NIT, intended bidder who do not have TVNL Bidder/ Vendor ID, will first communicate with TVNL contact person EEE(C&M-II) during office hours for this aforesaid NIT only, on his Mobile No-9031078834/8709054646 and send their firm details well before the submission deadline like Name, address, email, phone nos. and brief company's credentials also company's contact person name, email, Mobile no. may be sent in email : eeecandm.tvnl@gmail.com so that login ID & password can be created in SRM-SAP which will be sent to bidders contact person email. Bidder contact person has to register at TVNL web portal: <http://webdispatcher.tvnl.in/srmprd> with the given ID & password.
4. The **cost of tender document** and the Earnest Money shall be deposited well before the submission deadline and has to be **deposited only through payment gateway link in TVNL website. (DD will not be acceptable)**. The copy of the transaction ID or receipt may be submitted to TVNL contact person in person or by mail so that the contact person will allow access to open the RFx details and initiate bidding at TVNL website and attach the details of Part-I.
5. Bidder have to fill as well as attach scanned copies of the related documents to qualify in the part-I (Technical & commercial) on TVNL web portal: <http://webdispatcher.tvnl.in/srmprd> and also the bidder may submit the hardcopy of bid part-I (Technical & commercial) to the ESE(C&M), TVNL, Ranchi office along with the details of paid cost of tender document and paid or BG of Earnest money deposit (EMD).
6. Bidder have to bid for part-II (Price part) on TVNL web portal: <http://webdispatcher.tvnl.in/srmprd> only **Price Part is not to be submitted in Hard copy** (in sealed envelope).
7. Bidder will not get access to bidding in SRM-SAP without providing the cost of tender document. Any type of tempering/alteration with tender document shall not be allowed and offer, if submitted so, will be summarily rejected.
8. Tender without Earnest Money shall not be considered. Cost of tender document and earnest money deposit (EMD) of requisite value as specified above is to be deposited well before submission deadline. EMD may be furnished in the form of Bank Guarantee in required format from any Indian Nationalized Bank/ Schedule Commercial Bank in favour of "TENUGHAT VIDYUT NIGAM LIMITED" payable at Ranchi. The Bank Guarantee should remain valid for 12 months. In case BG is to be submitted against Earnest money deposit (EMD) it is to be submitted to TVNL contact person in a separate envelope so that the contact person will enter the BG details against EMD in the respective RFx well before the submission deadline, failing which offers are liable for rejection.
9. The earnest money will be forfeited on revocation of tender before expiry of validity of the tender or on refusal to enter into the contract after the award is made by TVNL to the bidder.
10. Any corrigendum/Addendum/Extension of bid opening date and cancellation of NIT will be published through our website www.tvnl.in only and not through newspaper. The bidders are requested to visit our website regularly for any addendum/corrigendum/extension till opening of NIT.
11. The due date of bid opening as mentioned in the tender will remain firm. However, in case of unforeseen circumstances or due to administrative reasons the bids are not opened on the due date, the same shall be opened on the next working day at the same time. In case the last date of submission of bids is declared as holiday, the bids received up to the time of closing of bids on the next working day shall be considered for opening.
12. TVNL reserves the right to reject any / all offer increase/decrease or to distribute the quantity among the bidders without assigning any reason thereof.

Sd/-
(R Ranjan)
Electrical Superintending Engineer (C&M)

TENUGHAT VIDYUT NIGAM LIMITED
HINOO, DORANDA, RANCHI-834002

BILL OF QUANTITY

PART- I (TECHNICAL& COMMERCIAL)

NIT NO- 36/OP/W/TVNL/RAN/2021- 22
SRM RFx No. - 1000005980

Sub: Annual maintenance contract for operation, testing and maintenance of SWASS room, DM Plant, DMPT Plant, Clarified pump house, CWPT plant, DM make up pump (operation only), Boiler Fill Pump (Operation only) of 2 x 210 MW at TTPS, Lalpania.

S.N.	Particulars	Details to be furnished by the Bidder (Enclose separate sheets if required)	Flag No.	Page No.
1.	Name of the Bidder (Enclose Letter Head of firm)		I	
2.	Address of Bidder with Telephone, Fax, E-mail		II	
3.	Nature of Firm (Proprietorship/Partnership /Pvt. Ltd./Public Sector) (Attach proof)		III	
4.	Name of the Proprietor/ Head of the Firm and its key personnel with organizational chart giving details of qualification and experience etc.		IV	
5.	Whether the firm are registered with NSIC/MSEs/SSI(Jharkhand)/ (enclose copy of certificate)		V	
6.	Work Experience of Bidder (Attach copy of work order of similar work and its successful completion certificate during last seven years as per Sl. No. 1.c of QR)	Work Order No..... Dated..... Completion Certificate Dated..... Work Order No..... Dated..... Completion Certificate Dated..... Work Order No..... Dated..... Completion Certificate Dated.....	VI	
7.	Financial Credibility/ Capacity (Attach Bank Solvency Certificate)		VII	
8.	Average annual financial turnover of bidder during the last 03 years (Attach audited Balance Sheet & P/L Account for last three years ending 31 st March, 2020 are essential)	Average annual financial turnover of bidder during the last 03 (three) years Rs..... Annual Turnover FY 2019-20: Rs..... FY 2018-19: Rs..... FY 2017-18: Rs.....	VIII	
9.	Name & Designation of Authorized Signatory (Attach Power of Attorney if applicable)		IX	
10.	Name and Qualification of the site-in-charge		X	

11.	Permanent Account Number (PAN) (Attach proof)		XI	
12.	Goods and Services Tax Registration Number (GSTIN) (Attach proof)		XII	
13.	Labour License No. (Attach copy of registration)		XIII	
14.	Particulars of Earnest Money (Transaction ID /BG No. & Date)		XIV	
15.	Particulars of Cost of Tender Document(BOQ) (Transaction ID No. & Date)		XV	
16.	EPF. Code No. (Attach copy of registration)		XVI	
17.	ESI Registration No. (Attach copy of registration)		XVII	
18.	Payment Terms	Whether you are accepting our payment terms clause at Sl.no.12 of GTC? Yes / No	XVIII	
19.	Validity period of the offer (minimum 120 days)		XIX	
20.	Whether you will deposit Security Money. If not reasons thereof with documentary proof of exemption:		XX	
21.	Whether you will furnish the Performance Guarantee		XXI	
22.	Do you fulfill the pre-requisite qualification?		XXII	
23.	Whether you accept all term & conditions of B.O.Q.		XXIII	
24.	Details required for ERP Vendor Coding:- a. Name of firm : b. Address : PIN: c. E-mail ID : d. Phone No. : e. Name of Contact Person: f. TIN No : g. CST No. : h. GSTIN No :		XXIV	

	i. PAN No : Details required for EMD Refund through RTGS/NEFT : j. Bank Name : k. Branch : l. Branch Code : m. A/c. No. : n. IFS Code : o. MICR Code :			
25.	Any extra information		XXV	

(Signature & Seal of Bidder)

TENUGHAT VIDYUT NIGAM LIMITED
HINOO, DORANDA, RANCHI-834002
NIT NO- 36/OP/W/TVNL/RAN/2021- 22
SRM RFx No. - 100005980

Sub: Annual maintenance contract for operation, testing and maintenance of SWASS room, DM Plant, DMPT Plant, Clarified pump house, CWPT plant, DM make up pump (operation only), Boiler Fill Pump (Operation only) of 2 x 210 MW at TTPS, Lalpania.

GENERAL INSTRUCTIONS TO BIDDERS

1. The tender document is to be downloaded from the TVNL website www.tvnl.in / www.jharkhand.gov.in. Tenders will have to be submitted in TVNL Web Portal only with Login URL: <http://webdispatcher.tvnl.in/srmprd>. For easy reference “Vendor Bidding Manual for Open Tender” can be downloaded from the TVNL website homepage. Link : https://tvnl.in/pdf/TVNL_Vendor_Manual_for_Open_Tender.pdf
2. First time bidder will first communicate with TVNL contact person during office hours with their firm details well before the submission deadline like Name, address, email, phone nos. and company’s contact person name, email, Mobile no. may be sent in email ID: eeecandm.tvnl@gmail.com, so that login ID & password can be created in SRM-SAP which will be sent to bidders contact person email. Bidder contact person has to register at TVNL web portal: <http://webdispatcher.tvnl.in/srmprd> with the given ID & password.
3. The cost of tender document shall have to be deposited through payment gateway link provided in TVNL website which is Non Refundable. Detail regarding the Transaction has to submitted to TVNL contact person, in person enclosed with a letter or by email giving detail of Rfx no. tender name in which the bidder has register and wish to participate. The contact person will allow access to open the RFx details and initiate bidding at TVNL website and attach the details of Part-I. **Bidder will not get access to bidding in SRM-SAP without providing the detail of cost of tender document and Earnest money deposit (EMD) deposited.**

Bidder has to follow below steps for Online Tender Fee or EMD Payment.

After registering against the RFx you have to follow the below steps:

- a. Go to TVNL website <http://tvnl.in>.
- b. Click on the navigation tab “Tender Payment” link (at the Top Right-hand side of the TVNL web home page).
- c. It will redirect you to the online payment page.
- d. Enter your User Id to proceed further.
- e. Enter the RFx no. for which you want to participate.
- f. Click on the “Go” button.
- g. Click on the Pay button to proceed for payment of “Tender Fee” or “EMD”.
- h. It will redirect you to the payment gateway for payment.
- i. Enter your card details or go for online banking for payment.

After payment is completed, please inform the concerned department with the receipt generated via email and request to provide access to the respective RFx number with your user Id.

4. The bidder may submit in sealed envelope hardcopy of all the enclosures uploaded of bid part-I (Technical & commercial) to ESE(C&M), TVNL, Ranchi office along with the copy of Txn. Slip of cost of tender document and Txn. Slip of Earnest money deposit (EMD). EMD if submitted in the form of BG, then it should be submitted personally or sent by Registered Post / Speed Post. The NIT no., bid due date, details of cost of Tender and earnest money deposit (EMD) should be super scribed on the envelope if details are sent by Post.

Bidder have to bid for part-II (Price part) on TVNL web portal:

<http://webdispatcher.tvnl.in/srmprd> only.

Price Part is not to be submitted in Hard copy.

5. Offers shall be accompanied with details of earnest money deposit (EMD) of requisite value as specified failing which offers are liable for rejection.
EMD may be furnished in any of the following forms:-
 - (a) Through payment gateway link provided in TVNL website. (DD will not be acceptable).
 - (b) Bank Guarantee from a Nationalized bank/Schedule commercial bank irrevocable & operative till 30 days after the validity of the offer or extended validity of the offer.
 - (c) The earnest money will be forfeited on revocation of tender before expiry of validity of the tender or on refusal to enter into the contract after the award is made by TVNL to the tenderer.

Tenders without Earnest Money shall not be considered other than NSIC/SSI registered and Jharkhand registered MSEs firms. Jharkhand registered Non MSE firms will get 50% concession in EMD. A copy of such registration/ license/certificate as per Jharkhand MSME act has to be furnished for claiming exemption/concession in EMD.

5. Special terms and conditions of the Tender :-

Bid will be rejected in case the quoted rates is found higher than 10% or lower than 15% of the estimated rate.

- 6. Validity of Offer:** The bid submitted by the bidders should remain valid for a minimum period of 120 days from the date of opening of Part-I unless otherwise specified.
- 7. Late Receipt of the Tender:** Special attention of the bidder is invited about the receipt of the online bids in time. Bids received after the stipulated date and time due to any reason, whatsoever, shall not be considered.
- 8. Inspection of Site:** Before quoting the rate, bidders are advised to visit the work site and get satisfied with scope of work for which rates are to be quoted. Engineer -in -charge may be consulted for any clarification regarding scope of work and terms of tender. Bidder should go through the terms and conditions and technical specification of work carefully and sign in all pages of the tender document.
- 9. Instruction to Bidder:**
- a. Bidders are advised to submit their bids strictly based on the scope of work, terms and conditions contained in the bid document and subsequent revisions/amendments, if any. The bid should be submitted along with covering letter.
 - b. The bid shall be prepared and submitted by typing or printing in English on white paper in consecutively numbered pages duly signed by the authorized signatory with company seal affixed on each page. Any part of the bid, which is not specifically signed by the authorized signatory and not affixed with company seal, may not be considered for the purpose of evaluation.
 - c. Copy of bid document, amendments/revisions to bid document if any, shall be signed and submitted along with the bid.
 - d. Complete bid document including all enclosures should be scanned and submitted. All pages should be numbered and must be signed by the authorized signatory with seal of the company.
 - e. A copy of "**Part-I (Techno-commercial Bid)**" may be submitted in hard copy by speed / registered post or by hand with, Name and address of the bidding firm, NIT no. super-scribed and should be addressed to ESE (C&M), Tenughat Vidyut Nigam Limited, Hinoo, Ranchi-834002. The **bid submission deadline is only valid** for submitting your price bid and all the documents in TVNL SRM online web portal.
 - f. The **Part-II (Price Bid) has to be** bid in TVNL website: <http://webdispatcher.tvnl.in/srmprd> only.
 - g. The envelope containing Part-I (Techno-commercial Bid should be super scribed with NIT No., Name and address of the bidding firm, and should be addressed to ESE (C&M), Tenughat Vidyut Nigam Limited, Hinoo, Ranchi-834002. Complete tender or tenders not submitted as per requirement as indicated in the NIT are likely to be rejected.
 - h. Bidders shall submit their offer strictly as per terms and conditions of the tender document without any deviation. If at any time any of the documents/information submitted by the bidder is found to be incorrect, false or untruthful, the bid and/or the resultant order may be summarily rejected/ cancelled at the risk of the bidder.
- 10.** Failure to furnish all information and documentary evidence as stipulated in the bid document or submission of an offer that is not substantially responsive to the bid in all respects shall be summarily rejected.
- 11. Security Deposit:** The successful bidder shall have to deposit total security deposit @ **10%** of order value as performance guarantee in which initial security money @ **5%** of the order value (including earnest money deposited along with tender) before executing the agreement, balance **5%** of security money will be deducted from R/A bills. The security money will be released after successful completion of work and closure of contract. Initial security money will be accepted as Bank Draft/ Bank Guarantee in the prescribed format.
- 12. Payment Terms:** Payment of Contractor will be made through monthly running bills which will be verified by Engineer - in - Charge after successful completion of the work and payment of wages to the employee by the Contractor. Deposit of ESI premium and EPF on account of employee is must against this contract. The monthly R. A. bill in triplicate will be submitted by the Contractor to the Engineer -in -Charge for its verification and department will make payment to the contractor subject to availability of the fund. No interest will be paid in case of delay in any payment. The contractor shall produce documentary evidence of previous month in support of deposit of EPF, ESI & GST (Bonus, overtime, Leave, Insurance, Medical, Safety etc if applicable or paid) before release of payment. Contractor must ensure the payment of wages to workmen deployed in preceding month latest by 5th day of every month irrespective of clearance of bill submitted at least for two consecutive months failing which penalty @ 0.5% per day (maximum up to 5%) of monthly contract value will be deducted from running bills of the contractor. All statutory taxes as applicable shall be deducted from each running bill of contractor.
- 13. Paying Authority:** The Accounts Officer, TTPS, Lalpania will be the Paying Authority.
- 14. Engineer-in-Charge:** EEE (OP-GEN) will be the Engineer-in-Charge for this work. The works are to be executed as per direction of Engineer-in-Charge. Anything not mentioned here in shall be decided by the in charge of the work and shall be binding on the contractor.
- 15. Idle Charges:** No charges for idle men, machine, plant and equipment will be allowed to agency for some reason or the other beyond control of the department.
- 16. Safety Measures:** TVNL has a zero tolerance policy on adherence to Safety norms. The Contractor shall have to observe all the safety measures. The contractor has to make all the employees aware of risk involved in the work. The contractor shall provide all safety appliances, tools and equipments to the workmen and supervisor at contractors cost and ensure that those items are used by all staff while working and on whole duty period. Name of such important personal protective equipments(PPE) are given below:-

- i. Asbestos hand gloves, Apron Asbestos cloths etc.
- ii. Rubber & Leather hand gloves,
- iii. Safety shoes for all types of works,
- iv. Safety belts and hooks,
- v. Helmets, Ear muffs, Safety goggles, Nose muffs etc.
- vi. Any other items related to safety rules may be assumed in contractor's scope.

If workers employed by the contractor found not using PPE a recovery will be made at the rate of Rs. 50/- per worker per day per occasion. Any compensation payable to your employee in the event of accident or casualty has to be borne by you and Nigam will not be responsible on this account in any case. In case of any damage due to negligence mishandling and mal operation by the staff of contractor, the damage would be made good by the contractor at his/own own cost. In case of non compliance, proportionate deduction will be made from the bills of the contractor. Any compensation payable to the Contractor's employee in the event of accident or causality has to borne by the Contractor himself and TVNL will not be responsible on this accounts in any way.

17. GENERAL TERMS & CONDITIONS

- a. **Scope of the work:** Scope of the work is detailed in BOQ to execute the work. However contractor has to execute all the work as per direction of Engineer-in-Charge for proper working of equipments.
- b. **Labour Laws:** The bidder has to follow the guidelines laid under the labour law, workmen compensation, and EPF rules in respect of minimum wages, EPF payment, Overtime, Holiday, Bonus Payment, ESI registration of all its employees and monthly/Yearly premium payment as per the guidelines of State Labour Deptt. and other service conditions. In the event of any accident / casualty to the employees of contractor, the compensation payable to the employees is to be borne by the contractor and TVNL will not be responsible in any way.
- c. **Minimum Wage Guarantee:** The contractor shall strictly ensure that the minimum wages as stipulated by GoJ from time to time is paid to their workmen. The monthly payment is to be made before the 10th day of the successive month. If the party fails to do timely monthly payment, than a penalty @ 2% of the monthly R A Bill value will be imposed. Any increase in minimum wages during the period of contract, will have to be paid to their workmen without any claim on TTPS/TVNL. If the contractor fails to comply with guarantee of minimum wages then the agreement is liable to be terminated and security money may be forfeited.
- d. **Taxes:** All statutory taxes as applicable shall be deducted from bill of contractor.
- e. **Violation of Terms & Conditions of Tender:** All terms and conditions of tender shall form a part of the contract. If contractor fails to execute the work up to entire satisfaction of Engineer -in -Charge as per terms & conditions of tender, then the contract agreement can be terminated on one month prior notice and security money shall be forfeited.
- f. **Subletting:** The successful bidder will have to execute the work directly. No subletting will be allowed.
- g. **Man Power:** A list of manpower arranged by the contractor should be submitted to Engineer -in -Charge of the work before deployment and same should be deployed with due permission of Engineer -in -Charge. **No employee should be aged below 21 years and above 60 Years.** If the performance of the deployed person is not found up to the mark at any time, the contractor will have to replace them with experience and suitable person. During the period of absence of contractors personnel TVNL will have right to deduct penalty from contractor's bill.
- h. **Tools & Tackles:** The contractor should have to arrange minimum of minor and special tools & tackles as per scope of work whereas heavy tools like hydra crane will be arranged by TTPS if available as per request of contractor. Contractor will arrange standard make tools after getting approval from EIC. Contractor will arrange welding M/C, gas cutting set etc to carry out any mechanical work in maintenance of field instruments as and when required. The entry of tools and tackles inside the power house should be verified by the CISF and should match with the requirement. Pro-rata deduction will be made if any mismatch is found.
- i. **Consumables:** The contractor has to provide all consumables like gas, electrodes, cotton waste, markin cloth, Rustolin, K-Oil, Petrol/Diesel and abrasive materials at their own cost, if required and applicable. Other consumables like gaskets, gland packing, asbestos rope, 'O' ring etc. shall be supplied by TTPS/TVNL free of cost, if applicable. The entry of consumables inside the power house should be verified by the CISF and should match with the requirement. Pro-rata deduction will be made if any mismatch is found.
- j. **Site Cleaning:** The Contractor must keep clean the working area after completion of the job. Waste materials and garbage shall be disposed off by the contractor at suitable place as per the instruction of the Engineer-in-Charge. Old unserviceable spare parts if so, has to be returned by the contractor to the Central Store/Site Store of TTPS as per the instruction of the Engineer-in-Charge.
- k. **Facilities to be provided by TVNL:**
 - i. Special T&P, jigs and fixtures, which are supplied by the OEM or procured by the TVNL shall be supplied as required.
 - ii. Closed space nearest to work spot for storing of our T&P and a room for office.
 - iii. Service water, Electricity and compressed Air nearest to work spot.
 - iv. E.O.T crane as and when required.
 - v. Guest house facility shall be provided to the visiting engineers/officers of the Contractor on chargeable basis if available.
 - vi. Unfurnished accommodation may be provided to the employees of the Contractor, if available during the period of execution of work in TTPS Township on rental basis as per departmental rule.

- vii. Medical facility as available at project site shall also be extended to the employee of the contractor. No payment will be made for any medicine purchased from outside or any treatment or test done outside the TTPS Hospital.
1. **Working Administration:** In general working hours of the TTPS employee will be the working hours of employee of Contractor. However in case of emergency or as per requirement of the job, contractor's employees will be required to work beyond working hours and also on rest days and holidays on the direction of Engineer -in -Charge. Employees deployed by the contractor will be under the operational control of Engineer -in -charge. In case of any employee working in shift/general duty falling sick or proceeding on leave the facts shall be brought to the knowledge of Engineer -in -Charge and deficit will be made by the contractor either by the existing staff by performing overtime duty or getting other manpower without adding any additional cost to the Project. It shall be binding on contractor that it does not directly or through its personnel divulge the secrecy of the establishment of TTPS. Any person deployed by contractor will not be a member of any trade union operating in the TTPS Projects establishment or outside. They will not take part in any strike or sympathized with any such movement. Employee age shall be mentioned in the identity card. The agency shall ensure that no unauthorized persons create any nuisance, disturbance, theft or pilferage of TVNL property or unauthorized transportation. The agency shall apprehend culprit and bring it to the notice of authorities of TVNL. If directed, the agency shall hand over them to local police authorities and follow - up the cases with police authorities on behalf of the TVNL Management and keep a close liaison with local police authorities for follow up action.
- m. **Penalty:** The work allocated by Engineer - in -charge is to be completed within the time period and as per schedule. In case of any breakdown, fault or emergency maintenance, the contractor has to attend the same without any delay. In case of failing or deliberated neglect, the work will be carried out through outside agency at the cost & risk of the contractor and this may be liable for termination of their contract. Penalty will be deducted for the work not executed or not satisfactory work at the rate of quoted price plus 25% for that portion proportionately. If any labour found smoking, drinking, chewing betel nut, pan parag etc within power plant. Rs. 200/- per worker per occasion will be deducted from contractor.
- n. **Departmental Facilities:** In case of major repair of equipments and testing of special equipments contractor should have to provide services of an expert from manufacturer and special tools & tackles. The contractor will also provide all other technical staffs and T&P's consumables etc free of cost. However, all spares parts shall be provided by TVNL on free of cost.
- o. **Transportation:** Successful bidder will be required to arrange his own conveyance for their employee for attending their duties. However, in case of emergency call during night, transport available may be provided by TTPS.
- p. **Mobilization Time:** The successful bidder will be given maximum 10 days time from the date of Information for mobilization of resources, manpower and starting the work. The contractor failing to enter into agreement within 30 days of receipt of Work order and if fails to start the work within 10 days from the date of written information , will lose the work order and earnest money/security money and work will be allotted to L2, L3.....bidder if they agree.
18. **Agreement:** The firm or his legally authorized representative having Power of Attorney will have to execute an agreement with the ordering authority within **30** days of issue of order in the event of placement of order on them. The agreement will have to be prepared on a non-judicial stamp paper of Rs.100/- on Nigam's format. Bank Guarantee against Security Deposit, Performance Guarantee etc. as per order will have to be furnished well before execution of agreement. The contractor is required to produce all original paper and documents for verification before agreement failing which order will be cancelled.
19. **Jurisdiction of Court:** Any dispute between the Contractor and TVNL shall be settled in the civil court, at Ranchi, Jharkhand only.
20. **Competent Authority:** Managing Director TVNL reserves the right to extend the due date and to reject any/all the tenders or to increase / reduce/ distribute the quantity of tender without assigning any reason thereof and not bound to accept the lowest tender or to assign any reason for the rejection of the lowest tender. During the execution of work in case of any dispute between the Engineer-in -Charge and contractor, the decision of GM- cum-CE, Tenughat TPS will be final and binding.
21. **Variation of quantities of work:** The contract price is based on the unit rates and the quantities of items stipulated in the contract. The contract price may undergo corresponding change, if the work orders for change in quantities of items during execution of work. However, the unit rates indicated in price schedules shall remain firm and shall not be subject to any escalation whatsoever.
22. **Extension of Contract:** If found satisfactory the contract may be extended for further period agreed mutually on same rate, terms and conditions however the only applicable VDA declared by the GOJ after the completion of the contract period with overhead at the rate of 35.94% (EPF, Bonus, ESI & contractor's profit) will be enhanced in the contract monthly value on production of documentary evidence and on due initiation of PR by E-I-C and after approval of competent authority. However, the agency has to accept the rate of extension period or rate decided by new tender whichever is lower.

23. Liquidated Damages for Delay in Completion: In case of any delay in the execution of the work beyond the stipulated date of completion/ Completion schedule including any extension permitted in writing, TVNL reserves right to recover from the agency a sum equivalent to 0.5% of the value of the delay work for each week of delay and part thereof subject to a maximum of 5% of the total value of the work.

(Signature & Seal of Bidder)

TENUGHAT VIDYUT NIGAM LIMITED
HINOO, DORANDA, RANCHI-834002

NIT NO- 36/OP/W/TVNL/RAN/2021- 22
SRM RFx No. - 1000005980

Sub: Annual maintenance contract for operation, testing and maintenance of SWASS room, DM Plant, DMPT Plant, Clarified pump house, CWPT plant, DM make up pump (operation only), Boiler Fill Pump (Operation only) of 2 x 210 MW at TTPS, Lalpania.

SCOPE OF WORK

Scope of work:

01(one) site in charge is to be provided in this estimate only.

Round the clock Operation & Testing of following area:

1. DM Plant
2. DM make up pump & initial fill pump House (Operation Only)
3. DMPT Plant
4. CWPT Plant
5. Clarified Water Pump House
6. SWAS Lab

A. Maintenance of DM plant & associated areas: Detail Scope of Work

1.Equipments list for Preventive Maintenance: **25%**

SL No. Description Population Frequency % Volume of Work

- 1 Compressor Cooling Pump 2 As per Schedule
- 2 Colony Supply Pump 2 As per Schedule
- 3 ACW Make up Pump 2 As per Schedule
- 4 Service Water Pump 2 As per Schedule
- 5 Alternate Pump 3 As per Schedule
- 6 Fire Fitting Pumps 2 As per Schedule
- 7 CHP Makeup Pump 2 As per Schedule
- 8 TBS Pump 2 As per Schedule
- 9 Sludge PP 3 As per Schedule
- 10 Flush Mixture Gear Box 2 As per Schedule
- 11 Clariflocculator Bridge Gear Box 2 As per Schedule
- 12 Agitator Gear Box 1(Bridge-1) 4 As per Schedule
- 13 Agitator Gear Box 1(Bridge-2) 4 As per Schedule
- 14 Alum Agitator Gear Box 3 As per Schedule
- 15 Filter Water Pump 4 As per Schedule
- 16 DM Regeneration Pump 2 As per Schedule
- 17 Alkali Transfer Pump 2 As per Schedule
- 18 Alkali Unloading Pump 2 As per Schedule
- 19 N-Pit Pump 4 As per Schedule
- 20 Degasser Fill Water Pump 4 As per Schedule
- 21 Degasser Air Blower 4 As per Schedule
- 22 Mixed Bed Air Blower 2 As per Schedule
- 23 ACF 3 As per Schedule
- 24 Cation Colum 3 As per Schedule
- 25 Anion Colum 3 As per Schedule
- 26 Mix Bed 3 As per Schedule
- 27 Sludge Pump 3 As per Schedule
- 28 Back Wash Sludge Pump 2 As per Schedule
- 29 Back wash/Fill pump 2 As per Schedule
- 30 Clariflocculator Bridge Gear Box 1 As per Schedule
- 31 Agitator Gear Box 2 As per Schedule
- 32 Gravity Air Blower 2 As per Schedule

- 33 Flush Mixing Gear Box 1 As per Schedule
- 34 Alum Agitator Gear Box 2 As per Schedule
- 35 Lime Mixer Gear Box 2 As per Schedule
- 36 Phosphate Dozing Pump (both units) 4 As per Schedule
- 37 Hydrazine Dozing Pump (both units) 4 As per Schedule

Note: This includes daily, weekly and monthly walk down checks and submission of reports/checklist as per given format and schedule to the engineer-in-charge. Submission of checklist is must for completion of PM work otherwise suitable penalty will be imposed on monthly Pro-rata basis.

2. Scheduled overhauling/Replacement/opportunity maintenance of Equipments: **50%**

SL No.	Description	Population	Frequency	% Volume of Work
1	DM Regeneration Pump	2	Yearly	
2	Alkali Transfer Pump	2	Yearly	
3	Alkali Unloading Pump	2	Yearly	
4	N-Pit Pump	4	Yearly	
5	Degasser Water Pump	4	Yearly	
6	Degasser Air Blower	4	Yearly	
7	Mixed Bed Air Blower	2	Yearly	
8	ACF	3	Half Yearly	
9	Cation Colum	3	Half Yearly	
10	Anion Colum	3	Half Yearly	
11	Mix Bed	3	Half Yearly	
12	Sludge Pump	3	Yearly	
13	Back Wash Sludge Pump	2	Yearly	
14	Clariflocculator Bridge Gear Box	1	Yearly	
15	Agitator Gear Box	1	Yearly	
16	Gravity Air Blower	1	Yearly	
17	Flush Mixing Gear Box	1	Yearly	
18	Alum Agitator Gear Box	2	Yearly	
19	Lime Mixer Gear Box	2	Yearly	
20	Phosphate Dozing Pump (both units)	4	Yearly	
21	Hydrazine Dozing Pump (both units)	4	Yearly	
22	NRV (150 MM) of ACW Pump	2	Half Yearly	
23	Gate Valve (150 MM) of ACW Pump	2	Half Yearly	
24	NRV (200 MM) of Compressor Cooling Pump	2	Half Yearly	
25	Gate Valve (200 MM) of Compressor Cooling Pump	2	Half Yearly	
26	NRV (150 MM) of Alternate Pump	3	Half Yearly	
27	Gate Valve (150 MM) of Alternate Pump	4	Half Yearly	
28	NRV (250 MM) of Colony S. Pump	2	Half Yearly	
29	Gate Valve (250 MM) of Colony S. Pump	3	Half Yearly	
30	NRV (65 MM) of Service W. Pump	2	Half Yearly	
31	Gate Valve (65 MM) of Service W. Pump	2	Half Yearly	
32	NRV (200 MM) of F/F Elec. Pump	1	Half Yearly	
33	Gate Valve (200 MM) of F/F Elec. Pump	1	Half Yearly	
34	NRV (200 MM) of F/F Diesel Pump	1	Half Yearly	
35	Gate Valve (200 MM) of F/F Diesel Pump	1	Half Yearly	
36	NRV (250 MM) of CHP Pump	2	Half Yearly	
37	Gate Valve (250 MM) of CHP Pump	2	Half Yearly	
38	Gate Valve (150 MM) of CHP Pump	1	Half Yearly	
39	NRV (150 MM) of TBS Pump	2	Half Yearly	
40	Gate Valve (150 MM) of TBS Pump	4	Half Yearly	
41	Gate Valve (200 MM) of TBS Pump	1	Half Yearly	
42	NRV (80 MM) of CWPT Sludge Pump	3	Half Yearly	
43	Gate Valve (80 MM) of CWPT Sludge Pump	3	Half Yearly	
44	Diaphragm Valve (50 MM) of CWPT Alum Tank	10	Half Yearly	
45	Gate Valve (250 MM) of DMPT Mix Bed Filter	8	Half Yearly	
46	NRV (100 MM) of DMPT Air Blower	2	Half Yearly	
47	NRV (100 MM) DMPT of Filling Pump	2	Half Yearly	
48	Gate Valve (100 MM) of DMPT Filling Pump	4	Half Yearly	
49	Gate Valve (100 MM) of Mix bed Filter Air blower Line	4	Half Yearly	
50	Gate Valve (300 MM) of DMPT Mix bed Clarified Water Inlet	2	Half Yearly	
51	Gate Valve (300 MM) of DMPT Mix bed Back Wash Outlet	2	Half Yearly	
52	Gate Valve (250 MM) of DMPT Mix bed Filter De Sludging	2	Half Yearly	
53	Gate Valve (300 MM) of CWPT Clarified Tank-1(Desludging Valve)	1	Half Yearly	
54	Gate Valve (300 MM) of CWPT Clarified Tank-2(Desludging Valve)	1	Half Yearly	
55	Gate Valve (80 MM) of Gravity Pressure Filter for Service Water	5	Half Yearly	
56	Gate Valve (100 MM) of Gravity Pressure Filter for Service Water	1	Half Yearly	

57 Gate Valve (65 MM) of Gravity Pressure Filter for Service Water 1 Half Yearly
58 Butter Fly Valve (Manual) (600 MM) of Raw Water Inlet Valve(CWPT) 3 Yearly
59 Butter Fly Valve (Electrical) (600 MM) of Raw Water Inlet Valve(CWPT) 1 Yearly
60 Butter Fly Valve (Manual) (250 MM) of Raw Water Inlet Valve(DMPT) 3 Yearly
61 Butter Fly Valve (Electrical) (250 MM) of Raw Water Inlet Valve(DMPT) 1 Yearly
62 Gate Valve (80 MM) of DMPT Desludging Back Wash Line 2 Half Yearly
63 Gear Box (V-600) of Flush Mixture Gear Box 1 1 Half Yearly
64 Gear Box (V-600) of Flush Mixture Gear Box 2 1 Half Yearly
65 Gear Box (U-600) of Clariflocculator Bridge Gear Box 1 1 Half Yearly
66 Gear Box (U-600) of Clariflocculator Gear Box Bridge 2 1 Half Yearly
67 Gear Box (V-500) of Agitator Gear Box 1(Bridge-1) 1 Half Yearly
68 Gear Box (V-500) of Agitator Gear Box 2 (Bridge-1) 1 Half Yearly
69 Gear Box (V-500) of Agitator Gear Box 3 (Bridge-1) 1 Half Yearly
70 Gear Box (V-500) of Agitator Gear Box 4 (Bridge-1) 1 Half Yearly
71 Gear Box (V-500) of Agitator Gear Box 1(Bridge-2) 1 Half Yearly
72 Gear Box (V-500) of Agitator Gear Box 2 (Bridge-2) 1 Half Yearly
73 Gear Box (V-500) of Agitator Gear Box 3 (Bridge-2) 1 Half Yearly
74 Gear Box (V-500) of Agitator Gear Box 4 (Bridge-2) 1 Half Yearly
75 Gear Box (V-400) of Alum Agitator Gear Box-1 1 Half Yearly
76 Gear Box (V-400) of Alum Agitator Gear Box-2 1 Half Yearly
77 Gear Box (V-400) of Alum Agitator Gear Box-3 1 Half Yearly
78 Gear Box (U-400) of Clariflocculator Bridge Gear Box 1 Half Yearly
79 Gear Box (V-400) of Agitator Gear Box 1 1 Half Yearly
80 Gear Box (V-400) of Agitator Gear Box 2 1 Half Yearly
81 Gear Box (V-400) of Flush Mixing Gear Box 1 Half Yearly
82 Gear Box (A-287) of Alum Agitator Gear Box-1 1 Half Yearly
83 Gear Box (A-287) of Alum Agitator Gear Box-2 1 Half Yearly
84 Gear Box (U-400) of Lime Mixer Gear Box-1 1 Half Yearly
85 Gear Box (U-400) of Lime Mixer Gear Box-2 1 Half Yearly
86 Gate Valve (125 MM) of ACF 21 Half Yearly
87 Diaphragm Valve (40 MM) of ACF 3 Half Yearly
88 Diaphragm Valve (125 MM) of Cation 9 Half Yearly
89 Diaphragm Valve (80 MM) of Cation 15 Half Yearly
90 Diaphragm Valve (100 MM) of Cation 3 Half Yearly
91 Diaphragm Valve (40 MM) of Cation 3 Half Yearly
92 Diaphragm Valve (125 MM) of Anion 12 Half Yearly
93 Diaphragm Valve (80 MM) of Anion 12 Half Yearly
94 Diaphragm Valve (65 MM) of Anion 9 Half Yearly
95 Diaphragm Valve (40 MM) of Anion 3 Half Yearly
96 Diaphragm Valve (125 MM) of Mix Bed 15 Half Yearly
97 Diaphragm Valve (80 MM) of Mix Bed 6 Half Yearly
98 Diaphragm Valve (65 MM) of Mix Bed 21 Half Yearly
99 Diaphragm Valve (40 MM) of Mix Bed 3 Half Yearly
100 Diaphragm Valve (50 MM) of Mix Bed 3 Half Yearly
101 Gate Valve (80 MM) of MB Air Blower 4 Half Yearly
102 NRV (80 MM) of MB Air Blower 2 Half Yearly
103 Diaphragm Valve (80 MM) of Acid Storage Tank 4 Half Yearly
104 Diaphragm Valve (50 MM) of Acid Storage Tank 4 Half Yearly
105 Diaphragm Valve (65 MM) of Caustic Storage Tank 3 Half Yearly
106 Diaphragm Valve (50 MM) of Caustic Storage Tank 3 Half Yearly
107 Diaphragm Valve (80 MM) of DM Regeneration Pump 4 Half Yearly
108 Diaphragm Valve (65 MM) of DM Regeneration Pump 2 Half Yearly
109 NRV (65 MM) of DM Regeneration Pump 2 Half Yearly
110 Diaphragm Valve (50 MM) of MB Regeneration Acid Tank 8 Half Yearly
111 Diaphragm Valve (40 MM) of MB Regeneration Acid Tank 2 Half Yearly
112 Diaphragm Valve (50 MM) of MB Regeneration caustic Tank 6 Half Yearly
113 Diaphragm Valve (40 MM) of MB Regeneration caustic Tank 2 Half Yearly
114 Diaphragm Valve (65 MM) of Cation Regeneration Acid Tank 4 Half Yearly
115 Diaphragm Valve (50 MM) of Cation Regeneration Acid Tank 4 Half Yearly
116 Diaphragm Valve (65 MM) of Anion Regeneration Caustic Tank 4 Half Yearly
117 Diaphragm Valve (50 MM) of Anion Regeneration Caustic Tank 2 Half Yearly
118 Diaphragm Valve (40 MM) of Anion Regeneration Caustic Tank 2 Half Yearly
119 Diaphragm Valve (65 MM) of Caustic Transfer Pump 2 Half Yearly
120 Diaphragm Valve (50 MM) of Caustic Transfer Pump 2 Half Yearly
121 NRV (50 MM) of Caustic Transfer Pump 2 Half Yearly
122 Diaphragm Valve (50 MM) of Filter for caustic Tank 8 Half Yearly
123 Diaphragm Valve (40 MM) of Filter for caustic Tank 1 Half Yearly
124 Diaphragm Valve (40 MM) of Caustic Transfer Tank 2 Half Yearly

125 Gate Valve (125 MM) of Filter Water Pump 4 Yearly
 126 NRV (125 MM) of Filter Water Pump 4 Yearly
 127 Diaphragm Valve (150 MM) of DG Pump 6 Yearly
 128 Diaphragm Valve (125 MM) of DG Pump 4 Yearly
 129 NRV (125 MM) of DG Pump 4 Yearly
 130 Diaphragm Valve (150 MM) of DG Blower Tank 6 Yearly
 131 Diaphragm Valve (250 MM) of N-Pit Pump 8 Yearly
 132 Butter Fly Valve (250 MM) of N-Pit Pump 4 Yearly
 133 Diaphragm Valve (50 MM) of N-Pit Acid Tank 3 Half Yearly
 134 Diaphragm Valve (50 MM) of N-Pit Caustic Tank 2 Half Yearly
 135 Butter Fly Valve (50 MM) of N-Pit Caustic Tank 2 Half Yearly
 136 Any type of leakage like water, oil, acid, caustic etc. from above listed equipment's related pipeline and all other maintenance work which are not listed here. Any other work which is required to be done by the instruction of engineer-in-charge. L/S

3. Breakdown Maintenance: Despite best of the effort there is a possibility of breakdown of equipments and systems. Under such condition agency has to take up the work immediately or within four (04) hours, so as to keep the system running. If contractor fails to comply it is up to the engineer-in-charge to take up the work from any other competent outside agency and deduct suitable amount from agency's running bill. **25%**

SL No. Specific description of the maintenance work

- 1 Topping of Oil, resin, greasing and complete replacement of lubricants, resins etc. as per schedule/requirement.
- 2 Replacement of gland packing and gaskets, tightening/replacement of coupling/foundation/flange bolts. (Related to DM water plant, CWPT, DMPT & clarified pump house and phosphate & hydrazine dosing pumps of both units)
- 3 Overhauling/replacement of pumps, fans and blowers related to DM water plant, CWPT, DMPT, Clarified pump house, Chlorination plant (both) and phosphate & hydrazine dosing pumps.
- 4 Overhauling/replacement of all valves (including NRVs), all horizontal pumps including hydrazine & phosphate dosing pumps, fans and blowers etc. of DM plant, DM & CWPT plant and clarified water pump house.
- 5 Rectification of leakages from pipe lines, valves and pumps by welding and cutting if required.
- 6 Preventive maintenance of equipments such as servicing of bearing, glands, valves, scats, valves, pump, tank and flanges of any types and sizes.
- 7 Replacement/repair of filters strainers.
- 8 Coupling/decoupling of machines.
- 9 Emergency maintenance of equipments falling under breakdown after normal working hours.
- 10 Maintenance of exchanges, filters etc.
- 11 Unloading and transportation of bulk chemicals at working site round the clock when required.
- 12 Replacement/adjustment of belts.
- 13 To prepare and put into implementation on effective preventive maintenance program in consultation of the engineer – in – charge.
- 14 To assist TVNL in timely procurement of needed spares.
- 15 Works those are not included in scope of work:
 - i. Rubber lining work if any.
 - ii. Overhauling/breakdown maintenance of vertical pumps.
 - iv. Overhauling/breakdown maintenance of Gate valve and NRV (size 200MM and above),
 - v. Overhauling/breakdown maintenance of Gear boxes.
 - vi. Capital maintenance of equipments
 - vii. New pipe laying works
 - viii. Instrument maintenance
 - ix. Electrical maintenance
 - x. Civil nature of works
- 16 Monitoring of the performance of the different components of the plant initiating adequate measures to overcome any actual or likely shortfall in performance.
- 17 To keep records on monthly basis of any types of maintenance works and required spares to be submitted by site in-charge who will report to the engineer – in – charge.
- 18 To ensure economics consumption of lubricants, chemical, resin and reagents.
- 19 To take all necessary precautions for safe, smooth, economical and efficient work during all types of maintenance works.
- 20 To carry out all types and analysis of work which are essential for efficient use of the plant.
- 21 The sludge of all the 3 clarifiers is to be removed in sump and then disposed through pumps of sludge disposal system once in a shift or as per site requirement. If the sludge disposal line of clarifier (CWPT & DMPT) get chocked, it is the responsibility of the contractor to get the line cleared.
- 22 To draw maintenance plan with Engineer – in – charge of the work.
- 23 Any other work not included above but forming essential part of maintenance will have to carry out on the instruction of work – in – charge.

- 24 Sufficient manpower high skilled/skilled/semi skilled in specific filed for specific works depending upon the nature & volume of work will be required to be engaged.
- 25 Recording of lubrication level, Acid level, Caustic level, Water level etc. on daily basis.
- 26 Contractor should submit a monthly work report with running bills to the engineer – in - charge.

B. Detail Scope of Work for Operation and Testing in DM plant and associated areas:

A. DM plant Operation related testing:

Sl No. Description Frequency % Volume of Work

- 1 PH (ACF, SAC, SBA, MB, DMST and N-Pit) Every 02 Hours 50% (including Operation)
- 2 Conductivity (SBA, MB & DMST) Every 02 Hours
- 3 Total Hardness (SAC, SBA, MB, DMST) Every 02 Hours
- 4 Silica (SBA, MB & DMST) Every 02 Hours
- 5 FMA (SAC) Every 02 Hours
- 6 EMA (SAC) Every shift
- 7 p-alkalinity (SAC & SBA) Every 04 Hours
- 8 m-alkalinity (SAC & SBA) Every 04 Hours
- 9 Sodium slippage (SAC) Every shift
- 10 Free CO₂ (Inlet & outlet of Degasser sump) Every shift
- 11 Raw Water analysis Weekly
- 12 Clarified water analysis Weekly
- 13 Free chlorine (Raw & clarified water, ACF) Every shift

B. Chemical Laboratory (General Duties):

- 1 Coal analysis (On air dried basis, TM basis and Conditioning Basis) Coal as received , coal as fired & joint coal sample Daily 20%
- 2 Unburnt carbon in Fly ash and bottom ash (running Unit) Daily
- 3 HGI of Coal (Coal as fired) Weekly
- 4 Record keeping all tests report, Bulk chemicals, stock position and reagents Daily
- 5 Testing of Bulk chemicals, Supplied at site As required
- 6 Mill fineness test (Running Mills) Daily
- 7 Flue Gas analysis (Both APH inlet and Outlet of Running Units) Daily
- 8 Ash water Ratio (Ash Dyke) Daily
- 9 Total suspended solid (Ash Dyke, N-Pit & Raw Water) Daily
- 10 Jar test (Raw water) Weekly
- 11 Organic Fouling (ACF & SBA) Every 06 Months
- 12 Oil testing (MOT, BFP of Both units) Daily
- 13 Oil testing (GT, Station & CW transformer) Monthly
- 14 Oil testing (Lubricating oil of all rotating equipments) Every 03 months
- 15 BOD (Ash Dyke, N-pit & raw water) Daily
- 16 COD (Ash Dyke, N-pit & raw water) Daily
- 17 Iron (Hot well, Feed water, CBD, Main steam & saturated steam) Weekly
- 18 Copper (Hot well, Feed water, CBD, Main steam & saturated steam) Weekly
- 19 TDS (Raw water, clarified water, N-Pit and Ash Dyke) Daily
- 20 Turbidity (Raw water, clarified water, N-Pit and Ash Dyke) Daily

C. SWAS Laboratory Test (Both Units):

- 1 Stator Water Analysis (PH, Conductivity, Silica, Phosphate, Ammonia, Hydrazine, Chloride, Hardness, p-alkalinity, m-alkalinity) Every shift 20%
- 2 Hot Well sample analysis (PH, Conductivity, Silica, Phosphate, Ammonia, Hydrazine, Chloride, Hardness, p-alkalinity, m-alkalinity) Every shift
- 3 Feed water analysis (PH, Conductivity, Silica, Phosphate, Ammonia, Hydrazine, Chloride, Hardness, p-alkalinity, m-alkalinity) Every shift
- 4 Main Steam analysis (PH, Conductivity, Silica, Phosphate, Ammonia, Hydrazine, Chloride, Hardness, p-alkalinity, m-alkalinity) Every shift
- 5 Saturated Steam analysis (PH, Conductivity, Silica, Phosphate, Ammonia, Hydrazine, Chloride, Hardness, p-alkalinity, m-alkalinity) Every shift
- 6 CBD Analysis (PH, Conductivity, Silica, Phosphate, Ammonia, Hydrazine, Chloride, Hardness, p-alkalinity, m-alkalinity) Every shift
- 7 Hydrogen Gas purity Every shift
- 8 Dozing of Hydrazine, Ammonia, TSP (As required) Every shift

D. Any type of emergency required tests which are not listed here & Any other work which is required to be done by the instruction of engineer-in-charge. 10%

Note: If the contractor fails to accomplish the work to the satisfaction of engineer-in-charge or as per prescribed norms a suitable pro rata deduction will be made to compensate the loss if any.

SL No. Specific description of the operation and testing work

- 1 Deployment of experience and sufficient manpower for operation of DM plant, DMPT plant, CWPT plant, Clarified water pump house & DM make – up pump and boiler fill pump, Filter pumps, Phosphate

- & hydrazine dosing pumps and all other pumps/equipments associated with it round the clock as per requirement of the power plant
- 2 Production of adequate quantity of DM water/Clarified Water/Drinking Water of specified quality for operation of power plant
 - 3 During production of D.M. Water hourly analysis of Silica, Ph, Conductivity, Hardness, Sodium, Free Mineral Acidity etc. must be done of all respective exchangers.
 - 4 Testing of Equivalent Mineral Acidity, Free Mineral Acidity and Free CO₂ should be done weekly.
 - 5 Operation of all the pumps (Electrical & Diesel) of clarified water pumps house and pre – treatment plants.
 - 6 Preparation of all types of chemical Reagents/solutions used for various testing and dosing solution for boiler & PT (DM & CW section) as per requirement.
 - 7 Conducting daily analysis for adjustment level of lime, alum by using Jar test and free chlorine and Residual Chlorine in bleaching powder/chlorine dosing up to optimum level.
 - 8 Half yearly/Periodical testing of resins and calculation of its operational capacity rejuvenate fouling resins by adopting suitable chemical treatment.
 - 9 Testing of all bulk chemicals received for dosing purpose, such as HCl, NaOH, Tri Sodium Phosphate, Hydrazine Hydrate, Ammonia, alum, bleaching, Lime etc. and their transportation from central store to site.
 - 10 Monitoring of water quality, purity of steam quality in boiler and feed cycle with determination of Ph, conductivity, Silica, Total Hardness, Chloride, sodium, Copper, Iron, D.O. etc.
 - 11 Testing of Hydrogen gas purity, moisture and CO₂ in generator and other available sample as per requirement.
 - 12 Testing of moisture content in dry air during purging in generator as per requirement.
 - 13 Analysis of accumulated gas in transformer (on requirement).
 - 14 Flue gas analysis and recommendation of proper and efficient use of fuel and air.
 - 15 Periodical testing of fuel oil, lubrication oils, gear box oils and transformer oils (on requirement).
 - 16 Collection , sample preparation & Routine testing of all types of Fuel sample, Turbine oils (MOT), Stator water, N-pit water, Raw water, CW intake water, CW discharge channel water, Ash pond water, Clarified water, filter water, ACF, Cation, Anion, Degasser water, DM water, etc.
 - 17 Collection of coal as fired, coal as received and joint sample, preparations and proximate analysis, Gross calorific values as per IS and FSA agreement, proximate analysis and Hard groove grind ability index etc. as per routine and schedule.
 - 18 Collection and testing of combustible matter in fly ash, bottom ash sample and complete ash analysis.
 - 19 Collection and analysis of all mills sample daily.
 - 20 Testing of efficient use of fuel and furnishing the recommendations.
 - 21 All testing of chemical laboratory as per schedule.
 - 22 Quality analysis of raw and clarified water samples weekly.
 - 23 Testing for assessment of several variations of water quality of river water, ash dyke and analysis thereof including TDS, TSS, Turbidity, biological/chemical oxygen demand etc. and monitoring of produced clarified water. Ash water ratio of ash dyke is also to be analyzed daily.
 - 24 Preservation of boiler, hot well, deaerator etc are required at the time of any short or long term shut down of both unit with desired parameters.
 - 25 Record keeping of all types of testing & analysis /consumption of chemicals in respective Logbooks/Register and to be submitted after filling to Sr. Chemist.
 - 26 Recording of lubrication level, Acid level, caustic level, water level etc

27. Manpower required for the work----

Operation, Testing & Maintenance:-

HSW-----09 person
 SW-----16 person
 SSW-----09 person
 Total-----34 person

Note: - Any consumable item may be calculated in terms of money. The CISF entry for month will be recorded and verified otherwise equivalent amount may be deducted from each running bills.

(Signature & Seal of Bidder)

TENUGHAT VIDYUT NIGAM LIMITED
HINOO, DORANDA, RANCHI-834002.

BILL OF QUANTITY

PART – II (PRICE PART)

NIT NO- 36/OP/W/TVNL/RAN/2021- 22
SRM RFx No. - 100005980

Sub: Annual maintenance contract for operation, testing and maintenance of SWASS room, DM Plant, DMPT Plant, Clarified pump house, CWPT plant, DM make up pump (operation only), Boiler Fill Pump (Operation only) of 2 x 210 MW at TTPS, Lalpania.

Sl. No.	Description of work	Quantity (Job)	Rate (Rs.)	Total Amount (Rs.)
1.	Annual maintenance contract for operation, testing and maintenance of SWASS room, DM Plant, DMPT Plant, Clarified pump house, CWPT plant, DM make up pump (operation only), Boiler Fill Pump (Operation only) of 2 x 210 MW at TTPS, Lalpania.	1 AU	XXXXXX	XXXXXX
2.	GST			Extra as applicable.

Note:

1. Total quoted cost will be the criteria for defining L₁ bidder
2. GST will be paid extra as applicable.
3. Price Part is not to be submitted in Hard copy.
4. Bidder has to bid for part-II (Price part) on TVNL web portal: <http://webdispatcher.tvnl.in/srmprd> only.

(Signature & Seal of Bidder)

NIT NO- 36/OP/W/TVNL/RAN/2021- 22
SRM RFx No. - 100005980

Sub: Annual maintenance contract for operation, testing and maintenance of SWASS room, DM Plant, DMPT Plant, Clarified pump house, CWPT plant, DM make up pump (operation only), Boiler Fill Pump (Operation only) of 2 x 210 MW at TTPS, Lalpania.

SELF DECLARATION

(of the Head of the Firm In the Firm's Letter Head)

I S/o
..... Resident of At-
.....P.O.-..... P.S.-
..... Dist..... State-.....PIN -
.....do hereby solemnly affirm and declare as follows:-

- 1. That, I am aged about years. (Male Y/N / female Y/N).
- 2. That, I/we am/are proprietor/partner of the firm
..... At-
.....P.O.-.....P.S.-
.....Dist.....State-.....PIN

3. That, my firm not blacklisted or warned at the time of bid submission by any works department under Jharkhand Govt. / Govt. /Semi Govt./ CPSUs(NTPC) /SPSUs/SEB's/Reputed Private Company.

4. That, above mentioned declaration along with documents submitted against the NIT no. - 36/OP/W/TVNL/RAN/2021- 22 are true and correct to best of my knowledge, information and belief. Verified and signed aton2022.

5. That, I have read and understood all the terms, conditions and scope of the work enlisted in the abovementioned Tender and will abide by them if the order is placed on our firm.

Signature with Firm seal

* SELF DECLARATION of the Head of the Firm duly filled with sign & firm seal attached with tender documents & its scanned copy may be attached online TVNL web portal: webdispatcher.tvnl.in/srmprd.