



# **Gujarat Mineral Development Corporation Limited**

**Tender Document for:**

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Selection of Contractor for Comprehensive Maintenance  
(preventive, predictive, breakdown, shutdown, general routine, and  
spares planning) of Boiler, Turbine, Generator and Auxiliaries, and  
Balance of Plant (BoP) of GMDC's 2X125 MW Akrimota  
Thermal Power Station (ATPS)

**Tender Number: GMDC/Power/ATPS/14/23-24**

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**General Manager (Power)**

**Gujarat Mineral Development Corporation Ltd.**

**(A Govt. Of Gujarat Enterprise)**

**CIN: L14100GJ1963SGC001206, GST: 24AAACG7987P1ZT**

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**TENDER NOTICE**

**Tender Number: GMDC/Power/ATPS/14/23-24**

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| <b>Place of work</b>                   | 2x125 MW Akrimota Thermal Power Station, Village: Nanichher, Taluka: Lakhpat, District: Kutch, Gujarat.  |
| <b>Brief description of work</b>       | The work involves comprehensive maintenance (preventive, predictive, breakdown, shutdown, general routine, and spares planning) of Boiler, Turbine, Generator and Auxiliaries, and Balance of Plant (BoP)  |
| <b>Period of contract</b>              | The contract period will be of <b>one year from the date of</b> acceptance of LOI. Further, there shall be a provision for extension for up to <b>one year</b> , as per the same terms and conditions with a further extension provision as per discretion of GMDC.  |
| <b>Availability of tender</b>          | Tender document will be available on the GMDC website ( <a href="http://www.gmdcltd.com">www.gmdcltd.com</a> ) and nprocure portal ( <a href="https://tender.nprocure.com">https://tender.nprocure.com</a> ).<br>Bids shall be required to be submitted online on the nprocure portal ( <a href="https://tender.nprocure.com">https://tender.nprocure.com</a> ).   |
| <b>EMD<br/>(Earnest Money Deposit)</b> | Rs. 14,00,000/- (Rupees Fourteen Lakhs Only) in any one of following form <ul style="list-style-type: none"><li>➤ DD in favour of GMDC Ltd, payable at Ahmedabad</li><li>➤ Digital Mode: Please note if payment is made through digital mode, kindly submit the receipt of the same in the attached documents. RTGS details for payment (Annexure-C):<br/>ICICI Bank, Ahmedabad Branch,<br/>Account Number: 002405019379<br/>IFSC: ICIC 0000024</li><li>➤ Bank Guarantee issued by banks approved by Govt. Of Gujarat from time to time (except Co-Operative bank) in the form and manner acceptable to GMDC (Govt. GR is attached in Annexure B for approved banks). It should be valid for a period of not less than 6 (six) months from the last date of submission of bid.</li></ul> <p><i>Relaxation in terms of submission of EMD shall be given to the bidder who is holding valid certificate issued under the MSME Act, 2006 on the date of submission of tender.</i></p> |



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| <b>Tender processing fee</b>   | <p><b>Rs. 15,000/-</b> (Rupees Fifteen Thousand Only) plus GST @ 18% aggregating to <b>Rs. 17,700/-</b> payable by Demand Draft/digital mode payment drawn in favor of “GMDC Ltd.” payable at Ahmedabad. Please note if payment is made through digital mode, kindly submit the receipt of the same in the attached documents. RTGS details for payment (Annexure C):</p> <p>ICICI Bank, Ahmedabad Branch,<br/>Account Number: 002405019379<br/>IFSC: ICIC 0000024</p> <p><i>Relaxation in terms of submission of tender processing fee shall be given to the bidder who is holding valid certificate issued under the MSME Act, 2006 on the date of submission of tender.</i></p> |
| <b>Commencement of tender</b>  | 09/12/2023   |
| <b>Last date for download the tender document</b>  | 30/12/2023 up to 18:00 hours   |
| <b>Last date of submission of bid through online</b>                                       | 30/12/2023 up to 18:00 hours   |
| <b>Last date of submission of physical documents i.e., EMD, Tender Processing Fee etc.</b> | 30/12/2023 up to 18:00 hours at Corporate Office, GMDC, Ahmedabad  |
| <b>Date and time for online opening of preliminary bid</b>                                 | 30/12/2023 up to 18:00 hours onwards   |
| <b>General and important terms and conditions</b>  | <ol style="list-style-type: none"><li>1. GMDC reserves absolute right/discretion to accept and/or reject any or all the tenders received or invite fresh bid at any stage or split the work between more than one bidder as the case may be.</li><li>2. The bidders are required to quote the rate strictly as per the terms and conditions mentioned in the tender document. Conditional tender shall not be entertained and will be rejected summarily without assigning any reasons, whatsoever.</li><li>3. GMDC may issue amendments/corrigendum in the tender documents, schedule, forms etc. at any time during the period</li></ol>   |



between publication of notice and submission of bids of the tender on website. The bidders in their own interest are advised to visit the website regularly till the last date of submission of the bid. No separate newspaper advertisement will be released for amendments/corrigendum.

4. GMDC reserves the rights to modify or alter any condition of the tender.
5. The bidders are advised to submit their price bid online on <https://www.tender.nprocure.com> only. Physical price bid shall not be accepted and shall be rejected summarily without assigning any reasons, whatsoever.
6. Failure to submit bid online in stipulated time due to any reason whatsoever by any bidder shall result in disqualification of bid. In such circumstances, bid submitted physically along with supporting documents, tender processing fees, EMD amount etc. shall not be considered as bid submitted and the same will be returned back to the bidder without opening the same. GMDC reserves the right to take suitable decision in this regard.

## **1. Purpose of the Document**

The tender (this document) floated by GMDC (Gujarat Mineral Development Corporation Limited); a Government of Gujarat Enterprise is to select a successful bidder which would be responsible for comprehensive maintenance (preventive, predictive, breakdown, shutdown, general routine, and spares planning) of Boiler, Turbine, Generator and Auxiliaries, and Balance of Plant (BoP) at 2x125 MW Akrimota Thermal Power Station (ATPS) at the quoted commercials and executed contract terms & conditions.

## **2. About GMDC**

Gujarat Mineral Development Corporation Limited herein after referred to as GMDC, a Government of Gujarat Enterprise, is a pioneer company in the field of mining for more than five decades, catering to the needs of the minerals and solid fuel for the industries based in Gujarat. GMDC's mining activities are spread all over Gujarat. It is currently dealing in minerals like lignite, bauxite, fluorspar, ball clay, silica sand and manganese. GMDC has also set up a 250 MW lignite based thermal power station at Nanichher in Kutch, wind power plant of 200 MW at Maliya, Jodiya, Godsar, Bhanvad, Bada, Varvada, Rojmal, and a solar power plant of 5 MW at Panandhro project.

## **3. Location of Work**

The work is to be carried out at Akrimota Thermal Power Plant Station (ATPS) located in village Nanichher of Lakhpat taluka in Kutch district of the Gujarat State. The project is located about 150 kms from Bhuj. The nearest railway station and airport is at Bhuj.

## **4. About ATPS**

GMDC has 2x125 MW thermal power project called ATPS. Both the units have been in commercial operation since March 2005. It is getting lignite from its own mines located at Mata no Madh and Umarsar. The water requirement for the power plant is taken from the nearest Kori creek through a 1.4 KM long sea water intake channel. The CFBC boiler is used here as it is environment friendly and controls sulphur in the flue gas emission. A 100-meter-thick green belt surrounds the entire site. The state-of-the-art technology DCS has been used.

## **5. General Instructions to Bidder**

The section aims to provide guidelines/instructions for bidders, to be used while submitting the proposals.

### **5.1 Cost of Bidding**

The bidder will bear all costs associated with the preparation and submission of its bid and GMDC, will in no event or circumstance be held responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

### **5.2 Due Diligence**

The bidder is expected to and shall be deemed to have examined all instructions, forms, terms and specifications and other information in this tender document. The bid should be precise, complete and in the prescribed format as per the requirement of the tender document. Failure to furnish all information required by the tender document or submission of a bid not responsive to the tender document in every respect will be at the bidder's risk and may result in rejection of the bid. GMDC shall at its sole discretion be entitled to determine the adequacy/ sufficiency of the information provided by the bidder.

### **5.3 Clarification of Bidding Documents**

GMDC shall make best efforts to respond to any request for clarification of the tender document. The response/clarification shall to the extent possible be made in writing.

### **5.4 Amendment of Tender Document**

At any time before the deadline for submission of bids, GMDC may modify the tender document for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the tender document by amending, modifying and/or supplementing the same. Any amendments/modifications in the tender document would be displayed on GMDC web site and all such amendments shall be binding on the bidder without any further act or deed on GMDC part. In the event of any amendment, GMDC reserves the right to extend the deadline for the submission of the bids, to allow prospective bidders reasonable time in which to take the amendment into account while preparing their bids. GMDC may at its sole discretion, extend this deadline for submission of bids by amending the bid documents.

### 5.5 Contact Details

All inquiries concerning this procurement are to be addressed to the following:

General Manager (Power)  
Gujarat Mineral Development Corporation Ltd.  
Khanij Bhavan, 132' Ring Road, University Ground,  
Vastrapur, Ahmedabad 380 052  
☎EPABX: 079-27913501, 27913200Extn.No:1760  
E-mail: power@gmdcltd.com, jndave@gmdcltd.co.in

### 5.6 Language of Bid

All proposals and various documents related to these proposals should be in English language. All correspondence between GMDC and the bidder would also be in English language. Supporting documents and printed literature furnished by the bidder may be in another language provided they are accompanied by an accurate translation in English language.

### 5.7 Late Bids

Any bid received by GMDC, after the deadline for submission of bids prescribed by GMDC, would be summarily rejected. GMDC shall not be responsible for any postal delay or non-receipt/non-delivery of the documents. No further correspondence on this subject will be entertained.

### 5.8 Right to Accept Proposal

GMDC, reserves the right to accept or reject any proposal, and to annul the proposal process and reject all proposals at any time prior to award of contract, without thereby incurring any liability to the affected bidder or any obligation to inform the affected consortium of the grounds for such decision.

### 5.9 Site visit

Bidders advised to visit the site to study the actual working conditions before submission of the bid and shall have to submit the site visit declaration in the prescribed format. The information/details given in the tender document are only to describe the magnitude of work and are for mere guidance to the bidders.

Any neglect or failure on the part of the bidder in obtaining necessary and reliable information upon the foregoing or any other matters affecting the contract shall not relieve him from any risks or liabilities or the entire responsibility from completion of the work at the contracted rates and time in strict accordance with the contract documents.

#### **5.10 Period of Validity of Bids**

Bids shall remain valid for 180 days after the date of bid opening prescribed by GMDC and same may be extended unconditionally for further period of 60 days. The bid of the bidder shall be considered non-responsive if such bid is valid for a period less the bid validity period.

#### **5.11 Sub-contract**

The successful bidder shall not assign or sub-contract any portion of this work without prior written consent of GMDC.

#### **5.12 Consortium / Joint Venture**

Consortium / joint venture are not allowed.

#### **5.13 Change in Law**

Nothing in this contract shall entitle the bidder to claim additional payment against the work executed or being executed or likely to be executed upon the change in law by Government of India or State of Gujarat in regard to any taxes, liabilities arising out of work contract, judgments of court etc. That nothing under the said laws shall create any additional liability on the GMDC over and above that set out herein. That unforeseen circumstances in the working of the said contract shall not entitle successful bidder to abandon or demand additional payment under a different head not originally mentioned herein and hence nothing except what is contained in the present contract shall constitute binding obligations between parties.

In case of any Central/State Government directives regarding power plant operation and execution of work related thereto, the same shall have to be strictly adhered to and binding upon the successful bidder for implementation, for which GMDC will not be responsible for any compensation.

#### **5.14 Interpretation**

That no communication preceding or following the present tender shall have any bearing on the terms and conditions set out herein. That no contract, promise or obligation shall arise out of

the said communication, over and above what is set out herein above. That the terms contained herein constitute the entire bargain between the parties and shall not be interpreted in the light of commercial correspondence between the parties.

#### **5.15 Declaration**

The bidder should give a declaration that it has not enclosed any conditional offer as per the format provided in FORM PD of the tender document.

#### **5.16 Amendment of Work Order**

GMDC is authorized to take suitable decision and action in case of requirement to amend/alter the contract conditions/quantities of the works/extension of the contract period/allotment of additional works/revision of the rates of the work etc., if necessary, in the interest of GMDC.

The successful bidder shall not change the constitution of the firm/name during the currency of the contract without prior approval of GMDC. Upon such change in constitution and/or name, supplementary agreement to that effect shall be executed and if the SD is submitted in form of BG/FD than fresh BG in the name and/or constitution shall be submitted failing which necessary action as deemed fit by GMDC shall be taken.

#### **5.17 Escalation in Contract Amount**

The contract amount for the extension period shall be considered as the contract amount in the preceding year, with a yearly escalation as per Wholesale Price Index (WPI) and Consumer Price Index (CPI).

In case of extension of the contract, the contract amount for the period of extension shall be escalated taking the value quoted by the successful bidder for the preceding year. The escalation rate shall be calculated based on the Wholesale Price Index (WPI) and Consumer Price Index (CPI).

For avoidance of doubt and by way of illustration, consider the following scenario:

- The contract amount for the preceding year is Rs. 10,00,00,000 (Rs. Ten Crores).
- The price index is 200 (two hundred) for the month when the contract is signed (say January 2024).

- The price index is 220 (two hundred and twenty) for the month when the contract ends (January 2025 – 12 (twelve) months from signing of the contract).
- The price index multiple for extension year shall be 1.1, calculated as 220 divided by 200.
- The contract amount for extension year shall be calculated as the contract amount in the preceding year multiplied by the price index multiple for the extension year, i.e., Rs. 10,00,00,000 x 1.1 = Rs. 11,00,00,000
- The price index for any year shall be a weighted average index as per 70% (seventy percent) of WPI and 30% of CPI (IW), i.e., 70%\*WPI + 30%\*CPI(IW)
- WPI shall mean the Wholesale Price Index for all commodities as published by the Ministry of Industry (GoI) on <http://eaindustry.nic.in/#>
- CPI (IW) shall mean the Consumer Price Index for Industrial Workers as published by the Labour Bureau, GoI on <http://www.labourbureaunew.gov.in/>
- Should the WPI or the CPI (IW) not be published for any time period, the escalation rate proposed by the Managing Director of GMDC shall prevail.

The bidder shall have to quote charges inclusive of all other taxes except applicable GST. Applicable GST, over and above approved contract amount, at the time of invoicing shall be reimbursed by GMDC. The risk of applicability of any taxes, duties, and levies except GST, shall rest with the bidder.

GMDC shall be entitled to deduct tax at source as may be applicable. The TDS certificate(s) shall be submitted as per the due date specified in the Income Tax Act.

Each bidder must quote his rates after thorough reading of this RFP document and estimates of its cost through detailed due diligence of the Site, statutory laws/regulations. GMDC reserves the right to seek any clarifications regarding price quoted from bidders before any decisions.

## 6. Earnest Money Deposit

A non-interest-bearing Earnest Money Deposit of Rs 14,00,000/- (Rupees Fourteen Lakhs Only) in any one of following form shall be submitted by the bidder along with the technical bid.

1. Demand Draft in favor of GMDC Limited payable at Ahmedabad.

OR

2. Digital Mode: Please note if payment is made through digital mode kindly submit the receipt of the same in the attached documents. RTGS details for payment (Annexure-C)

ICICI Bank, Ahmedabad Branch,  
Account Number: 002405019379  
IFSC: ICIC0000024

OR

3. Bank Guarantee issued by banks approved by Govt. Of Gujarat from time to time (except Co-Operative bank) in the form and manner acceptable to GMDC (Govt. GR is attached in Annexure B for approved banks). It should be valid for a period of not less than 6 (six) months from the last date of submission of bid.

***Relaxation in terms of submission of EMD shall be given to the bidder who is holding valid certificate issued under the MSME Act, 2006 on the date of submission of tender.***

## **7. Tender Processing Fee**

The tender processing fee is to be paid at the time of submission of supporting document of technical bid in the form of demand draft/pay order of **Rs. 15,000/-** (Rupees Fifteen Thousand Only) plus GST @ 18% aggregating to **Rs. 17,700/-** as mentioned in tender notice in the sealed technical bid cover. If the amount mentioned in the DD/ digital mode payment is found short, the tender will not be considered for scrutiny and will be out rightly rejected.

***Relaxation in terms of submission of tender processing fee shall be given to the bidder who is holding valid certificate issued under the MSME Act, 2006 on the date of submission of tender.***

## **8. Security Deposit**

8.1 Security deposit is measure of liquidated damages sustained by GMDC for not performing the contract satisfactorily. Nothing herein above shall disentitle GMDC from claiming the damages actually sustained in the value over and above the security deposit.

8.2 The successful bidder shall submit security deposit of 10% of the total contract value excluding Goods & Service Tax (GST) within 10 days from the date of issuance of LOI in any one of following form:



1. Demand Draft in favor of GMDC Limited payable at Ahmedabad.

OR

2. Bank Guarantee issued by banks approved by Govt. Of Gujarat from time to time (except Co-Operative bank) in the form and manner acceptable to GMDC (Govt. GR approved banks are given in Annexure B for approved bank). It should be valid for a period of not less than 12 (twelve months) from the date of receipt of LOI and shall be renewed from time to time in case of requirement.

OR

3. Digital Mode: Please note if payment is made through digital mode kindly submit the receipt of the same in the attached documents. RTGS details for payment (Annexure-C):

ICICI Bank, Ahmedabad Branch

Account Number: 002405019379

IFSC: ICIC0000024

8.3 It shall be refunded to the successful bidder, within a period of six months after satisfactory completion of the work and removal of equipment, tools tackles, campsite etc., and the due fulfillment of all the terms and conditions of the contract.

8.4 The successful bidder shall obtain “No Dues Certificate” and “Site Clearance” certificate to this effect from the General Manager [Project]/Project-in-Charge and shall submit the same to the General Manager [Power] at HO, who after verification of the fact will arrange for refund of SD.

8.5 The successful bidder will also have to submit “NO DEMAND CERTIFICATE” along with the above-mentioned certificate.

8.6 The SD deposited by the successful bidder may be forfeited if the successful bidder fails to adhere to fulfill the conditions of work order/agreement.

8.7 Security deposit shall not bear any interest under any circumstances.

8.8 GMDC will reserve the right to recover the charges or the liquidated damages from the security deposit in the following circumstances-

1. If the successful bidder or its employees causes any damage or destroy any property belonging to GMDC.

2. The shortfall amount of all compensations, penalties, and other sums of money payable by the successful bidder or recoveries to be made under the terms of this contract which is due but not paid by the successful bidder in full, etc.
3. Any other dues on account of statutory compliance.

## 9. Procedure for Submission of the Bid

- 9.1. Offers prepared in accordance with the procedures enumerated below.
- 9.2. Bid should be submitted **online** at [www.nprocure.com](http://www.nprocure.com) on or before the last date and time as prescribed in this tender.
- 9.3. The bidder should submit their bids in TWO parts, these are:
  1. Technical bid (Details of EMD, tender processing fee, and documents listed in FORM PA – hard copy)
  2. Price bid (online).
- 9.4. Manual price bids or the bids submitted by telex/telegram/fax/e-mail etc. will not be accepted under any circumstances. No correspondence will be entertained on this matter.
- 9.5. Bidders are advised to follow the ‘Instructions for Bids Submission’ given in Annexure A for e-submission of the bids online through n-procure.
- 9.6. Documents should be submitted as per check list given in FORM PA in offline/hard copy mode in the sealed cover superscribed as “Technical Bid for Tender Number: GMDC/Power/ATPS/14/23-24 and Name of work: “Selection of contractor for comprehensive maintenance (preventive, predictive, breakdown, shutdown, general routine, and spares planning) of Boiler, Turbine, Generator and Auxiliaries, and Balance of Plant (BoP) of GMDC’s 2X125 MW Akrimota Thermal Power Station (ATPS)”. Bids must be submitted as per the schedule (date & time) indicated in tender notice.

## 10. Eligibility and Qualification Criteria of Bidder

### 10.1 Experience

The bidders should have the following minimum experience of having successfully completed similar works during last 7 (seven) years (i.e., period from 01/12/2016 to 30/11/2023):

1. Three or more similar completed works each having amount of Rs 5,32,00,000/- (Rupees Fife Crores Thirty-Two Lakhs Only)

**OR**

2. Two or more similar completed works each having amount of Rs 6,65,00,000/- (Rupees Six Crores Sixty-Five Lakhs Only)

**OR**

3. One or more similar completed work having amount of Rs 10,64,00,000/- (Rupees Ten Crores Sixty-Four Lakhs Only)

“Similar works” means the bidders should have experience in:

1. AMC of Boiler and auxiliaries OR Turbine and auxiliaries at thermal power plant or any industry’s thermal power plant of capacity greater than 100 MW and works carried out under the single LOI/work order/agreement.

**OR**

2. O&M of Boiler and auxiliaries OR Turbine and auxiliaries at thermal power plant or any industry’s thermal power plant of capacity greater than 100 MW and works carried out under the single LOI/work order/agreement.

**OR**

3. O&M of complete thermal power plant of capacity greater than 100 MW and works carried out under the single LOI/work order/agreement.

Bidder shall submit the details of work completed in FORM PC as provided in the tender document. Separate year-wise statement of experience with work orders and work executed certificates duly certified by the certificate issuing authority shall be submitted as supporting documents. In case of confidentiality, self-certified work orders should be submitted.

## **10.2 Financial**

1. Bidder must have an average positive net worth of last three financial years ended on 31.03.2021, 31.03.2022 and 31.03.2023.

2. Bidder must have a minimum average turnover of Rs 4,00,00,000/- (Four Crores Only) for last three financial years ended on 31.03.2021, 31.03.2022 and 31.03.2023.

A certificate from Chartered Accountant regarding financial capacity shall be submitted as per format provided in FORM PC of the tender document.

### 10.3 Statutory

#### 1. License

1. The bidder should have suitable valid statutory certification/license required for executing above works. Liaisoning with boiler inspector and other government authorities shall be under successful bidder's scope as required.
2. Bidder must have valid special class repairer recognition from competent authority as per India Boiler Regulation 1950.
3. If bidder does not have a special class repairer recognized by competent authority, then bidder has to arrange all IBR works through IBR approved special class boiler repairer as per IBR 1950.
4. Bidder shall have to submit the notarized copy of valid special class repairer certificate and consent letter of special class boiler repairer from whom he wants to arrange the IBR works of this tender, failing in which, the offer shall be liable to be rejected.

#### 2. Blacklisting of the Bidder

The bidder or its directors have not been blacklisted by any government organization. The bidder will submit a declaration to this effect as per the format provided in FORM PD of the tender document. If at any time such declaration is found false, the bid will be rejected or if the contract work is already awarded, it will be terminated forthwith without payment of any compensation and the EMD/SD will be forfeited.

#### 3. Company Registration

Registered in India under Indian Companies Act 1956/2013 or Limited Liability Partnership firm registered under LLP act in India (Partnership and sole proprietorship firms are also allowed to participate in the tender)

#### 10.4 Site Visit Certificate

The bidder should give a declaration of site visit as per the format provided in FORM PG of the tender document.

### 11. Evaluation of Bids

#### 11.1 Completeness of Bids

GMDC will examine the bids to determine whether they are complete, whether they meet all the conditions of the tender document and technical specifications, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the bid documents are substantially responsive to the requirements of the tender document.

#### 11.2 Tender Document Clarifications

GMDC may at its discretion, seek from any or all bidders, clarifications on their bids, including technical information, documents, and materials.

#### 11.3 Rejection of Bid

A bid that does not meet all eligibility criteria or is not responsive shall be rejected by GMDC. Submission of false or incorrect information, history of delayed work, reports of unprofessional conduct, among other things, shall be sufficient grounds for disqualification in technical bid.

#### 11.4 Opening of Bids

Technical bids will be opened after verification of receipt of payment towards tender processing fee and EMD. The eligible bidders will be able to view the technical bids after opening of technical bid. On verification of the supporting documents, technical qualification of the bidders will be assessed. However, all successful bidders will be able to view the price bids online on their computers after opening of price bid.

#### 11.5 Selection of Bidder

The contract will be awarded to the bidder who stands **L1 in total price**. GMDC reserves its right to reject any or all tenders or split the job between more than one bidder without assigning any reason and thereby without incurring any liability to the affected successful bidder or bidders or any obligation to inform the affected successful bidder or successful bidders of the grounds for GMDC's action/decision.

*In the event of any two price bids being the same, then in such a tie situation the bidder who have higher average turnover of last three financial years (i.e., 2020-21, 2021-22 & 2022-23) shall get preference.*

#### **11.6 Discussion**

It is absolutely essential for the successful bidder to quote the lowest price at the time of making the offer in their own interest. GMDC, however, will have the discretion to choose to enter into any mode of discussion.

#### **11.7 Acceptance of LOI and Award of Contract (Work Order)**

1. GMDC, on acceptance of the offer, will issue Letter of Intent (LOI) to the successful bidder, who will be required to confirm its acceptance of the LOI within 7 days from the date of receipt. If successful bidder does not accept the LOI within stipulated time-period, the amount of the EMD paid will be forfeited and necessary further actions may be initiated as may be deemed fit by GMDC.
2. The successful bidder shall have to submit the security deposit within 10 days from acceptance of LOI. The successful bidder shall submit the security deposit in the manner prescribed in this tender document. In case of failure to submit the security deposit, the amount of EMD will be forfeited and necessary further actions may be initiated as may be deemed fit by GMDC.
3. GMDC will award the contract (Work Order) to the successful bidder, after the payment of security deposit, in token of acceptance of the terms and conditions of the contract, within 30 days from the date of issuance of LOI. In case of any necessity arising after executing work order and during the execution of the work, which requires alteration/modifications in the agreement, the same can be made in writing after mutual understanding and consent of both the parties.

### **12. Scope of Work**

The work involves comprehensive maintenance (preventive, predictive, breakdown, shutdown, general routine, and spares planning) of Boiler, Turbine, Generator and Auxiliaries, and Balance of Plant (BoP) at 2x125 MW Akrimota Thermal Power Station.

#### **12.1 Battery Limits**

The battery limits for the comprehensive maintenance including housekeeping of different systems under BTG-BoP are as follows:

- 1. Boiler and auxiliaries:** The lignite and limestone bunkers are fed by the Material Handling Plant (MHP). Boiler work starts from bunker gates where lignite / lime is transferred via conveyors. Any maintenance work in the flow path of lignite and lime to furnace; flow path of air and flue gas systems from primary/secondary/ID/FA air fans and associated duct damper /NMEJ, MEJ, support systems, Cooling Water System of all fans, pre-heater (TAPH), cyclone, Ash cooler and its' associate system, PHE, pumps, valves, cooling coils, refractories, FOPH and its' auxiliaries, , oil firing system including oil guns, ESP up to ESP hopper outlet knife gate and stack; water and steam systems starting from boiler feed pumps, economizer, Soot Blowers, water walls, furnace, drum, system piping, all types of IBR valves, super heaters , reheaters (including all boiler mountings , structures , supports & accessories) till HP turbine, reheaters till IP turbine is in successful bidder's scope.
- 2. Turbine, generator, and auxiliaries:** The turbine system starts with the main steam entering the HP turbine from the boiler area. It then passes through IP and LP where electricity is generated through the turbine generator and is passed to switchyard for further distribution. The steam is passed through the condensate system starting with condenser from the LP turbine. The steam converted to water in condenser is passed further through Hotwell, Condensate extraction pump along with CCW, LP Bypass system, Deaerator and then to Boiler Feed Pump which forms a part of the boiler area. The residual HP/IP steam extracted from the turbine passes through a series of HP heaters while the residual LP steam goes to the LP bypass system and LP heaters. All the ducts and pipes carrying the steam and converted water would be a part of the turbine and auxiliaries' system. Any mechanical / electrical / instrumentation scope of work which lies in the above flow path is in successful bidder's scope.
- 3. Balance of plant:** All facilities excluding ones mentioned above are included in Balance of Plant (BoP). Primarily, sea water treatment plant (SWTP) including electro-chlorinator, sea water desalination plant, de-mineralization plant up to deaerator. Any maintenance work from condenser exit to cooling towers (including pumps) back to cooling tower;

switchyard. Any mechanical/electrical/instrumentation scope of work which lies in the above flow path is in successful bidder's scope.

4. **AC system:** All air conditioning systems including chiller plant AC compressors with auxiliaries, air handling units, all packaged ACs, all windows ACs, all split ACs, all water coolers installed in Akrimota Thermal Power Station premises including the equipment in colony area.
5. **220KV Switchyard** upto GETCo point.
6. **Lifts:** 01 Nos. of passenger electric lift of 885 kg capacity at service building (G+3) AND 01 Nos. of goods cum passenger electric lift of 2000 kg capacity at boiler area (G+10).

## 12.2 General scope of work

1. Co-ordination of all activities of BTG, BoP in consultation with GMDC is the responsibility of the successful bidder.
2. The successful bidder must arrange for services of specialists (i.e., vibration experts, etc.), within 24-36 hrs of intimation by EIC (as & when required). SOPs/HIRA for all high-risk jobs must be prepared, approval from GMDC EIC & compiled.
3. The running maintenance team should be available in the system round the clock to attend the defects when informed by the operations team. The rectification process of any defects/faults should be initiated immediately upon identification/reporting.
4. Permit to work system is to be followed to carry out maintenance job. All maintenance activities are to be carried out by the successful bidder as directed by GMDC Engineer In-Charge (EIC) with adherence to safety and competent supervision.
5. The successful bidder should analyze breakdown and maintenance schedule and update preventive maintenance schedule and overhauling of equipment with PERT and CPM charts for mechanical, electrical, and C&I systems in consultation with GMDC site team.
6. Successful bidder must plan and prepare the schedule for greasing/oil filling/replacement in gearboxes, fans, MOT, pumps, compressors, bearings and fluid couplings, bearing house, lubrication system etc. based on the running hours as and when required and manufacturers' recommendation.

7. The successful bidder must follow the routine and preventive maintenance schedule strictly as per the updated and agreed PM schedule. The preventive maintenance checklist for every equipment is to be followed and submitted to GMDC daily after completion of job as mentioned in the next clause.
8. The successful bidder shall have to submit daily report showing maintenance work carried out, spare parts/consumables etc. replaced, operational running hours, status of availability of system /equipment of entire systems of BTG & BOP area (including lignite and lime feeding system).
9. Equipment history register is to be maintained as per instruction of GMDC and to be submitted weekly for review.
10. The maintenance scope includes failure analysis (Root Cause Analysis or Failure Mode and Effects Analysis) and to implementation of corrective/preventive actions (CAPA) for improvement in plant performance.
11. For addressing unplanned/breakdown maintenance, successful bidder must deploy maximum manpower immediately so that the break down equipment is revived as soon as possible. Incident investigation/Root Cause Analysis (RCA) report must be submitted for major breakdowns to EIC (within 72 hours).
12. Any kind of maintenance work which requires within plant workshop will be in bidder's scope. For example, precision welding/machining, repair of gear box, gear box bearing replacement, replacement of fluid coupling bearings and casing, etc. GMDC shall provide access to the available facilities and workshop in the plant with prior written consent, as per availability. The successful bidder must ensure skilled operators required for workshop equipment for maintenance work at its own cost.
13. The cost of any maintenance work requiring outside plant workshop will be borne by GMDC. However, the successful bidder must co-ordinate and facilitate the process from dismantling to repair to reinstalling of part.
14. If any damage occurs due to negligence of the successful bidder, they must bear the entire cost of repair/replacement of equipment/machinery to the satisfaction of GMDC. Decision of EIC shall be final and binding to successful bidder.

**Spares, Tools, Tackles, Consumables and Stores**

15. Bidder must get issued material/spares from main store or any location and shifting to job/required location.
16. The successful bidder must plan, access and submit list of small equipment, spares and lubricants well in advance.
17. If the successful bidder has used any of the tools, tackles, consumables and equipment of GMDC, they have to return the same in healthy condition after use. The operator will have to communicate such requirements in advance to the GMDC ATPS team. In case of any damage to the tools and tackles, the same have to be replaced by the successful bidder with new tools and tackles of same make and model as damaged ones.
18. Reconciliation statement of equipment spares, steel and lubricants, consumed in each month must be verified by GMDC and to be submitted to GMDC along with the invoice.
19. The successful bidder must develop their own store and keep minimum tools, routine fasteners, cleaning agents, HT bolts and all consumables (except those directly fed/used in equipment) as per the annexures. In addition to that as per requirement of plant need to keep ever day tools and tackles at various plant locations to reduce mobilization time as per site requirement.
20. The successful bidder must maintain separate sub store for lubricants also. All oil/grease containers shall be marked clearly. Separate can (5 L, 10 L capacity) and oil pump to be kept for oil containers. If any equipment is found damaged due to mixing of lubricants, cost of repair/replacement shall be borne by the successful bidder. Daily and monthly consumption records need to maintain and verify. A separate oil containment zone to be developed and maintained to keep Waste-Oil / Empty Oil Drums.
21. Mobilization of spares and lubrication etc. from GMDC main store/plant premises up to work location/sub-store and return back the remaining items shall be in the scope of the bidder. Transfer of any kind of such spares and Hydra shall be arranged in advance to avoid delay in work.

22. All measuring instruments, tools and tackle available for work by bidder shall be calibrated by bidder as per standard procedure and within 2 months of mobilization.
23. Bidder must access and assess condition of all equipment of boiler, turbine, generator and balance of plant during handover of plant for maintenance work. Bidder must make all breakdown equipment/hosts and cranes available for operation up to the satisfaction of GMDC. List of required spares shall be submitted to GMDC for procurement of spares for availability of breakdown equipment.

### **Workforce deployment**

24. Successful bidder shall have to appoint well experienced, competent in managerial skills and well conversant site-in-charge for handling the site. The site-in-charge should have minimum 12 years hands on experience in handling maintenance of similar type of equipment(s), who will co-ordinate with GMDC engineer and should bear over all responsibilities of contract.
25. The successful bidder shall deploy adequate number of qualified, competent and skilled persons at all locations for effective and efficient execution of the contractual obligation and to fulfill the terms and conditions of the contract. The successful bidder must provide organogram and shall be responsible for overall supervision and control of the work assignment and the manpower deployed for the purpose.
26. All staff members / Key Personnel of the successful bidder shall be examined for technical / professional competency by EIC / committee.
27. All the staff members of the successful bidder must have biometric attendance and shall carry Photo Identity Card while on duty.
28. It is the responsibility of the successful bidder to ensure that all the employees deployed by them remain available at their respective locations. Any employee who is relieved, must have suitable reliever reached at site and handover/takeover formalities completed.
29. It is a pre-condition that the successful bidder and the persons deployed by the successful bidder are for a contractual period only.

30. The successful bidder shall provide necessary arrangement for transportation of manpower from township or other locations to work site with all the required safety provisions/devices enforced by statutory authority and other applicable laws/rules or as directed by GMDC authority.
31. Successful bidder shall have to work in three shifts and by three different work groups compulsory (mandatory). The time of commencement of work and of the end of the work for each work group will be in accordance with the timings of GMDC's own workings. Duration of each shift will be eight hours, with at least half-an hour rest interval (for general shift) in between.

### **Safety**

32. All work must be done in accordance with approved safe work procedure and strictly under continuous supervision / guidance of competent Engineer / Supervisor.
33. Safety of equipment and workforce are of utmost importance. Issue of permit to work to maintenance people, is to be strictly in line of direction given by EIC of GMDC.
34. Manpower deployed by the successful bidder must be equipped with suitable personal protective equipment like safety shoes, safety belts, safety goggles, safety helmet, ear plug & dust mask etc. and successful bidder's company uniform. As and when required other personal protective wears shall also be provided to the deployed manpower by the successful bidder. All PPE quality should be checked & approved with GMDC's safety officer.
35. Existing GMDC's safety rules are to be followed. Permit to work system is to be followed to carry out maintenance job. Successful bidder as per system requirement shall carry out every maintenance activity.
36. Medical examination and Police Verification of all persons to be employed by the successful bidder in the power project shall have to be conducted as per law.

### **Contract Related**

37. The decision of General Manager (Power Project) in consultation and approval of General Manager (Power) of the plant shall be final and binding on the successful bidder for defining the terms and conditions included in this contract.
38. Separate contract will be issued for annual/capital overhauls to other bidder for ATPS overhauling. The successful bidder must support the overhauling agency/successful bidder in the overhauling activities as per the discretion of the GMDC team.
39. All the tools, tackles and consumables, and equipment proposed to be used in the power project shall be physically examined by GMDC's engineers for verifying its use-worthiness in the power plant. In case, any irregularities are found, the item must be replaced to the satisfaction of the GMDC engineers.
40. In case of any Central/State Government directives regarding power plant operation and execution of work related thereto, the same shall have to be strictly adhered to and binding upon the successful bidder for implementation, for which GMDC will not be responsible for any compensation.
41. To meet the exigencies arising out of natural calamities or disaster or during any emergency, GMDC reserves the right to take away any of the equipment/machineries deployed at the project site with a mutually consented rate. A separate agreement will be made to this effect.
42. MD-GMDC is authorized to take suitable decision and action in case of requirement to amend/alter the contract conditions/quantities of the works/ extension of the contract period/allotment of additional works/revision of the rates of the work etc. if necessary, in the interest of GMDC.

### 12.3 Boiler and auxiliaries

The scope of work of the successful bidder involves maintenance of boiler system and its auxiliaries (including Aux. Boiler) through qualified and knowledgeable manpower including housekeeping with all terms and conditions as mentioned in scope of work.

#### 1. Boiler pressure parts

1. Attending boiler tube leakages (BTL) in all zones of both boilers and auxiliary boiler along with all works including installation of scaffolding with required materials. Leakages in both units/auxiliary boiler and/or locations to be attended in parallel by deploying separate groups as per requirement and as instructed by GMDC EIC for unit availability and defects attending for running/shut down unit.
2. Liaisoning with Boiler Director during BTL / AOH / COH / License Renewal etc. of boiler 1, 2 & Auxiliary boiler and those falling under IBR, shall be in successful bidder's scope.
3. Other than BTL works during shutdown (overhaul or opportunity based), resources to be mobilized for other preventive maintenance works. Works to be carried out in parallel with BTL works (in case both units at a time) as instructed by the GMDC EIC.
4. During running units, defects of high-pressure lines, like soot blower line, headers, drain line, vent line leakages, etc., for which isolation can be provided, defects shall be attended by the successful bidder and to attend to these defects, the required workforce skillset (e.g., grinder, rigger, fitter, HP welder (IBR approved), etc.) shall be arranged by the successful bidder.
5. Water washing of entire boiler and second pass whenever opportunity arises.
6. Super heater and reheater exfoliation inspection and problem related repair works – extra bend cutting and cleaning work and rewelding of bends as per drawings. FSH / FRH / Water Wall (WW) tube, headers repair works, SR test, radiography, hydro test with safety procedures. Safety nets shall be fitted before start of work. Scaffolding to be installed as per requirements.
7. Sky climber inspection / repair work to be carried out in boiler first pass during every opportunity.
8. During opportunity shut-down Air Tightness Test (ATT) to be done for all ducts, Furnace, Flue gas path and associated systems, along with their defect rectification.

9. De-metering / thickness Survey of high-pressure Part lines and their welding healthiness to be checked as instructed by GMDC EIC. Tubes to be replaced and defective weld joints to be repaired at every year as per discretion of GMDC team.
10. After completion of works, all hopper (ex. Economizer hopper), ESP, TAPH, Second pass furnace, Ash cooler etc. inspections to be done and any foreign material available inside the equipments to be removed to avoid any blockage during unit running condition.

## **2. Valves servicing**

1. Servicing and maintenance (including satellite in-situ machining & blue matching) of all types of valves (IBR/Non IBR) and defective / passing high pressure valves including safety valves identified in thermography reports and defect notifications.
2. Valve replacement to be carried out for all defective valves, including cutting / removal of defective valve and installation / welding of new valves. IBR approved welder is required for welding and installation of valves. Valves for replacement would be provided by employer and replacement work will be carried out as per requirement and instruction of EIC.
3. Preparatory work for all type of valves (MOV, CV, Manual, Pneumatic, NRV) servicing will be in successful bidder's scope. This includes scaffolding installation, hook welding / beam installation for valve dismantling, induction heating, and jacking arrangement for valve bonnet dismantling etc.
3. Servicing and regular maintenance works for all oil burners / guns, fans, and soot blowers are under successful bidder's scope as per the instruction of EIC.
4. All works related to FOPH maintenance (pumps, heaters / tank / oil & steam line / valves / mechanical seal / stainer, etc.)
5. Penthouse internal repairs and cleaning work, buckstay cleaning in boiler area will be in the successful bidder's scope.
6. Boiler piping and hanger supports scope for boiler area covers all the piping coming from TG house towards boiler and return up to TG house inlet.

7. Lignite drag link conveyor, gravimetric feeder, RALF, TAPH, bellow (non-metallic and metallic) cyclone, ash cooler, loop seal, ducts, fans, L-valves, RC line and furnace fabrication related all works.
8. Liasioning for renewal of boiler license for validity through boiler regulatory office and other TBR office related works will be in successful bidder's scope. The successful bidder must ensure availability of certificate on time for use of boilers. This includes 2 Nos. boiler and 1 No. auxiliary boiler. Regular inspections of boilers from boiler directorate regarding certificate renewal and BTL are covered in successful bidder's scope.
9. Insulation removal and installation of work will be in the successful bidder's scope.
10. CW, CCW pipelines and headers, support defect identification and repair/replacement work will be in the successful bidder's scope.
11. Instrument, service air lines and headers, support defect identification and repair/replacement work will be in the successful bidder's scope.
12. SWASS Panel defect identification and repair/ replacement work will be in the successful bidder's scope.

### **13. NDT**

1. Radiographic inspection/Phased Array Ultrasonic Testing (PAUT) analysis of boiler tubes and header joints during routine maintenance, opportunity shutdown & boiler tube leakages. It excludes radiography during unit overhaul.
2. The successful bidder must ensure presence of qualified radiography staff throughout the year and one dark room to be established within plant as per Govt norms. Also, ensure availability of radiography source not less than 10 Curie, (in the range of 10 to 20 Curie) all the time throughout year as per the requirement & instructions of GMDC's EIC.
3. During opportunity shutdown 2 to 3 sources are to be mobilized as per the requirement and instructions of EIC.
4. Skill set requirement for radiography work:

1. In-charge of radiography team should have minimum 7 to 10 years of experience in the relevant field / boiler pressure parts with NDT Level II certificate from BARC.
2. Radiography technicians should have minimum 5 to 8 years of experience with relevant field / boiler pressure parts, NDT Level-II and valid Thermo Luminescent Device (TLD) for radiography.
3. The successful bidder must arrange for source identification and authorization letter from BARC, Mumbai or any other approved source along with authorized list of technicians for use of source.

#### **14. Boiler rotary/stationary parts**

1. Regular maintenance and all other related works for air preheater, fabric, and metallic bellows as per defects identified and repair/ replacement as per requirement at discretion of GMDC team.
2. Servicing and maintenance work of lignite / lime mills, lignite / lime feeders, and associated systems.
3. Lignite / lime mill overhauls – replacement of mill grinding elements and internals, arrangement of hearting coil and insulation material for grinding roll replacement, gearbox replacement, and other related works.
4. Lignite / lime pipe and bends patching and repair works, choking removal and pipe replacement work during running as per requirement.
5. Lignite / lime mill top and ducts cleaning (accumulated material).
6. Repair and replacement of various fabric and metallic bellows during opportunity shutdowns as per defects identified.
7. Air and flue gas duct inspection and repair work as per defects identified.
8. Repair and maintenance of hoists in boiler area including lime mills, FOPH and fans (preventive, routine, break-down maintenance) and assistance in load testing.

9. Servicing and maintenance work of ash draglink / ash rotary / L-valves and related works.
10. Ash cooler / vessel valve / L-valves choking removal and repair, replacement work during running as per requirement.
11. Isolation gate maintenance repair/ replacement work as per defects identified.
12. PHEs defect identification and rectification as per instruction of EIC.
13. Pump maintenance, servicing and repair/replacement work as per instruction of EIC.
14. Furnace, loop seal, ash cooler internal cleaning and damaged parts repair/ replacement work as per defects

**15. TAPH short shutdown works**

1. External and internal cleaning of tubes and plugging of leaky tubes and water washing by jet cleaning as and when required.
2. SA and PA inlet damper / outlet dampers, flue gas Guillotine gates freeness checking and repair or replacement if required.
3. APH hot PA damper, SA outlet damper, and flue gas inlet damper freeness checking.
4. Flue gas gates, diverter plates, duct plate, bracing repairs, anti-wear angle installation.
5. Deluge line and fire extinguishing line nozzle removal and cleaning work.
6. All ducts' leakages should be identified and attended wherever required.
7. All related works (inspection/repair/replacement), if required by system as per instruction of GMDC's EIC.

**16. Inspection and repair work of ducts and their supports (TAPH and ESP inlet, ESP hoppers, ESP roof, outlet ducts up to chimney)**

1. Cleaning of all ducts – ash and debris.
2. Inspection, identification and defect rectification of damaged parts.

3. Duct bracings, protective angles/shields, duct diverter plates inspection and replacement work. Scaffold erection for approach of all parts of ducts.
4. Manhole cutting and restoration for lifting and shifting of material as per requirement.
5. Cutting and renewal of all damaged parts like ducts, bracing pipers, guide channels, damper stopper plates and other damaged plates.
6. Welding and repairing work of all damaged parts like support bracing pipes, guide channels, dampers and plates.
7. All refractory works in required areas i.e. furnace, ash cooler, cyclone, loop seal, return leg, down comer, COD, auxiliary boiler, L- valves, RC line, bellows etc. as per defects.
8. Removal and shifting of scrap from workplace to designated area as per GMDC's EIC's instructions.
9. Cleaning, visual inspection, and repair work of ducts as directed by EIC.
10. Proper illumination arrangement and their sustainability at work site will be in the successful bidder's scope.
11. Any access / approach required at workplace to be erected as per requirement. Site register to be maintained for site day to day activity with signature of EIC on daily basis. Also, protocols of major activities to be prepared as per EIC instructions.
12. Steel structural fabrication and erection as per requirements will be in successful bidder's scope.
13. Insulation removal and installation work as per defect identified.

**17. ID/FA/PA/SA/ash cooler fan corrective/breakdown maintenance**

1. Internal inspection and rectification of all fans – ID, FA, PA, SA, Ash cooler etc. fans during opportunity shut down.
2. Repair and maintenance of all fans – ID, FA, PA, SA, Ash cooler etc. fans including fan rotor, servomotor replacement during opportunity shut down.
3. Damper servicing, APH ducts and dampers, al fans (ID, FA, PA, SA, Ash cooler etc.) ducts and dampers.

4. Fan top casing dismantling, fan rotor and servomotor repair / replacement, alignment, box up, oil top up and housekeeping of entire area.
5. Servomotor feedback and command rod removal, inspection, and servicing work.
6. Fan lube oil tank draining, oil cooler, filter cleaning defect rectification and refilling.
7. All components dismantling, inspection, servicing, repair / replacement as per requirement.
8. Repair / replacement of bearing, impeller shaft, impeller, couplings, voith coupling, pulley, gear fluid coupling maintenance, alignment, journal bearing, lube oil pump repair / reconditioning, fan assembly replacement and balancing work etc.
9. Lube oil pipeline, lube oil pump defect attending, dismantling, flushing, and gasket / seals replacement.
10. Fan blade inspection and repair / replacement as required.

#### **18. ESP**

1. All works related to ESP, i.e., water washing, profile correction, gear box service, hopper cleaning, internal parts repair / replacement, fabrication and erection of steel and structure work, air ingress arrest and all other ESP related work.

#### **19. Lime grinding and dosing system**

1. All work related lime grinding and dosing system i.e. rotary feeder, bag filter, screen, chain conveyor, pneumatic pump, pneumatic conveyor, compressor, fans, blower, gear box, HAG system, weigh feeder, mill, Lime bunker, day pin de-chocking and cleaning, dampers, lube oil system maintenance work etc.

#### **20. Auxiliary Boiler**

1. Servicing, repair, and preservation works of auxiliary boiler area – pressure parts, feed pump, FD fan, furnace, dosing pumps, valves, oil burner, ducts, dampers, IGV, oil /air/steam line and all related parts.
2. Hydro testing, attending of leaky tubes and putting boiler under preservation. And making ready for light up.

## 21. Refurbishment works

1. Refurbishment of spares in boiler and aux. area will be in the successful bidder's scope and material required for refurbishment will be provide by GMDC.
  1. Burner tip / nozzle, valves, oil gun, all baffles, mill assemblies, gear boxes, spares, mottos, and other parts refurbishment.
  2. All types of soot blowers.

## 22. Miscellaneous works

1. All audit compliances – safety, technical, quality, cleaning etc. and other observations.
2. Support for all OEMs and experts' services.
3. Assistance for boiler and service building lift servicing.
4. Scheduled load testing of all lifting tools and tackles and keeping records.
5. Replacement and top-up (replenishment) of lubricants as per schedule and maintain records of the same.
6. Installation and fitting of insulation material as per drawing at various locations in boiler and auxiliaries in running unit. During running plant maintenance work, insulation removed at necessary location shall be reinstalled by the successful bidder.
7. Carrying out modifications / innovations / kaizen / changes in the boiler and auxiliary area, wherever required related to system as per the instruction of GMDC EIC.
8. Housekeeping of all boiler and auxiliaries work area, including ash and coal powder removal from confined spaces, tunnels, furnace, cyclone area, penthouse, second pass and scrap removal. Shifting of scrap material, waste oil, grease to designated store areas.
9. Records of performing all tasks should be recorded on regular basis.
10. Maintenance and repair of permanent and movable (trolley) type dewatering and submersible pumps.
11. Anti-rust painting of repaired / serviced equipment in boiler area and auxiliary boiler.

12. Fabrication and erection of platform, ladder, staircase, handrail, toe guard, etc., along with anti-rust painting wherever required for maintenance purpose and erection of minor approaches for safe working shall be in the successful bidder's scope.
13. Transport of required material from stores to site and vice versa by any mechanized arrangement, i.e., truck, tractor trolley, hand trolley, hydra, etc. will be in the scope of the successful bidder. Required vehicle will be arranged by the successful bidder without any financial implication to the employer / owner.
14. Scaffolding work for running plant and opportunity shutdown defects.
15. The T&P required to execute work at height, work at confined place, hot work etc.
16. All works related to hoists, cranes, and other lifting tools.
17. Cleaning and anti-rust painting of equipment, structures, etc.

### **23. Assistance works**

1. Assistance for non-destructive tests like video boroscopy, exfoliation inspection works during BTLs and short shutdowns.
2. Assistance in preservation of spare at stores and site.
3. Rotary Equipment's Vibration data collection, analysis, remedial measures along with vibration Data Collection Instrument(s) and their record keeping.
4. Assistance works for operations department like soot-blowing, furnace temperature mapping, boiler oil gun trial, valve operations, etc.
5. Assistance in coal feeder calibrations work, dirty air velocity test, fan balancing, motor de-coupling, shifting, reinstallation, and alignment works.
6. Assistance in actuator, power cylinder decoupling / replacement.
7. Scaffolding and approach preparation for any other works related to the system for any other department.
8. Shifting and installation of panel, analyzer, and other instruments in position as per requirement.

9. Assistance and proactive action in case of Emergencies like Black-Out & Fire etc.

A non-exhaustive list of major equipment has been attached in Annexure G for ready reference.

**Note:** Any other maintenance work related to boiler and auxiliaries which is not specifically mentioned in the scope of work above but required for job completions / performance of the contract, shall be in the scope of the successful bidder.

#### 12.4 Turbine and auxiliaries & Balance of Plant (BoP)

##### 1. HP/IP/LP Turbine:

1. Overhauling/repairing/rectification of mainstream valve & control valve, combined reheat valves, lubrication system, control / jacking oil system, generator cooling air system etc.
2. Daily checking up of steam leakage, glands leakage, oil leakage, etc. inclusive of repair / replacement / rectification of the equipment.
3. Maintenance of associated all valves, pumps, accumulators, filters, strainers, nozzles, and repair / replacement / rectification of hydraulic / pneumatic units.
4. Inspection, repair / replacement / rectification of each size of steam line at turbine area.
5. Inspection, repair/replacement/rectification of connected cooling water lines, heat exchangers etc.

##### 2. Turbine auxiliaries:

1. Preventive / breakdown maintenance of equipment of auxiliaries' such as feed water system, condensate system, extraction system, HP/LP bypass system, cooling water system, Debris filter etc.
2. Regular maintenance / repairing / rectification of all types of manual valves, motorized valves, diaphragm valves, gear boxes, pressure relief valve & vacuum breakers etc.
3. Successful bidder must carry out outage job in CW/ACW/CCW/Ash cooler system like butterfly valves and pump's overhauling, all rubber lining / coro-coating piping inspection, Plate type heat exchanger/shell & tube heat exchanger overhauling (dismantling, acid cleaning, and assembly), defect attending and any required modification.

4. During outages debris filter and associated valves overhauling will be in the successful bidder's scope.
5. Overhauling of HP and LP bypass valves and its spray control valve will be in the successful bidder's scope as and when required.
6. During outages, inspection work, cleaning, repair and modification of HP/LP heaters, deaerator internals and system valves, condenser water box, hot well etc. will be in successful bidder's scope.
7. The successful bidder will be liable for carrying out all outages related activities within stipulated time frame.
8. Maintaining operating vacuum in system by attending / rectifying leakage of joints, condenser tube cleaning by hydro-jetting and replacement / plugging of defective tubes, pipes and pipe fitting, if any.
9. Maintenance of all equipment and systems incorporated in the auxiliary system.
10. Maintenance of all relevant equipment, lines and sub-systems of cooling water system.
11. Operational assistance for oil top-ups, greasing, valve operations due to jamming or approach, providing access platform etc. will be the successful bidder's scope.
12. Various other activities like assistance for online sealing job, platform/scaffolding (with material) for another department will be in successful bidder's scope.
13. Online sealing service required for any flange, valve, clamp etc. will be in successful bidder's scope.
14. Installation and fitting of insulation material as per drawing at various locations in Turbine and auxiliaries in running unit. During running plant maintenance work, insulation removal at necessary locations shall be reinstalled by the successful bidder.
15. Maintenance of TG and it's hoist/crane is in successful bidder's scope.
16. All safety PPE should be arranged by successful bidder with prior approval of GMDC safety officer.

### **3. Rotary Equipment:**

1. Maintenance and overhauling (routine, breakdown & annual) of ACW pumps, CCW pumps, boiler feed pump, condensate extraction pumps, steam ejectors, booster pumps, BFP, seal water pumps, main oil pump, AOP, JOP, de-watering pumps / submersible pump in CEP / condenser and various pits etc.
2. During outages or as required, overhauling of all rotary equipment is successful bidder's responsibility.
3. Regular maintenance of all pumps such as topping of oil and greasing, attending gland leakages from pump, system pipe / flanges and valves.
4. Repair / replacement / rectification of all pumps including overhauling work (routine & annual).
5. Required stand by equipment should be kept in working condition for immediate use whenever required.
6. Any pump taken out for overhauling to be made ready, in case of emergency work to be carried out on round the clock basis and equipment should be made available within a stipulated timeline as per decision of EIC.
7. All the routine and preventive measures to be taken and overhauling procedure is laid down in detail as per OEM manual and same shall be' adopted invariably, to ensure optimum performance of equipment.
8. All works in all areas of turbine and its auxiliaries, CEP and its auxiliaries, BFP and its auxiliaries, condenser; deaerator, HP LP heaters, MOT, HP LP bypass system, piping, valves, GSC fan, lube and control oil system, steam jet ejector, safety valves, PRDS etc. are under the successful bidder's scope.

#### **4. Balance of Plant (BoP)**

1. Maintenance of BoP equipment viz. sea water intake pumps, CW pumps, CT make-up water pump, vertical turbine pumps, miscellaneous horizontal pump, jockey pump, fire water and spray water pumps, firefighting system sump pump and submersible pumps, booster pumps, horizontal pumps, dosing pumps, fire hydrant and sprinkler systems of plant, diesel generators, diesel driven fire pump / dewatering pump (Hydrant and spray)

cooling towers (including riser pipes and valves, CT fans, gear box repair / replacement / adjustments of blade angles / repair / replacement of CT spray nozzles etc.) HP/LP piping, LP valves, induced draft cooling tower, all air compressors (instrument and service), all valves/pumps/pipes/joints/gear boxes of BoP area, cranes, hoists, and allied equipment, RO plant and system, clarification, pre-treatment and chlorination plant, desalination plant, MED acid cleaning, DM plant, reject water system, switchyard etc.

**5. General Activities:**

1. The works required to work at height, work at confined space, Hot work, chemical work etc.
2. Lifting and shifting, replacement of various mechanical equipment, tools and tackles.
3. All works related to turbine & generator and TG and BoP miscellaneous job etc.
4. All works related to STG/BOP or any miscellaneous work to be carried out round the clock as per GMDC EIC.
5. All works related to PPE (safety shoes, helmets, safety mask, gum boot, hand gloves, safety belts etc.) as per MSDS (for Chemical Handling) and GMDC EIC.
6. All works related to hoists, cranes, and other lifting tools.
7. Cleaning and anti-rust painting of equipment, structures, etc.
8. The maintenance of TG and Auxiliaries + BoP system work involves replacement of damaged / worn out / broken spares by new ones, necessary site repairing job whenever necessary or repairing of critical spares or minor repair in new spares. The repairing of replaced spare parts in case they are repairable at site in opinion of concerned EIC or during non-availability of spares will be in the successful bidder's scope.
9. The successful bidder shall supply manpower as and when required even after normal working hours / odd hours / public holiday in short notice (2 hours, immediately in case of emergency), which is required to carry out departmental / essential works.
10. The successful bidder shall be responsible for any damage of the equipment due to improper operation improper fitting, misalignment, lack of supervision, improper tools, and negligence / incompetency of maintenance staff.
11. All other works including cleaning/housekeeping etc. to facilitate the above works as instructed by EIC.

12. All tools & tackles (as described in tool list) with tool keeper required to available round the clock.
13. All types of transportation and lifting and shifting shall be in bidder's scope. Hydra, crane if required to be arranged by successful bidder.
14. All type of underground pipeline leakage attending shall be in bidder's scope. All scope of work which includes digging, dewatering by required dewatering pumps, leakage identification & attending & again refilling. Dewatering pump shall be provided by owner.
15. All PPE should be checked and verified by GMDC's safety officer.

A non-exhaustive list of major equipment has been shown in **Annexure G** for ready reference.

***Note: Any other maintenance work related to turbine and auxiliaries with BoP which is not specifically mentioned in the scope of work above but required for job completions / performance of the contract, shall be in the scope of the successful bidder.***

#### 12.5 Electrical Maintenance

1. All electrical maintenance works in all areas of Boiler, Turbine, Generator, BOP, Switchyard including cable dressing, cable tray stiffening, Trench Cleaning and all area lighting maintenance etc.
2. All electrical maintenance works related to ESP, i.e., transformer maintenance, discharge electrode insulators, rectifiers, motors, etc.
3. The works required at height and at confined place etc.
4. The works include 220 KV switchyard, hot spot attending, 220 KV lines, GT bays maintenance, Bus coupler bay maintenance, 220KV switchyard insulators cloth cleaning, 220KV equipment replacement, etc.
5. Lifting and shifting, replacement of electrical equipment, tools and tackles, etc.
6. All works related to HT/ LT Motors, Feeders, Breakers, MOVs, Actuators, Transformers, VFDs, Panels, MCCs, PCC, Boards, Battery and Battery chargers, ACBDs, DCDBs, PDBs, NLDB etc. except motor rewinding shall be under successful bidder's scope. In case of motor rewinding work, dismantling and removal of motors and re-installation will be under successful bidder's scope. Actual rewinding work will be under GMDC's scope.

7. All works related to 11 KV, 6.6KV, 415V, 230V, etc. 3phase and single phase power and control supply auxiliaries, etc.
8. All breakdown / corrective / preventive maintenance work of electrical and electronics equipment including fault finding, rectification will be under successful bidder's scope.
9. All area illumination including, Boiler, FOPH, TG, SY, BOP, Auxiliary Boiler, Store, RO Plant, etc, all buildings of the plant area including service building, admin building, all areas MCC room, Cable gallery, etc.
10. Illumination of street lights and boundary lights including supply and replacement of lighting material like lamp, ballast, cables, igniters etc. shall be in bidders scope.
11. If any expertise/ outsourcing agency required to carry out for smooth operation, breakdown attending of the electrical , electronics system, that also shall be under scope of the bidder.
12. Calibration of Energy meters at line main and check rack, GT, UAT panels and Colony outgoing feeder at MHP MCC shall be carried out.
13. Switchyard, MCC, Feeder protection schemes shall be tested as per requirement.
14. The bidders supplied tools and tackles shall bear statutory compliances.
15. All works related to cable laying, termination, manual fault finding, HT and LT jointing including supply of new jointing kits, lugs, connectors etc. If outside jointer is required, it shall be under successful bidder's scope.
16. All works related to hoists, cranes, and other lifting tools, etc.
17. Cleaning and anti-rust painting of equipment, structures, etc.
18. The successful bidder shall ensure deployment of suitable and sufficient manpower as and when required even after normal working hours immediately.
19. All other works including cleaning/housekeeping etc. to facilitate the above works as instructed by EIC.
20. All manpower shall be ready to work at anywhere of the plant including areas at height and areas at confined places as per prescribed safety norms including 24 V power supply.
21. Specially there shall be at least four technicians and four helpers, 2 engineers/supervisors who can work at any height at 220KV switchyard and ESP inside and other areas.
22. All HT areas engineers, supervisors shall hold electrical supervisory license essentially.

## 12.6 C&I Maintenance

1. All C&I related works in all areas of Boiler, Turbine, Generator, BOP, Switchyard, auxiliary boiler, FOPH, Ro Plant, ESP (controllers), DCS (Distributed Controlled System) etc.
2. Calibration and maintenance of transmitters, switches and gauges like pressure, temperature, flow, level, conductivity and all other such instruments that form an integrated part of the power plant and its auxiliary units. The successful bidder must adhere to the calibration schedule and instructions as directed by GMDC EIC.
3. Calibration and maintenance of hydraulic/pneumatic and electric valves (24V and below), actuators and power piston-cylinders used for moving dampers, gates, valves, positioners, solenoid valves, etc.
4. The successful bidder must support the C&I engineer in checking of control loop from DCS end and proceed up to field instrument through every junction box or control panel according to respective loop-checking procedure.
5. Instrument tubing, cable laying (from device to nearby JB), cable terminations, JB installation and all such activities needed to install/ refit new instruments, detect and rectify faults during signal transmission from field instrument to control room DCS. Dressing / redressing of cables, cable trays, cable tray cleaning in JBs or Panels shall be part of the maintenance activity being performed.
6. Overhaul of control valves, pneumatic actuators, when found necessary shall be done. All the necessary precautions like checking bench set of pneumatic valves, replacement of internals, changing gland packing etc. and all such activities needed for the overhaul shall be performed.
7. Overhaul of devices like solenoid valves, air filters, level glass etc.; setting of limit switches for all instruments, taking instruments in and out of service, venting & flushing of instrument tapping lines, identification of cable path from instrument via junction boxes to control room marshalling and all other activities required to complete the maintenance activities shall be performed, taking into consideration the safety of the working personnel, equipment, and the power plant as a whole.
8. Preventive maintenance of C&I of running equipment as per the agreed schedule shall be carried out.

9. The works are required to be carried out at height and/ or in confined space as per site situation.
10. Lifting and shifting, replacement of C&I equipment, tools and tackles, etc.
11. All works related to cable laying, termination, manual fault finding, jointing, etc.
12. Cleaning and anti-rust painting of equipment, cabinets, junction boxes, impulse line, structures, etc.
13. The successful bidder shall supply manpower as and when required even after normal working hours immediately including engineer/supervisor.
14. All other works including cleaning/housekeeping etc. to facilitate the above works as instructed by EIC.
15. All type of actuators / valves servicing and seal kit / diaphragm repair/replacement work.
16. Measuring instruments mention in tool list must be calibrated and certified by NABL / NABL traceable certificate.
17. In case of any fault in DCS or UPS, service engineer required for fault addressal will be in successful bidder's scope.
18. All consumables, necessary tools, tackles, and equipment etc. required for the job shall be in the successful bidder's scope.
19. All safety measures of manpower, machines, etc. will be in the successful bidder's cope.

#### **12.7 Housekeeping**

1. GMDC intent to engage adequate resources for good housekeeping of the plant. Under the scope of this contract, the successful bidder is required to provide qualified manpower for housekeeping with tools & tackles for both units boiler, turbine, BOP, main store, workshop, CW pump house, lab, SWT, PLC/DCS/HMI/Control room instruments etc. (excluding MHP, AHP).
2. Supervisors have to report to EIC well in advance prior to the time schedule of housekeepers and sweepers and as per instruction of EIC. Supervisors must plan the housekeeping of entire specified area of the plant. Supervisors must ensure all manpower deployed for work is engaged in housekeeping work. Record of works, manpower, tools tackles etc. is also to be maintained by the supervisor.

3. Housekeepers have to carry out housekeeping work, cleaning, mopping, furnace cleaning, etc. in ATPS plant area as per requirement and instruction of EIC.
4. Sweepers have to carry out cleaning of all toilets (Main plant, Switchyard, KBL, Lab) & housekeeping work at different area in ATPS plant area as per requirement and instruction of EIC.
5. All facilities like snacks, foods, transportation etc. to the manpower deployed will be in successful bidder's scope.
6. The successful bidder shall have to provide additional manpower as and when required by GMDC if any, within 48 hours at the same terms and conditions of the tender.
7. For all the manpower mentioned above, physical fitness shall be ascertained from Medical Center of GMDC.
8. All Housekeeping persons shall have good general physical fitness & preferably knowledge of first aid.
9. The successful bidder will be responsible for the presence of housekeeping workforce and maintaining decorum of GMDC.
10. The successful bidder shall ensure to make its manpower to abide by rules & regulation & follow instructions of EIC, GMDC.
11. All tools, tackles, and equipment required for housekeeping work will be under successful bidder's scope. An indicate list have been shown in Annexure-H. Any additional tools and tackles, if required, shall be arranged by the successful bidder.

#### **12.8 Lift maintenance in boiler area and service building**

1. The successful bidder shall have valid authorization / license for operation and maintenance of lifts under Gujarat lifts and escalators Act.
2. The successful bidder shall inspect both lifts within 14 days of acceptance of the LOI. The successful bidder shall arrange all required spares, consumable, manpower, tools and tackles etc. for ensuring both lifts are in operating condition.
3. The bidder shall carry out supply and replacement of spare and consumables material for making initial time ready for service building passenger lift of (G+3) 884 Kg capacity, including but not limited to: Door Sensor, Door Motor, Door Drive, Automatic Rescue Device (ARD), all necessary new wiring & controller Electronics cards and relays and

contactors, main pulley of main geared machine, break, all landing locks, and other necessary accessories and standard safety protection, etc. AND supply and replacement of spare material for making initial time ready for goods cum passenger Boiler lift of (G+10) 2000 Kg capacity, including but not limited to all manual imperforated doors, necessary repairing of manual Door Frame, Main Ropes replacement, all necessary new wiring & controller Electronics cards and relays and contactors, Main Pulley of main geared machine, break, All Landing Locks, and other necessary accessories and standard safety protection, etc.

4. The bidder shall supply and replace all the spares. The above list is indicative and only for reference. Whatever spares, consumables, etc. required to make both lifts revival for making initial time operational shall be in bidder's scope.
5. The bidder shall supply the spares at ATPS, carry out the gate entry, store entry process and replace the spares. The quoted price for spares supply and replacement in A3, A4 shall be treated as ceiling value but not paid in lump sum. The actual invoice value of the spares supplied for making lifts operational first time shall be paid.
6. Before quoting, the bidder on bidder's interest shall visit the site and check the requirement accordingly.
7. The Bidder shall make both lifts operational, carry out commissioning of both lifts with 72 hours of trouble-free operation. The bidder shall arrange and carry out third party inspection and testing as per GOG rules and submit the certificate to GMDC. All these jobs shall be completed within 30 days of acceptance of LOI.
8. The bidder shall guarantee trouble free lift operations for a minimum of 120 days from the date of initial overhaul. However, if any lift develops any fault during any guarantee period, The bidder shall be given relaxation to rectify within same day. This relaxation shall not be for more than 7 times(days) per lift in one year.
9. The bidder shall Supply 1 No. of qualified attendant cum operator for each lift, i.e., totalling 2 Nos. during general shift for every day for 365 days. General shift hours shall be same as that of GMDC Office general shift timings. The bidder shall be liable for payment of salary, weekly off and overtime to its employees as per Govt. Of Gujarat rules prevailing

from time to time. GMDC shall not pay any overtime on any account like public holiday, Duty after regular time, etc. whatever the cause may be.

10. The bidder shall supply maximum 2 nos. of qualified Attendant cum operator per day for lifts in the timings of other than General shifts on as and when required basis on advance intimation. For this, GMDC EIC shall intimate the bidder in 2 days advance. The day following the intimation day shall be treated as day#1. On Day#3, the bidder shall provide extra qualified attendant cum operator of lifts at ATPS. The bidder shall be liable for payment of salary, weekly off and Overtime to its employees as per Govt. of Gujarat rules prevailing from time to time. GMDC shall not pay any Overtime on any account like Public holiday, Duty after regular time, etc whatever the cause may be.
11. The attendant cum operator shall perform following duty:
  1. Report to duty in designated time/shift,
  2. Daily cleaning and lubricating the guides,
  3. Examine the ropes and their attachments,
  4. Examine the safety devices,
  5. Examining and lubricating the door locks,
  6. Examining the moving parts
  7. Examining all electrical connections lighting, plug point and earthing etc.
  8. Make necessary adjustments as per requirement for healthy operation of the lift as the case may be.
  9. Carry out all other jobs as per Gujarat lifts and escalator rules
12. The bidder shall carry out PM and servicing once in each month after successful commissioning of the lift(s). The following works shall be carried out and recorded during PM once every month by the bidder.
  1. Cleaning and lubricating the guides,
  2. Examine the ropes and their attachments,

3. Examine the safety devices,
4. Examining and lubricating the door locks,
5. Examining the moving parts
6. Examining all electrical connections lighting, plug point and earthing, etc.
7. Make necessary adjustments as per requirement for healthy operation of the lift as the case may be.
8. Cleaning and greasing of machine, motor, controller etc.
9. Cleaning and lubrication of all hoist way equipment and entrance,
10. Greasing of bearings and guides,
11. Conduct equipment safety survey,
12. Examine lift, cleaning, lubricate, adjust, repair-contacts, contact insulation, contact spring, cable connectors, contact holders, distance pieces for the switches of the controller, selector panel (for floor settings), brakes, governor, electrical and mechanical interlocks, wiring of controller, car switches, brushes etc.
13. Replacement/Topping up oil in main gear box and door mechanism gearbox.
14. Maintenance of door operating unit for automatic opening/closing of the doors and thorough inspection of machine room, checking & cleaning of machine, motor, controller etc., greasing & oiling of guides and bearings, checking & maintaining gear box oil level, carrying out necessary adjustments and settings, lighting of car, machine room, pit and its cleaning, checking of all the door & its lock for smooth working, limit switches, checking of speed governor and all the safety aspects which are mandatory under lift act etc. The inspection report shall be prepared in 4 copies and signed by bidder shall be submitted to GMDC.
15. Any other works which shall be required to be carried out as part of obligation under Gujarat lifts and escalators act/rules shall be complied by the bidder.

13. The Bidder shall guarantee for 5 days of trouble free running after executing each PM in each month. However, if any lift develops any fault during this guarantee period, The bidder shall be given relaxation to rectify fault within same day.
14. The attendant cum lift operator or GMDC person shall intimate the bidder if any fault occurs in lift(s) about the breakdown telephonically or by email. The bidder shall arrange all required spares, consumables and manpower to carry out breakdown maintenance and make the lift operational within 5 days.
15. During Preventive or breakdown maintenance, the bidder shall repair all kinds of spares including cards, etc. If any spare is found non-repairable. The new material for faulty and non-repairable spares and replacement shall be in bidder's scope.
16. In All PM, BD and etc cases: repair, supply and replacement of all spares including cards, VFD, etc. shall be in bidder's scope.
17. The Bidder shall guarantee for 10 days of trouble free running after executing each Breakdown in each lift. However, If any lift develops any fault during this guarantee period, The bidder shall be given relaxation to rectify fault within same day. This relaxation shall not be for more than 5 times per lift in one year duration.
18. Third party Inspection and Testing after 6 months of commissioning of lifts shall be carried out as per Gujarat lifts and escalators act and report shall be submitted to GMDC and GOG authority by the bidder.
19. Repairing and replacement of all spares shall be in bidder's scope. If any spares are not repairable or any new spares are required to make the lifts operative, then the supply and replacement of new spares shall also be in bidder's scope. Spares shall include all and every spares including cards, controller, machine, etc.
20. The completely revived lifts shall be put on operation for 72 hours for successful commissioning.
21. After lifts are completely revived by the bidder, both lifts shall be inspected and tested by the third party auditor in a year through Govt. authorized agency, authorized under sec-13, as per Gujarat lifts and escalators rules and submit inspection and test report to the Chief

- Inspector. After inspection of lifts, the bidder shall have to submit the certificate as per requirement of Gujarat lift and escalator rule 2001 and subsequent amendment thereof.
22. If any modification / alterations shall be carried out by the bidder, then obtaining the requisite permission of the inspector shall be in bidder's scope.
23. The bidder shall supply one lift attendant for lift operation in general shift every day for 365 days. If additional lift attendant shall be required for any time on GMDC demand, then the bidder shall have to provide the attendant at the same rate of supply. The overtime on odd hours/ public holidays, etc. as per factories act, shall be the sole responsibility of the successful bidder and GMDC shall not bear any overtime, compensation, etc.
24. During annual overhauling and / or unit breakdown period of units or any other times, lift attendant shall be required in odd hours after general shift as and when required. Accordingly, additional lift attendants for maximum 120 man-days in one year as and when required by GMDC shall be supplied by the bidder.
25. The lift attendant shall maintain the register all breakdown and problem arises during the operation of lifts. If due to any breakdown, lift shall be out of service, the attendant shall inform to the bidder as well as the GMDC EIC.
26. The lift attendant shall carry out daily cleaning and operation of the lift.
27. For breakdown on call: The bidder shall arrange manpower and spares, consumables, tools and tackles for attending the breakdown and shall make lift available into service within 4 days of outage of lift. Repairing and replacement of all spares shall be in bidder's scope. If any spares are not repairable or any new spares are required to make the lifts operative, then the supply and replacement of new spares shall also be in bidder's scope and paid as per the rate contract. Spares shall include all and every spares including cards, controller, machine etc.
28. All tools and tackles, consumables, spares, cards, everything required to carry out revival, breakdown, Preventive maintenance, etc. shall be in bidder's scope.
29. Before starting of any maintenance work, if isolation of electrical power is required, then the bidder shall obtain the same through EIC, GMDC and on receiving the isolation permit,

- the bidder shall start work. If without isolation permit, bidder shall carry out any maintenance work, it shall be understood that bidder do not require the isolation permit.
30. The bidder shall submit the old scraps, spares and consumables, etc. in main store or any designated place from time to time as per the instruction of EIC. This includes lifting, shifting of material. Without removal and shifting of scraps, old materials, and cleaning, RA invoice shall not be processed.
  31. The successful bidder shall be responsible for any accident/ incident to bidder's deputed manpower. GMDC shall in no way held responsible.
  32. The maintenance for safe and normal operation of both lifts shall be in bidder's scope.
  33. If at any stage the bidder fails to complete the job (i.e. maintenance work etc.) the same will be done at the bidder's risk and cost and additional expenditure incurred by the GMDC, will be recovered from bidder's invoice including 15% service charge.
  34. Replacement of any parts shall be one to one replacement with existing make and size.
  35. The lifts shall be maintained as per the guidelines laid under Gujarat lifts and escalators acts, 2000, Gujarat lifts and escalators rules-2011, Gujarat lifts and escalators act-2013 and other rules and regulation, which may come into force from time to time by the Govt. of Gujarat.
  36. All necessary tools, tackles and equipment, spares etc. required for the completion of job shall be in the successful bidder's scope.
  37. All consumables required for the job shall be in the successful bidder's scope.
  38. The successful bidder shall engage skill and sufficient manpower for timely completion of job as directed by GMDC.
  39. The bidder should have valid statutory certification / License for carrying out O&M of lifts.
  40. The deployed manpower should have enough experience for the works and observe all necessary precaution.
  41. All safety measures of manpower, machines, etc. will be in the successful bidder's scope.

42. Mobilization, demobilization and all types of conveyance for crew shall be in the successful bidder's scope.
43. Police verification of bidder's manpower, plant gate pass shall be arranged by the bidder.
44. Lighting arrangement if required shall be in the successful bidder's scope.
45. Canteen facility on availability shall be given on chargeable basis at ATPS during working period.
46. Lodging facility at ATPS Hostel or Labour colony or D-types quarters, if available shall be provided on nominal chargeable basis by GMDC.
47. Bidder shall have to ensure the work completed within the stipulated period as it involves line permit from SLDC.
48. The successful bidder shall abide by and ensure compliance of all labor laws, insurance, workman compensation act & all applicable statutory rules and regulations for subject work.
49. The successful bidder must fulfill all the safety regulations and take all necessary safety measures to avoid any hazard and shall be strictly followed by persons deployed by the successful bidder for the job.
50. The successful bidder shall be solely responsible for any accident / Incident to the successful bidder's workers and should adhere to all rules and regulations as per labor laws of Government and other statutory authority. The successful bidder shall ensure that all persons employed by the successful bidder use personal protective equipment.
51. The successful bidder shall keep GMDC indemnified from all liabilities arising out of his action in pursuance of this contract.
52. All persons deployed by the successful bidder shall maintain due discipline and GMDC reserves the right to take disciplinary action, if required.
53. In any dispute during the contractual period among the bidder and EIC, the decision of GM (Power) and GM (Power Project) of GMDC is final and binding to all parties.
54. GMDC shall arrange required electrical isolation permit, if required.

55. Accommodation shall be in bidder's scope. However, GMDC shall provide accommodation, if available, on chargeable basis after fulfilling requirement of own staff.
56. All statutory expenses shall be borne by GMDC. On submitting the proof of such challans to GMDC in running invoices, GMDC shall reimburse the challan amount to the bidder. However, successful bidder has to comply all statutory norms applicable to industrial & service lifts.

### 12.9 AC System

1. All type of Mechanical Maintenance Works of Air conditioning systems including Chiller plant AC compressors with auxiliaries, Air handling units, all Packaged ACs, all windows ACs, all split ACs, all water coolers installed in plant premises.
2. The scope of work includes ACs and coolers available in colony area also.
3. Maintenance of Condenser, chiller pumps, CCW pumps, dryers
4. Maintenance, Servicing and cleaning of Air handling units.
5. Maintenance of all valves, piping, duct and insulation.
6. To attend all the defects available in present system and to make and maintain system healthy.
7. To attend defect within a week after received defect from user departments.
8. The successful bidder has to submit daily report to mechanical maintenance department of day to day activities regarding all defects.
9. Debris shall be cleared from the working area after completion of the works.
10. All works related to PPE (safety shoes, helmets, safety mask, gum boot, hand gloves, safety belts etc.) as per Engineer In charge.
11. Cleaning and painting of equipment, structures, etc.
12. The successful bidder shall supply manpower as and when required even after normal working hours immediately, which is required to carry out departmental works.
13. All other works including cleaning/housekeeping etc. to facilitate the above works as instructed by EIC.

14. All tools & tackles with tool keeper required to available round the clock if required.
15. The works are required to be carried out at height and/ or in confined space and hot work as per site situation.
16. Lifting and shifting, replacement of AC equipment, tools and tackles, etc.
17. During overhauling of chiller compressor successful bidder has to mobilize separate skilled manpower with qualified supervisor immediately as per EIC. Work should be carried out as per the instruction of engineer in charge round the clock with utmost care & to be executed within stipulated time.
18. For routine and unforeseen job price and rates quoted shall include cost of all consumables, supervision, tools and tackles, transport, taxes, and levies if any etc. And such other cost which are not specifically mentioned herein but will be incurred by the successful bidder for the satisfactory and timely completion of the work.

***Note: Any other maintenance work related to AC System and auxiliaries which is not specifically mentioned in the scope of work above but required for job completions / performance of the contract, shall be in the scope of the successful bidder***

### **13.Period and Duration of Work**

- 13.1 The contract period will be of **one year from the date of acceptance of LOI**. Further, there shall be a provision for extension for up to **one year**, as per the same terms and conditions with a further extension provision subject to entire satisfaction and requirement of the GMDC.
- 13.2 In case of any reason including adverse working conditions during execution of the contract that may compel suspension/closure of the contract, GMDC shall be at liberty to conclude/postpone/complete/terminate/foreclose this contract. No compensation or payment shall be made on account of afore-stated events. Decision of GMDC in this regard shall be final and binding to the successful bidder.

### **14.Liquidated Damages (LD)**

- 14.1 If the bidder fails to start the actual work within 14 days from the date of acceptance of LOI as required, a liquidated damage @ Rs. 20,000/- per day shall be leviable, for a maximum period



of 20 days. If the bidder fails to start work even after 20 days, GMDC will be free to forfeit the EMD and/or SD and take suitable/necessary action.

14.2 In event of failure in execution of services under the scope of the successful bidder due to the reasons attributable to the successful bidder, GMDC shall have the right to make the deductions as detailed below:

1. Monthly payment shall be derived as per SLAs after consideration of deductions as per SLAs mentioned in Annexure D.

14.3 Under any circumstances, GMDC shall not be liable to pay any compensation to the successful bidder.

**14.4 Overall cap on the total LD shall be 10% of the contract value.**

14.5 GMDC shall not be made liable for any damage and /or compensation for the manpower and/or tools and tackles provided by the successful bidder.

14.6 GMDC reserves the right to review and assess the performance of the work at any time during the contract period. In case of poor performance by the successful bidder, defined as, actual K factor lying in the worst performance category for three or more KPIs defined in Annexure D, GMDC shall have discretion to take appropriate action including termination of the contract and backlisting the successful bidder.

14.7 The successful bidder shall have to follow all safety norms. The successful bidder shall be responsible for safety of equipment and plants. If any damage occurs, then the successful bidder shall be responsible for repairing the damage made to the equipment and plant of GMDC and compensate for the cost of damage. This will be above the 10% LD cap and would equal to the actual cost of repair/replace.

## **15. Goods & Service Tax**

15.1 All bidders are required to submit their GST number and date in the bid. Bid received from unregistered bidder will not be considered and out rightly rejected.

15.2 Bidders are requested to quote their rates without GST. GST will be paid/adjusted/reimbursed to the Successful bidder as per prevailing rates and rules to the extent directly related to the services rendered OR Goods supplied by the Successful bidder under the said contract subject to

production of documentary proof and Successful bidder will mention the GST amount separately in the invoice along with SAC/HSN Code under GST.

## **16. Insurance**

- 16.1 The successful bidder shall take full responsibility to take all precautions to prevent loss or damage to the works or part thereof for any reasons whatsoever (except for reasons which are beyond control of the successful bidder or act of God, e.g. flood, riots, war, earthquake, etc.) and shall at his own cost, repair and make good the loss/damage to the work so that on completion, the work shall be in good order and condition and in conformity with the requirements of the contract and instructions of the project authority, if any.
- 16.2 The successful bidder shall, at all times during the pendency of the contract, indemnify the GMDC against all claims, damages or compensation under the provisions of the Employee's Compensation Act and shall take insurance policy covering all risk, claims, damages or compensation payable under the Employee's Compensation Act or under any other law relating thereto.
- 16.3 The Successful bidder shall take adequate statutorily prescribed insurance cover for all men and machinery engaged by him/it for performance of the work at site. Any insurance claim brought against the GMDC by an individual or by customers or by any such other persons who suffered damage due to negligence of the Successful bidder or his employees, the same shall be settled by the Successful bidder at his cost.
- 16.4 The successful bidder shall ensure that the insurance policy/policies are kept alive till full expiry of the contract by timely payment of premiums and shall not be cancelled without the approval of the GMDC. The cost of premiums shall be borne by the successful bidder and it shall be deemed to have been included in the tendered rate.
- 16.5 In the event of the successful bidder's failure to effect or to keep in force the insurance referred to above or any other insurance which the Successful bidder is required to effect under the terms of the contract, the GMDC may effect and keep in force any such insurance and pay such premium/premiums as may be necessary for that purpose from time to time and recover the amount thus paid from any moneys due by the successful bidder.

## **17. Payment Terms**

17.1 The successful bidder shall submit invoice after completing the mentioned work in all respect including removal shifting and submitting the old spares, scraps to designated place/main store, cleaning of the location.

17.2 Monthly Payment will be done to the successful bidder equal to the value derived basis Service Level Agreements.

17.3 Invoice shall be submitted to the office of the General Manager (Power Project), ATPS with following documents:

1. Duly certified area wise KPI values as mentioned in Annexure D:
  1. Duly certified date wise report of calibration of equipment conducted as per schedule given by the GMDC team.
  2. Duly certified date wise report of mechanical, electrical, and C&I predictive, preventive and breakdown maintenance work with details of consumable and spare use for BTG and auxiliaries, BoP, Switchyard, and Lifts.
  3. Duly certified date-wise housekeeping index as surveyed by joint team.
  4. Duly certified date wise report of maintenance jobs conducted of AC System as per schedule given by the GMDC team.
  5. Duly certified date wise report on the reworks conducted in various systems of the plant.
  6. Duly certified date wise report on the availability of lift throughout the month.
  7. Copies of Muster Roll and Payment sheets showing the amount of PF deducted from salaries of the labour and employees, PF No. of labour and employee, amount of contribution of the Successful bidder.
  8. Copy of the challans for the PF amount deposited in RPFC for the previous month, in respect of PF deduction related exclusively to this contract as well as copies of monthly returns, i.e., 3A and yearly 6A.
  9. Compliance of all law relevant with the work carried out by Contract or such as Labour and Factories Act etc.
  10. Check List.

17.4 Invoice, submitted at the office of General Manager (Power Project) will be processed considering the following deductions:

1. Income tax as per provision of Income Tax Act, and other Taxes (and surcharges) applicable in force from time to time
2. Cost of any other services provided / material supplied plus 15% administrative charge, if any, by the GMDC.
3. Liquidated damages
4. Other deductions, if any.

17.5 An ad-hoc payment @ 80% of the payable amount arrived after considering above deduction, will be paid by office of the G.M. [Power Project], within 30 days of submission of the invoice along with its details.

17.6 The invoice shall then be sent to GMDC's Corporate Office at Ahmedabad for verification, auditing and approval. Balance 20% payable amount of Running account invoices shall become payable by Project within two weeks of the receipt of the approved invoice from Corporate Office.

## **18. Statutory Obligations**

18.1 That the successful bidder shall obtain license under the Factories Act and it shall pay wages and benefits in accordance with the applicable laws and shall not pay less than as notified by the Government Authorities from time to time and shall maintain the employment records as required under applicable laws.

18.2 That the Successful Bidder shall get his own License under Contract Labour (Regulation and Abolition) Act. It shall be binding to get the same renewed from time to time and shall maintain all the records as per the act.

18.3 That the Successful Bidder shall be responsible to enroll his employees, deduct, add and deposit in the relevant accounts the contributions as required under the Employees State Insurance Act, 1952 and the Employees Provident Funds and Miscellaneous Provisions Act 1952 and any other enactment's covered under the various applicable labour laws as well as maintain all books of records for the staff and employees deputed by it for this contract such as required under any

laws applicable. The Successful Bidder shall also furnish a copy of such statements as documentary proof to the GMDC.

18.4 That if the Successful Bidder is not covered under the Employees State Insurance Act, 1952 then it shall be the duty of the Successful Bidder to take appropriate insurance cover under the Workmen Compensation Act and take Group Personal Accident Policy for all the employees deputed at the project site.

18.5 The Successful Bidder must issue to the employee's Identity card with their photos and shall also maintain relevant register.

18.6 That the Successful Bidder shall give leave/holiday to its workforce as per the provisions of labour laws applicable.

18.7 Every person deployed by the Successful bidder in a plant must wear safety gadgets to be provided by the Successful bidder.

18.8 Any statutory clearance, permission required for the work, its completion, commissioning shall be in successful bidder's scope.

18.9 The Successful bidder will be required to obtain License from the office of the Labour Commissioner for the required strength of labour, before commencement of work at site and the same shall be maintained updated and valid throughout the currency of the contract.

18.10 If any amount becomes payable by GMDC as a result of any claim or application in terms of the provisions or non-compliance of provision of any Acts and the Rules and Regulations, By-laws or the Orders made there under, applicable from time to time, such amounts shall be recoverable from the Successful bidder for which GMDC will not be responsible for any compensation.

18.11 That the Successful Bidder would obey with all applicable laws and maintain all such necessary records as necessitated under such enactments.

18.12 The Successful bidder shall also indemnify the GMDC against any claims, compensations, damages, loss, liquidated damages etc. for breach and / or non-fulfillment of the prevailing Rules and Regulations and other statutory provisions in force from time to time and applicable to the work during the currency of contract.

18.13 The Successful bidder shall abide by the provision of the Motor Vehicle Act for machinery. Any consequences arising out of non-compliance of said Provisions will be at the Successful bidder sole risk and cost, for which GMDC will not be responsible for any compensation.

18.14 The Successful bidder shall comply with other statutory provisions of Law. The Successful bidder shall comply with all applicable laws, ordinances, approved standards, rules and regulations, and shall procure all necessary municipal and governmental permits, licenses and inspection and shall pay all fees and charges in connection with the items covered by the contract. The Successful bidder shall serve GMDC harmless as a result of any in factions thereof. Successful bidder will be solely liable for all non-compliances. The following are some of the major Government of India Acts and Regulations to be complied with by the Successful Bidder. The List is illustrative and not exhaustive.

1. The Factories Act of 1948 (63 to 1948) and Amendments and Rules (Amended up to date)
2. The Electricity Act, 2003 and rules made there under
3. The Indian Boiler Regulation Act, 1950 and rules made there under
4. The Minimum Wages Act, 1948
5. The Employees Compensation Act 1923 and Amendment Act 2010
6. The Payment of Wages Act 1936 and Amendment Act 2012
7. Payment of Bonus Act 1965 and Amended up to date
8. Contract Labour Regulations& Abolition Act 1970
9. Interstate Migrant Workmen (Regulations) Act 1979

18.15 All the activities arising under the scope of the works shall be complied with various statute/laws/rules/regulations etc. Including environmental laws and if the successful bidder fails to comply the laws; it will be done at the risk and cost of the successful bidder and expenses will be recovered from RA invoice of the successful bidder.

## **19. Bankruptcy**

19.1 If the Successful bidder commits an act of Bankruptcy or goes into liquidation except for construction purposes, or if its business is carried on by a receiver, such receiver, liquidator or any person in whom the contract may become vested shall forthwith give notice thereof in writing to GMDC and in reasonable time during which he shall take all reasonable steps to prevent stoppage of performance of the contract, have the option of carrying out the contract subject to his or their providing such guarantees as may be required by GMDC but not exceeding the value of the work for the time being remaining unexecuted.

19.2 In the event of stoppage of performance under the contract, the period of option under this clause shall be decided by GMDC considering the situation, provided that the above option is not exercised, GMDC may terminate the contract by serving notice in writing to the Successful bidder. The power and provision so reserved to GMDC on taking of the work out of the Successful bidder's hands shall apply as far as they may be when the contract is so terminated.

## **20. Notice**

Written notice shall be deemed to have been duly served if delivered to the individual or to Successful bidder or to the Signing Authority of the GMDC from whom it is intended, or if delivered at or sent by mail or post, to the last business address known to him who gives the notice.

## **21. Canvassing Not Permitted**

1. Bidder should not canvass their offer personally or otherwise by approaching the Chairman or the Member of GMDC. If any Bidder wants to make any representation regarding his offer, he should write to the General Manager (Power), if he desires, but personal and oral representations are not permitted.
2. In spite of the above clear instructions, any Bidder is found to canvass his offer or against his competitor's offer through personal approach to the competent authority or the officials of GMDC, their offer will be rejected without assigning any reason and the firm even is blacklisted.

## **22. Termination Of Contract**

If at any time during the currency of this contract, if any breach occurs due to the reasons attributed to the successful bidder, GMDC shall be at liberty to terminate this contract without assigning any reasons, whatsoever, for such termination and any losses and/or damages occurring due to such termination shall be borne by the Successful bidder. GMDC shall be entitled to forfeit Security deposits as Liquidated damages.

### **23. Arbitration**

All questions, disputes, differences whatsoever which may at any time arise between the parties to this Tender and subsequent contract in connection with the Tender and subsequent contract or any matter arising out of or in relation thereto, shall be referred to Sole Arbitrator as per the provisions of Arbitration and Conciliation Act, 1996 and subsequent amendment thereto and the venue of arbitration proceedings shall be at Ahmedabad only. The Language of the Arbitration shall be in English only.

### **24. Governing Law**

This Tender and subsequent Contract shall be construed and interpreted in accordance with and governed by the laws of India.

### **25. Jurisdiction**

The matter related to any dispute or difference arising out of this Tender and subsequent contract shall be subject to the exclusive jurisdiction of Court at Ahmedabad only.

### **26. Non-Fulfillment of Terms And Condition of The Contract**

26.1 If the Successful bidder fails to carry out the work as per terms and conditions of the contract to the satisfaction of the GMDC, GMDC shall be entitled to forfeit the security deposit paid by the Successful bidder. This however, shall not absolve the Successful bidder from his obligation to fulfill the contract. In such event, the GMDC shall have a right to complete and / or to get the work completed at the cost & risk of the Successful bidder and the Successful bidder shall be responsible to pay such cost incurred by the GMDC to complete the work and / or to get the work completed.

26.2 Likewise, if the Successful bidder does not fulfill the terms and conditions of the contract and does not carry out the work up to the entire satisfaction of GMDC, GMDC has the right to

forthwith terminate the contract at its sole discretion, without assigning any reason, Under such events, the GMDC shall be entitled to forfeit the security deposit paid by the Successful bidder and the GMDC shall have a right to complete the work and / or to get the work completed at the risk and cost of the Successful bidder.

26.3 For any reasons, if it is required, the GMDC reserves rights to cancel, terminate, amend and / or alter the contract and / or bifurcate and / or increase and/or reduce the contract work at any time without giving any notice or reason to the Successful bidder and without incurring any responsibility. For such cases, Successful bidder shall have to take away his labour, tools, tackles, machinery, equipment etc. and shall leave the site at once or shall have to carry out the instructions of the GMDC.

## **27. Completion Of Work**

27.1 Upon the Successful bidder fulfilling the entirety of its obligations under the Contract to the satisfaction of GMDC and subject to terms and conditions of the Contract, it shall become eligible to apply for a Completion Certificate. The General Manager (Power Project) / General Manager (Power) of GMDC shall formally issue the Completion Certificate, after verifying from the completion documents and satisfying himself that the Works under the Contract have been completed in accordance with all the provisions of this Contract. The Successful bidder, after obtaining the Completion Certificate shall become eligible to present the final invoice for the Works executed by it under the Contract.

27.2 Upon completion of Works under the Contract and before the application for the Completion Certificate, the Successful bidder shall clear the project of GMDC of all rubbish, dirt, structures, scrap, oily rags etc. Failure to clear the project may constrain GMDC to clear the said site at the risk and cost of the Successful bidder.

27.3 The Successful bidder shall provide GMDC with any and all documents/records/proofs that may be demanded before issuance of Completion Certificate.

## **28. Accident and Responsibilities of Bidder**

28.1 The entire responsibility on account of any accidents, damage or personal injury which may occurred to any of the Successful bidder's vehicles/ equipments or his/its employees or any outside party shall be exclusively that of the Successful bidder and no claim whatsoever shall be

entertain by the GMDC on this account. The Successful bidder shall keep the GMDC indemnified from all the consequence.

28.2 In the event of any breakdown or accident during the course of any operation, the Successful bidder shall notify the facts to the Project Authority or any other officer immediately present there of such incidence and shall simultaneously make adequate remedial arrangements on his/its own cost and risk and as per the instruction of the Project Authority.

28.3 The Successful bidder shall pay all claims, damages and compensation with cost arising out of or resulting there from to the third party(s) and in case the GMDC would be required to face any proceedings all to pay any amount on the aforesaid account, it shall be deemed to have been discharge on behalf of the Successful bidder, the same amount shall be recovered half-an hour rest interval in between. The Successful bidder shall ensure that the attendance of all the supplied manpower shall be taken through biometric attendance machine.

## **29. Foreclosure**

29.1 In case of any necessity or any situation arising due to local working conditions or any unforeseen reason not in the control of the GMDC or of the Successful Bidder, Committee comprising of representative of GMDC, Successful Bidder and Outside Expert from Technical and Financial background shall be constituted and Committee will look into the reasons/causes and analyze the conditions as to whether the work awarded is feasible to continue with the existing terms and conditions of the contract or any other available option or to Fore Close the contract in the interest of both the GMDC and the Successful Bidder.

29.2 If after study of the prevailing conditions of the contract under execution, committee recommends to Fore Close the contract keeping in view the financial implication to both the GMDC and Successful Bidder, guideline/Modality of the Fore Closure of the contract shall be decided by the committee considering the work executed and unexecuted, period of the contract completed and balance period of the contract, value of the work executed and value of the work unexecuted etc.

### **30. Force Majeure**

- 30.1 Force majeure is herein defined as any cause which is beyond the control of the Successful bidder or the GMDC as the case may be which they could not foresee or with a reasonable amount of diligence could not have foreseen and which substantially affect the performance of the contract, such as:
- 30.2 Natural phenomena such as flood, draughts, cyclone, earthquake and epidemics, declaration of war.
- 30.3 Acts of any government, including but not limited to war, declared or undeclared priorities, quantities, embargoes, providing either party shall within fifteen (15) days from the occurrence of such a cause notify the other in writing of such cases.
- 30.4 The Successful bidder will advise, in the event of his having resort to this clause by a registered letter duly certified by the statutory authorities, the beginning and end of the cause of delay, within fifteen days of the occurrence and cessation of such Force Majeure condition. In the event of delay lasting over two months, if arising out of Force Majeure, the contract may be terminated at the discretion of the GMDC.
- 30.5 For delay arising out of Force Majeure, the Successful bidder will not claim extension in completion date for a period exceeding the period of delay attributable to the causes of force Majeure and neither company nor the Successful bidder shall be liable to pay extra costs (like increase in rates, remobilization, advance, idle charges for labour and machinery etc.) provided it is mutually established that the Force Majeure conditions did actually exist.
- 30.6 If any of the Force Majeure conditions exists in the place of operation of the Successful bidder even at the time of submission of bid, he will categorically specify them in his bid and state whether they have been taken into consideration in their quotations.
- 30.7 The Successful bidder or the GMDC shall not be liable for delays in performing his obligations resulting from any force majeure cause as referred to and/ or defined above. The date of completion will, subject to hereinafter provided, be extended by a reasonable time.

## **Annexure A: Instruction to Bidders for Online Tendering**

1. All Bidders must submit their bid online through the website <https://tender.nprocure.com>
2. Bidders who wish to participate in online tenders will have to procure / should have legally valid Digital Certificate (Class III) as per Information Technology Act-2000, using which they can sign their electronic bids. Bidders can procure the same from any of the license certifying Authority of India or can contact (n) code solutions- a division of GNFC Limited, who are licensed Certifying Authority by Government of India at address mentioned below at clause 5.
3. All bids should be digitally signed. For details regarding digital signature certificate and related training involved at the below mentioned address should be contacted:
4. Address:

**(n)Procure Cell**

**(n)Code solutions A division of GNFC**

**403, GNFC Info-Tower, Bodakdev, Ahmedabad- 380 054 (India)**

**Tel: +91 26857316/17/18 Fax: +91 79 26857321, Toll Free: 1800-233-1010**

**E-mail : [nprocure@gnfc.net](mailto:nprocure@gnfc.net)**

5. Kindly take note that, valid Digital Signature Certificates is a must for all the interested Bidders. Online tendering process is not possible without a valid digital signature certificate.
6. Interested Bidders are also requested to complete their procedure for taking digital signature certificate in respect to filling of application form, supporting documents with necessary fees at least 3 days before last date of tender submission.
7. (n) code solutions reserves the rights to issue digital signature certificate after verification of application forms / supporting documents submitted by Bidder. (n) code solutions is fully authorized to issue digital signature certificate to Bidders.
8. Bidders who have no facility to participate in on-line tenders are requested to contact (n) code solutions for the same.
9. Free vendor training camp will be organized every Saturday between 4.00 to 5.00 P.M. at (n) code solutions-A Division of GNFC Ltd. at address mentioned above at Clause No. 5 of Chapter No-III.
10. Bidders are requested to take benefit of the same.



11. All the correspondence in respect to training, support or digital signature certificate should be addressed to (n) code solutions directly on the above mentioned address. In case the Bidders face any difficulty, they may contact the officials of the GMDC or GNFC on the below mentioned details:

a. GMDC:

Contact Person: General Manager (Power)

Contact numbers: 079-27913200/3501 Ext No 1760

E-Mail: [power@gmdcltd.com](mailto:power@gmdcltd.com); [jndave@gmdcltd.co.in](mailto:jndave@gmdcltd.co.in)

b. GNFC

Contact Number: 079- 26857316/17/18

E-Mail: [nprocure@gnfc.net](mailto:nprocure@gnfc.net)

## Annexure B: Approved Banks

### Annexure I.

**Finance Department, GR. No.: FD/MSM/e-file/4/2023/0057/D.M.O.**

Date: 21/04/2023

(A) Guarantees issued by the following banks will be accepted as SD/EMD on permanent basis:

❖ **All Nationalized Banks**

(B) Guarantees issued by the following Banks will be accepted as SD/EMD for the period up to March 31, 2024. The validity cut-off date in the GR is with respect to the date of issue of Bank Guarantee irrespective of the date of termination of Bank Guarantee.

| Sr No | Name of Banks              | Sr No | Name of Banks                            |
|-------|----------------------------|-------|--|
| 1     | AXIS Bank                  | 17    | Kotak Mahindra Bank                      |
| 2     | AU Small Finance Bank      | 18    | South Indian Bank                        |
| 3     | Bandhan Bank               | 19    | Standard Chartered Bank                  |
| 4     | BNP Paribas                | 20    | Tamilnadu Mercantile Bank                |
| 5     | City Union Bank            | 21    | Utkarsh Small Finance Bank               |
| 6     | CSB Bank                   | 22    | The Kalupur Commercial Co-op. Bank       |
| 7     | DBS Bank India Limited     | 23    | Ahmedabad Mercantile Co-op. Bank         |
| 8     | DCB Bank                   | 24    | Nutan Nagarik Sahakari Bank Ltd.         |
| 9     | Equitas Small Finance Bank | 25    | Rajkot Nagarik Sahakari Bank Ltd.        |
| 10    | FEDERAL Bank               | 26    | Saraswat Co-Operative Bank Ltd           |
| 11    | HDFC Bank                  | 27    | SVC Co-Operative Bank LTD.               |
| 12    | HSBC Bank                  | 28    | The Gujarat State Co-operative Bank      |
| 13    | ICICI Bank                 | 29    | The Mehsana Urban Co-Op. Bank Ltd        |
| 14    | IndusInd Bank              | 30    | The Surat District Co-Operative Bank Ltd |
| 15    | Karnataka Bank             | 31    | The Surat People's Co-Op. Bank Ltd       |
| 16    | Karur Vysya Bank           | 32    | Saurashtra Gramin Bank                   |

**All the eligible banks are instructed to collect the original documents/papers of guarantee from the concerned tendering authority.**

  
(S. Chhakchhuak)

Additional Secretary (Budget)  
Finance Department

-----XXXXX-----



**Annexure C: Bank Details for RTGS**

VALID FOR THREE MONTHS ONLY

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
|   |   |   |   |   |   |   |   |   |   |
| D | M | Y | Y | Y | Y | Y | Y | Y | Y |

OR ORDER

₹

FOR GUJARAT MINERAL DEVE CORP LTD

**ICICI Bank**  
Ahmedabad Branch  
Jmc House, Opp.Parimal Garden,Ahmedabad - 380006.  
RTGS / NEFT / IFSC Code : ICIC0000024

**PRIVILEGE**  
18207185

*Handwritten Signature*

A/c No. 002405019379

CBS  
BUSINESS BANKING - NEW CURRENT ACCOUNT  
Payable at par at all branches of ICICI Bank Limited in India

AUTHORISED SIGNATORIES  
Please sign above

SESHASAI (M) (S) - 2019

28/12/12

11491099 38029002 019379 29

### Annexure D: Service Level Agreements – Maintenance of BTG and BoP Systems, Lifts and AC System

| S. No.                     | Key Performance Indicator (KPI)  | KPI Measurement Criteria                      | K Factor                       | Weightage (%) | Monthly Amount (say) |                     | 1,00,00,000                                | Monthly amount considering actual value of K factor | Output measurement |
|----------------------------|--|---|--------------------------------|---------------|----------------------|---------------------|--|---|--------------------|
|                            |  |   |                                |               | Actual Values        | Applicable K factor | Monthly amount considering K factor = 1.00 |   |                    |
|                            |  |   |                                | a             | b                    | c                   | d = a x Allotted Monthly Amount            | e = c x d   |                    |
| A                          | Timely Compliance of Preventive Maintenance (Refer Appendix I for calculations)                    | 95% ≤ B ≤ 100%                                | 1.00                           | 35%           | 98%                  | 1.00                | 35,00,000                                  | 35,00,000   | Automated + Manual |
|                            |  | 85% ≤ B < 95%                                 | 0.90                           |               |                      |                     |  |   |                    |
|                            |  | 75% ≤ B < 85%                                 | 0.80                           |               |                      |                     |  |   |                    |
|                            |  | B < 75%                                       | 0.00                           |               |                      |                     |  |   |                    |
| B                          | Unplanned/Breakdown Compliance (Refer Appendix II for calculations)                                | 95% ≤ C ≤ 100%                                | 1.00                           | 35%           | 97%                  | 1.00                | 35,00,000                                  | 35,00,000   | Automated + Manual |
|                            |  | 85% ≤ C < 95%                                 | 0.90                           |               |                      |                     |  |   |                    |
|                            |  | 75% ≤ C < 85%                                 | 0.80                           |               |                      |                     |  |   |                    |
|                            |  | C < 75%                                       | 0.00                           |               |                      |                     |  |   |                    |
| C                          | Compliance of Housekeeping as per agreed plan (Refer Appendix III for calculations)                | 90% ≤ D ≤ 100%                                | 1.00                           | 20%           | 85%                  | 0.90                | 20,00,000                                  | 18,00,000   | Manual             |
|                            |  | 80% ≤ D < 90%                                 | 0.95                           |               |                      |                     |  |   |                    |
|                            |  | 70% ≤ D < 80%                                 | 0.90                           |               |                      |                     |  |   |                    |
|                            |  | 60% ≤ D < 70%                                 | 0.85                           |               |                      |                     |  |   |                    |
|                            |  | D < 60%                                       | 0.00                           |               |                      |                     |  |   |                    |
| D                          | Maintenance of AC System as per the schedule provided by GMDC (Refer Appendix IV for calculations) | 95% ≤ C ≤ 100%                                | 1.00                           | 10%           | 90%                  | 0.90                | 10,00,000                                  | 9,00,000  | Manual             |
|                            |  | 85% ≤ C < 95%                                 | 0.90                           |               |                      |                     |  |   |                    |
|                            |  | 75% ≤ C < 85%                                 | 0.80                           |               |                      |                     |  |   |                    |
|                            |  | C < 75%                                       | 0.00                           |               |                      |                     |  |   |                    |
| <b>Sub-total (A+B+C+D)</b> |  |   |                                |               |                      |                     | <b>1,00,00,000</b>                         | <b>97,00,000</b>                                    |                    |
| S. No.                     | SLA Description  | SLA Measurement                               | LD                             |               |                      | Quantity            |  | Monthly LD  | Output Measurement |
|                            |  |   | a                              |               |                      | b                   |  | d = a*b   |                    |
| E                          | Rework frequency (Repetition of job within a month) (Refer Appendix V)                             | Number of reworks required in respective jobs | 0.05% of total contract amount |               |                      | 8                   |  | 40,000  | Manual             |
| F                          | Lift availability (Refer Appendix VI)  | Deduction per day for non-operational days    | Rs. 2000/day                   |               |                      | 5                   |  | 10,000  | Manual             |
| <b>Total (A+B+C+D-E-F)</b> |  |   |                                |               |                      |                     |  | <b>96,50,000</b>                                    |                    |

**Note:** Monthly payment shall be derived as per SLAs after consideration of deductions as mentioned above with a maximum cap of 10%.

## Appendix I: Timely Compliance of Preventive Maintenance

$$PM\ Compliance = \frac{\text{No. of scheduled PM done during the month as per Annexure E}}{\text{Total No. of scheduled PM during the month as per Annexure E}}$$

### Note:

1. Successful bidder shall complete PM schedule as mentioned in scope of work and Annexure E within the timeline.
2. PM schedule mentioned in the scope of work is based on previous history and OEM guidelines and will be revised time to time considering the overall health of the equipment and as decided by the employer / owner. All such changes to the PM schedule shall be binding to the successful bidder.
3. Any PM scheduled which is not performed or where completion is delayed as compared to the planned schedule and non-conforming shall be treated as a default for the purpose of calculating PM compliance index.
4. PM activities scheduled but not completed during any calendar month shall automatically be carried forward to the PM activities scheduled in the subsequent month (subject to a revised schedule to be agreed with the employer / owner) and shall form part of the compliance requirement of the subsequent month. Employer / owner, however, reserves the right to carry out such non-completed PM by themselves or any other 3<sup>rd</sup> party entirely at the costs and risks of the successful bidder if decided by the employer / owner if such carry forward may be detrimental to the operation and safety of the plant.

## Appendix II: Unplanned/Breakdown Compliance

### Unplanned/Breakdown Compliance

$$= \frac{\text{No. of breakdowns resolved within completion period during the month}}{\text{Total No. of breakdowns during the month}}$$

| S. No. | Name of the activity  | Unit | Completion Period | Defect Liability Period |
|--------|---|------|-------------------|-------------------------|
| 1.     | Dismantling, removal and insertion of BFP cartridge                           | No.  | 46 hours          | 1 month                 |
| 2.     | Overhauling of Booster Pump Model 200x150                                     | No.  | 48 hours          | 1 month                 |
| 3.     | Decoupling and coupling of hydraulic or BFP or Booster pump or motor          | No.  | 6 hours           | Nil                     |
| 4.     | Replacement of hydraulic coupling oil   | No.  | 6 hours           | Nil                     |
| 5.     | Cleaning/replacement of suction strainer in water circuit                     | No.  | 4 hours           | Nil                     |
| 6.     | Maintenance of DE bearing and oil guard of BFP/BP                             | No.  | 5 hours           | 1 week                  |
| 7.     | Maintenance of NDE bearing and oil guard of BFP/BP (including thrust bearing) | No.  | 5 hours           | 1 week                  |
| 8.     | Replacement of BFP or Booster pump DE side mechanical seal                    | No.  | 8 hours           | 1 week                  |
| 9.     | Replacement of BFP or Booster pump NDE side mechanical seal                   | No.  | 12 hours          | 1 week                  |
| 10.    | Cleaning/replacement of lub oil filters                                       | No.  | 1 hour            | Nil                     |
| 11.    | Attending of 1/2" or 1" oil or water pipeline fitting leakages                | No.  | 1 hour            | 2 days                  |
| 12.    | Replacement of booster pump parting plane gasket                              | No.  | 8 hours           | 1 week                  |
| 13.    | Replacement of thrust bearing end cover 'O' ring of BFP or Booster pump       | No.  | 1 hour            | 1 week                  |
| 14.    | Booster pump suction flange or discharge flange leakage                       | No.  | 12 hours          | 1 week                  |
| 15.    | BFP suction flange gasket replacement   | No.  | 6 hours           | 1 week                  |
| 16.    | Lub oil line 1/2" to 2" line orifice gasket/flange gasket replacement         | No.  | 1 hour            | 1 week                  |
| 17.    | Tightening of oil/water line flanges of 1/2" to 2" size for any leakages      | No.  | 1 hour            | 1 week                  |
| 18.    | Seal water cooler tubes leakages  | No.  | 8 hours           | 1 week                  |
| 19.    | Removal and box-up of coupling guard (1 number)                               | No.  | 3 hours           | Nil                     |



|     |   |     |          |          |
|-----|---|-----|----------|----------|
| 20. | Replacement of fusible plug of hydraulic coupling of BFP                    | No. | 1 hour   | 1 month  |
| 21. | Servicing of BFP hydraulic coupling scoop mechanism                         | No. | 1 hour   | 1 month  |
| 22. | Attending leakage from BFP retaining ring                                   | No. | 7 hours  | 2 months |
| 23. | Overhauling of hydraulic coupling   | No. | 72 hours | 4 months |
| 24. | Maintenance of jacking oil pump   | No. | 24 hours | 1 month  |
| 25. | Maintenance of control oil main pump  | No. | 24 hours | 1 month  |
| 26. | Maintenance of HP Bypass control oil pump (Gear pump submerged in oil tank) | No. | 16 hours | 1 month  |
| 27. | Maintenance of lub oil pump (AOP/EOP)                                       | No. | 24 hours | 1 month  |
| 28. | Cleaning of turbine lub oil filter  | No. | 3 hours  | Nil      |
| 29. | Cleaning of jacking oil filter  | No. | 1 hour   | Nil      |
| 30. | Replacement of control oil filters (Total 2 nos.)                           | No. | 2 hours  | Nil      |
| 31. | Maintenance of turbine luboil cooler  | No. | 24 hours | 1 month  |
| 32. | Maintenance of accumulator of control oil system – 1 No. (Capacity – 50L)   | No. | 6 hours  | 1 week   |
| 33. | Oil top-up in MOT tank (Castrol make Perfecto T-46)                         | No. | 1 hour   | Nil      |
| 34. | Cleaning of Main oil tank (15000L capacity)                                 | No. | 24 hours | Nil      |
| 35. | Oil top-up in HP Bypass control oil tank (Castrol make Perfecto T-46)       | No. | 1 hour   | Nil      |
| 36. | Replacement of HP Bypass control oil (Castrol make Perfecto T-46) 150L      | No. | 3 hours  | Nil      |
| 37. | Cleaning of MOT strainer  | No. | 4 hours  | Nil      |
| 38. | Maintenance of accumulator of HP Bypass control oil                         | No. | 6 hours  | 1 week   |
| 39. | Maintenance of oil vapour exhaust fan                                       | No. | 4 hours  | 1 week   |
| 40. | Overhauling of CEP<br>Make: KBL Model: BHRC 28M                             | No. | 48 hours | 1 month  |
| 41. | Cleaning of suction strainer  | No. | 4 hours  | Nil      |
| 42. | Maintenance of DE thrust bearing of CEP                                     | No. | 12 hours | 1 week   |
| 43. | Maintenance of gland  | No. | 12 hours | 1 week   |
| 44. | Replacement of suction/discharge flange gasket                              | No. | 4 hours  | 1 week   |
| 45. | Oil top-up in CEP bearing   | No. | 1 hour   | Nil      |
| 46. | Removal of CEP motor for electrical work                                    | No. | 4 hours  | Nil      |
| 47. | Removal of CEP motor top cover for I&C work and refixing of the same        | No. | 2 hours  | Nil      |
| 48. | Cleaning of water box (per box) of condenser                                | No. | 8 hours  | Nil      |
| 49. | Cleaning of hotwell   | No. | 8 hours  | Nil      |
| 50. | Plugging of tube leakage of condenser                                       | No. | 2 days   | 1 month  |



|     |   |     |          |         |
|-----|---|-----|----------|---------|
| 51. | Replacement of manhole door gasket of condenser / hotwell                               | No. | 3 hours  | 1 week  |
| 52. | Attending manhole flange leakage of deaerator   | No. | 3 hours  | 1 month |
| 53. | Plugging of tube leakage of LP heaters / HP heaters / Gland steam cooler / Drain cooler | No. | 2 days   | 1 month |
| 54. | Attend flange leakage of LP heaters / HP heaters / Gland steam cooler / Drain cooler    | No. | 2 days   | 1 month |
| 55. | Welding of CS piping 100 mm diameter and max thickness 11mm                             | No. | 2 hours  | 1 week  |
| 56. | -do-> 100mm and upto 200mm  | No. | 3 hours  | 1 week  |
| 57. | -do-> 200mm and upto 400mm  | No. | 3 hours  | 1 week  |
| 58. | Welding of ACW water line upto 100mm  | No. | 2 hours  | 1 week  |
| 59. | -do-> 100mm and upto 200mm  | No. | 3 hours  | 1 week  |
| 60. | -do-> 200mm and upto 300mm  | No. | 3 hours  | 1 week  |
| 61. | -do-> 300mm and upto 600mm  | No. | 4 hours  | 1 week  |
| 62. | -do-> 600mm and upto 1200mm   | No. | 8 hours  | 1 week  |
| 63. | Attending leakage in air/oil/water line of 100NB and below size                         | No. | 1 hour   | 1 week  |
| 64. | Attending leakages in SS pipeline upto 50NB   | No. | 2 hours  | 1 week  |
| 65. | Attending flange leakage of air/oil/ACW water line 100NB to 250NB                       | No. | 3 hours  | 1 week  |
| 66. | Attending flange leakage of air/oil/ACW water line 300NB to 600NB                       | No. | 4 hours  | 1 week  |
| 67. | Servicing of gate/globe valves of NB 300mm to 450mm                                     | No. | 6 hours  | 1 month |
| 68. | -do-> NB 60mm to 250mm  | No. | 6 hours  | 1 month |
| 69. | -do-> NB 50mm and below   | No. | 5 hours  | 1 month |
| 70. | Servicing of non-return valve NB 300 to 400   | No. | 6 hours  | 1 month |
| 71. | -do-> NB below 250mm  | No. | 6 hours  | 1 month |
| 72. | -do-> CRH/Extraction NRV size 450mm to 600mm  | No. | 10 hours | 1 month |
| 73. | Servicing of steam traps/strainers  | No. | 2 hours  | 1 month |
| 74. | Servicing of ball valves/globe valves of instrument air line NB 15 to 50mm              | No. | 2 hours  | 1 month |
| 75. | Replacement of gland packings in valves. Upto NB 100mm (Gate and Globe valve)           | No. | 1 hour   | 1 month |
| 76. | -do-> NB 150/400mm  | No. | 1 hour   | 1 month |
| 77. | Replacement of pneumatic control valves upto NB 100mm                                   | No. | 6 hours  | 1 month |
| 78. | -do-> NB 150mm to 450mm   | No. | 8 hours  | 1 month |



|      |  |          |          |         |
|------|--|----------|----------|---------|
| 79.  | Replacement of bonet/flange gaskets for valves upto NB 100mm (Gate/Globe/Pneumatic valve)  | No.      | 4 hours  | 1 month |
| 80.  | -do-> NB 150 to 300mm  | No.      | 4 hours  | 1 month |
| 81.  | -do-> NB 350 to 600mm  | No.      | 6 hours  | 1 month |
| 82.  | Flange gasket replacement of gate/globe valve of 350 to 600mm in air/water line            | No.      | 4 hours  | 1 month |
| 83.  | Flange gasket replacement of gate/globe valve of 100 to 300 NB in air/water line           | No.      | 3 hours  | 1 month |
| 84.  | Flange gasket replacement of gate/globe valve of below 100 NB in air/water line            | No.      | 2 hours  | 1 month |
| 85.  | Gland Tightening of valves (Globe/Gate/Pneumatic) of size 250 to 450 NB                    | No.      | ½ hour   | 1 week  |
| 86.  | Gland Tightening of valves (Globe/Gate/Pneumatic) of size 150 to 250 NB                    | No.      | ½ hour   | 1 week  |
| 87.  | Gland Tightening of valves (Globe/Gate/Pneumatic) of size 50 to 150 NB                     | No.      | ½ hour   | 1 week  |
| 88.  | Gland Tightening of valves (Globe/Gate/Pneumatic) of size below 50 NB                      | No.      | ½ hour   | 1 week  |
| 89.  | Maintenance of impeller  | No.      | 8 hours  | 1 month |
| 90.  | Generator cooler hydrotest   | No.      | 8 hours  | 1 week  |
| 91.  | Hand barring of the turbine for 1 hour   | No.      | 1 hour   | Nil     |
| 92.  | Fabrication of piping upto 2” per mtr. length  | Mtr.     | 4 hours  | Nil     |
| 93.  | Painting of pipeline upto 4” per mtr. length   | Mtr.     | 2 hours  | 1 month |
| 94.  | Painting of pipeline upto 4”-10” per mtr. length   | Mtr.     | 2 hours  | 1 month |
| 95.  | Painting of equipment surface per square meter area  | Sq. mtr. | 3 hours  | 1 month |
| 96.  | Remove insulation and cladding sheet from pipeline per mtr. length and apply back upto 4”  | Mtr.     | 2 hours  | Nil     |
| 97.  | Remove insulation and cladding sheet from pipeline per mtr. length and apply back above 4” | Mtr.     | 2 hours  | Nil     |
| 98.  | Remove insulation and cladding sheet from valve upto 4” size and apply back                | No.      | 2 hours  | Nil     |
| 99.  | Remove insulation and cladding sheet from valve above 4” size and apply back               | No.      | 2 hours  | Nil     |
| 100. | Servicing of safety relief valve upto 1”   | No.      | 8 hours  | 1 month |
| 101. | Servicing of safety relief valve above 1” and upto 4”                                      | No.      | 12 hours | 1 month |
| 102. | Servicing of safety relief valve above 4” and upto 10”                                     | No.      | 16 hours | 1 month |
| 103. | Cleaning of workshop equipments total 8 machines   | No.      | 8 hours  | Nil     |
| 104. | Arranging of workshop and TG tools and cleaning  | No.      | 8 hours  | Nil     |



|      |  |              |          |         |
|------|--|--------------|----------|---------|
| 105. | NRV top bonnet tightening upto 20" size  | No.          | 4 hours  | 1 month |
| 106. | Removal of pneumatic/electrical actuator in case of respective department are not able to remove the same and refix the same upto 100NB size | No.          | 3 hours  | Nil     |
| 107. | -do-> above 100NB upto 200NB   | No.          | 8 hours  | Nil     |
| 108. | -do-> above 200NB  | No.          | 8 hours  | Nil     |
| 109. | Inspection of steam/water/condensate/drain line hangers (one no.)  | No.          | 1 hour   | 1 month |
| 110. | Removal of CEP motor for electrical work   | No.          | 4 hours  | Nil     |
| 111. | Removal of CEP motor top cover for I&C work and refixing of the same   | No.          | 2 hours  | Nil     |
| 112. | Cleaning of spillage oil per sq mtr area   | Sq. mtr.     | 1 hour   | Nil     |
| 113. | LP turbine diaphragm and gasket replacement (1 no.)  | No.          | 3 hours  | 1 week  |
| 114. | Fabrication and erection of platform/structural supports   | Metric tonne | 1 day    | 1 week  |
| 115. | Checking the nitrogen gas pressure in HPBP & CO system   | No.          | 1 hour   | 1 month |
| 116. | Replacement of threaded valves upto 2" size  | No.          | 1 hour   | 1 month |
| 117. | Replacement of fusible plug of hydraulic coupling of BFP   | No.          | 1 hour   | 1 month |
| 118. | Servicing of BFP hydraulic coupling scoop mechanism  | No.          | 1 hour   | 1 month |
| 119. | Attending of any pinhole leakage on pipeline and valve body  | No.          | 1 hour   | 1 month |
| 120. | Replacement of coupling pin of feed pump or booster pump of oil centrifuge   | No.          | 1 hour   | 1 month |
| 121. | Replacement of the set of brake shoes of oil centrifuge  | No.          | 1 hour   | 1 month |
| 122. | Flap type NRV servicing (as in GSC fan, oil vapour exhaust fan etc.)   | No.          | 1 hour   | 1 month |
|      | Centrifuge:  |              |          |         |
| 123. | Oil filling in worm gearbox 5L (Servo system 68)   | No.          | 1 hour   | Nil     |
| 124. | Maintenance of bowl spindle and gearbox  | No.          | 12 hours | 1 week  |
| 125. | Maintenance of feed/booster gear pump  | No.          | 4 hours  | 1 week  |
| 126. | Replacement of oil seal of feed pump/booster pump  | No.          | 2 hours  | 1 week  |
| 127. | Checking the nitrogen gas pressure in HPBP and CO  | No.          | 1 hour   | 1 month |
| 128. | Replacement of coupling pin of feed pump or booster  | No.          | 1 hour   | 1 month |
| 129. | Replacement of the set of brake shoes of oil centrifuge  | No.          | 1 hour   | 1 month |



**Note: Estimated completion period and defect liability period for breakdown of other equipment shall be decided at mutually agreed timelines between the successful bidder and GMDC after issuing the LoA.**

### Appendix III: Sample Housekeeping Calculation Sheet

1. Successful bidder to define areas and respective checklist of activities to be completed along with site team to comprehensively cover entire BTG, BoP (excluding MHP, AHP) for housekeeping performance measurement.
2. Calculation is out of 100 marks per area.
3. Housekeeping monitoring team will be formed (employer/owner + successful bidder), team will monitor it on daily basis and marking to be done accordingly.
4. For each area, the housekeeping team shall conduct surveys and give scores (as illustrated below) and a daily average housekeeping compliance percentage shall be completed which will be aggregated to calculate the monthly average housekeeping compliance.

***Illustration***

| Date | Area 1 | Area 2 | Area 3 | ... | Area N | Housekeeping compliance<br>in % |
|------|--------|--------|--------|-----|--------|---------------------------------|
| 1    | 98     | 92     | 95     | ... | 99     | 94                              |
| 2    | 99     | 91     | 96     | ... | 93     | 95                              |
| 3    | 98     | 92     | 94     | ... | 93     | 98                              |
| 4    | 95     | 93     | 99     | ... | 98     | 96                              |
| 5    | 96     | 90     | 90     | ... | 91     | 93                              |
| 6    | 93     | 95     | 95     | ... | 94     | 98                              |
| 7    | 92     | 98     | 99     | ... | 95     | 100                             |
| 8    | 98     | 90     | 100    | ... | 99     | 94                              |
| 9    | 100    | 91     | 92     | ... | 93     | 96                              |
| 10   | 96     | 92     | 97     | ... | 94     | 100                             |
| 11   | 96     | 97     | 98     | ... | 94     | 94                              |
| 12   | 99     | 100    | 94     | ... | 98     | 95                              |
| 13   | 92     | 98     | 97     | ... | 96     | 99                              |
| 14   | 99     | 96     | 93     | ... | 97     | 93                              |
| 15   | 92     | 94     | 94     | ... | 90     | 98                              |
| 16   | 100    | 94     | 98     | ... | 93     | 97                              |
| 17   | 97     | 99     | 96     | ... | 96     | 94                              |
| 18   | 93     | 98     | 94     | ... | 94     | 99                              |
| 19   | 90     | 94     | 91     | ... | 97     | 92                              |
| 20   | 99     | 97     | 100    | ... | 93     | 94                              |



|    |                                       |     |     |     |    |     |       |
|----|---------------------------------------|-----|-----|-----|----|-----|-------|
| 21 | 99                                    | 94  | 90  | ... | 99 | 98  |       |
| 22 | 91                                    | 95  | 96  | ... | 93 | 91  |       |
| 23 | 95                                    | 100 | 93  | ... | 93 | 100 |       |
| 24 | 97                                    | 92  | 94  | ... | 94 | 90  |       |
| 25 | 98                                    | 92  | 93  | ... | 92 | 90  |       |
| 26 | 94                                    | 100 | 98  | ... | 92 | 98  |       |
| 27 | 100                                   | 99  | 95  | ... | 90 | 91  |       |
| 28 | 93                                    | 91  | 96  | ... | 94 | 92  |       |
| 29 | 93                                    | 96  | 98  | ... | 90 | 98  |       |
| 30 | 99                                    | 97  | 98  | ... | 93 | 93  |       |
| 31 | 98                                    | 98  | 100 | ... | 96 | 96  |       |
|    | Average House Keeping Compliance in % |     |     |     |    |     | 95.35 |

## Appendix IV: Maintenance of AC System

### *Maintenance Compliance*

$$= \frac{\text{No. of scheduled maintenance jobs done during the month as per annexure F}}{\text{No. of scheduled maintenance jobs during the month as per annexure F}}$$

#### **Note:**

1. Successful bidder shall complete maintenance jobs as per the schedule as mentioned in scope of work and Annexure F within the timeline.
2. Maintenance job schedule mentioned in the scope of work is based on previous history and OEM guidelines and will be revised time to time considering the overall health of the equipment and as decided by the employer / owner. All such changes to the maintenance schedule shall be binding to the successful bidder.
3. Any maintenance job scheduled which is not performed or where completion is delayed as compared to the planned schedule and non-conforming shall be treated as a default for the purpose of calculating the maintenance compliance index.
4. Maintenance activities scheduled but not completed during any calendar month shall automatically be carried forward to the maintenance activities scheduled in the subsequent month (subject to a revised schedule to be agreed with the employer / owner) and shall form part of the compliance requirement of the subsequent month. Employer / owner however, reserves the right to carry out such non-completed maintenance jobs by themselves or any other 3<sup>rd</sup> party entirely at the costs and risks of the successful bidder if decided by the employer / owner if such carry forward may be detrimental to the operation and safety of the plant.

### **Appendix V: Deduction due to rework frequency**

1. If even after the regular PM schedule and an unplanned breakdown, there are further reworks required for the same job in the plant, a deduction would be applicable on the successful bidder equal to 0.05% of the total contract amount.  
(For e.g. if the total contract amount is INR 1 Crores, a deduction of INR 5,000 per rework would be charged to the successful bidder)

**Appendix VI: Deduction due to lift availability**

1. Non-availability of each lift will be tracked and the deduction will be calculated basis number of days of non-availability of each lift equal to Rs. 2000/day.
2. Total 1 hour/day non-availability of any lift shall be exempted from LD for servicing and any emergency break down.

### Annexure E: Preventive maintenance schedule

**Boiler and auxiliaries:**

| S. No. | Equipment (Both units)   | Frequency   |
|--------|--------------------------|-------------|
| 1      | ID Fan - A               | Monthly     |
| 2      | ID Fan - B               | Monthly     |
| 3      | PA Fan - A               | Monthly     |
| 4      | PA Fan - B               | Monthly     |
| 5      | SA Fan - A               | Monthly     |
| 6      | SA Fan - B               | Monthly     |
| 7      | Ash Cooler Fan - A       | Monthly     |
| 8      | Ash Cooler Fan - B       | Monthly     |
| 9      | FA Fan - A               | Monthly     |
| 10     | FA Fan - B               | Monthly     |
| 11     | FA Fan - C               | Monthly     |
| 12     | Bed Ash Conveyor - A     | Weekly      |
| 13     | Bed Ash Conveyor - B     | Weekly      |
| 14     | Hot Water Pump - A       | Monthly     |
| 15     | Hot Water Pump - B       | Monthly     |
| 16     | Hot Water Pump - C       | Monthly     |
| 17     | Lignite Feeder - A       | Fortnightly |
| 18     | Lignite Feeder - B       | Fortnightly |
| 19     | Drag Link Conveyor - A   | Fortnightly |
| 20     | Drag Link Conveyor - B   | Fortnightly |
| 21     | Lignite RALF - AA        | Fortnightly |
| 22     | Lignite RALF - AB        | Fortnightly |
| 23     | Lignite RALF - BA        | Fortnightly |
| 24     | Lignite RALF - BB        | Fortnightly |
| 25     | CRM / GDRM gear box - A1 | Quarterly   |
| 26     | CRM / GDRM gear box - A2 | Quarterly   |
| 27     | CRM / GDRM gear box - A3 | Quarterly   |
| 28     | CRM / GDRM gear box - A4 | Quarterly   |
| 29     | CRM / GDRM gear box - A5 | Quarterly   |
| 30     | CRM / GDRM gear box - A6 | Quarterly   |
| 31     | CRM / GDRM gear box - A7 | Quarterly   |
| 32     | CRM / GDRM gear box - B1 | Quarterly   |
| 33     | CRM / GDRM gear box - B2 | Quarterly   |
| 34     | CRM / GDRM gear box - B3 | Quarterly   |



|    |  |           |
|----|--|-----------|
| 35 | CRM / GDRM gear box - B4                 | Quarterly |
| 36 | CRM / GDRM gear box - B5                 | Quarterly |
| 37 | CRM / GDRM gear box - B6                 | Quarterly |
| 38 | CRM / GDRM gear box - B7                 | Quarterly |
| 39 | ERM gear box - A1                        | Quarterly |
| 40 | ERM gear box - A2                        | Quarterly |
| 41 | ERM gear box - A3                        | Quarterly |
| 42 | ERM gear box - A4                        | Quarterly |
| 43 | ERM gear box - A5                        | Quarterly |
| 44 | ERM gear box - A6                        | Quarterly |
| 45 | ERM gear box - A7                        | Quarterly |
| 46 | ERM gear box - B1                        | Quarterly |
| 47 | ERM gear box - B2                        | Quarterly |
| 48 | ERM gear box - B3                        | Quarterly |
| 49 | ERM gear box - B4                        | Quarterly |
| 50 | ERM gear box - B5                        | Quarterly |
| 51 | ERM gear box - B6                        | Quarterly |
| 52 | ERM gear box - B7                        | Quarterly |
| 53 | Servicing of ESP Gates (Inlet / outlet). | Quarterly |
| 54 | HFO Transfer Pump - 1                    | Quarterly |
| 55 | HFO Transfer Pump - 2                    | Quarterly |
| 56 | HFO Transfer Pump - 3                    | Quarterly |
| 57 | LDO Transfer Pump - 1                    | Quarterly |
| 58 | LDO Transfer Pump - 2                    | Quarterly |
| 59 | HFO Unloading Pump - 1                   | Quarterly |
| 60 | HFO Unloading Pump - 2                   | Quarterly |
| 61 | HFO Unloading Pump - 3                   | Quarterly |
| 62 | LDO Unloading Pump - 1                   | Quarterly |
| 63 | LDO Unloading Pump - 2                   | Quarterly |
| 64 | Drain Oil Tank Pump - 1                  | Quarterly |
| 65 | Drain Oil Tank Pump - 2                  | Quarterly |
| 66 | Drain Oil Tank Pump - 3                  | Quarterly |
| 67 | HP Dosing Pump - A                       | Monthly   |
| 68 | HP Dosing Pump - B                       | Monthly   |
| 69 | LP Dosing Pump - A                       | Monthly   |
| 70 | LP Dosing Pump - B                       | Monthly   |
| 71 | Soot blower-second pass-111              | Quarterly |
| 72 | Soot blower-second pass-112              | Quarterly |



|    |                             |           |
|----|-----------------------------|-----------|
| 73 | Soot blower-second pass-113 | Quarterly |
| 74 | Soot blower-second pass-121 | Quarterly |
| 75 | Soot blower-second pass-122 | Quarterly |
| 76 | Soot blower-second pass-123 | Quarterly |
| 77 | Soot blower-second pass-131 | Quarterly |
| 78 | Soot blower-second pass-132 | Quarterly |
| 79 | Soot blower-second pass-133 | Quarterly |
| 80 | Soot blower-second pass-141 | Quarterly |
| 81 | Soot blower-second pass-142 | Quarterly |
| 82 | Soot blower-second pass-143 | Quarterly |
| 83 | Soot blower-second pass-151 | Quarterly |
| 84 | Soot blower-second pass-152 | Quarterly |
| 85 | Soot blower-second pass-153 | Quarterly |
| 86 | Soot blower-TAPH-211        | Quarterly |
| 87 | Soot blower-TAPH-212        | Quarterly |
| 88 | Soot blower-TAPH-213        | Quarterly |
| 89 | Soot blower-TAPH-221        | Quarterly |
| 90 | Soot blower-TAPH-222        | Quarterly |
| 91 | Soot blower-TAPH-223        | Quarterly |
| 92 | Soot blower-TAPH-231        | Quarterly |
| 93 | Soot blower-TAPH-232        | Quarterly |
| 94 | Soot blower-TAPH-233        | Quarterly |
| 95 | Boiler fill pump            | Quarterly |
| 96 | Ash rotary seal - A         | Quarterly |
| 97 | Ash rotary seal - B         | Quarterly |

**Turbine and auxiliaries:**

| S. No. | Description  | Units | Frequency   |
|--------|--|-------|-------------|
| 1      | Cleaning of HP/ LP bypass unit   | Both  | Weekly      |
| 2      | General cleaning of BFP, BP and hydraulic coupling area.                         | Both  | Fortnightly |
| 3      | Cleaning of tray and drain oil collector   | Both  | Fortnightly |
| 4      | Bowl cleaning  | Both  | Monthly     |
| 5      | Oil centrifuge of MOT  | Both  | Monthly     |
| 6      | General Cleaning of TG set, its stop & control valves with HP & LP bypass valves | Both  | Bi-monthly  |



|    |  |      |             |
|----|--|------|-------------|
| 7  | BFP - A<br>(including BP & Hydraulic coupling) | Both | Quarterly   |
| 8  | Working oil / lube oil cooler of BFP - A       | Both | Quarterly   |
| 9  | Hot well make-up pump - A                      | Both | Quarterly   |
| 10 | BFP - B<br>(including BP & Hydraulic coupling) | Both | Quarterly   |
| 11 | Working oil / lube oil cooler of BFP - B       | Both | Quarterly   |
| 12 | Hot well make-up pump - B                      | Both | Quarterly   |
| 13 | TG Building Cranes (70 T / 20 T)               | BoP  | Quarterly   |
| 14 | Diesel Engine - 1                              | BoP  | Quarterly   |
| 15 | Diesel Engine - 2                              | BoP  | Quarterly   |
| 16 | BFP - C<br>(including BP & Hydraulic coupling) | Both | Quarterly   |
| 17 | Working oil / lube oil cooler of BFP - C       | Both | Quarterly   |
| 18 | Hot well make-up pump - C                      | Both | Quarterly   |
| 19 | GSC exhaust fan - A                            | Both | Four months |
| 20 | SAC - A  | BoP  | Four months |
| 21 | SAC - E  | BoP  | Four months |
| 22 | IAC - D  | BoP  | Four months |
| 23 | ACW pump - A                                   | BoP  | Four months |
| 24 | GSC exhaust fan - B                            | Both | Four months |
| 25 | UDT condensate pump - A                        | BoP  | Four months |
| 26 | SAC - B  | BoP  | Four months |
| 27 | IAC - A  | BoP  | Four months |
| 28 | ACW pump - B                                   | BoP  | Four months |
| 30 | Ash water cooler pump - A                      | BoP  | Four months |
| 31 | SAC - C  | BoP  | Four months |
| 32 | IAC - B  | BoP  | Four months |
| 33 | ACW pump - C                                   | BoP  | Four months |
| 35 | CCW pump - A                                   | BoP  | Four months |
| 36 | Ash water cooler pump - B                      | BoP  | Four months |
| 37 | SAC - D  | BoP  | Four months |
| 38 | IAC - C  | BoP  | Four months |
| 39 | CCW pump - B                                   | BoP  | Four months |
| 40 | Ash water cooler pump - C                      | BoP  | Four months |
| 41 | SAC - A  | BoP  | Four months |
| 42 | SAC - E  | BoP  | Four months |
| 43 | IAC - D  | BoP  | Four months |



|    |  |      |             |
|----|--|------|-------------|
| 44 | CCW pump - C   | BoP  | Four months |
| 46 | UDT condensate pump - B  | BoP  | Four months |
| 45 | Clean and dirty oil transfer pump                                    | BoP  | Yearly      |
| 47 | CEP - A  | Both | Yearly      |
| 48 | Suction strainer of CEP - A  | Both | Yearly      |
| 49 | Cleaning of all the water box of condenser                           | Both | Yearly      |
| 50 | Cleaning of hot well   | Both | Yearly      |
| 51 | Inspection of AC/DC lube oil pump coupling-one no.                   | Both | Yearly      |
| 52 | CEP - B  | Both | Yearly      |
| 53 | Suction strainer of CEP - B  | Both | Yearly      |
| 54 | Cleaning of Deaerator  | Both | Yearly      |
| 55 | CEP - C  | Both | Yearly      |
| 56 | Suction strainer of CEP - C  | Both | Yearly      |
| 57 | Turbine last stage blade inspection                                  | Both | Yearly      |
| 58 | Hogging Ejector  | Both | Yearly      |
| 59 | Main Ejector - A, B  | Both | Yearly      |
| 60 | Generator cooler hydrotest   | Both | Yearly      |
| 61 | HP/ LP - Bypass system   | Both | Yearly      |
| 62 | Condenser fill test  | Both | Yearly      |
| 63 | Condenser spring inspection  | Both | Yearly      |
| 64 | Inspection of Hydraulic Oil Pump (control oil pump) coupling-one no. | Both | Yearly      |

**Balance of Plant:**

| S. No. | Description                     | Units | Frequency   |
|--------|---------------------------------|-------|-------------|
| 1      | Back wash recirculating pump #A | BoP   | Four Months |
| 2      | Back wash recirculating pump #B | BoP   | Four Months |
| 3      | Cooling tower fan & cell #1     | 1&2   | Four Months |
| 4      | Cooling tower fan & cell #2     | 1&2   | Four Months |
| 5      | Cooling tower fan & cell #3     | 1&2   | Four Months |
| 6      | Cooling tower fan & cell #4     | 1&2   | Four Months |
| 7      | Cooling tower fan & cell #5     | 1&2   | Four Months |
| 8      | Cooling tower fan & cell #6     | 1&2   | Four Months |
| 9      | Cooling tower fan & cell #7     | 1&2   | Four Months |
| 10     | Cooling tower fan & cell #8     | 1&2   | Four Months |
| 11     | Cooling tower fan & cell #9     | 1&2   | Four Months |



|    |  |     |             |
|----|--|-----|-------------|
| 12 | CW pump #A   | BoP | Four Months |
| 13 | CW pump #B   | BoP | Four Months |
| 14 | CW pump #C   | BoP | Four Months |
| 15 | CW pump #D   | BoP | Four Months |
| 16 | CW pump #E   | BoP | Four Months |
| 17 | Flash mixer Gear box                               | BoP | Four Months |
| 18 | Polyelectrolyte dosing pump #B                     | BoP | Four Months |
| 19 | Reject water pump #A                               | BoP | Four Months |
| 20 | Reject water pump #B                               | BoP | Four Months |
| 21 | Reject water pump #C                               | BoP | Four Months |
| 22 | Sea water intake pump #A                           | BoP | Four Months |
| 23 | Sea water intake pump #B                           | BoP | Four Months |
| 24 | Sea water intake pump #C                           | BoP | Four Months |
| 25 | Seal water pump for CW pump #A                     | BoP | Four Months |
| 26 | Seal water pump for CW pump #B                     | BoP | Four Months |
| 27 | Seal water pump for CW pump #C                     | BoP | Four Months |
| 28 | Dewatering Polyelectrolyte dosing pump #A          | BoP | Six Months  |
| 29 | Dewatering Polyelectrolyte dosing pump #B          | BoP | Six Months  |
| 30 | Gear box in Flocculators & Flocculator assembly #A | BoP | Six Months  |
| 31 | Gear box in Flocculators & Flocculator assembly #B | BoP | Six Months  |
| 32 | Gear box in Flocculators & Flocculator assembly #C | BoP | Six Months  |
| 33 | Gear box in Flocculators & Flocculator assembly #D | BoP | Six Months  |
| 34 | Gear box in Flocculators & Flocculator assembly #E | BoP | Six Months  |
| 35 | Gear box in Flocculators & Flocculator assembly #F | BoP | Six Months  |
| 36 | Gear box in Flocculators & Flocculator assembly #G | BoP | Six Months  |
| 37 | Gear box in Flocculators & Flocculator assembly #H | BoP | Six Months  |
| 38 | Acid cleaning pump #A                              | BoP | Six Months  |
| 39 | Acid cleaning pump #B                              | BoP | Six Months  |
| 40 | Acid dosing pump #A                                | BoP | Six Months  |
| 41 | Acid dosing pump #B                                | BoP | Six Months  |
| 42 | Acid unloading pump #A                             | BoP | Six Months  |
| 43 | Acid unloading pump #B                             | BoP | Six Months  |
| 44 | Air Compressor for musifire system                 | BoP | Six Months  |
| 45 | Alkali dosing pump #A                              | BoP | Six Months  |
| 46 | Alkali dosing pump #B                              | BoP | Six Months  |
| 47 | Alkali unloading pump #A                           | BoP | Six Months  |
| 48 | Alkali unloading pump #B                           | BoP | Six Months  |
| 49 | Alum dosing pump #A                                | BoP | Six Months  |



|    |                                |     |            |
|----|--------------------------------|-----|------------|
| 50 | Alum dosing pump #B            | BoP | Six Months |
| 51 | Anti-foaming dosing pump #A    | BoP | Six Months |
| 52 | Anti-foaming dosing pump #B    | BoP | Six Months |
| 53 | Anti-foaming dosing pump #C    | BoP | Six Months |
| 54 | Anti-foaming dosing pump #D    | BoP | Six Months |
| 55 | Anti-scalant dosing pump #A    | BoP | Six Months |
| 56 | Anti-scalant dosing pump #B    | BoP | Six Months |
| 57 | Anti-scalant dosing pump #C    | BoP | Six Months |
| 58 | Anti-scalant dosing pump #D    | BoP | Six Months |
| 59 | Brine pump #A                  | BoP | Six Months |
| 60 | Brine pump #B                  | BoP | Six Months |
| 61 | Brine pump #C                  | BoP | Six Months |
| 62 | Brine pump #D                  | BoP | Six Months |
| 63 | Centrifuge feed pump #A        | BoP | Six Months |
| 64 | Centrifuge feed pump #B        | BoP | Six Months |
| 65 | Centrifuge feed pump #C        | BoP | Six Months |
| 66 | Centrifuge feed pump #D        | BoP | Six Months |
| 67 | Colony potable water pump #A   | BoP | Six Months |
| 68 | Condensate pump #A             | BoP | Six Months |
| 69 | Condensate pump #B             | BoP | Six Months |
| 70 | Condensate pump #C             | BoP | Six Months |
| 71 | Condensate pump #D             | BoP | Six Months |
| 72 | CT make up pump #A             | BoP | Six Months |
| 73 | CT make up pump #B             | BoP | Six Months |
| 74 | CT make up pump #C             | BoP | Six Months |
| 75 | CW pump house Crane            | BoP | Six Months |
| 76 | Desal Feed pump #A             | BoP | Six Months |
| 77 | Desal Feed pump #B             | BoP | Six Months |
| 78 | Desal Feed pump #C             | BoP | Six Months |
| 79 | Diesel Engine (mulsifire pump) | BoP | Six Months |
| 80 | Distillate pump #A             | BoP | Six Months |
| 81 | Distillate pump #B             | BoP | Six Months |
| 82 | Distillate pump #C             | BoP | Six Months |
| 83 | Distillate pump #D             | BoP | Six Months |
| 84 | DM Water Supply pump #A        | BoP | Six Months |
| 85 | DM Water Supply pump #B        | BoP | Six Months |
| 86 | DM Water Supply pump #C        | BoP | Six Months |
| 87 | DM water transfer pump #A      | BoP | Six Months |



|     |  |     |            |
|-----|--|-----|------------|
| 88  | DM water transfer pump #B                      | BoP | Six Months |
| 89  | DM water transfer pump #C                      | BoP | Six Months |
| 90  | Effluent disposal (neutralizing sump) pump #A  | BoP | Six Months |
| 91  | Effluent disposal (neutralizing sump) pump #B  | BoP | Six Months |
| 92  | Electro Chlorination Feed Pump #A              | BoP | Six Months |
| 93  | Electro Chlorination Feed Pump #B              | BoP | Six Months |
| 94  | Electro Chlorination Feed Pump #C              | BoP | Six Months |
| 95  | Electro Chlorination Feed Pump #D              | BoP | Six Months |
| 96  | Filter back wash water pump #A                 | BoP | Six Months |
| 97  | Filter back wash water pump #B                 | BoP | Six Months |
| 98  | Filter back wash water pump #C                 | BoP | Six Months |
| 99  | Fire Water booster pump (MD) #A                | BoP | Six Months |
| 100 | Fire Water booster pump (MD) #B                | BoP | Six Months |
| 101 | Gravity Filter Backwash blower #B              | BoP | Six Months |
| 102 | Gravity Filter Backwash blower #A              | BoP | Six Months |
| 103 | Gravity Filter Backwash blower #C              | BoP | Six Months |
| 104 | Hydrant pump (engine driven)                   | BoP | Six Months |
| 105 | Hydrant pump (Motor Driven) #301               | BoP | Six Months |
| 106 | Hydrant pump (Motor Driven) #302               | BoP | Six Months |
| 107 | Hypochlorite dosing pump for drinking water #A | BoP | Six Months |
| 108 | Hypochlorite dosing pump for drinking water #B | BoP | Six Months |
| 109 | Hypochlorite dosing pump for sea water #A      | BoP | Six Months |
| 110 | Hypochlorite dosing pump for sea water #B      | BoP | Six Months |
| 111 | Intake pump house Crane                        | BoP | Six Months |
| 112 | jockey pump (MD) #101                          | BoP | Six Months |
| 113 | jockey pump (MD) #102                          | BoP | Six Months |
| 114 | M B blower #A                                  | BoP | Six Months |
| 115 | M B blower #B                                  | BoP | Six Months |
| 116 | Motive water pump #A                           | BoP | Six Months |
| 117 | Motive water pump #B                           | BoP | Six Months |
| 118 | Motive water pump #C                           | BoP | Six Months |
| 119 | Motive water pump #D                           | BoP | Six Months |
| 120 | Plant potable & service water pump #A          | BoP | Six Months |
| 121 | Plant potable & service water pump #B          | BoP | Six Months |
| 122 | Plant potable & service water pump #B          | BoP | Six Months |
| 123 | Polyelectrolyte dosing pump #A                 | BoP | Six Months |
| 124 | potable water conditioning pump #A             | BoP | Six Months |
| 125 | potable water conditioning pump #B             | BoP | Six Months |



|     |  |     |            |
|-----|--|-----|------------|
| 126 | Sea water intake screen backwash pump #A | BoP | Six Months |
| 127 | Sea water intake screen backwash pump #B | BoP | Six Months |
| 128 | Sludge Thickening mechanism #A           | BoP | Six Months |
| 129 | Sludge Thickening mechanism #B           | BoP | Six Months |
| 130 | Sludge Thickening mechanism #C           | BoP | Six Months |
| 131 | Sludge Thickening mechanism #D           | BoP | Six Months |
| 132 | Sodium Meta Bi-sulphite dosing pump #A   | BoP | Six Months |
| 133 | Sodium Meta Bi-sulphite dosing pump #B   | BoP | Six Months |
| 134 | Sodium Meta Bi-sulphite dosing pump #C   | BoP | Six Months |
| 135 | Sodium Meta Bi-sulphite dosing pump #D   | BoP | Six Months |
| 136 | Spray pump (Engine Driven)               | BoP | Six Months |
| 137 | Spray pump (MD) #201                     | BoP | Six Months |

### Electrical Maintenance

| Sr. | UNIT | KKS NUMBER  | Equipment                                    | Frequency   |
|-----|------|-------------|--|-------------|
| 1   |      |             | S/Y -48 V BANK ,350 AH PLCC                  | Bi-monthly  |
| 2   |      |             | S/Y -48 V BANK ,350 AH PLCC,charger          | Bi-monthly  |
| 3   |      |             | 24 V BATTERY BANK for DG set1 & 2 & FW pump  | Bi-monthly  |
| 4   |      |             | BATTERY BANK U#-1 ,220VDC,1300AH(170 cells)  | Bi-monthly  |
| 5   |      |             | BATTERY BANK -U#2 ,220VDC,1300AH(170 cells)  | Bi-monthly  |
| 6   |      |             | S/Y BATTERY BANK -1 ,220VDC,410AH (73 cells) | Bi-monthly  |
| 7   |      |             | S/Y BATTERY BANK -2 ,220VDC,410AH (73 cells) | Bi-monthly  |
| 8   | 2    | 2HTS21AN001 | Conveying compressor A limestone - 1&2       | Four months |
| 9   | 2    | 2HTS22AN001 | Conveying compressor B limestone - 1&2       | Four months |
| 10  |      |             | 220V CHARGER UNIT# 1,1300AH                  | Six months  |
| 11  |      |             | 220V CHARGER UNIT# 2,1300AH                  | Six months  |
| 12  |      | ACWP-A      | ACW - A, Motor, Butter fly v/v               | Six months  |
| 13  |      | ACWP-B      | ACW - B, Motor, Butter fly v/v               | Six months  |
| 14  |      | ACWP-C      | ACW - C, Motor, Butter fly v/v               | Six months  |
| 15  | 2    | 2HHQ10AN001 | Ash cooler fan 2A                            | Six months  |
| 16  | 2    | 2HHQ20AN001 | Ash cooler fan 2B                            | Six months  |
| 17  | 1    | 1HHQ20AN001 | Ash cooler fan 1B                            | Six months  |
| 18  | 1    | 1HHQ10AN001 | Ash cooler fan 1A                            | Six months  |
| 19  |      | 1PGA10AP001 | ASH COOLER PUMP MOTOR - A, WITH I/O VALVES   | Six months  |



|    |   |             |  |            |
|----|---|-------------|--|------------|
| 20 |   | 1PGA20AP001 | ASH COOLER PUMP MOTOR - B WITH I/O VALVES    | Six months |
| 21 |   | 1PGA02AP001 | ASH COOLER PUMP MOTOR -C WITH I/O VALVES     | Six months |
| 22 | 2 | 2HDA10AF001 | ASH DRAG LINK CONVEY 2A                      | Six months |
| 23 | 1 | 1HDA10AF001 | ASH DRAG LINK CONVEY 1A                      | Six months |
| 24 | 2 | 2HDA20AF001 | ASH DRAG LINK CONVEY 2B                      | Six months |
| 25 | 1 | 1HDA20AF001 | ASH DRAG LINK CONVEY 1B                      | Six months |
| 26 |   |             | BAY - 1 LINE-1,BMK-1                         | Six months |
| 27 |   |             | BAY - 2 GT-1, BMK-2                          | Six months |
| 28 |   |             | BAY - 3 LINE-2, BMK-3                        | Six months |
| 29 |   |             | BAY - 4 BUS COUPLER, BMK-4                   | Six months |
| 30 |   |             | BAY - 5 LINE-3, BMK-5                        | Six months |
| 31 |   |             | BAY - 6 GT-2, BMK-6                          | Six months |
| 32 |   | CCWP-C      | CCW - C, Motor                               | Six months |
| 33 |   | HCP-203A/B  | CONDENSATE PUMP - 1&2                        | Six months |
| 34 |   | HCP-203C/D  | CONDENSATE PUMP - 3&4                        | Six months |
| 35 | 2 | 2PGA02AP001 | Cooling water pump for ash cooler- A         | Six months |
| 36 | 2 | 2PGA10AP001 | Cooling water pump for ash cooler -C         | Six months |
| 37 | 2 | 2PGA03AP001 | Cooling water pump for ash cooler-B          | Six months |
| 38 |   | VTPC-103A/B | CT MAKE UP PUMP-1                            | Six months |
| 39 |   | VTPC-103A/B | CT MAKE UP PUMP-2                            | Six months |
| 40 |   | VTPC-103C   | CT MAKE UP PUMP-3                            | Six months |
| 41 |   | VTPC-105A   | DESAL FEED PUMP-1                            | Six months |
| 42 |   | VTPC-105B   | DESAL FEED PUMP-2                            | Six months |
| 43 |   | VTPC-105C   | DESAL FEED PUMP-3                            | Six months |
| 44 |   |             | DISTILLATE PUMP-1&2(HCP-202A&B)              | Six months |
| 45 |   |             | DISTILLATE PUMP-3&4(HCP-202C&D)              | Six months |
| 46 | 2 | 2EMA11AN001 | E1haust air fan bag filter bed material silo | Six months |
| 47 | 1 | 2EMA11AN001 | E1haust air fan bag filter bed material silo | Six months |
| 48 |   | VTPC-102A/B | FILTER BACK WASH PUMP-1&2                    | Six months |
| 49 |   | VTPC-102C   | FILTER BACK WASH PUMP-3                      | Six months |
| 50 | 2 | 2HCB10AT111 | FULLY RECT SB                                | Six months |
| 51 | 2 | 2HCB10AT112 | FULLY RECT SB                                | Six months |
| 52 | 2 | 2HCB10AT113 | FULLY RECT SB                                | Six months |
| 53 | 2 | 2HCB10AT121 | FULLY RECT SB                                | Six months |
| 54 | 2 | 2HCB10AT122 | FULLY RECT SB                                | Six months |
| 55 | 2 | 2HCB10AT123 | FULLY RECT SB                                | Six months |
| 56 | 1 | 1HCB10AT111 | FULLY RECT SB                                | Six months |
| 57 | 1 | 1HCB10AT112 | FULLY RECT SB                                | Six months |
| 58 | 1 | 1HCB10AT113 | FULLY RECT SB                                | Six months |
| 59 | 1 | 1HCB10AT121 | FULLY RECT SB                                | Six months |
| 60 | 1 | 1HCB10AT122 | FULLY RECT SB                                | Six months |



|     |   |             |                                      |            |
|-----|---|-------------|--------------------------------------|------------|
| 61  | 1 | 1HCB10AT123 | FULLY RECT SB                        | Six months |
| 62  | 2 | 2MAW30AN001 | Gland Condenser Blower - A           | Six months |
| 63  | 1 | 1MAW30AN001 | Gland Condenser Blower - A           | Six months |
| 64  | 2 | 2MAW30AN002 | Gland Condenser Blower - B           | Six months |
| 65  | 1 | 1MAW30AN001 | Gland Condenser Blower - B           | Six months |
| 66  | 1 | 1HTN52AN001 | HAG COMBUSTION AIR BLOWER            | Six months |
| 67  | 2 | 2HTN52AN001 | HAG COMBUSTION AIR BLOWER            | Six months |
| 68  | 2 | 2HTN51AN001 | HAG DILUTION AIR BLOWER              | Six months |
| 69  | 1 | 1HTN51AN001 | HAG DILUTION AIR BLOWER              | Six months |
| 70  | 2 | 2HCB10AT131 | HALF RECT SB                         | Six months |
| 71  | 2 | 2HCB10AT132 | HALF RECT SB                         | Six months |
| 72  | 2 | 2HCB10AT133 | HALF RECT SB                         | Six months |
| 73  | 2 | 2HCB10AT141 | HALF RECT SB                         | Six months |
| 74  | 2 | 2HCB10AT142 | HALF RECT SB                         | Six months |
| 75  | 2 | 2HCB10AT143 | HALF RECT SB                         | Six months |
| 76  | 1 | 1HCB10AT131 | HALF RECT SB                         | Six months |
| 77  | 1 | 1HCB10AT132 | HALF RECT SB                         | Six months |
| 78  | 1 | 1HCB10AT133 | HALF RECT SB                         | Six months |
| 79  | 1 | 1HCB10AT141 | HALF RECT SB                         | Six months |
| 80  | 1 | 1HCB10AT142 | HALF RECT SB                         | Six months |
| 81  | 1 | 1HCB10AT151 | HALF RECT SB                         | Six months |
| 82  | 1 | 1HCB10AT152 | HALF RECT SB                         | Six months |
| 83  | 1 | 1HCB10AT153 | <b>HALF RECT SB</b>                  | Six months |
| 84  | 2 | 2HJF10AP001 | HFO PUMP (Pressuring pump) UNIT-2    | Six months |
| 85  | 1 | 1HJF10AP001 | HFO PUMP (Pressuring pump) UNIT-1    | Six months |
| 86  | 1 | 1HJF20AP001 | HFO PUMP(pressuring pump) UNIT-1     | Six months |
| 87  | 2 | 2HJF20AP001 | HFO PUMP(pressuring pump) UNIT-2     | Six months |
| 88  | 1 | 1LDN45AP001 | HYD DOSING PUMP-1                    | Six months |
| 89  | 2 | 2LDN45AP002 | HYD DOSING PUMP-2                    | Six months |
| 90  |   | HP-301      | HYDRANT PUMP-1                       | Six months |
| 91  |   | HP-302      | HYDRANT PUMP-2                       | Six months |
| 92  |   | IAC-A       | INSTRUMENT AIR COMPRESSOR - A, Motor | Six months |
| 93  |   | IAC-B       | INSTRUMENT AIR COMPRESSOR - B, Motor | Six months |
| 94  |   | IAC-C       | INSTRUMENT AIR COMPRESSOR - C, Motor | Six months |
| 95  |   | IAC-D       | INSTRUMENT AIR COMPRESSOR - D, Motor | Six months |
| 96  |   | JP-101      | JOCKY PUMP-1                         | Six months |
| 97  |   | JP-102      | JOCKY PUMP-2                         | Six months |
| 98  | 2 | 2HTS06AN001 | Mill Air Recirculation Fan           | Six months |
| 99  | 1 | 1HTS06AN001 | Mill Air Recirculation Fan           | Six months |
| 100 | 2 | 2HTS08AN001 | Mill Bag Filter Fan                  | Six months |
| 101 | 1 | 1HTS08AN001 | Mill Bag Filter Fan                  | Six months |
| 102 | 1 | 1HTS21AN001 | MILL COMPRESSOR MOTOR - 1A           | Six months |



|     |   |             |   |            |
|-----|---|-------------|---|------------|
| 103 | 2 | 2HTS21AN001 | MILL COMPRESSOR MOTOR - 2A  | Six months |
| 104 | 2 | 2HTS22AN001 | MILL COMPRESSOR MOTOR - 2B  | Six months |
| 105 | 1 | 1HTS22AN001 | MILL COMPRESSOR MOTOR - 1B  | Six months |
| 106 | 2 | 2HTS02AU001 | MILL MAIN MOTOR - 2A  | Six months |
| 107 | 2 | 2HTS10AN002 | Positive Displacement Blower For Lime Day Bin                           | Six months |
| 108 | 1 | 1HTS10AN002 | Positive displacement blower for lime day bin                           | Six months |
| 109 | 2 | 2HTS21AP001 | Screw pump A limestone  | Six months |
| 110 | 1 | 1HTS21AP001 | Screw pump A limestone  | Six months |
| 111 |   | VTPC-101A   | SEA INTAKE PUMP-A   | Six months |
| 112 |   | VTPC-101B   | SEA INTAKE PUMP-B   | Six months |
| 113 |   | VTPC-101C   | SEA INTAKE PUMP-C   | Six months |
| 114 | 2 | 2HTS10AN001 | Silo feeding P.G. Conveyer Blower                                       | Six months |
| 115 | 1 | 1HTS10AN001 | Silo feeding P.G. Conveyer Blower                                       | Six months |
| 116 |   | SAC-A       | STATION AIR COMPRESSOR - A, Motor                                       | Six months |
| 117 |   | SAC-B       | STATION AIR COMPRESSOR - B, Motor                                       | Six months |
| 118 |   | SAC-C       | STATION AIR COMPRESSOR - C, Motor                                       | Six months |
| 119 |   | SAC-D       | STATION AIR COMPRESSOR - D, Motor                                       | Six months |
| 120 |   | SAC-E       | STATION AIR COMPRESSOR - E, Motor                                       | Six months |
| 121 |   | TWS-1       | TRAVELLING WATER SCREEN-1,2&3   | Six months |
| 122 |   |             | TUBE SETTLER CUM MECH. THICKNER-1&2(TST-101A&B)                         | Six months |
| 123 |   |             | UPS & BATTERY   | Six months |
| 124 |   |             | WASH WATER PUMP-1&2   | Six months |
| 125 |   | 0HJF31AP001 | HFO DRAIN OIL PUMP 1  | Yearly     |
| 126 |   | 0HJF31AP002 | HFO DRAIN OIL PUMP 2  | Yearly     |
| 127 |   |             | 220V STANDBY CHARGER 1300AH   | Yearly     |
| 128 |   |             | 48V S/YARD PLCC CHARGER 1   | Yearly     |
| 129 |   |             | 48V S/YARD PLCC CHARGER 2   | Yearly     |
| 130 |   |             | ACID CLEANING PUMP - 1&2 (HCP-503A&B)                                   | Yearly     |
| 131 |   | DOP-301A/B  | ACID DOSING PUMP-1&2  | Yearly     |
| 132 |   |             | AHU MOTOR-1   | Yearly     |
| 133 |   |             | AHU MOTOR-2   | Yearly     |
| 134 |   |             | AHU MOTOR-3   | Yearly     |
| 135 |   | DOP-302A/B  | ALKALI DOSING PUMP-1&2  | Yearly     |
| 136 |   | AGT-101A    | ALUM DOSING TANK AGITATOR-1&2 WITH PUMP-4                               | Yearly     |
| 137 |   |             | ANTI FOAM DOSING PUMP - 1&2 (DOP-202A&B)                                | Yearly     |
| 138 |   |             | ANTI FOAM DOSING PUMP - 3&4 (DOP-202C&D)                                | Yearly     |
| 139 |   | DOP-202A/B  | ANTI FOAM DOSING TANK AGITATOR -1&2                                     | Yearly     |
| 140 |   |             | ANTI SCALENT DOSING AGITATOR (AGT-201-A&B) PUMPS - (HCP-201-A, B, C&D.) | Yearly     |



|     |   |             |   |        |
|-----|---|-------------|---|--------|
| 141 |   |             | AU11ILIARY COOLING WATER PUMP -1&2&3      | Yearly |
| 142 | 2 | 2HTS02AU003 | AU11ILIARY MILL MOTOR                     | Yearly |
| 143 |   |             | AUX DB - TRANSFORMER-1 AT CW PUMP.        | Yearly |
| 144 | 1 | 1HTS02AU003 | AUXILIARY MILL MOTOR                      | Yearly |
| 145 |   | VTP-106A    | BACK WASH RECIRCULATION PUMP-1            | Yearly |
| 146 |   | VTP-106B    | BACK WASH RECIRCULATION PUMP-2            | Yearly |
| 147 | 2 | 2HTS08AF001 | Bag Filter Rotary Air Lock Motor          | Yearly |
| 148 | 2 | 2HTS08AF002 | Bag Filter Rotary Air Lock Motor          | Yearly |
| 149 | 1 | 1HTS08AF001 | Bag Filter Rotary Air Lock Motor          | Yearly |
| 150 | 1 | 1HTS08AF002 | Bag Filter Rotary Air Lock Motor          | Yearly |
| 151 |   |             | BATTERY CHARGER- VATECH PUMP HOUSE 220VDC | Yearly |
| 152 | 2 | 2LAB50AP001 | BOILER FILL PUMP                          | Yearly |
| 153 | 1 | 1LAB50AP001 | BOILER FILL PUMP                          | Yearly |
| 154 |   |             | BOOSTER PUMP - 1&2                        | Yearly |
| 155 |   | HCP-201A    | BRINE PUMP - 1&2 (HCP-201A&B)             | Yearly |
| 156 |   | HCP-201B    | BRINE PUMP - 3&4 (HCP-201C&D)             | Yearly |
| 157 |   | CCWP-A      | CCW - A, Motor,                           | Yearly |
| 158 |   | CCWP-B      | CCW - B, Motor                            | Yearly |
| 159 |   | SCP-101A    | CENTRIFUGE FEED PUMP-1 & 2                | Yearly |
| 160 |   | SCP-101C    | CENTRIFUGE FEED PUMP-3 & 4                | Yearly |
| 161 |   | CFG-101A/B  | CENTRIFUGE-1&2,                           | Yearly |
| 162 |   | CFG-101C/D  | CENTRIFUGE-3&4                            | Yearly |
| 163 | 2 | 2HTS05AF001 | CHAIN CONVEYER (LIME)                     | Yearly |
| 164 | 1 | 1HTS05AF001 | CHAIN CONVEYER (LIME)                     | Yearly |
| 165 |   |             | CHILLER,COMPRESSOR - 1&WATER CIRC.PUMP-1  | Yearly |
| 166 |   |             | CHILLER,COMPRESSOR - 2&WATER CIRC.PUMP-2  | Yearly |
| 167 |   |             | CHILLER,COMPRESSOR - 3&WATER CIRC.PUMP-3  | Yearly |
| 168 |   |             | CHILLER,COMPRESSOR - 4&WATER CIRC.PUMP-4  | Yearly |
| 169 |   | ABL-501A    | CHLORINE AIR BLOWER - 1                   | Yearly |
| 170 |   | ABL-501B    | CHLORINE AIR BLOWER - 2                   | Yearly |
| 171 |   |             | CONDENSATE TRANSFER PUMP-1                | Yearly |
| 172 |   |             | CONDENSATE TRANSFER PUMP-2                | Yearly |
| 173 | 1 |             | CT U#1 -- Fan no-1                        | Yearly |
| 174 | 1 |             | CT U#1 -- Fan no-2                        | Yearly |
| 175 | 1 |             | CT U#1 -- Fan no-3                        | Yearly |
| 176 | 1 |             | CT U#1 -- Fan no-4                        | Yearly |
| 177 | 1 |             | CT U#1 -- Fan no-5                        | Yearly |
| 178 | 1 |             | CT U#1 -- Fan no-6                        | Yearly |
| 179 | 1 |             | CT U#1 -- Fan no-7                        | Yearly |



|     |   |             |   |        |
|-----|---|-------------|---|--------|
| 180 | 1 |             | CT U#1 -- Fan no-8                            | Yearly |
| 181 | 1 |             | CT U#1 -Fan no-9                              | Yearly |
| 182 | 2 |             | CT U#2 -Fan no-1                              | Yearly |
| 183 | 2 |             | CT U#2 -Fan no-2                              | Yearly |
| 184 | 2 |             | CT U#2 -Fan no-3                              | Yearly |
| 185 | 2 |             | CT U#2 -Fan no-4                              | Yearly |
| 186 | 2 |             | CT U#2 -Fan no-5                              | Yearly |
| 187 | 2 |             | CT U#2 -Fan no-6                              | Yearly |
| 188 | 2 |             | CT U#2 -Fan no-7                              | Yearly |
| 189 | 2 |             | CT U#2 -Fan no-8                              | Yearly |
| 190 | 2 |             | CT U#2 -Fan no-9                              | Yearly |
| 191 | 1 | 1LBA01CG051 | CTRL-V STANDSTILL COOLING                     | Yearly |
| 192 | 2 | 2LBA01AA051 | CTRL-V STANDSTILL COOLING                     | Yearly |
| 193 |   |             | CW DEWATERING PUMP-1&2                        | Yearly |
| 194 | 2 | 2HTS04AF001 | CYCLONE ROTARY AIR LOCK-A                     | Yearly |
| 195 | 1 | 1HTS04AF001 | CYCLONE ROTARY AIR LOCK-A                     | Yearly |
| 196 | 1 | 1HTS04AF002 | CYCLONE ROTARY AIR LOCK-B                     | Yearly |
| 197 |   |             | DG-1 & 2 Charger                              | Yearly |
| 198 |   | HCP-301C    | DM WATER SUPPLY PUMP-3                        | Yearly |
| 199 |   | HCP-302A/B  | DM WATER TRANSFER PUMP-1&2                    | Yearly |
| 200 |   | HCP-302C    | DM WATER TRANSFER PUMP-3                      | Yearly |
| 201 |   | AGT-104A    | DWPE dosing agitator-1 & 2 with pump motor-4  | Yearly |
| 202 |   | DOP-103A    | DWPE DOSING PUMP-1(DOP-103A)                  | Yearly |
| 203 |   | DOP-103B    | DWPE DOSING PUMP-2(DOP-103B)                  | Yearly |
| 204 |   | DOP-103C    | DWPE DOSING PUMP-3(DOP-103C)                  | Yearly |
| 205 |   | DOP-103D    | DWPE DOSING PUMP-4(DOP-103D)                  | Yearly |
| 206 | 2 | 2HTS11AN001 | EIhaust air fan bag filter limestone day bin  | Yearly |
| 207 | 2 | 2HTS11AN001 | EIhaust air fan bag filter limestone day bin  | Yearly |
| 208 |   | VTP-104A    | ELECTROCHLORINATION FEED PUMP-1&2(VTP-104A&B) | Yearly |
| 209 |   | VTP-104B    | ELECTROCHLORINATION FEED PUMP-3&4(VTP-104C&D) | Yearly |
| 210 |   |             | ELECTROCHLORINATION PANEL-2                   | Yearly |
| 211 |   |             | ELECTROCHLORINATION PANEL-3                   | Yearly |
| 212 |   |             | EOT CRANE AT CW PUMP HOUSE                    | Yearly |
| 213 | 1 | 1HTS11AN001 | Exhaust air fan bag filter limestone day bin  | Yearly |
| 214 |   | ABL-101A    | FILTER AIR BLOWER-1&2                         | Yearly |
| 215 |   | FLR-101A    | FLOCULATOR- 1 TO 4                            | Yearly |
| 216 | 1 | 1HTN10AP001 | HAG oil pump motor                            | Yearly |
| 217 |   |             | HFO UNLOADING PUMP-A                          | Yearly |
| 218 |   |             | HFO UNLOADING PUMP-B                          | Yearly |
| 219 |   |             | HFO UNLOADING PUMP-C                          | Yearly |
| 220 | 1 |             | HOT WELL MAKE UP PUMP - 1C                    | Yearly |



|     |   |             |   |        |
|-----|---|-------------|---|--------|
| 221 | 2 |             | HOT WELL MAKE UP PUMP - 2B  | Yearly |
| 222 | 1 |             | Hot well makeup pump-1A   | Yearly |
| 223 | 1 |             | Hot well makeup pump-1B   | Yearly |
| 224 | 1 |             | Hot well makeup pump-1C   | Yearly |
| 225 | 2 |             | Hot well makeup pump-2A   | Yearly |
| 226 | 2 |             | Hot well makeup pump-2B   | Yearly |
| 227 | 2 |             | Hot well makeup pump-2C   | Yearly |
| 228 |   |             | HYDRANT & SPRAY DIESEL PUMP CHARGING PANEL & 24 V D.C BATTERY CHARGER.        | Yearly |
| 229 |   |             | HYDRANT DIESEL PUMP   | Yearly |
| 230 | 1 | 1LDN45AP001 | HYDRAZINE DOZING PUMP-A   | Yearly |
| 231 | 2 | 2LDN45AP001 | HYDRAZINE DOZING PUMP-A   | Yearly |
| 232 | 2 | 2LDN45AP002 | HYDRAZINE DOZING PUMP-B   | Yearly |
| 233 |   | DOP-501A    | HYPOCHLORITE DOSING PUMP FOR POTABLE WATER, SEA WATER, COOLING TOWER- EACH-2. | Yearly |
| 234 |   |             | INDOOR DCDB - 4 NOS   | Yearly |
| 235 |   |             | INDOOR ELDB - 3   | Yearly |
| 236 |   |             | INDOOR ELDB - 1&2   | Yearly |
| 237 |   |             | INDOOR NLDB - 1&2   | Yearly |
| 238 |   |             | INDOOR NLDB - 3&4   | Yearly |
| 239 |   |             | INDOOR NLDB - 5&6   | Yearly |
| 240 |   |             | INDOOR NLDB - 7&8   | Yearly |
| 241 |   |             | INDOOR NLDB - 9   | Yearly |
| 242 |   |             | LDO TRANSFER PUMP-A   | Yearly |
| 243 |   |             | LDO TRANSFER PUMP-B   | Yearly |
| 244 |   |             | LDO UNLOADING PUMP-A  | Yearly |
| 245 |   |             | LDO UNLOADING PUMP-B  | Yearly |
| 246 |   | AGT-102A    | LIME DOSING TANK AGITATOR-1&2   | Yearly |
| 247 | 2 | 2HTV01AP001 | LIME Mill DE & NDE bearing lube oil pump-1&2 (4 NOS)                          | Yearly |
| 248 | 1 | 1HTV01AP001 | LIME Mill DE & NDE bearing lube oil pump-1&2 (4 NOS)                          | Yearly |
| 249 |   | ABL-301A/B  | MILLED BED BLOWER -1&2  | Yearly |
| 250 | 2 | 2HTV03AP001 | Mill bearing oil pre jacking pump   | Yearly |
| 251 | 1 | 1HTV03AP001 | Mill bearing oil pre jacking pump   | Yearly |
| 252 | 2 | 2HTV04AP001 | Mill Gear bo1 lube oil pump 1 & 2   | Yearly |
| 253 | 1 | 1HTV04AP001 | Mill Gear bo1 lube oil pump 1 & 2   | Yearly |
| 254 |   |             | MLDB TRANSFORMER AT VATECH PLANT  | Yearly |
| 255 |   |             | OUTDOOR NLDB - 1&2  | Yearly |
| 256 |   |             | OUTDOOR NLDB - 3&4  | Yearly |
| 257 |   |             | PDB TRANSFORMER AT VATECH PLANT   | Yearly |
| 258 |   | DOP-102A    | PE DOSING PUMP-1&2  | Yearly |



|     |   |             |  |        |
|-----|---|-------------|--|--------|
| 259 | 1 | 1LDN35AP001 | PH DOSING PUMP                           | Yearly |
| 260 | 2 | 2LDN35AP001 | PH DOSING PUMP                           | Yearly |
| 261 | 2 | 2LDN35AP002 | PH DOSING PUMP                           | Yearly |
| 262 | 1 | 1LDN35AP001 | PH DOSING PUMP-1                         | Yearly |
| 263 | 2 | 2LDN35AP002 | PH DOSING PUMP-2                         | Yearly |
| 264 | 1 | 1LDN35AP002 | PH DOSING PUMP-2                         | Yearly |
| 265 | 1 | 1LDN10AM001 | PH DOSING TANK AGITATOR                  | Yearly |
| 266 | 1 | 1LDN11AM001 | PH DOSING TANK AGITATOR                  | Yearly |
| 267 | 2 | 2LDN11AM001 | PH DOSING TANK AGITATOR                  | Yearly |
| 268 | 2 | 2LDN10AM001 | PH DOSING TANK AGITATOR                  | Yearly |
| 269 | 2 | 2LDN10AM001 | PH DOSING TANK AGITATOR-1                | Yearly |
| 270 | 1 | 1LDN10AM001 | PH DOSING TANK AGITATOR-1                | Yearly |
| 271 | 2 | 2LDN11AM001 | PH DOSING TANK AGITATOR-2                | Yearly |
| 272 | 1 | 1LDN11AM001 | PH DOSING TANK AGITATOR-2                | Yearly |
| 273 | 2 | 2LDN35AP001 | PH DOZING PUMP-A                         | Yearly |
| 274 | 2 | 2LDN35AP002 | PH DOZING PUMP-B                         | Yearly |
| 275 | 1 | 1LDN35AP002 | PH DOZING PUMP-B                         | Yearly |
| 276 |   |             | PORTABLE WATER CONDITONING PUMP -<br>1&2 | Yearly |
| 277 |   |             | REJECT WATER PUMP-1                      | Yearly |
| 278 |   |             | REJECT WATER PUMP-2                      | Yearly |
| 279 |   |             | REJECT WATER PUMP-3                      | Yearly |
| 280 |   |             | RO Plant HT Motor-1 and its breaker      | Yearly |
| 281 |   |             | RO Plant HT Motor-2                      | Yearly |
| 282 |   |             | RO Plant LT Motor-1 motor and feeder.    | Yearly |
| 283 |   |             | RO Plant LT Motor-10 motor and feeder.   | Yearly |
| 284 |   |             | RO Plant LT Motor-11 motor and feeder.   | Yearly |
| 285 |   |             | RO Plant LT Motor-12 motor and feeder.   | Yearly |
| 286 |   |             | RO Plant LT Motor-13 motor and feeder.   | Yearly |
| 287 |   |             | RO Plant LT Motor-14 motor and feeder.   | Yearly |
| 288 |   |             | RO Plant LT Motor-15 motor and feeder.   | Yearly |
| 289 |   |             | RO Plant LT Motor-16 motor and feeder.   | Yearly |
| 290 |   |             | RO Plant LT Motor-17 motor and feeder.   | Yearly |
| 291 |   |             | RO Plant LT Motor-18 motor and feeder.   | Yearly |
| 292 |   |             | RO Plant LT Motor-19 motor and feeder.   | Yearly |
| 293 |   |             | RO Plant LT Motor-2 motor and feeder.    | Yearly |
| 294 |   |             | RO Plant LT Motor-20 motor and feeder.   | Yearly |
| 295 |   |             | RO Plant LT Motor-21 motor and feeder.   | Yearly |
| 296 |   |             | RO Plant LT Motor-22 motor and feeder.   | Yearly |
| 297 |   |             | RO Plant LT Motor-23 motor and feeder.   | Yearly |
| 298 |   |             | RO Plant LT Motor-24 motor and feeder.   | Yearly |
| 299 |   |             | RO Plant LT Motor-25 motor and feeder.   | Yearly |



|     |   |             |  |        |
|-----|---|-------------|--|--------|
| 300 |   |             | RO Plant LT Motor-26 motor and feeder. | Yearly |
| 301 |   |             | RO Plant LT Motor-27 motor and feeder. | Yearly |
| 302 |   |             | RO Plant LT Motor-28 motor and feeder. | Yearly |
| 303 |   |             | RO Plant LT Motor-29 motor and feeder. | Yearly |
| 304 |   |             | RO Plant LT Motor-3 motor and feeder.  | Yearly |
| 305 |   |             | RO Plant LT Motor-30 motor and feeder. | Yearly |
| 306 |   |             | RO Plant LT Motor-31 motor and feeder. | Yearly |
| 307 |   |             | RO Plant LT Motor-32 motor and feeder. | Yearly |
| 308 |   |             | RO Plant LT Motor-33 motor and feeder. | Yearly |
| 309 |   |             | RO Plant LT Motor-34 motor and feeder. | Yearly |
| 310 |   |             | RO Plant LT Motor-35 motor and feeder. | Yearly |
| 311 |   |             | RO Plant LT Motor-36 motor and feeder. | Yearly |
| 312 |   |             | RO Plant LT Motor-37 motor and feeder. | Yearly |
| 313 |   |             | RO Plant LT Motor-38 motor and feeder. | Yearly |
| 314 |   |             | RO Plant LT Motor-39 motor and feeder. | Yearly |
| 315 |   |             | RO Plant LT Motor-4 motor and feeder.  | Yearly |
| 316 |   |             | RO Plant LT Motor-40 motor and feeder. | Yearly |
| 317 |   |             | RO Plant LT Motor-41 motor and feeder. | Yearly |
| 318 |   |             | RO Plant LT Motor-42 motor and feeder. | Yearly |
| 319 |   |             | RO Plant LT Motor-43 motor and feeder. | Yearly |
| 320 |   |             | RO Plant LT Motor-44 motor and feeder. | Yearly |
| 321 |   |             | RO Plant LT Motor-45 motor and feeder. | Yearly |
| 322 |   |             | RO Plant LT Motor-46 motor and feeder. | Yearly |
| 323 |   |             | RO Plant LT Motor-47 motor and feeder. | Yearly |
| 324 |   |             | RO Plant LT Motor-48 motor and feeder. | Yearly |
| 325 |   |             | RO Plant LT Motor-5 motor and feeder.  | Yearly |
| 326 |   |             | RO Plant LT Motor-6 motor and feeder.  | Yearly |
| 327 |   |             | RO Plant LT Motor-7 motor and feeder.  | Yearly |
| 328 |   |             | RO Plant LT Motor-8 motor and feeder.  | Yearly |
| 329 |   |             | RO Plant LT Motor-9 motor and feeder.  | Yearly |
| 330 | 2 | 2HCB20AT231 | ROTARY SB                              | Yearly |
| 331 | 2 | 2HCB20AT232 | ROTARY SB                              | Yearly |
| 332 | 2 | 2HCB20AT233 | ROTARY SB                              | Yearly |
| 333 | 1 | 1HCB20AT211 | ROTARY SB                              | Yearly |
| 334 | 1 | 1HCB20AT212 | ROTARY SB                              | Yearly |
| 335 | 1 | 1HCB20AT213 | ROTARY SB                              | Yearly |
| 336 | 1 | 1HCB20AT221 | ROTARY SB                              | Yearly |
| 337 | 1 | 1HCB20AT222 | ROTARY SB                              | Yearly |
| 338 | 1 | 1HCB20AT223 | ROTARY SB                              | Yearly |
| 339 | 1 | 1HCB20AT231 | ROTARY SB                              | Yearly |
| 340 | 1 | 1HCB20AT232 | ROTARY SB                              | Yearly |
| 341 | 1 | 1HCB20AT233 | ROTARY SB                              | Yearly |



|     |   |                     |  |        |
|-----|---|---------------------|--|--------|
| 342 | 2 | 2HCB20AT211         | ROTARY SB  | Yearly |
| 343 | 2 | 2HCB20AT212         | ROTARY SB  | Yearly |
| 344 | 2 | 2HCB20AT213         | ROTARY SB  | Yearly |
| 345 | 2 | 2HCB20AT221         | ROTARY SB  | Yearly |
| 346 | 2 | 2HCB20AT222         | ROTARY SB  | Yearly |
| 347 | 2 | 2HCB20AT223         | ROTARY SB  | Yearly |
| 348 |   | AGT-203A            | S B S TANK AGITATOR -1&2 WITH PUMP(DOP-203A,B,C&D) | Yearly |
| 349 |   |                     | S/Y 220V CHARGER UNIT# 1,410AH                     | Yearly |
| 350 |   |                     | S/Y 220V CHARGER UNIT# 2,410AH                     | Yearly |
| 351 |   |                     | S/Y BATTERY BANK                                   | Yearly |
| 352 |   |                     | SEAL WATER TANK MAKE UP PUMP                       | Yearly |
| 353 |   |                     | SPRAY DIESEL PUMP                                  | Yearly |
| 354 |   | SP-201              | SPRAY PUMP   | Yearly |
| 355 |   | S/y Dewatering Pump | Switchyard Dewatering Pump                         | Yearly |
| 356 |   | 0LCM65AP001         | UNIT DRAIN PUMP-A                                  | Yearly |
| 357 |   | 0LCM75AP001         | UNIT DRAIN PUMP-B                                  | Yearly |
| 358 |   |                     | Unit-1 Battery Bank-1300 AH,220 V DC               | Yearly |
| 359 |   |                     | Unit-2 Battery Bank-1300 AH,220 V DC               | Yearly |

**Controls and Instrumentation:**

| S. No. | Equipment Name   | Frequency |
|--------|--|-----------|
| 1      | ID Fan Instruments-Unit1, Ash Cooler Fan Instruments-Unit1, Deaerator Instruments-Unit1, SWTP Control Panel  | Monthly   |
| 2      | ID Fan Instruments-Unit2, Ash Cooler Fan Instruments-Unit2, Deaerator Instruments-Unit2  | Monthly   |
| 3      | Burner / Igniter instruments-Unit1, HP bypass system, OSU instruments-Unit1, Uninterrupted Power Supply System-Unit1   | Monthly   |
| 4      | Burner / Igniter instruments-Unit2, HP bypass system, OSU instruments-Unit2, Uninterrupted Power Supply System-Unit2, Instrument/ Service Air Compressor instruments | Monthly   |
| 5      | C. Cooling water Pumps instruments-Unit1, Aux PRDS Instruments/ Valves Unit1, Servers and Operator Work Station-Unit1  | Monthly   |
| 6      | C. Cooling water Pumps instruments-Unit2, Aux PRDS Instruments/ Valves Unit2, Servers and Operator Work Station-Unit2  | Monthly   |
| 7      | FA Fan Instruments-Unit1, Gravimetric feeder A Instruments-Unit1, LP Bypass system, OSU instruments-Unit1, Aux Boiler instruments                                    | Monthly   |



|    |   |         |
|----|---|---------|
| 8  | FA Fan Instruments-Unit2, Gravimetric feeder A Instruments-Unit2, LP Bypass system , OSU instruments-Unit2,   | Monthly |
| 9  | Fuel oil Instruments-Unit1, Drum Level Instruments-Unit1, Auxiliary cooling Water Pumps inst-Unit1, CW Pump Control Panel instruments                         | Monthly |
| 10 | Fuel oil Instruments-Unit2, Drum Level Instruments-Unit2, Auxiliary cooling Water Pumps inst-Unit2  | Monthly |
| 11 | Bed Material feeding system instruments-Unit1, Control Room DCS System panels -Unit1, Fire Hydrant Pump Instruments   | Monthly |
| 12 | Bed Material feeding system instruments-Unit2, Control Room DCS System panels -Unit2  | Monthly |
| 13 | PA Fan Instruments-Unit1, Gravimetric feeder B Instruments-Unit1, BFP Instruments-Unit1, CW Pump instruments  | Monthly |
| 14 | PA Fan Instruments-Unit2, Gravimetric feeder B Instruments-Unit2, BFP Instruments-Unit2   | Monthly |
| 15 | Hotwell Instruments-Unit1, HP Heater Instruments/Valves-Unit1, Superheater Valves-Unit1, Reject Water System Instruments-Unit1                                | Monthly |
| 16 | Hotwell Instruments-Unit2, HP Heater Instruments/Valves-Unit2, Superheater Valves-Unit2   | Monthly |
| 17 | Steam Extraction system valves-Unit1, Soot Blower Instruments-Unit1, Condenser End Control Panel Instruments  | Monthly |
| 18 | Steam Extraction system valves-Unit2, Soot Blower Instruments-Unit2   | Monthly |
| 19 | SA Fan Instruments-Unit1, Oxygen Analyser-Unit1, CEP Instruments-Unit1, Desalination System MED 1, 2 inst -Unit1  | Monthly |
| 20 | SA Fan Instruments-Unit2, Oxygen Analyser-Unit2, CEP Instruments-Unit2  | Monthly |
| 21 | Ash cooling water pumps instruments-Unit1, LP Heater Instruments/Valves-Unit1, Reheater Valves-Unit1, Intake Water pump / Travelling water Screen instruments | Monthly |
| 22 | Ash cooling water pumps instruments-Unit2, LP Heater Instruments/Valves-Unit2, Reheater Valves-Unit2  | Monthly |
| 23 | CST Tank instruments-Unit1, Lime System Instruments-Unit1, Air Conditioning System Instruments  | Monthly |
| 24 | CST Tank instruments-Unit2, Lime System Instruments-Unit2   | Monthly |

Additionally, **yearly one time calibration** of the following instruments would be required to be done by the successful bidder as instructed by GMDC EIC. This would be considered as a **part of the PM schedule of that particular month for monthly invoice.**

| S. No. | Description of material  | UOM  | Quantity |
|--------|--|------|----------|
| 1.     | Weigh balance Make: - Mettler Toledo & Shimadzu, Mettler Toledo: - 0 to 6.1 kg Shimadzu: - 0.0 to 220 gm, Accuracy: <0.05 %. | Nos. | 2        |
| 2.     | Flash point analyzer HPF-360, 30 to 300 degree, Accuracy < 2.0 degree diff.  | Nos. | 1        |
| 3.     | Furnace Make: - Ambassador, 0 to 1100 degree, Accuracy< 5.0 degree diff.   | Nos. | 1        |
| 4.     | Ovan Make: - Pro- Tech, 0 to 200 degree, Accuracy< 2.0 degree diff.  | Nos. | 1        |
| 5.     | ELECTRICAL LOOP CALIBRATOR, TCS 4050M, Sr. no. 16253884  | Nos. | 1        |
| 6.     | ELECTRICAL LOOP CALIBRATOR, TCS 4050M, Sr. no. 16274230  | Nos. | 1        |
| 7.     | PRESSURE LOOP CALIBRATOR, DPI 802.Sr no.8020011216   | Nos. | 1        |
| 8.     | HANDHELD PRESSURE CALIBRATOR, DPI 705, Sr no. 70548002   | Nos. | 1        |
| 9.     | HANDHELD PRESSURE CALIBRATOR, DPI 610, Sr no.61056483  | Nos. | 1        |
| 10.    | MASTER GAUGE (0 TO 40 KG/CM2)  | Nos. | 1        |
| 11.    | MASTER GAUGE (0 TO 250 KG/CM2)   | Nos. | 1        |
| 12.    | MASTER GAUGE (-1 TO 0 KG/CM2)  | Nos. | 1        |
| 13.    | Pressure calibrator (0 to 40 BAR), MPCE40, Sr no. MPCE08060210A12  | Nos. | 1        |
| 14.    | TEMPERATURE CALIBRATOR- MP 650, Sr no. MP-08080385 A4  | Nos. | 1        |
| 15.    | TEMPERATURE CALIBRATOR- MP- 40 R, Sr. no MP-08080394 B3  | Nos. | 1        |
| 16.    | Dead weight tester, H6000-DP-350-2, Sr no.1380   | Nos. | 1        |
| 17.    | TEMPERATURE BATH DBC 650 TS, Sr no.30484   | Nos. | 1        |
| 18.    | TRX - II, Sr no.9068   | Nos. | 1        |



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|     |                                    |      |   |
|-----|------------------------------------|------|---|
| 19. | DPI - 104, Sr. no.2940085          | Nos. | 1 |
| 20. | pH Meter, Make: - Systronic        | Nos. | 1 |
| 21. | Conductivity Meter, Make: - LABMAN | Nos. | 1 |

**Note:**

1. Successful bidder has to intimate to Engineer In-Charge of GMDC the details of work to be performed during preventive maintenance prior to undertaking the equipment for maintenance.
2. All the above works shown are indicative. If any additional work required to operate the plant efficiently, the same is required to be carried out by the successful bidder.
3. Apart from the above list, for any LT equipment, PM periodicity shall be of every three months and for any HT equipment, PM periodicity shall be every six months.

### Annexure F: Maintenance schedule for AC System

| Sr. No. | Area                   | Description  | Frequency   |
|---------|------------------------|--|-------------|
| 1       | AHS Pkg Ac             | PM of Package AC (AHS Control Room)  | Monthly     |
| 2       | AHU                    | Cleaning of Discharge air filter of common duct of AHU of Main Control Room.(24Nos.)     | Quarterly   |
| 3       | AHU#1                  | Cleaning of suction air filter of air handling unit of Main Control Room. (15 Nos. each) | Monthly     |
| 4       | AHU#1                  | Fresh air filter cleaning of AHU.  | Monthly     |
| 5       | AHU#1                  | PM of air handling units (Control room)  | Quarterly   |
| 6       | AHU#2                  | Cleaning of suction air filter of air handling unit of Main Control Room. (15 Nos. each) | Monthly     |
| 7       | AHU#2                  | Fresh air filter cleaning of AHU.  | Monthly     |
| 8       | AHU#2                  | PM of air handling units (Control room)  | Quarterly   |
| 9       | AHU#3                  | Cleaning of suction air filter of air handling unit of Main Control Room. (15 Nos. each) | Monthly     |
| 10      | AHU#3                  | Fresh air filter cleaning of AHU.  | Monthly     |
| 11      | AHU#3                  | PM of air handling units (Control room)  | Quarterly   |
| 12      | CCW Split Ac           | PM of AC.  | Monthly     |
| 13      | Chiller Compressor#1   | Gas leak test in AC compressor   | Monthly     |
| 14      | Chiller Compressor#1   | PM of AC Compressor.   | Four Months |
| 15      | Chiller Compressor#2   | Gas leak test in AC compressor   | Monthly     |
| 16      | Chiller Compressor#2   | PM of AC Compressor.   | Four Months |
| 17      | Chiller Compressor#3   | Gas leak test in AC compressor   | Monthly     |
| 18      | Chiller Compressor#3   | PM of AC Compressor.   | Four Months |
| 19      | Chiller Compressor#4   | Gas leak test in AC compressor   | Monthly     |
| 20      | Chiller Compressor#4   | PM of AC Compressor.   | Four Months |
| 21      | Chiller Pump#1         | PM of Chilled water pump.  | Four Months |
| 22      | Chiller Pump#2         | PM of Chilled water pump.  | Four Months |
| 23      | Chiller Pump#3         | PM of Chilled water pump.  | Four Months |
| 24      | Chiller Pump#4         | PM of Chilled water pump.  | Four Months |
| 25      | Condenser Water Pump#1 | PM of Condenser water pump.  | Six Months  |
| 26      | Condenser Water Pump#2 | PM of Condenser water pump.  | Six Months  |
| 27      | Control Room           | PM of AC.  | Monthly     |
| 28      | CWP Ac                 | PM of AC.  | Monthly     |
| 29      | ECR Panel Room         | PM of AC   | Monthly     |
| 30      | ECR Panel Room         | PM of AC   | Monthly     |
| 31      | ESP Pkg Ac             | PM of Package AC unit (ESP of Unit 1 & Unit2)  | Monthly     |
| 32      | Excitation Pkg Ac      | PM of Package AC unit<br>(Excitation control rooms of Unit 1& Unit 2)                    | Monthly     |
| 33      | HR Office              | PM of AC.  | Monthly     |
| 34      | Lime Pkg Ac            | PM of Package AC (lime control room )  | Monthly     |



|    |                       |  |            |
|----|-----------------------|--|------------|
| 35 | Main Store            | PM of AC.  | Monthly    |
| 36 | Main Store (office)   | PM of AC.  | Monthly    |
| 37 | MHP PKg Ac            | PM of Package AC (MHP Control Room)  | Monthly    |
| 38 | MMD Office            | PM of Ac.  | Monthly    |
| 39 | Stacker Rec- Cabin Ac | PM of AC.  | Weekly     |
| 40 | Stacker Rec- MCC Ac   | PM of AC.  | Weekly     |
| 41 | Switch yard Ac        | PM of AC.  | Monthly    |
| 42 | SWTP Pkg Ac           | PM of Package AC unit (Sea water treatment plant)  | Monthly    |
| 43 | SWTP-AHU              | Cleaning of suction air filter of air handling unit of Main Control Room. (15 Nos. each) | Bi-monthly |
| 44 | SWTP-AHU              | PM of air handling units (Vatech Control room)   | Bi-monthly |
| 45 | SWTP-Lab              | PM of AC.  | Monthly    |
| 46 | SWTP-Office           | PM of AC.  | Monthly    |
| 47 | VIP Guest House       | PM of AC.  | Monthly    |

**Note:**

1. Successful bidder has to intimate to Engineer In-Charge of GMDC the details of work to be performed during preventive maintenance prior to undertaking the equipment for maintenance.
2. All the above works shown are indicative. If any additional work required to operate the plant efficiently, the same is required to be carried out by the successful bidder.

### Annexure G: Major equipment details

#### Boiler Equipment List

| S. NO | AREA   | SYSTEM | EQUIPMENT | TOTAL QTY (NOS) | SPECIFICATION (TYPE, CAPACITY, MODEL, MAKE)  |
|-------|--------|--------|-----------|-----------------|--|
| 1     | BOILER | FANS   | ID FAN    | 4               | TYPE: BACKWARD CURVED LAMINAR, SIZE & MODEL: 2990MM DIBCB-42, TIP SPEED M/S: 111.15, SHAFT POWER: 718KW, FAN RPM: 710, SHAFT DIA AT BEARING: 190.5MM, .DIA AT IMPELLER: 405MM, MATERIAL: EN 8, BEARING TYPE: JOURNAL SIZE: 190.5", MAKE: ANDREW YULE & CO. LIMITED |
| 2     |        |        | PA FAN    | 4               | TYPE: BACKWARD CURVED AEROFOIL, SIZE & MODEL: 2350MM DIBAB-11, TIP SPEED M/S: 183.33, SHAFT POWER: 1040KW, FAN RPM: 1490, SHAFT DIA AT BEARING: 125MM, .DIA AT IMPELLER: 315MM, MATERIAL: EN 8, BEARING TYPE: JOURNAL 5", MAKE: ANDREW YULE & CO. LIMITED          |
| 3     |        |        | SA FAN    | 4               | TYPE: BACKWARD CURVED AEROFOIL, SIZE & MODEL: 2030MM DIBAB-11, TIP SPEED M/S: 158.37, SHAFT POWER: 742KW, FAN RPM: 1490, SHAFT DIA AT BEARING: 101.6MM, .DIA AT IMPELLER: 290MM, MATERIAL: EN 8, BEARING TYPE: JOURNAL SIZE: 4", MAKE: ANDREW YULE & CO. LIMITED   |
| 4     |        |        | FA FAN    | 6               | FAB NO. 0202962, DP: 590 MBAR, MODEL NO. K -145- R-LP, CAPACITY: 100 M3/MIN, POWER: 129.1 KW, RPM: 1360, MAKE: RKR VERDICHTTECHNIK GMBH.   |
| 5     |        |        |           |                 |  |



|    |                  |                                      |                        |  |  |
|----|------------------|--------------------------------------|------------------------|--|--|
|    |                  |                                      | ASH COOLER FAN         | 4  | TPPE: BACKWARD CURVED LAMINAR, SIZE AND MODEL:1270MM SIPSC-05, TIP SPEED M/S:198.16, SHAFT POWER 120KW, FAN RPM:2980, BEARING TYPE:BALL/ROLLER, SIZE OF BEARING :70/80MM, FAN NO.01021, MAKE:ANDREW YULE & CO. LIMITED |
| 6  |                  | <b>BED ASH DRAINING</b>              | ASH DRAGLINK CONVEYOR  | 2  | TYPE: R-01, MANUFACTURE YEAR:2002, SR NO.01/00188-0201, MAKE:SMD FORDERTECHNIK GMBH  |
| 7  | ASH ROTARY SEAL  |                                      | 04                     | ASH ROTARY SEAL  |  |
| 8  | HOT WATER PUMP   |                                      | 6                      | DISCHARGE:205 M3/H, N-2800RPM, MAKE: KSB   |  |
| 9  | ASH DRAGLINK     |                                      | 2                      | TYPE: R-01, MANUFACTURE YEAR:2002, SR NO.01/00188-0201, MAKE: SMD FORDERTECHNIK GMBH |  |
| 10 | <b>FILL PUMP</b> |                                      | BOILER FILL PUMP       | 2  | FLOW: 100 M3/HR, PRESSURE: 15 KG/CM2 MAKE: SULZER  |
| 11 |                  | <b>LIGNITE FEEDING SYSTEM</b>        | GR. FEEDER             | 4  | MODEL NO. LPG30, FEEDER CAPACITY:127TPH(MAX) &12.7 TPH(MIN), BELT DRIVE MOTOR:14.9 KW (20HP), MAKE:STOCK EQUIPMENTCOMPANY.   |
| 12 |                  |                                      | LIGNITE DRAGLINK       | 4  | MAKE: IEM  |
| 13 |                  |                                      | ROTARY AIR LOCK FEEDER | 8  | MAKE: IEM  |
| 14 |                  | <b>BOILER CHEMICAL DOSING SYSTEM</b> | HP DOSING PUMP         | 4  | MULTI FLOW PUMP, MODEL NO.PR-35, CAPACITY:72 LITER/HOUR, PRESSURE:183.5 KG/CM2, RATIO:5-1, SR NO. N07117785, MAKE: V.K. PUMP INDUSTRIES PVT.LTD.   |



|    |                  |                             |                           |                                |   |
|----|------------------|-----------------------------|---------------------------|--------------------------------|---|
| 15 |                  |                             | LP DOSING PUMP            | 4                              | CAPACITY:06 LPH, WORKING PRESSURE:5 KG/CM2, PRV SET PRESSURE:7 KG/CM2, IR NO.PIL 156, SR NO.CDS/157/02-03, MAKE: POSITIVE METERING PUMP(I) PVT.LTD.   |
| 16 |                  | <b>SOOT BLOWING SYSTEM</b>  | TAPH ROTARY SOOT BLOWER   | 18                             | MODEL NO.G9B, MAKE: ALSTOM  |
| 17 | HR-SOOT BLOWER   |                             | 18                        | MODEL NO. IK 300, MAKE: ALSTOM |   |
| 18 | LR-SOOT BLOWER   |                             | 12                        | MODEL NO. IK 300, MAKE: ALSTOM |   |
| 19 |                  | <b>LIME FEEDING SYSTEM</b>  | LIME CONVEYING SCREW PUMP | 4                              | SCREW WITH SOLID SHAFT FOR 235MM PNEUMATIC SCREW PUMP, DRG NO. B SHE-16612, MAKE: ALSTOM  |
| 20 |                  |                             | LIME COMPRESSOR           | 4                              | TYPE: RECIPROCATING, BELT DRIVE, MODEL NO.1HA4Q, SETNO.7733, PRESSURE:2 KG/CM2, COMPRESSOR RPM:750, MOTOR KW:225, PRIMOVR/RPM: BHEL/1479, MAKE:KG KHOSLA  |
| 21 | <b>LIME MILL</b> |                             | CHAIN CONVEYOR            | 2                              | TYPE: ENMASSE CHAIN CONVEYOR SIZE:800X606, CONVEYOR NO.CC-1B, CAPACITY:140TPH, LENGTH:30 MTR. MAKE: ENVIRO ABRASION RESISTANT ENGINEERS PVT.LTD   |
| 22 |                  |                             | DILUTION AIR BLOWER       | 2                              | VOLUME CAPACITY:25000 KGS/HR, TYPE: CETRIFUGAL, DISCHARGE PRESSURE:108MM WG, KW/RPM:11KW/4 POLE, TEMP: 30DEGREE CENTIGRATE  |
| 23 |                  | <b>LIME GRINDING SYSTEM</b> | HAG                       | 2                              | TYPE OF GENERATOR: HORIZONTAL DOUBLE SHELL, OVER ALL SIZE: 1916 MM DIA X4820 MM LONG, TURN DOWN RATIO:4:1, HEAT RELEASE:5.25 M KCALS/HR, HOT AIR QUANTITY:36800 KGS/HR, TYP OF GUN: CONSTANT PRESSURE AIR ATOMISING, MODE OF BURNER LIT UP: LPG PILOT, MAKE: COEN BHARAT LIMITED. |
| 24 |                  |                             | BAG FILTER                | 2                              | TYPE: PULSE JET, CAPACITY: 60,000 M3/HR, I/L DUST BURDEN: 150 GMS/NM3, O/L DUST BURDEN: 50 MGM/NM3 FAN NO-01080, WORK ORDER NO-K060C  |

|    |                         |                            |                          |   |   |
|----|-------------------------|----------------------------|--------------------------|---|---|
| 25 |                         |                            | COMBUTION BLOWER         | 2 | VOLUME CAPACITY:14,000 KGS/HR, TYPE: CETRIFUGAL, DISCHRGE PRESSURE: 130MM WG, KW/RPM:7.5/4 POLE, TEMP- 30 DEGREE CENTIGRADE,  |
| 26 |                         |                            | MILL RC FAN              | 2 | LIME MILL RE-CIRCULATION FAN  |
| 27 | <b>FOPH</b>             | <b>FUEL OIL PUMP HOUSE</b> | LDO UNLOADING PUMP       | 2 | MAKE-TUSHACO, TYPE-TS 105/045.000.40.1K, DISCHARGE(Q)-250 L/MIN, DIFF PRESSURE-3.50 KG/M2, VELOCITY (V)-2.50-15.7 MM2/SEC, SPEED-1415 RPM, POWER-5.50 KW.   |
| 28 |                         |                            | LDO TRANSFER PUMP        | 2 | CITADEL-MAKE  |
| 29 |                         |                            | HFO UNLOADING PUMP       | 3 | TUSHACO MAKE, TYPE-TDSH 088/040.100.40.1BK, DISCHARGE (Q)-417 L/MIN., DIFF PRESSURE-3.50 KG/CM2, VELOCITY (V)-90-300 MM2/SEC, SPEED-1450 RPM, POWER-7.50 KW.  |
| 30 |                         |                            | HFO TRANSFER             | 4 | MODEL NO. T3S 70/40 NHSBF S2RNJE BALC, CAPACITY:328LPM, RPM:1480, DIFF.PRESSURE:30 KG/CM2, VELOCITY:80MM2/SEC, POWER:23.1KW, DRG NO. D001-3922/1, MAKE: TUSHACO PUMPS PVT.LTD                         |
| 31 |                         |                            | CONDENSATE TRANSFER PUMP | 2 | TYPE: HORIZONTAL CENTRIFUGAL BACK PULL-OUT, MODEL: TCH + N 25 / 200-I. MAKE: SAM TURBO IND., COIMBATORE.  |
| 32 | <b>AUXILIARY BOILER</b> | <b>AUXILIARY BOILER</b>    | FD FAN                   | 1 | MACHINE NO. 02.109, IOB NO. APC 132 031, MODEL NO. ATKH -063-3-S, CAPACITY:29511 CMH, FAN SPEED:1300RPM, MOTOR:56.25KW, STATIC PRESSURE:450 MM/WG, IMPELLER DIA:1259MM, SHAFT DIA:75MM, MAKE: AIROTEK |
| 33 |                         |                            | BOILER FEED PUMP         | 2 | TYPE:65X50MSS9M, SR NO.020112 1-911, PUMPING HEAD:282 MTR, RATE OF FLOW:24 M3/HR, DRIVER:37 KW, SPEED: 2960 RPM, MAKE:KIRLOSKAR EBARA PUMPS LIMITED   |
| 34 |                         |                            | LDO PUMP                 | 2 | PUMP MODEL: RDRX100L, PUMP SPEED:1440RPM, CAPACITY:50LPM, DISCHARGE PRESSURE:10 KG/CM2, MAKE: ROTODEL   |
| 35 |                         |                            | LP DOSING PUMP           | 1 | CAPACITY:06 LPH, WORKING PRESSURE:5 KG/CM2, PRV SET PRESSURE:7 KG/CM2, IR NO.PIL 156, SR NO.CDS/157/02-03, MAKE:POSITIVE METERING PUMP(I) PVT.LTD.  |



|    |  |            |     |    |  |
|----|--|------------|-----|----|--|
| 36 |  | <b>ESP</b> | ESP | 02 | MODEL NO.FAA-7X 30H-96-150-A2,2 PASS IN EACH ESP AND EACH PASS HAVING-07 FIELD |
|----|--|------------|-----|----|--|

### TG BOP Equipment List

| S. NO.     | EQUIPMENT NAME            | MAKE                                     | SPECIFICATION / CAPACITY                                   | QTY |
|------------|---------------------------|--|--|-----|
| <b>STG</b> |                           |  |  |     |
| 1          | BOILER FEED PUMP          | KIROLSKAR EBRA PUMPS LTD.                | 256 M <sup>3</sup> /HR                                     | 6   |
| 2          | BOOSTER PUMP              | KIROLSKAR EBRA PUMPS LTD.                | 288 M <sup>3</sup> /HR                                     | 6   |
| 3          | BFP OIL CENTRIFUGE        | EMMI OIL CLEANING SYSTEM                 | 200 LTR/HR   | 6   |
| 4          | CONENSATE EXTRACTION PUMP | KIROLSKAR BROTHERS LTD.                  | 203.8M <sup>3</sup> /HR                                    | 6   |
| 5          | HP HEATER                 | BHEL                                     | 21.873KG/HR(SHELL)-<br>369.612T/HR(TUBE)                   | 2   |
| 6          | HP HEATER                 | BHEL                                     | 21.413KG/HR(SHELL)-<br>369.612T/HR(TUBE)                   | 2   |
| 7          | LP HEATER                 | LARSEN & TOUBRO LIMITED                  | 4.212M <sup>3</sup> (SHELL)-<br>1.080M <sup>3</sup> (TUBE) | 2   |
| 8          | LP HEATER                 | LARSEN & TOUBRO LIMITED                  | 5.850M <sup>3</sup> (SHELL)-<br>1.663M <sup>3</sup> (TUBE) | 2   |
| 9          | LP HEATER                 | LARSEN & TOUBRO LIMITED                  | 4.15M <sup>3</sup> (SHELL)-<br>1.40M <sup>3</sup> (TUBE)   | 2   |
| 10         | CONDENSER                 | STF S.p.A.COSTRUZIONE IMPIANTI IND-ITALY | 6173 M <sup>3</sup>  | 2   |
| 11         | EJECTORS                  | SCAM TORINO                              | 165KG/HR, 15-BAR   | 4   |
| 12         | DEAERATOR UNIT            | GEA ENERGY SYSTEM (I) LTD.               | 115.815 KG/SEC   | 2   |
| 13         | MAIN OIL TANK UNIT        | LUBISYSTME                               | 15250 LTR  | 2   |
| 14         | MOT OIL CENTRIFUGE UNIT   | VERONESI SEPARATORI S.P.A.               | 2500 LTR/HR  | 2   |
| 15         | MAIN OIL COOLER UNIT      | FLOVEX S.P.A-ITALY                       | 334 OIL/342 WATER  | 4   |



|            |                                  |                            |                                   |   |
|------------|----------------------------------|----------------------------|-----------------------------------|---|
| 16         | MOT VAPOUR EXTRACTION FAN        | CAT BLOWER                 | 820 M <sup>3</sup> /HR            | 4 |
| 17         | JACKING OIL PUMP-AC DRIVEN       | REXORTH BOSCH              | 1.5M <sup>3</sup> /HR             | 2 |
| 18         | JACKING OIL PUMP DC DRIVEN       | REXORTH BOSCH              | 1M <sup>3</sup> /HR               | 2 |
| 19         | LUB OIL PUMP UNIT                | COLFAX PUMP S.P.a.-ITALY   | 64.8 M <sup>3</sup> /HR           | 4 |
| 20         | TURNING GEAR OIL PUMP            | REXORTH BOSCH              | 39 M/MIN-250 BAR                  | 2 |
| 21         | EOP UNIT                         | COLFAX PUMP S.P.a.-ITALY   | 25.9M <sup>3</sup> /HR            | 2 |
| 22         | GLAND STEAM CONDENSER UNIT       | FLOVEX S.P.A-ITALY         | 221 LTR SHELL/152 LTR TUBE        | 2 |
| 23         | GLAND STEAM BLOWER               | CHICAGO BLOWER S.P.A.      | 1160 M <sup>3</sup> /HR           | 4 |
| 24         | HP-LP BYPASS SERVO OIL TANK UNIT | SCODA                      | 500 LITR                          | 2 |
| 25         | HYDRULIC OIL PUMP                | ALLWEIR                    | 3 L/SEC-40 BAR                    | 4 |
| 26         | CLEAN OIL TRANSFER PUMP          | TUSHAKO                    | 2 M <sup>3</sup> /HR              | 1 |
| 27         | DIRTY OIL TRANSFER PUMP          | TUSHAKO                    | 2 M <sup>3</sup> /HR              | 1 |
| 28         | CLEAN & DIRTY OIL CENTRIFUGE     | VERONESI SEPARATORI S.P.A. | 2500 LTR/HR                       | 1 |
| 29         | CST UNIT                         | ALSTOM                     | 350 M <sup>3</sup>                | 2 |
| 30         | UNIT DRAIN TANK                  | ANSALDO                    | 10 M <sup>3</sup>                 | 1 |
| 31         | UDT TRANSFER PUMP                | SULZER                     | 5 M <sup>3</sup> /HR              | 2 |
| 32         | CLEAN OILTANK                    | LUBISYSTME                 | 15M <sup>3</sup>                  | 1 |
| 33         | DIRTY OIL TANK                   | LUBISYSTME                 | 15M <sup>3</sup>                  | 1 |
| 34         | HOTWELL MAKE UP                  | SULZER PUMPS INDIA LTD.    | 15M <sup>3</sup> /HR              | 6 |
| 35         | CCW PUMP                         | BEACON WEIR LTD.           | 1375M <sup>3</sup> /HR            | 3 |
| 36         | ACW PUMP                         | BEACON WEIR LTD.           | 1850M <sup>3</sup> /HR            | 3 |
| 37         | ASH COOLER PUMP                  | BEACON WEIR LTD.           | 850M <sup>3</sup> /HR             | 3 |
| 38         | PLATE TYPE HEAT EXCHANGER        | IDMC LTD.                  | DESAL WATER-42-36/SEA WATER-34-39 | 3 |
| 39         | SUMP PUMP                        | BEACON WEIR LTD.           | 30M <sup>3</sup>                  | 8 |
| 40         | DG SET                           | CATERPILLAR                | 625 KVA                           | 2 |
| <b>PTP</b> |                                  |                            |                                   |   |
| 41         | FLASH MIXTURE                    | CEECONS CHENNAI,INDIA      | 3600 M <sup>3</sup> /HR           | 1 |
| 42         | FLOCCULATOR                      | VATECH WABAG LTD           | 900 M <sup>3</sup>                | 8 |
| 43         | AIR BLOWER- GRAVITY SAND FILTER  | KEY INTERNATION LTD.       | 1200 NM <sup>3</sup> /HR          | 3 |



|                 |                                 |                             |                          |   |
|-----------------|---------------------------------|-----------------------------|--------------------------|---|
| 44              | SEA WATER INTAKE PUMP           | KIRLOSKER BROTHER LTD.      | 1800 M <sup>3</sup> /HR  | 3 |
| 45              | TWS SPRAY PUMP                  | JHONSON INDIA LTD           | 60 M3                    | 2 |
| 46              | CT MAKE UP PUMP                 | KIRLOSKER BROTHER LTD.      | 1550M <sup>3</sup> /HR   | 3 |
| 47              | DESALINATION FEED PUMP          | KIRLOSKER BROTHER LTD.      | 417M <sup>3</sup> /HR    | 3 |
| 48              | EC FEED PUMP                    | KIRLOSKER BROTHER LTD.      | 40M <sup>3</sup> /HR     | 4 |
| 49              | BACKWASH RECIRCULATION PUMP     | KIRLOSKER BROTHER LTD.      | 300M <sup>3</sup> /HR    | 2 |
| 50              | FILTER BACKWASH PUMP            | KIRLOSKER BROTHER LTD.      | 1000M <sup>3</sup> /HR   | 3 |
| 51              | CENTRIFUGE FEED PUMP            | TUSHACO PUMPS               | 20M <sup>3</sup> /HR     | 4 |
| 52              | CENTRIFUGE-A                    | HUMBOLDT WEDG INDIA LTD.    | 20M <sup>3</sup> /HR     | 3 |
| 53              | ALUM TANK AGITATOR              | CEECONS                     | 12.1 <sup>3</sup> /HR    | 2 |
| 54              | LIME SOLUTION TANK AGITATOR     | VATECH WABAG LTD            | 5.28M <sup>3</sup> /HR   | 2 |
| 55              | PE TANK AGITATOR                | CEECONS                     | 5.38M <sup>3</sup> /HR   | 2 |
| 56              | DWPE TANK AGITATOR              | CEECONS                     | 5.38M <sup>3</sup> /HR   | 2 |
| 57              | ALUM DOSING PUMP                | SWELORE ENGINEERING PVT.LTD | 2160 LPH                 | 2 |
| 58              | PE DOSING PUMP                  | SWELORE ENGINEERING PVT.LTD | 550 LPH                  | 2 |
| 59              | DWPE DOSING PUMP                | SWELORE ENGINEERING PVT.LTD | 653 LPH                  | 4 |
| 60              | SLUDGE THICKENER                | VATECH WABAG LTD            | 4320 M <sup>3</sup> /HR  | 4 |
| 61              | BIOCIDE DOSING PUMP             | SWELORE ENGINEERING PVT.LTD | 50M <sup>3</sup> /HR     | 2 |
| 62              | POLYPHOSPHATE DOSING PUMP       | SWELORE ENGINEERING PVT.LTD | 50M <sup>3</sup> /HR     | 2 |
| 63              | BOICIDE TANK AGITATOR           | CEECONS                     | 0.628 M <sup>3</sup> /HR | 2 |
| 64              | POLYPHOSPHATE TANK AGITATOR     | CEECONS                     | 0.628 M <sup>3</sup> /HR | 2 |
| <b>DM PLANT</b> |                                 |                             |                          |   |
| 65              | COLONY POTABLE WATER PUMP       | KIRLOSKER BROTHER LTD.      | 30 M <sup>3</sup> /HR    | 2 |
| 66              | DM WATER SUPPLY PUMP            | KIRLOSKER BROTHER LTD.      | 40 M <sup>3</sup> /HR    | 3 |
| 67              | CHEMICAL CONTIONING DOSING PUMP | SWELORE ENGINEERING PVT.LTD | 150 LPH                  | 2 |
| 68              | ACID UNLOADING PUMP             | RAJE-DIA PUMPS PVT. LTD.    | 10 M <sup>3</sup> /HR    | 2 |
| 69              | ALKALI UNLOADING PUMP           | RAJE-DIA PUMPS PVT. LTD.    | 10 M <sup>3</sup> /HR    | 2 |
| 70              | ACID DOSING PUMP                | SWELORE ENGINEERING PVT.LTD | 380 LPH                  | 2 |



|                           |  |                             |                         |   |
|---------------------------|--|-----------------------------|-------------------------|---|
| 71                        | ALKALI DOSING PUMP                       | SWELORE ENGINEERING PVT.LTD | 500 LPH                 | 2 |
| 72                        | EFFLUENT DISOSAL PUMP                    | KIRLOSKER BROTHER LTD.      | 50 M <sup>3</sup> /HR   | 2 |
| 73                        | DM WATER TRANSFER PUMP                   | KIRLOSKER BROTHER LTD.      | 42 M <sup>3</sup> /HR   | 3 |
| 74                        | POTABLE SERVICE WATER PUMP               | KIRLOSKER BROTHER LTD.      | 20 M <sup>3</sup> /HR   | 2 |
| 75                        | POTABLE WATER CONDITIONING TANK AGITATOR | CEECONS                     | 2 M <sup>3</sup> /HR    | 1 |
| 76                        | MIXED BED EXCHANGER AIR BLOWER           | KAY INTERNATIONAL LTD.      | 210 NM <sup>3</sup> /HR | 2 |
| 77                        | DESALINATION WATER STROAGE TANK          | VATECH WABAG LTD            | 1500 M <sup>3</sup>     | 3 |
| 78                        | ACID BULK STORGE TANK                    | VATECH WABAG LTD            | 15 M <sup>3</sup>       | 1 |
| 79                        | ALKALI BULK STORGE TANK                  | VATECH WABAG LTD            | 15 M <sup>3</sup>       | 1 |
| 80                        | DM WATER STORGE TANK                     | VATECH WABAG LTD            | 500 M <sup>3</sup>      | 2 |
| <b>DESALINATION PLANT</b> |  |                             |                         |   |
| 81                        | ANTISCALANT DOSING PUMP                  | SWELORE ENGINEERING PVT.LTD | 21 LPH                  | 4 |
| 82                        | ANTIFOAM DOSING PUMP                     | SWELORE ENGINEERING PVT.LTD | 40 LPH                  | 4 |
| 83                        | SBS DOSING PUMP                          | SWELORE ENGINEERING PVT.LTD | 40 LPH                  | 3 |
| 84                        | BRINE PUMP                               | KIRLOSKER BROTHER LTD.      | 280 M <sup>3</sup> /HR  | 4 |
| 85                        | DISTILLATE PUMP                          | KIRLOSKER BROTHER LTD.      | 50 M <sup>3</sup> /HR   | 4 |
| 86                        | CONDENSATE PUMP                          | KIRLOSKER BROTHER LTD.      | 10 M <sup>3</sup> /HR   | 4 |
| 87                        | ACID CLEANING PUMP                       | RAJE-DIA PUMPS PVT. LTD.    | 13.5 M <sup>3</sup> /HR | 2 |
| 88                        | MOTIVE WATER PUMP                        | KIRLOSKER BROTHER LTD.      | 90 M <sup>3</sup> /HR   | 4 |
| 89                        | ANTISCALANT TANK AGITATOR                | CEECONS                     | 0.628 M <sup>3</sup>    | 2 |
| 90                        | ANTI FOAM TANK AGITATOR                  | CEECONS                     | 0.628 M <sup>3</sup>    | 2 |
| 91                        | SBS TANK AGITATOR                        | CEECONS                     | 0.628 M <sup>3</sup>    | 2 |
| <b>CW SYSTEM</b>          |  |                             |                         |   |
| 92                        | CW PUMP#A                                | KIRLOSKAR BROTHERS LTD.     | 14000M3/HR              | 5 |
| 93                        | SEAL WATER PUMP                          | KIRLOSKAR BROTHERS LTD.     | 50M3/HR                 | 3 |
| 94                        | DEWATERING PUMP                          | KIRLOSKAR BROTHERS LTD.     | 51M3/HR                 | 2 |
| 95                        | SEAL WATER TANK FILLING PUMP             | KIRLOSKAR BROTHERS LTD.     | 51M3/HR                 | 1 |
| 96                        | REJECT WATER PUMP#A                      | BEACON WEIR LTD.            | 1000M3/HR               | 3 |
| 97                        | AIR COMPRESSOR                           | ELGI COMPRESSOR             | 0.5 M3                  | 1 |



|             |                                 |                       |   |    |
|-------------|---------------------------------|-----------------------|---|----|
| 98          | COOLING TOWER FAN               | BDT LTD.              | 3111M <sup>3</sup> /HR/CELL,<br>41°C-34°C | 18 |
| <b>FIRE</b> |                                 |                       |   |    |
| 99          | JOCKY PUMP 101                  | FLOMORE PVT LTD       | 30 M <sup>3</sup> /HR                     | 2  |
| 100         | HYDRANT PUMP 301(Motor driven)  | FLOMORE PVT LTD       | 410 M <sup>3</sup> /HR                    | 2  |
| 101         | HYDRANT PUMP 303(Engine driven) | FLOMORE PVT LTD       | 410 M <sup>3</sup> /HR                    | 1  |
| 102         | SPRAY PUMP 201(Motor driven)    | FLOMORE PVT LTD       | 410 M <sup>3</sup> /HR                    | 1  |
| 103         | SPRAY PUMP 202(Engine driven)   | FLOMORE PVT LTD       | 410 M <sup>3</sup> /HR                    | 1  |
| 104         | FIRE BOOSTER PUMP 501           | FLOMORE PVT LTD       | 140 M <sup>3</sup>                        | 2  |
| 105         | AIR COMPRESSOR 401              | KHOSLA AIR COMPRESSOR | 2 M <sup>3</sup>                          | 1  |
| 106         | DIESEL ENGINE                   | CUMINNS               | 231HP                                     | 2  |

### AC System Equipment List

| S. NO. | IDENTIFICATION CODE                     | EQUIPMENT NAME                          | MAKE                    | SPECIFICATION / CAPACITY | QTY |
|--------|---|---|-------------------------|--------------------------|-----|
| 1      | CHILLER COMPRESSOR                      | CHILLER COMPRESSOR                      | BLUE STAR               | 90 TR                    | 4   |
| 2      | CHILLER PUMP                            | CHILLER PUMP                            | BEACON WEIR LTD.        | 65M <sup>3</sup> /HR     | 4   |
| 3      | AUXILLARY COOLING TOWER                 | AUXILLARY COOLING TOWER                 | COOL TECH COOLING TOWER | 100 TR                   | 1   |
| 4      | CONDENSATE PUMP                         | CONDENSATE PUMP                         | AJAY PUMP               | 70 M <sup>3</sup> /HR    | 2   |
| 5      | AIR HANDLING UNIT                       | AIR HANDLING UNIT                       | BLUE STAR               | 39200 CMH/AHU            | 3   |
| 6      | PACKAGED AC LIME CONTROL ROOM           | PACKAGED AC LIME CONTROL ROOM           | BLUE STAR               | 10 TR                    | 3   |
| 7      | PACKAGE AC EXCITATION CONTROL ROOM U#1  | PACKAGE AC EXCITATION CONTROL ROOM U#1  | BLUE STAR               | 10 TR                    | 2   |
| 8      | PACKAGED AC EXCITATION CONTROL ROOM U#2 | PACKAGED AC EXCITATION CONTROL ROOM U#2 | BLUE STAR               | 10 TR                    | 2   |
| 9      | PACKAGED AC ESP CONTROL ROOM U#1        | PACKAGED AC ESP CONTROL ROOM U#1        | BLUE STAR               | 10 TR                    | 2   |



|    |                                  |  |           |            |    |
|----|----------------------------------|--|-----------|------------|----|
| 10 | PACKAGED AC ESP CONTROL ROOM U#2 | PACKAGED AC ESP CONTROL ROOM U#2                           | BLUE STAR | 10 TR      | 2  |
| 11 | PACKAGED AC MHP CONTROL ROOM     | PACKAGED AC MHP CONTROL ROOM                               | BLUE STAR | 10 TR      | 3  |
| 12 | PACKAGED AC AHS CONTROL ROOM     | PACKAGED AC AHS CONTROL ROOM                               | BLUE STAR | 5 TR       | 2  |
| 13 | PACKAGED AC SWTP CONTROL ROOM    | PACKAGED AC SWTP VATECH CONTROL ROOM                       | VOLTAS    | 15 TR      | 2  |
| 14 | DRYER OF IAC/SAC                 | DRYER  | DONALDSON | -          | 2  |
| 15 | SPILT AC                         | CWPH/ECR/CCR/STACKER/VIP/HOSPITAL/HR/MAIN STORE/SWITCHYARD | BLUESTAR  | 1.5/2/3 TR | 52 |
| 16 | WINDOW AC                        | MMD/IF ANY   | BLUESTAR  | 2 TR       | 10 |

Note: The above is an indicative and non-exhaustive list of equipment. Maintenance of equipment required for smooth normal functioning and not mentioned above will be under successful bidder's scope.

### Annexure H: List of Tools and Tackles

#### Mechanical Maintenance

| S. No. | Tool / Tackle   | Description  | Unit | Quantity |
|--------|-----------------|--|------|----------|
| 1      | CHAINBLOCK - 1T | HAND OPERATED CHAIN PULLEY BLOCK,LIGHT WEIGHT, CHAIN LENGTH : 6 MTR, MODEL- KP1, KEPRO MAKE<br>1 T CAPACITY, COMPACT SIZE, EASY TO CARY, | NOS  | 12       |
| 2      | CHAINBLOCK- 2T  | HAND OPERATED CHAIN PULLEY BLOCK, 2 T CAPACITY, COMPACT SIZE, EASY TO CARY,LIGHT WEIGHT, CHAIN LENGTH : 6 MTR, MODEL- KP2, KEPRO MAKE    | NOS  | 8        |
| 3      | CHAINBLOCK- 2T  | HAND OPERATED CHAIN PULLEY BLOCK, 2 T CAPACITY, COMPACT SIZE, EASY TO CARY,LIGHT WEIGHT, CHAIN LENGTH : 26 MTR, MODEL- KP2, KEPRO MAKE   | NOS  | 3        |
| 4      | CHAINBLOCK- 2T  | MOTOR OPERATED CHAIN PULLEY BLOCK, 2 T CAPACITY, COMPACT SIZE, EASY TO CARY,LIGHT WEIGHT, CHAIN LENGTH : 26 MTR, MODEL- KP2, KEPRO MAKE  | NOS  | 2        |
| 5      | CHAINBLOCK-5T   | HAND OPERATED CHAIN PULLEY BLOCK, 5 T CAPACITY, COMPACT SIZE, EASY TO CARY, LIGHT WEIGHT, CHAIN LENGTH : 6 MTR,MODEL- KP3, KEPRO MAKE    | NOS  | 4        |
| 6      | CHAINBLOCK-5T   | HAND OPERATED CHAIN PULLEY BLOCK, 5 T CAPACITY, COMPACT SIZE, EASY TO CARY, LIGHT WEIGHT, CHAIN LENGTH :26 MTR,MODEL- KP3, KEPRO MAKE    | NOS  | 2        |
| 7      | CHAINBLOCK-5T   | MODEL- KP3, KEPRO MAKE,COMPACT SIZE, EASY TO CARY, LIGHT WEIGHT, CHAIN LENGTH : 40 MTR,  | NOS  | 2        |
| 8      | CHAINBLOCK-10T  | HAND OPERATED CHAIN PULLEY BLOCK, 10 T CAPACITY, COMPACT SIZE, EASY TO CARY, LIGHT WEIGHT, CHAIN LENGTH : 10 MTR,MODEL- KP3, KEPRO MAKE  | NOS  | 2        |
| 9      | SLING BELT      | 25MM NYLONE SLING BELT,01 MTR,CAPACITY-01 TON  | NOS  | 10       |
| 10     | SLING BELT      | 50MM NYLONE SLING BELT,02MTR,CAPACITY-02 TON   | NOS  | 10       |
| 11     | SLING BELT      | NYLONE SLING BELT,CAPACITY-05TON,03MTR   | NOS  | 10       |
| 12     | SLING BELT      | NYLONE SLING BELT,CAPACITY-05TON,10MTR   | NOS  | 10       |
| 13     | SLING BELT      | NYLONE SLING BELT,CAPACITY-10TON,03MTR   | NOS  | 6        |
| 14     | SLING BELT      | NYLONE SLING BELT,CAPACITY-10TON,10MTR   | NOS  | 6        |



|    |                         |   |     |    |
|----|-------------------------|---|-----|----|
| 15 | SLING BELT              | NYLONE SLING BELT,CAPACITY-10TON,05MTR  | NOS | 6  |
| 16 | 4" ANGLE GRINDER        | PDA 100M, 715-870 WATT, 12000 RPM, MAKE:HITACHI KOKI WITH 10 NOS OF CARBONE BRUSH   | NOS | 10 |
| 17 | 5" ANGLE GRINDER        | PDA 125M, 715-870 WATT, 12000 RPM, MAKE: HITACHI KOKI WITH 10 NOS OF CARBONE BRUSH  | NOS | 6  |
| 18 | 7" ANGLE GRINDER        | 7" ANGLE GRINDING MACHINE,MAKE-HITACHI WITH 10 NOS OF CARBONE BRUSH   | NOS | 6  |
| 19 | AIR BLOWER              | AIR BLOWER, RPM -16000, 550 WATT, MODEL:RB40SA, MAKE : HITACHI KOKI   | NOS | 4  |
| 20 | SPANNER                 | RING SPANNER SET,MAKE-TAPARIA(6-32)   | SET | 12 |
| 21 | SPANNER                 | OPEN ENDED SPANNER(6-32)  | SET | 12 |
| 22 | STAR SPANNER            | STAR SPANNER SET (6-32)   | SET | 3  |
| 23 | SPANNER                 | S14HXL 1/2" SQUARE DRIVE SOCKET SET,FORGED HIGH GRADE CHROME VANADIUM STEEL,44-50 HRC, MAKE-TAPARIA(MM SET)   | SET | 3  |
| 24 | SLODGING RING           | SIZE-30MM,32MM,34MM,36MM,38MM,41MM,46MM,48MM,55MM,MAKE-GRIPHOLD   | SET | 8  |
| 25 | SLODGING FIX            | SIZE-46MM,55MM,75MM,MAKE-GRIPHOLD   | SET | 5  |
| 26 | BOX SPANNER             | BOX SPANNER SET,MAKE-TAPARIA(6-32) WITH TOMMY BAR   | SET | 6  |
| 27 | PIPE SPANNER            | PIPE SPANNER SET,MAKE-TAPARIA(6-32)   | SET | 3  |
| 28 | RATCHET SPANNER         | SIZE-17-19MM  | NOS | 12 |
| 29 | RATCHET SPANNER         | SIZE-24-27MM  | NOS | 12 |
| 30 | RATCHET SPANNER         | SIZE-34-36MM  | NOS | 4  |
| 31 | RATCHET SPANNER         | SIZE-32-34MM  | NOS | 4  |
| 32 | RATCHET SPANNER         | SIZE-34-36MM  | NOS | 4  |
| 33 | PLASMA MACHINE          | 3 PHASE PLASMA MACHINE WITH ACCESSARIE NOZZLES  | NOS | 2  |
| 34 | INDUSTRIAL SWITCH BOARD | WITH 3 SWITCH & 3 SOCKET WITH 12 METER CABLE  | NOS | 24 |
| 35 | TOOLBOX WITH SPANNER    | COMPLETE TOOL BOX WITH RING-FIX SPANNER SET -01 EACH (6 TO 32MM), HAMMER 500GM-01NO., SCREW SPANNER-12"-01NO., SCREW DRIVER- 10 X 200MM-01 NO., PIPE WRENCH-350MM -01NO., CENTRE PUNCH-01 NO. FLAT FILE -12: X 01 NO., ROUND FILE-01NO. 6" CHISEL – 01NO., ALLEN KEY MM SET - 01NO, COPPER ROD 25MM -01NO, CIRCLIP PLIER -1SET,RIGHT ANGLE 6" -01NO | SET | 20 |
| 36 | SCREW DRIVER            | SCREW DRIVER SET,MAKE-TAPARIA   | NOS | 6  |
| 37 | SCREW DRIVER            | SCREW DRIVER, SIZE:18", MAKE: TAPARIA   | NOS | 6  |



|    |   |   |     |    |
|----|---|---|-----|----|
| 38 | PIPE WRENCH                             | 450 MM,HEAVY DUTY,MAKE-TAPARIA  | NOS | 8  |
| 39 | PIPE WRENCH                             | 600 MM,HEAVY DUTY,MAKE-TAPARIA  | NOS | 8  |
| 40 | ADJUSTABLE WRENCH                       | SIZE-6" ,TAPARIA MAKE   | NOS | 8  |
| 41 | BELT WRENCH                             | BELT WRENCH,200MM   | NOS | 2  |
| 42 | CHAIN PIPE WRINCH                       | CHAIN PIPE WRINCH ,250MM  | NOS | 2  |
| 43 | NIDDLE DIMOND FILE                      | NIDDLE FILE, DIAMOND COATED<br>TYPE(ROUND,FLATE & HALF ROUND)                                       | SET | 6  |
| 44 | ALLEN KEY                               | SIZE : INCH, UNBREKO MAKE   | SET | 6  |
| 45 | ALLEN KEY                               | SIZE : MM, UNBREKO MAKE   | SET | 6  |
| 46 | ALLEN KEY                               | SIZE : STAR, UNBREKO MAKE   | SET | 6  |
| 47 | ALLEN KEY                               | SIZE-14MM,17MM,19MM,22MM,UP TO 36 MM<br>MAKE-TAPARIA  | SET | 6  |
| 48 | ROTARY CUTTER<br>MACHINE WITH<br>CUTTER | TUNGSTON CARBIDE BURR HEAD ROTARY<br>CUTTER MACHINE SET (FF2) MAKE : GENERIC                        | SET | 4  |
| 49 | WELDING MACHINE                         | 3 PHASE WELDING MACHINE, MAKE-ESAB  | NOS | 8  |
| 50 | WELDING MACHINE                         | SINGLE PHASE WELDING MACHINE,MAKE-<br>ESAB,MODEL NO. BUDDY ARC-200                                  | NOS | 8  |
| 51 | ARGON SET                               | ARGON SET COMPLETE  | NOS | 3  |
| 52 | MEASURING TAPE                          | 03 MTR STEEL MEASURING TAPE   | NOS | 20 |
| 53 | MEASURING TAPE                          | 05 MTR STEEL MEASURING TAPE   | NOS | 10 |
| 54 | DRILLING MACHINE                        | HAMMER DRILL,TYPE-B101,710 W,MAX13 MM<br>DRILL,0-2800 RPM,MODEL NO. KR704RE,MAKE-<br>BLACK & DECKER | NOS | 4  |
| 55 | GREASE GUN                              | CAPACITY-01 KG  | NOS | 6  |
| 56 | GREASE GUN                              | CAPACITY-05 KG  | NOS | 3  |
| 57 | CIRCLIP PLIER                           | INSIDE CIRCLIP PLIER,MAKE-TAPARIA   | NOS | 6  |
| 58 | CIRCLIP PLIER                           | OUTSIDE CIRCLIP PLIER,MAKE-TAPARIA  | NOS | 6  |
| 59 | COMBINATION PLIER                       | COMBINATION PLIER,MAKE-TAPARIA  | NOS | 6  |
| 60 | CHIESEL                                 | CHIESEL,SIZE-12"  | NOS | 6  |
| 61 | SHIM CUTTER                             | SIZE-10"  | NOS | 6  |
| 62 | CHOPSAW MACHINE                         | 14"   | NOS | 2  |
| 63 | WIRE SLING                              | 10MMX1MTR   | NOS | 4  |
| 64 | WIRE SLING                              | 10MMX2MTR   | NOS | 4  |
| 65 | WIRE SLING                              | 10MMX3MTR   | NOS | 4  |
| 66 | WIRE SLING                              | 13MMX1MTR   | NOS | 8  |
| 67 | WIRE SLING                              | 13MMX2MTR   | NOS | 4  |
| 68 | WIRE SLING                              | 13MMX3MTR   | NOS | 4  |
| 69 | WIRE SLING                              | 13MMX6MTR   | NOS | 4  |
| 70 | WIRE SLING                              | 15MMX1MTR   | NOS | 4  |
| 71 | WIRE SLING                              | 15MMX2MTR   | NOS | 8  |
| 72 | WIRE SLING                              | 15MMX3MTR   | NOS | 8  |



|     |                            |   |      |     |
|-----|----------------------------|---|------|-----|
| 73  | WIRE SLING                 | 15MMX6MTR   | NOS  | 8   |
| 74  | WIRE SLING                 | 25MM X 3 MTR  | NOS. | 8   |
| 75  | WIRE SLING                 | 25MM X 6 MTR  | NOS  | 4   |
| 76  | D-SHACKEL                  | SIZE-3/4" X4TON   | NOS  | 20  |
| 77  | D-SHACKEL                  | SIZE-1/2" X2TON   | NOS  | 20  |
| 78  | D-SHACKEL                  | SIZE-1" X8TON   | NOS  | 20  |
| 79  | D-SHACKEL                  | SIZE-1" X10TON  | NOS  | 8   |
| 80  | 3 JAW PULLER               | MECHANICAL PULLER   | NOS  | 4   |
| 81  | HAMMER                     | 2700GM,MAKE-TAPARIA   | NOS  | 6   |
| 82  | HAMMER                     | 5000GM,MAKE-TAPARIA   | NOS  | 6   |
| 83  | HAMMER                     | 1000GM, MAKE-TAPARIA  | NOS  | 10  |
| 84  | FILLER GAUGE               | 0.01-1MM,   | NOS  | 6   |
| 85  | INSIDE CALIPER             | SIZE-10"  | NOS  | 3   |
| 86  | OUTSIDE CALIPER            | SIZE-10"  | NOS  | 3   |
| 87  | OUTSIDE CALIPER            | SIZE-24"  | NOS  | 2   |
| 88  | INSIDE CALIPER             | SIZE-16"  | NOS  | 2   |
| 89  | OUTSIDE CALIPER            | SIZE-16"  | NOS  | 2   |
| 90  | HYDRAULIC PUMP             | MODEL NO. P-39,MANKE-ENARPAC,SINGLE SPEED,700BAR WITH OIL CAPACITY 770 CM3,WEIGHT 6.2KG | NOS  | 6   |
| 91  | HYDRAULIC RAM              | MAKE-ENARPAC,50 TON   | NOS  | 4   |
| 92  | HYDRAULIC HOLLOW RAM       | MAKE-ENARPAC,30 TON   | NOS  | 4   |
| 93  | SPIRIT LEVEL               | 10"   | NOS  | 4   |
| 94  | MASTER LEVEL               | 10"   | NOS  | 2   |
| 95  | NYLONE ROPE                | 16MM  | MTR  | 200 |
| 96  | NYLONE ROPE                | 12MM  | MTR  | 200 |
| 97  | MANILA ROPE                | 16MM  | MTR  | 200 |
| 98  | HACK SAW BLADE FRAME       | 12"   | NOS  | 8   |
| 99  | PNEUMATIC WRENCH           | 1/2",MAKE-INDERSOL RAND   | NOS  | 5   |
| 100 | PNEUMATIC WRENCH           | 3/4" MAKE-INDERSOL RAND   | NOS  | 4   |
| 101 | PNEUMATIC WRENCH           | 1" MAKE-INDERSOL RAND   | NOS  | 2   |
| 102 | BOX SPANNER WITH 1" SQUARE | 1",SPANNER-55MM FOR PHE   | Nos  | 4   |
| 103 | SCISSOR                    | 8"  | NOS  | 6   |
| 104 | HOLE PUNCH                 | SET UP TO 24MM  | SET  | 4   |
| 105 | NUMBER PUNCH               | SET 0 TO 9  | SET  | 3   |
| 106 | STEEL RULE                 | STEEL RULE 1000MM   | NOS  | 2   |
| 107 | STEEL RULE                 | STEEL RULE 300MM  | NOS  | 6   |
| 108 | TAPE HANDLE                | TAP HANDLE.SIZE-10",MAKE-TAPARIA  | NOS  | 4   |
| 109 | TAPE HANDLE                | TAP HANDLE.SIZE-12",MAKE-TAPARIA  | NOS  | 4   |



|     |                        |  |     |     |
|-----|------------------------|--|-----|-----|
| 110 | TAPE SET               | SIZE-6MM,HSS,MAKE-TAPARIA                                | NOS | 4   |
| 111 | TAPE SET               | SIZE-8MM,HSS,MAKE-TAPARIA                                | NOS | 4   |
| 112 | TAPE SET               | SIZE-10MM,HSS,MAKE-TAPARIA                               | NOS | 4   |
| 113 | TAPE SET               | SIZE-12 MM,HSS,MAKE-TAPARIA                              | NOS | 4   |
| 114 | TAPE SET               | SIZE: 12X1.5MM HSS, MAKE TAPARIA                         | NOS | 4   |
| 115 | TAPE SET               | SIZE-14 MM,HSS,MAKE-TAPARIA                              | NOS | 4   |
| 116 | TAPE SET               | SIZE-16 MM,HSS,MAKE-TAPARIA                              | NOS | 4   |
| 117 | TAPE SET               | SIZE : 20MM,HSS,MAKE:TAPARIA                             | NOS | 4   |
| 118 | TAPE SET               | SIZE : 22MM,HSS,MAKE:TAPARIA                             | NOS | 3   |
| 119 | TAPE SET               | SIZE-24MM,HSS,MAKE-TAPARIA                               | NOS | 4   |
| 120 | TAPE SET               | SIZE-1/2" BSP,HSS,MAKE-TAPARIA                           | SET | 4   |
| 121 | TAPE SET               | SIZE-3/4" BSP,HSS,MAKE-TAPARIA                           | SET | 4   |
| 122 | TAPE SET               | SIZE-1" BSP,HSS,MAKE-TAPARIA                             | SET | 3   |
| 123 | DRILL BIT              | SIZE-3,3.5,4.5,5,5.5,6.8,7.5,8,8.6,10,10.5,11.11.5,12 MM | SET | 6   |
| 124 | DRILL BIT              | SIZE-14,16,18,20,22,24,30,32, 36MM                       | SET | 6   |
| 125 | BEAIRNG HEATER         | INDUCTION BEARING HEATER                                 | NOS | 3   |
| 126 | OVEN                   | OVAN FOR WELDING ELECTRODE HEATING                       | NOS | 3   |
| 127 | PULLER - 3 JAW         | HYDRAULIC PULLER   | NOS | 4   |
| 128 | PULLER - 4 JAW (BIG)   | HYDRAULIC PULLER   | NOS | 4   |
| 129 | SCRAPPER               | BEARING SCRAPPER TRIANGLE                                | NOS | 3   |
| 130 | SCRAPPER               | BEARING SCRAPPER HALF ROUND                              | NOS | 3   |
| 131 | SCAFFOLDING PIPE       | 6 MTR  | NOS | 100 |
| 132 | SCAFFOLDING PIPE       | 3MTR   | NOS | 100 |
| 133 | JALI                   | JALI 400MM X 3000MM                                      | NOS | 60  |
| 134 | SCAFFOLDING PIPE CLAMP | STANDARD -MOVABLE  | NOS | 400 |
| 135 | BOX SPANNER            | 34MM, 36MM, 38MM,41MM,46MM,55MM WITH TOMMY BAR           | SET | 5   |
| 136 | CLAMP                  | C- CLAMP 6"  | NOS | 12  |
| 137 | KNIEF                  | UTILITY KNIEF , 19MM, MAKE: TAPARIA                      | NOS | 6   |
| 138 | COPPER TUBE CUTTER     | UP TO 1"   | NOS | 2   |
| 139 | TUBE EXPANDER          | UP TO 2"   | NOS | 2   |
| 140 | RIGHT ANGLE            | 6"   | NOS | 6   |
| 141 | COPPERROD              | SIZE:25MM X 200MM LONG                                   | NOS | 6   |
| 142 | COPPERROD              | SIZE : 50MM X 200MM LONG                                 | NOS | 6   |
| 143 | SAFETY BELT            | STANDARD   | NOS | 24  |
| 144 | MAGNETIC DRILL MACHINE | UPTO 20MM DRILLING                                       | NOS | 2   |
| 145 | OIL STONE MEDIUM,FINE  | MEDIUM, FINE   | NOS | 10  |



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|-----|---|---|-----|-----|
| 146 | CUTTING TORCH   | CUTTING TORCH WITH HOSE PIPE AND REGULATOR                      | SET | 10  |
| 147 | REGULATOR   | OXYGEN REGULATOR  | NOS | 4   |
| 148 | REGULATOR   | DA REGULATOR  | NOS | 4   |
| 149 | REGULATOR   | ARGON REGULATOR   | NOS | 4   |
| 150 | CYLINDER KEY  | CYLINDER KEY  | NOS | 12  |
| 151 | TUBE BENDER   | SIZE UP TO 2"   | SET | 2   |
| 152 | CYLINDER TROLLEY  | FOR DA/OXYGEN   | NOS | 6   |
| 153 | TROLLEY   | FOR MATERIAL SHIFTING   | NOS | 4   |
| 154 | LED LIGHTING FIXTURE WITH CABLE   | INDUSTRIAL LED LIGHTING FIXTURE LAMP WITH CABLE APPROX.12 METER | NOS | 24  |
| 155 | HAND LAMP WITH CABLE  | INDUSTRIAL HAND LAMP  | NOS | 12  |
| 156 | RCC BREAKER   | MAKE-HILTI  | NOS | 2   |
| 157 | HYDRO TEST DUNKEY   | UP TO 20BAR PRESSURE  | NOS | 2   |
| 158 | SCAFFOLDING FIX CLAMP   | FIX CLAMP   | NOS | 200 |
| 159 | CARBIDE BORING TOOL, TYPE:RH, GRADE:P30, SIZE:3/8"X3/8"                                   | MAKE: ADDISION/TOTEM/MIRINDA/BORMER.                            | NOS | 12  |
| 160 | CARBIDE BORING TOOL, TYPE:RH, GRADE:P30, SIZE:16X16                                       | MAKE: ADDISION/TOTEM/MIRINDA/BORMER.                            | NO. | 12  |
| 161 | CARBIDE BORING TOOL, TYPE:RH, GRADE:P30, SIZE:25X25                                       | , MAKE: ADDISION/TOTEM/MIRINDA/BORMER                           | NO. | 12  |
| 162 | CARBIDE BORING TOOL, TYPE:RH, GRADE:P30, SIZE:12X12                                       | MAKE: ADDISION/TOTEM/MIRINDA/BORMER                             | NO. | 12  |
| 163 | CARBIDE V TOOL, SIZE:5/8", GRADE-P30<br>CARBIDE CRANKED CUTTING TOOL, TYPE:LH, GRADE-P30, | MAKE: ADDISION/TOTEM/MIRINDA/BORMER                             | NO. | 12  |
| 164 | CARBIDE CRANKED CUTTING TOOL, TYPE:LH, GRADE-P30,SIZE:16X16                               | MAKE:ADDISION/TOTEM/MIRINDA/BORMER.                             | NO. | 12  |
| 165 | 4 FLUTE TUNGSTEN CARBIDE END MILL CUTTER, SIZE:6 MM,8MM,10MM,12MM                         | MAKE:ADDISION/TOTEM/MIRINDA/BORMER.                             | SET | 6   |
| 166 | CARBIDE CRANKED CUTTING TOOL,   | MAKE:ADDISION/TOTEM/MIRINDA/BORMER.                             | NO. | 12  |



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|     | TYPE:RH, GRADE-P30,SIZE:16X16                                  |  |      |    |
| 167 | CARBIDE CRANKED CUTTING TOOL, TYPE:RH, GRADE-P30, SIZE:20 X 20 | MAKE:ADDISION/TOTEM/MIRINDA/BORMER.                                    | NO.  | 12 |
| 168 | CENTER DRILL, MOC:HSS, SIZE:6.3 MM,8MM,10MM,12MM               | IS 6708-1977 TYPE-A  | SET  | 6  |
| 169 | DIAL GAUGE WITH MAGNETIC STAND                                 | 0-10MM,MAKE MITUTOYO (02 NOS. OF DIAL GAUGE )                          | NOS  | 12 |
| 170 | TEMPERATURE GUN  | TEMPERATURE GUN  | NOS  | 6  |
| 171 | VERIER CALIPERS  | 0-300MM,MAKE-MUTUTOYO  | NOS  | 4  |
| 172 | VERIER CALIPERS  | 0-200MM,MAKE-MUTUTOYO  | NOS  | 4  |
| 173 | MICRO METER OUTSIDE  | 0-300MM,MAK-MUTUTOYO   | NOS  | 4  |
| 174 | MICRO METER INSIDE   | 0-300MM,MAK-MUTUTOYO   | NOS  | 4  |
| 175 | MICRO METER OUTSIDE  | 0-100MM,MAK-MUTUTOYO   | NOS  | 4  |
| 176 | MICRO METER OUTSIDE  | 0-25MM,MAK-MUTUTOYO  | NOS  | 4  |
| 177 | BORE GAUGE   | 35-60MM,MAKE-MUTUTOYO  | NOS  | 3  |
| 178 | BORE GAUGE   | 50-150MM,MAKE-MUTUTOYO   | NOS  | 3  |
| 179 | VIBRATION METER  | MAKE: ALLEN BRADLEY OR SKF   | NOS  | 1  |
| 180 | D METER  | ULTRASONIC THICKNESS MEASUREMENT                                       | NOS  | 3  |
| 181 | CIRCLIP PLIER  | NAIL PULIER  | NOS  | 4  |
| 182 | FASTNER KIT MACHINE  | MSRT MACHINE SIZE: 60", MAKE:FLEXO                                     | NOS  | 1  |
| 183 | BELT CUTTER  | BELT CUTTER  | NOS  | 4  |
| 184 | FUNNEL   | FUNNEL   | NOS  | 6  |
| 185 | CONTAINER  | OIL CONTAINER 5 LTR  | NOS  | 6  |
| 186 | CONTAINER  | OIL CONTAINER10LTR   | NOS  | 6  |
| 187 | CONTAINER  | OIL CONTAINER20LTR   | NOS  | 5  |
| 188 | OIL GUN  | OIL GUN  | NOS  | 5  |
| 189 | TORQUE WRINCH  | TOURQU WRINCH 350NM  | NOS  | 4  |
| 190 | ONLINE TOOL  | FIBER COMPOUND TFG-1, APPLICATION-ONLINE SEALING                       | KG   | 10 |
| 191 | ONLINE TOOL  | RUBBER COMPOUND TR-1,APPLICATION-ONLINE SEALING                        | KG   | 5  |
| 192 | ONLINE TOOL  | LEATHER HAND GLOVES, PRIME QUALITY,APPLICATION-ONLINE SEALING          | PAIR | 5  |
| 193 | ONLINE TOOL  | OIL SEAL, HYDRAULIC INJECTION GUN,APPLICATION-ONLINE SEALING           | NOS  | 10 |
| 194 | ONLINE TOOL  | HYDRAULIC INJECTION GUN,APPLICATION-ONLINE SEALING                     | NOS  | 1  |
| 195 | ONLINE TOOL  | HYDRAULIC PUMP, 700 KG PRESSURE WITH HYDRAULIC HOSE FOR ONLINE SEALING | NOS  | 1  |



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|-----|-------------|--|-----|----|
| 196 | ONLINE TOOL | PNEUMATIC DRILL MACHINE FOR ONLINE SEALING                           | NOS | 1  |
| 197 | ONLINE TOOL | PINNING PNEUMATIC MACHINE HEAVY DUTY FOR ONLINE SEALING              | NOS | 1  |
| 198 | ONLINE TOOL | PINNING NIPPS FOR ONLINE SEALING                                     | SET | 3  |
| 199 | ONLINE TOOL | PINNING SPRING FOR PINNING MACHINE , APPLICATION-ONLINE SEALING      | NOS | 5  |
| 200 | ONLINE TOOL | AIR HOSE, 12 KG/CM2 PRESSURE , SIZE- 1/4",APPLICATION-ONLINE SEALING | MTR | 30 |
| 201 | ONLINE TOOL | JUBILLY CLAMP ,1/4", APPLICATION-ONLINE SEALING                      | NOS | 20 |
| 202 | ONLINE TOOL | AIR CONNECTER 1/4", APPLICATION-ONLINE SEALING                       | NOS | 10 |
| 203 | ONLINE TOOL | AIR CONNECTER 1/2",APPLICATION-ONLINE SEALING                        | NOS | 6  |
| 204 | ONLINE TOOL | INJECTION GUN, NUT 16MM x 20MM, APPLICATION-ONLINE SEALING           | NOS | 2  |
| 205 | ONLINE TOOL | DRILL BIT, SIZE- 4.0X4"MM,HSS  | NOS | 10 |
| 206 | ONLINE TOOL | DRILL BIT, SIZE- 6.8X6"MM,HSS  | NOS | 5  |
| 207 | ONLINE TOOL | DRILL BIT, SIZE- 8.5X6"MM,HSS  | NOS | 5  |
| 208 | ONLINE TOOL | DRILL BIT, SIZE- 4.0X6"MM,HSS  | NOS | 5  |
| 209 | ONLINE TOOL | DRILL BIT, SIZE- 4.0X8"MM,HSS  | NOS | 5  |
| 210 | ONLINE TOOL | DRILL BIT, SIZE- 4.0X10"MM,HSS                                       | NOS | 5  |
| 211 | ONLINE TOOL | DRILL BIT, SIZE- 4.0MM,HSS, EXTRA LONG                               | NOS | 10 |
| 212 | ONLINE TOOL | DRILL BIT, SIZE- 3.0X HSS, EXTRA LONG                                | NOS | 5  |
| 213 | ONLINE TOOL | TAPE SET ,SIZE-8.0 MM CARBON   | SET | 3  |
| 214 | ONLINE TOOL | TAPE SET ,SIZE- 10.0MM CARBON  | SET | 3  |
| 215 | ONLINE TOOL | TAPE SET ,SIZE- 8.0MM HSS  | SET | 3  |
| 216 | ONLINE TOOL | TAPE SET ,SIZE- 10 MM HSS  | SET | 3  |
| 217 | ONLINE TOOL | TAPE HANDLE , SIZE-12"   | NOS | 2  |
| 218 | ONLINE TOOL | TAPE HANDLE , SIZE-6"  | NOS | 2  |
| 219 | ONLINE TOOL | ALLENKEY ,SIZE-4 MM  | NOS | 4  |
| 220 | ONLINE TOOL | ALLENKEY ,SIZE-5 MM  | NOS | 4  |
| 221 | ONLINE TOOL | GRUB SCREW,8MM   | NOS | 50 |
| 222 | ONLINE TOOL | GRUB SCREW,10 MM   | NOS | 50 |
| 223 | ONLINE TOOL | HACKSAW FRAME, SIZE-6"   | NOS | 2  |
| 224 | ONLINE TOOL | BLADE HAKSAW , SIZE-6"   | NOS | 10 |
| 225 | ONLINE TOOL | BRASS WIRE,SIZE-4.0MM ROUND  | KG  | 3  |
| 226 | ONLINE TOOL | BRASS WIRE, SIZE-5.0MM ROUND   | KG  | 3  |
| 227 | ONLINE TOOL | BRASS WIRE, SIZE-6.0MM ROUND   | KG  | 3  |
| 228 | ONLINE TOOL | BRASS WIRE, SIZE-8.0MM ROUND   | KG  | 3  |
| 229 | ONLINE TOOL | BRASS WIRE, SIZE-3.0MM ROUND   | KG  | 2  |



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| 230 | ONLINE TOOL                                    | PIPE WRENCH,12", MAKE-TAPARIA   | NOS | 1   |
| 231 | ONLINE TOOL                                    | ADJUSTABLE WRENCH 12", MAKE-TAPARIA                                       | NOS | 1   |
| 232 | ONLINE TOOL                                    | ADJUSTABLE WRENCH 6", MAKE-TAPARIA  | NOS | 1   |
| 233 | ONLINE TOOL                                    | 24 X27 MM OPEN SPANNER, MAKE-TAPARIA                                      | NOS | 2   |
| 234 | ONLINE TOOL                                    | 24 X27 MM RING SPANNER, MAKE-TAPARIA                                      | NOS | 2   |
| 235 | ONLINE TOOL                                    | 16X 17MM OPEN SPANNER , MAKE-TAPARIA                                      | NOS | 2   |
| 236 | ONLINE TOOL                                    | 16X 17MM RING SPANNER , MAKE-TAPARIA                                      | NOS | 2   |
| 237 | ONLINE TOOL                                    | SCREW DRIVER , SIZE-10MM, MAKE-TAPARIA                                    | NOS | 2   |
| 238 | ONLINE TOOL                                    | SCREW DRIVER , SIZE-6 MM, MAKE-TAPARIA                                    | NOS | 2   |
| 239 | OIL PUMP                                       | OIL PUMP MANUAL   | NOS | 2   |
| 240 | OIL PUMP                                       | OIL PUMP MOTOR OPERATED   | NOS | 2   |
| 241 | HOSE   | WIRE BRAIDED FLEXIBLE HOSE 1", PRESSURE 12KG/CM2                          | MTR | 100 |
| 242 | HOSE   | WIRE BRAIDED FLEXIBLE HOSE 1/2", PRESSURE 12KG/CM2                        | MTR | 100 |
| 243 | HOSE   | WIRE BRAIDED FLEXIBLE HOSE 3/4", PRESSURE 12KG/CM3                        | MTR | 100 |
| 244 | DRILLING MACHINE                               | DRILLING MACHINE , CHARGEABLE   | NOS | 2   |
| 245 | FF TO RORARY GRINDER                           | FF TO RORARY GRINDER WITH METTALIC TOOLS                                  | NOS | 6   |
| 246 | BEVEL PROTECTOR                                | BEVEL PROTECTOR WITH WATER LEVEL FOR COOLING TOWER BLADE ANGLE ADJUSTMENT | NOS | 2   |
| 247 | WELDING CABLE WITH COPPER CORE APPROX 30 METER | WELDING CABLE WITH COPPER CORE APPROX 30 METER                            | NOS | 6   |
| 248 | BUTTON JACK                                    | BUTTON JACK 30 TR   | NOS | 3   |
| 249 | DC LIGHT                                       | 24 VOLTS LIGHTING WITH PANLE & CABLE                                      | NOS | 12  |
| 250 | TROLLEY  | FOR MATERIAL SHIFTING   | NOS | 4   |

### Electrical Maintenance

| S. No. | ELECTRICAL Tools List   | UOM  | Quantity |
|--------|---|------|----------|
| 1      | Pipe spanner set (6-7mm to 18-19mm), Make Taparia                                 | Set  | 6        |
| 2      | Combination plier, Size-8inch, Make-Taparia                                       | Nos. | 6        |
| 3      | Nose plier-6 Inch   | Nos. | 6        |
| 4      | Long nose plier-8 Inch  | Nos. | 6        |
| 5      | Industrial Electric Air blower, Min 650W, Standard Make like Hitachi, Bosch, etc. | Nos. | 6        |
| 6      | Screwdriver,905-I, Make-Taparia   | Nos. | 6        |
| 7      | Heavy Screwdriver, DES177211  | Nos. | 6        |



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| 8  | Box spanner set, (6mm to 32mm) with ratchet handle, Standard make like Taparia, etc.   | Set  | 6  |
| 9  | Ring spanner set (6-7mm to 30-32mm), Make Taparia  | Set  | 6  |
| 10 | Fix Spanner set (6-7mm to 30-32mm), Make Taparia   | Set  | 6  |
| 11 | Fix ring combo spanner set, size-(6mm to 32mm), Make: Taparia  | Set  | 6  |
| 12 | T-spanner set, size-(6mm to 24mm),   | Set  | 6  |
| 13 | Outside circlip plier, Size-6,8,10 inch (1 each)   | Set  | 6  |
| 14 | Inside circlip plier, Size-6,8,10 inch (1 each)  | Set  | 6  |
| 15 | Hydraulic Jacking oil pump, 30 Ton for industry use, Botton Type   | Nos. | 1  |
| 16 | Hydraulic Jacking oil pump, 50 Ton for industry use, Botton Type   | Nos. | 1  |
| 17 | Hydraulic puller- Big,3-jaw type, max. spread-200mm, output 5 ton  | Nos. | 2  |
| 18 | Three arm Bearing puller, size-300mm, Arm Length-240mm, Force- 50KN, Torque-160Nm, Make-Any standard                                 | Nos. | 6  |
| 19 | Hex Press big size crimping tool suitable for crimping of lug upto 630Sq   | Nos  | 1  |
| 20 | Hydraulic Hex Press big size crimping tool suitable for crimping of lug upto 630Sq   | Nos  | 1  |
| 21 | Hex Press Medium size crimping tool, Size-16 to 50sqmm, Make- TAPARIA  | Nos. | 6  |
| 22 | Hex Press Medium size crimping tool, Size-0.5 sq mm to 16sqmm, Make-TAPARIA  | Nos. | 6  |
| 23 | Allen key set, in mm   | Set  | 6  |
| 24 | Allen key set, in Inch   | Set  | 6  |
| 25 | Allen key set, T- type, in mm  | Set  | 6  |
| 26 | Electrical Knife   | Nos. | 6  |
| 27 | Bearing induction heater, TMBH-1 with heating clamp medium size  | Nos. | 1  |
| 28 | Bearing induction heater, with heating clamp, Big, TIH030m/230V,   | Nos  | 1  |
| 29 | Screwdriver set, Heavy screwdriver set with insulation sleeve, in the set screw driver no.-713,922,725,828,912,712,937, Make-Taparia | Set  | 6  |
| 30 | Tap die set with handle, (2 mm to 16 mm) inner and outer   | Set  | 3  |
| 31 | Pipe Wrench -300mm   | Nos. | 6  |
| 32 | Grinding Machine AG4, Bosch or any standard make, With face shield   | Nos. | 4  |
| 33 | Double speed Drill machine with bits, up to 16 mm Drill bits, Bosch or any standard make for concrete and RCC use.                   | Set  | 4  |
| 34 | Safety Belt with anti-skidding lock and double hook type. IS standard certified  | Nos. | 10 |
| 35 | Cutter, 6-inch, 8-inch   | Set  | 5  |
| 36 | Chisel   | Nos. | 5  |
| 37 | Hammer medium, 500g weight   | Nos. | 5  |
| 38 | Teflon Hammer medium size 500g   | Nos. | 4  |
| 39 | Bearing inserting fitting kit,   | Nos. | 1  |
| 40 | Hexo Frame WITH BLADE MEDIUM SIZE  | Nos. | 6  |
| 41 | Copper Bar, 500Gram  | Nos. | 4  |
| 42 | Nylon belt, 10 Tonne   | Nos. | 4  |
| 43 | Wire Stripper  | Nos. | 5  |
| 44 | Digital clamp on cum multi meter   | Nos  | 6  |
| 45 | Analog LT insulation tester battery operated, 2KV  | Nos  | 6  |
| 46 | Digital Multi meter for 4-20m Amp measurement (True RMS)   | Nos  | 5  |
| 47 | Digital HT insulation tester 5KV with PI measurement   | Nos  | 1  |
| 48 | 15 Tonne ceiling wire rope with 2 nos. D cycle   | Set  | 2  |
| 49 | Hot air blower, 1000 Watt  | Set  | 2  |



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| 50 | File set- round and flat  | Set  | 2  |
| 51 | Paint spray Gun   | Nos  | 4  |
| 52 | LED Long Distance Torch 1 KM, Chargeable  | Nos  | 5  |
| 53 | 11 KV electrical hand gloves  | Pair | 4  |
| 54 | Rubber Gloves for battery maintenance work  | Pair | 10 |
| 55 | Hydro meter for Battery maintenance   | Nos. | 5  |
| 56 | Nylon Rope-30mm, 5 tons - 30 mtr  | Nos. | 6  |
| 57 | Tree Cutting Saw machine  | Nos. | 1  |
| 58 | Hole Shaw Cutter 5mm to 55mm  | set  | 3  |
| 59 | Chain Block :2Tonne capacity with 30 mtr chain  | Set  | 2  |
| 60 | Extension Board with 6ASwitch Socket-4nos. and 16A- Switch Socket-1 Nos.<br>With 20 Meter Cable | Set  | 5  |

### C&I Maintenance

| S. No. | C&I Tools List   | UOM  | Quantity |
|--------|--|------|----------|
| 1      | Ring spanner set 6-7mm to 30-32mm  | Set  | 13       |
| 2      | Fix spanner set 6-7mm to 30-32mm   | Set  | 13       |
| 3      | Fix-ring spanner set 6-7mm to 30-32mm  | Set  | 13       |
| 4      | Box spanner set 6 to 32 mm with handle   | Set  | 13       |
| 5      | Adjustable Screw spanner 6"  | Nos. | 13       |
| 6      | Adjustable Screw spanner 8"  | Nos. | 13       |
| 7      | Adjustable Screw spanner 10"   | Nos. | 13       |
| 8      | Adjustable Screw spanner 12"   | Nos. | 13       |
| 9      | Crimping tool set size 0.5 to 5 sq mm  | Set  | 1        |
| 10     | High speed Electrical drill machine with up to 16mm drill bit (RCC & HHS)                    | Nos. | 2        |
| 11     | Soldering iron with soldering wire & flux  | Nos. | 3        |
| 12     | Pipe wrench 300mm  | Nos. | 13       |
| 13     | Pipe wrench 500mm  | Nos. | 3        |
| 14     | Pipe wrench 750 mm   | Nos. | 3        |
| 15     | File set   | Set  | 13       |
| 16     | Hex saw with blade (6 inch)  | Nos. | 13       |
| 17     | Hex saw with blade (12 inch)   | Nos. | 13       |
| 18     | Chisel   | Nos. | 13       |
| 19     | Metal tube cutter for S S & Copper   | Nos. | 2        |
| 20     | Metal tube bender S S & Copper tube 6mm  | Nos. | 1        |
| 21     | Metal tube bender S S & Copper tube 8mm  | Nos. | 1        |
| 22     | Metal tube bender S S & Copper tube 12mm   | Nos. | 1        |
| 23     | Allen key set- in mm   | Set  | 13       |
| 24     | Allen key set- in inch   | Set  | 13       |
| 25     | Allen key Set T-type   | Set  | 4        |
| 26     | Screwdriver set, Taparia 812   | Set  | 13       |
| 27     | Heavy Screw driver set with insulation cover, Taparia, 713 , 922, 725, 828,<br>912, 712, 937 | Set  | 4        |



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| 28 | Small size screwdriver set (watch maker set), Taparia precision, Model-PSFP6                | Set  | 13 |
| 29 | Number Punch for making cable gland holes   | Set  | 2  |
| 30 | RJ 45and RJ 11 Crimping tool  | Nos. | 2  |
| 31 | Digital Vernier caliper, make – Mitiyoto Measuring Length 300 mm.                           | Nos  | 1  |
| 32 | Grinding machine A4 size  | Nos. | 2  |
| 33 | Air blower variable speed, make – Bosch   | Nos. | 3  |
| 34 | Hot blower, make – Bosch  | Nos. | 2  |
| 35 | Tester, taparia   | Nos. | 13 |
| 36 | Long nose plier 8" size   | Nos. | 13 |
| 37 | Long nose plier 6" size   | Nos. | 13 |
| 38 | Combination Plier size- 8"  | Nos. | 13 |
| 39 | Wire stripper   | Nos. | 13 |
| 40 | 200gm Teflon Hammer   | Nos. | 5  |
| 41 | 500gm Hammer  | Nos. | 5  |
| 42 | Inside Circlip plier  | Nos. | 3  |
| 43 | Outside Circlip plier   | Nos. | 3  |
| 44 | Industrial application Vacuum cleaner   | Nos. | 1  |
| 45 | Ratchet spanner set 6-7 m to 30-32mm  | Nos. | 2  |
| 46 | Multimeter with Auto range facility & true RMS type including 4-20 mA.                      | Nos. | 13 |
| 47 | Highway Addressable Remote Transducer (HART)  | Nos. | 3  |
| 48 | Safety Belt with anti-skidding lock and double hook type. IS standard certified             | Nos. | 2  |
| 49 | Current & MV source & sink (two in one)   | Nos. | 4  |
| 50 | Nylon rope 10Tonne with D-cycle   | Nos. | 2  |
| 51 | knife for cutting wire  | Nos. | 13 |
| 52 | LED Torch 1 Watt rechargeable   | Nos. | 13 |
| 53 | Extension Board with 6A Switch Socket-4nos. and 16ASwitch Socket -1nos. With 20 Meter Cable | Set  | 3  |
| 54 | Wire cutter (06 inch)   | Set  | 13 |
| 55 | Measuring tape  | Set  | 3  |
| 56 | Pointer puller  | Set  | 13 |

### AC System

| S NO. | SHORT DESCRIPTION | LONG DESCRIPTION  | UOM | TOTAL QTY |
|-------|-------------------|---|-----|-----------|
| 1     | CHAINBLOCK - 1T   | HAND OPERATED CHAIN PULLEY BLOCK, 1 T CAPACITY, COMPACT SIZE, EASY TO CARY, LIGHT WEIGHT, CHAIN LENGTH: 6 MTR, MODEL- KP1, KEPRO MAKE | NOS | 2         |
| 2     | CHAINBLOCK- 2T    | HAND OPERATED CHAIN PULLEY BLOCK, 2 T CAPACITY, COMPACT SIZE, EASY TO CARY, LIGHT WEIGHT, CHAIN LENGTH: 6 MTR, MODEL- KP2, KEPRO MAKE | NOS | 2         |



|    |                    |   |     |   |
|----|--------------------|---|-----|---|
| 3  | CHAINBLOCK-5T      | HAND OPERATED CHAIN PULLEY BLOCK, 5 T CAPACITY, COMPACT SIZE, EASY TO CARY, LIGHT WEIGHT, CHAIN LENGTH: 6 MTR, MODEL- KP3, KEPRO MAKE | NOS | 1 |
| 4  | SLING BELT         | 25MM NYLONE SLING BELT,01 MTR, CAPACITY-01 TON  | NOS | 4 |
| 5  | SLING BELT         | 50MM NYLONE SLING BELT,02MTR, CAPACITY-02 TON   | NOS | 4 |
| 6  | SLING BELT         | NYLONE SLING BELT, CAPACITY-05TON,03MTR   | NOS | 4 |
| 7  | SLING BELT         | NYLONE SLING BELT, CAPACITY-05TON,10MTR   | NOS | 2 |
| 8  | 4" ANGLE GRINDER   | PDA 100M, 715-870 WATT, 12000 RPM, MAKE: HITACHI KOKI WITH 10 NOS OF CARBONE BRUSH  | NOS | 1 |
| 9  | 5" ANGLE GRINDER   | PDA 125M, 715-870 WATT, 12000 RPM, MAKE: HITACHI KOKI WITH 10 NOS OF CARBONE BRUSH  | NOS | 1 |
| 10 | AIR BLOWER         | AIR BLOWER, RPM -16000, 550 WATT, MODEL: RB40SA, MAKE: HITACHI KOKI   | NOS | 2 |
| 11 | SPANNER            | RING SPANNER SET, MAKE-TAPARIA(6-32)  | SET | 3 |
| 12 | SPANNER            | OPEN ENDED SPANNER (8-32)   | SET | 3 |
| 13 | SPANNER            | S14HXL 1/2" SQUARE DRIVE SOCKET SET, FORGED HIGH GRADE CHROME VANADIUM STEEL,44-50 HRC, MAKE-TAPARIA (MM SET)                         | SET | 2 |
| 14 | SLODGING RING      | SIZE-30MM, MAKE-GRIP HOLD   | NOS | 3 |
| 15 | SLODGING RING      | SIZE-32MM, MAKE-GRIPHOLD  | NOS | 3 |
| 16 | SLODGING RING      | SIZE-34MM, MAKE-GRIPHOLD  | NOS | 2 |
| 17 | SLODGING RING      | SIZE-36MM, MAKE-GRIPHOLD  | NOS | 2 |
| 18 | SCREWDRIVER        | SIZE-10x200, MAKE: TAPARIA  | NOS | 4 |
| 19 | SCREWDRIVER        | SIZE-8X200, MAKE: TAPARIA   | NOS | 4 |
| 20 | SCREWDRIVER        | SCREWDRIVER SET, MAKE-TAPARIA   | NOS | 4 |
| 21 | SCREWDRIVER        | SCREWDRIVER, SIZE:18", MAKE: TAPARIA  | NOS | 2 |
| 22 | PIPE WRENCH        | 300MM, HEAVY DUTY, MAKE-TAPARIA   | NOS | 2 |
| 23 | PIPE WRENCH        | 450 MM, HEAVY DUTY, MAKE-TAPARIA  | NOS | 2 |
| 24 | PIPE WRENCH        | 600 MM, HEAVY DUTY, MAKE-TAPARIA  | NOS | 2 |
| 25 | ADJUSTABLE WRENCH  | SIZE-6", TAPARIA MAKE   | NOS | 3 |
| 26 | ADJUSTABLE WRENCH  | SIZE-10", TAPARIA MAKE  | NOS | 3 |
| 27 | ADJUSTABLE WRENCH  | SIZE-12", TAPARIA MAKE  | NOS | 3 |
| 28 | NIDDLE DIMOND FILE | NIDDLE FILE, DIAMOND COATED TYPE (ROUND, FLATE & HALF ROUND)  | SET | 1 |
| 29 | ALLEN KEY          | SIZE: MM, UNBREKO MAKE  | SET | 1 |
| 30 | ALLEN KEY          | SIZE: INCH, UNBREKO MAKE  | SET | 1 |
| 31 | ALLEN KEY          | SIZE: STAR, UNBREKO MAKE  | SET | 1 |
| 32 | WELDING MACHINE    | SINGLE PHASE WELDING MACHINE, MAKE-ESAB, MODEL NO. BUDDY ARC-200  | NOS | 1 |
| 33 | MEASURING TAPE     | 03 MTR STEEL MEASURING TAPE   | NOS | 3 |
| 34 | MEASURING TAPE     | 05 MTR STEEL MEASURING TAPE   | NOS | 3 |
| 35 | DRILLING MACHINE   | HAMMER DRILL, TYPE-B101,710 W, MAX13 MM DRILL,0-2800 RPM, MODEL NO. KR704RE, MAKE-BLACK & DECKER                                      | NOS | 1 |
| 36 | GREASE GUN         | CAPACITY-01 KG  | NOS | 1 |
| 37 | GREASE GUN         | CAPACITY-05 KG  | NOS | 1 |
| 38 | CIRCLIP PLIER      | INSIDE CIRCLIP PLIER, MAKE-TAPARIA  | NOS | 2 |
| 39 | CIRCLIP PLIER      | OUTSIDE CIRCLIP PLIER, MAKE-TAPARIA   | NOS | 2 |



|    |                           |   |     |     |
|----|---------------------------|---|-----|-----|
| 40 | COMBINATION PLIER         | COMBINATION PLIER, MAKE-TAPARIA   | NOS | 2   |
| 41 | FILE                      | FLAT FILE, SIZE-10"   | NOS | 2   |
| 42 | FILE                      | FLAT FILE, SIZE-12"   | NOS | 2   |
| 43 | FILE                      | ROUND FILE, SIZE-6"   | NOS | 2   |
| 44 | FILE                      | ROUND FILE, SIZE-10"  | NOS | 2   |
| 45 | CHIESEL                   | CHIESEL, SIZE-6"  | NOS | 2   |
| 46 | CHIESEL                   | CHIESEL, SIZE-8"  | NOS | 2   |
| 47 | CHIESEL                   | CHIESEL, SIZE-12"   | NOS | 2   |
| 48 | CENTRE PUNCH              | TAPARIA CENTRE PUNCHES 1884   | NOS | 2   |
| 49 | SHIM CUTTER               | SIZE-10"  | NOS | 1   |
| 50 | WIRE SLING                | 13MMX1MTR   | NOS | 2   |
| 51 | WIRE SLING                | 15MMX2MTR   | NOS | 2   |
| 52 | WIRE SLING                | 15MMX3MTR   | NOS | 2   |
| 53 | D-SHACKEL                 | SIZE-3/4" X4TON   | NOS | 4   |
| 54 | D-SHACKEL                 | SIZE-1/2" X2TON   | NOS | 4   |
| 55 | D-SHACKEL                 | SIZE-1" X8TON   | NOS | 4   |
| 56 | 3 JAW PULLER              | MECHANICAL PULLER   | NOS | 1   |
| 57 | HAMMER                    | 2700GM, MAKE-TAPARIA  | NOS | 1   |
| 58 | HAMMER                    | 5000GM, MAKE-TAPARIA  | NOS | 1   |
| 59 | HAMMER                    | 1500GM, MAKE-TAPARIA  | NOS | 1   |
| 60 | HAMMER                    | 1000GM, MAKE-TAPARIA  | NOS | 2   |
| 61 | HAMMER                    | 500 GM, MAKE-TAPARIA  | NOS | 2   |
| 62 | FILLER GAUGE              | 0.01-1MM,   | NOS | 1   |
| 63 | INSIDE CALIPER            | SIZE-10"  | NOS | 1   |
| 64 | OUTSIDE CALIPER           | SIZE-10"  | NOS | 1   |
| 65 | HYDRAULIC PUMP            | MODEL NO. P-39, MAKE-ENARPAC, SINGLE SPEED,700BAR WITH OIL CAPACITY 770 CM3, WEIGHT 6.2KG | NOS | 1   |
| 66 | HYDRAULIC RAM             | MAKE-ENARPAC,50 TON   | NOS | 1   |
| 67 | HYDRAULIC HOLLOW RAM      | MAKE-ENARPAC,30 TON   | NOS | 1   |
| 68 | SPIRIT LEVEL              | 10"   | NOS | 1   |
| 69 | MASTER LEVEL              | 10"   | NOS | 1   |
| 70 | NYLONE ROPE               | 16MM  | MTR | 120 |
| 71 | NYLONE ROPE               | 12MM  | MTR | 120 |
| 72 | MANILA ROPE               | 16MM  | MTR | 120 |
| 73 | HACK SAW BLADE FRAME      | 12"   | NOS | 2   |
| 74 | SCISSOR                   | 8"  | NOS | 2   |
| 75 | HOLE PUNCH                | SET UP TO 24MM  | NOS | 1   |
| 76 | STEEL RULE                | STEEL RULE 1000MM   | NOS | 1   |
| 77 | STEEL RULE                | STEEL RULE 300MM  | NOS | 1   |
| 78 | DRILL BIT                 | SIZE-3,3.5,4.5,5,5.5,6,8,7.5,8,8.6,10,10.5,11,11.5,12 MM                                  | SET | 7   |
| 79 | CUTTER                    | SHEET CUTTER 10"  | NOS | 1   |
| 80 | BOX SPANNER 6-32MM        | SET   | SET | 3   |
| 81 | CLAMP                     | C- CLAMP 6"   | NOS | 4   |
| 82 | KNIFE                     | UTILITY KNIFE, 19MM, MAKE: TAPARIA  | NOS | 2   |
| 83 | COPPER TUBE CUTTER/BENDER | UP TO 1"  | NOS | 1   |
| 84 | TUBE EXPANDER             | UP TO 1"  | NOS | 1   |
| 85 | RIGHT ANGLE               | 6"  | NOS | 1   |
| 86 | COPPERROD                 | SIZE:25,50MM  | NOS | 1   |



|     |                                    |  |     |   |
|-----|------------------------------------|--|-----|---|
| 87  | COPPERROD                          | 8"   | NOS | 1 |
| 88  | SAFETY BELT                        | STANDARD   | NOS | 4 |
| 89  | OIL STONE MEDIUM,<br>FINE          | MEDIUM, FINE   | NOS | 2 |
| 90  | TUBE BENDER                        | UP TO ¾" SIZE  | SET | 2 |
| 91  | TUBE CUTTER                        | UP TO ¾" SIZE  | SET | 2 |
| 92  | STEPDOWN<br>TRANSFORMER            | 24 VOLT  | NO  | 1 |
| 93  | CUTTING /BRAZZING<br>TORCH         | WITH HOSE PIPE AND REGULATOR   | NO  | 1 |
| 94  | GAS CHARGING LINE<br>WITH CYLINDER | WITH CYLINDER ADAPTOR AND REGRIGERANT<br>CYLINDERS WITH GAS OF 60 KG CAPACITY  | NO  | 2 |
| 95  | VACCUM PUMP                        |  | NO  | 1 |
| 96  | NYLON BRUSH WITH<br>EXTENSION ROD  | FOR CLEANING OF CONDENSER/COOLER<br>TUBES  | NO  | 6 |
| 97  | CYLINDER TROLLY                    | FOR DA/OXYGEN  | NO  | 6 |
| 98  | TROLLY                             | FOR MATERIAL SHIFTING  | NO  | 4 |
| 99  | LIFTING TOOLS                      | SET OF ADEQUATE RATED LIFTING TACKLES<br>SUITABLE FOR HANDLING THE COMPRESSORS,<br>CONDENSER, CHILLER, PUMP SETS, FANS,<br>ROOF EXTRACTER, AHU SECTION ETC | SET | 1 |
| 100 | LIGHTING TOOLS                     | AC & DC LIGHTING WITH SWITCHBOARDS   | SET | 3 |

**MEASURING INSTRUMENTS**

| S NO. | SHORT DESCRIPTION                 | LONG DESCRIPTION                                 | UOM | TOTAL QTY |
|-------|-----------------------------------|--|-----|-----------|
| 1     | DIAL GAUGE WITH<br>MAGNETIC STAND | 0-10MM, MAKE MITUTOYO (02 NOS. OF DIAL<br>GAUGE) | NOS | 3         |
| 2     | TEMPERATURE GUN                   | TEMPERATURE GUN                                  | NOS | 2         |
| 3     | VERIER CALIPERS                   | 0-300MM, MAKE-MUTUTOYO                           | NOS | 1         |
| 4     | MICROMETER INSIDE &<br>OUTSIDE    | 0-300MM, MAKE-MUTUTOYO                           | NOS | 1         |
| 5     | BORE GAUGE                        | 35-60MM, MAKE-MUTUTOYO                           | NOS | 1         |
| 6     | BORE GAUGE                        | 50-150MM, MAKE-MUTUTOYO                          | NOS | 1         |

**Housekeeping**

| S NO. | PARTICULARS  | MONTHLY QUANTITY REQ.                        |
|-------|--|--|
| 1     | Shovel   | 30   |
| 2     | Pawada (small + long)  | (25 SMALL+10 BIG)                            |
| 3     | Bowl   | 30   |
| 4     | Trikam   | 15   |
| 5     | Vacuum cleaning machine for CCR, Turbine<br>floor, MHP, Office | 02 (02 FOR MAIN PLANT) (01 BIG, 01<br>SMALL) |
| 6     | Acid   | 20 LTR                                       |
|       | Phenyl   | 50 LTR                                       |
|       | Detergent  | 15 KG  |
|       | Soft broom   | 20NOS  |
|       | Hard broom   | 20 NOS                                       |
|       | Cobweb   | 10 NOS                                       |
|       | Glass cleaner – 500 ml   | 15 NOS                                       |
|       | Wiper big  | 10 NOS                                       |



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|                         |        |
|-------------------------|--------|
| Wiper small             | 10 NOS |
| Cotton waste            | 30 KG  |
| Room freshener – 300 ml | 15 NOS |
| Trolley with tire       | 10 NOS |

***Note: If any tools and tackles, except the list mentioned above, if required to carry out any job, shall then be arranged by the successful bidder for which the payment shall be done by GMDC team at mutually agreed rates.***

### Annexure I: List of Consumables Items

#### Mechanical Maintenance:

| S. No. | Description           | Specification                                 | Unit  | Quantity |
|--------|-----------------------|---|-------|----------|
| 1      | M-SEAL                | M SEAL  | KGS   | 60       |
| 2      | HAND GLOVES (CLOTHES) | HAND GLOVES                                   | PAIR  | 1200     |
| 3      | BLUE PASTE            | MAKE:CAMLIN,10ML                              | NOS   | 24       |
| 4      | SILICON SEALANT       | 200GRAMM                                      | NOS   | 240      |
| 5      | OIL STONE             | ROUGH   | NOS   | 12       |
| 6      | OIL STONE             | MEDIUM  | NOS   | 12       |
| 7      | OIL STONE             | FINE  | NOS   | 12       |
| 8      | EMERY PAPER           | ROUGH   | METER | 200      |
| 9      | EMERY PAPER           | MEDIUM  | METER | 200      |
| 10     | EMERY PAPER           | FINE  | METER | 200      |
| 11     | EMERY PAPER           | 800 GRIT SIZE                                 | NOS   | 200      |
| 12     | EMERY PAPER           | 1000 GRIT SIZE                                | NOS   | 200      |
| 13     | EMERY PAPER           | 1500 GRIT SIZE                                | NOS   | 200      |
| 14     | LAPPING PASTE         | ROUGH, 400 GM CAN                             | NOS   | 12       |
| 15     | LAPPING PASTE         | MEDIUM,400 GM CAN                             | NOS   | 12       |
| 16     | LAPPING PASTE         | FINE,400 GM CAN                               | NOS   | 12       |
| 17     | WD 40 SPRAY           | WD 40 SPRAY                                   | NOS   | 240      |
| 18     | TAFELON TAPE          | TAFELON TAPE                                  | NOS   | 1200     |
| 19     | RUSTOLINE             | RUSTOLINE                                     | LITER | 600      |
| 20     | ANABOND -666          | ANABOND-666                                   | NOS   | 72       |
| 21     | WIRE BRUSH            | WIRE BRUSH                                    | NOS   | 240      |
| 22     | MOLYCOAT GREASE       | MOLYCOTE1000,HIGH<br>TEPERATURE GREASE 1000°C | KG    | 40       |
| 23     | ACETYLENE NOZZLE      | MAKE-MOREX,ANME 1/16" TIG<br>WELD             | NOS   | 60       |
| 24     | ACETYLENE NOZZLE      | MAKE-MOREX,ANME 1/64" TIG<br>WELD             | NOS   | 60       |
| 25     | CYLINDER KEY          | CYLINDER KEY                                  | NOS   | 40       |
| 26     | DA CYLINDER           | DA CYLINDER                                   | NOS   | 120      |
| 27     | OXYGEN CYLINDER       | OXYGEN CYLINDER                               | NOS   | 240      |
| 28     | ARGON CYLINDER        | ARGON CYLINDER                                | NOS   | 24       |
| 29     | TUNGSTEN WIRE         | 2.4 MMX100 MM                                 | PKT   | 8        |
| 30     | E-6013                | 3.15MM*350MM                                  | KG    | 1200     |
| 31     | E-6013                | 2.5MM*350MM                                   | KG    | 1200     |
| 32     | E-7018                | ,2.5MM*350MM                                  | KG    | 1200     |



|    |  |                     |       |      |
|----|--|---------------------|-------|------|
| 33 | E-7018   | 3.15MM*350MM        | KG    | 1200 |
| 34 | E-7018   | 04MM*350MM          | KG    | 1200 |
| 35 | E-308  | 3.15*350MM          | KG    | 1200 |
| 36 | E-308  | 2.5*350MM           | KG    | 1200 |
| 37 | E-309  | 3.15*350MM          | KG    | 1200 |
| 38 | E-309  | 2.5*350MM           | KG    | 1200 |
| 39 | CUTTROD  | 4*350MM             | KG    | 1200 |
| 40 | E-310  | 3.15*350MM          | KG    | 1200 |
| 41 | E-310  | 2.5*350MM           | KG    | 1200 |
| 42 | WELDING ROD 8018-B3                                  |                     | KG    | 200  |
| 43 | WELDING ROD 9018-B3                                  |                     | KG    | 200  |
| 44 | CAST IRON WELDING ROD                                |                     | KG    | 120  |
| 45 | CAST STEEL WELDING ROD                               |                     | KG    | 120  |
| 46 | ALUMINIUM ROD  |                     | KG    | 20   |
| 47 | STERLITE FILLER WIRE                                 |                     | KG    | 120  |
| 48 | FILLER ROD 70S                                       |                     | KG    | 120  |
| 49 | FILLER ROD 80S                                       |                     | KG    | 120  |
| 50 | FILLER ROD 90S-B9                                    |                     | KG    | 120  |
| 51 | FILLER ROD SS 304                                    |                     | KG    | 120  |
| 52 | FILLER ROD SS 310                                    |                     | KG    | 120  |
| 53 | FILLER ROD SS 316                                    |                     | KG    | 120  |
| 54 | LOCTITE 406  |                     | NOS   | 80   |
| 55 | LOCTITE 278 THREAD LOCKER                            |                     | NOS   | 24   |
| 56 | BEARING RETAINER                                     |                     | NOS   | 24   |
| 57 | METALLIC PUTTY                                       |                     | NOS   | 12   |
| 58 | PETROL   | FOR FILTER CLEANING | LTR   | 800  |
| 59 | DIESEL   |                     | LTR   | 800  |
| 60 | PERMANENT MARKER                                     |                     | NOS   | 240  |
| 61 | PAINT MARKER   |                     | NOS   | 240  |
| 62 | CHALK  |                     | BOX   | 40   |
| 63 | MARKING CLOTH  |                     | METER | 240  |
| 64 | RAIN COAT  |                     | NOS   | 48   |
| 65 | GUM BOOT   |                     | PAIRS | 96   |
| 66 | METALLIC GRAPHITE GASKET,<br>CHAMPION SUPER 54 - 3MM | MAKE : CHAMPION     | KG    | 400  |
| 67 | NON METALLIC GASKET,<br>STYLE:39 - 3MM               | MAKE : CHAMPION     | KG    | 1200 |
| 68 | NON METALLIC GASKET,<br>STYLE:39 - 5MM               | MAKE : CHAMPION     | KG    | 1200 |
| 69 | LEATHER HAND GLOVES<br>(GOOD QUALITY)                |                     | PAIR  | 60   |



|    |  |  |      |       |
|----|--|--|------|-------|
| 70 | AG-4 CUTTING WHEEL   | 1MM - YURI MAKE  | NOS  | 2400  |
| 71 | AG-5 CUTTING WHEEL   | 1.5 MM - YURI MAKE   | NOS  | 2400  |
| 72 | AG-7 CUTTING WHEEL   | 3MM - BOSCH MAKE   | NOS  | 1200  |
| 73 | AG-4 GRINDING WHEEL  | 6MM - BOSCH MAKE   | NOS  | 800   |
| 74 | AG-5 GRINDING WHEEL  | 6MM - BOSCH MAKE   | NOS  | 800   |
| 75 | AG-7 GRINDING WHEEL  | 8MM - BOSCH MAKE   | NOS  | 400   |
| 76 | AG-4 BUFFING WHEEL   | BOSCH MAKE   | NOS  | 2400  |
| 77 | WELDING HELMET WITH GLASS  |  | NOS  | 80    |
| 78 | WELDING HOLDER HEAVY DUTY  |  | NOS  | 120   |
| 79 | GRINDING HELMET  |  | NOS  | 60    |
| 80 | WELDING GLASS  | WHITE  | NOS  | 800   |
| 81 | WELDING GLASS  | BLACK  | NOS  | 400   |
| 82 | SODIUM SILICATE  | SODIUM SILICATE  | KG   | 800   |
| 83 | FEVICOL  | SR-998   | LTR  | 400   |
| 84 | COTTON WASTE   | COTTON WASTE   | KG   | 2,000 |
| 85 | BELT DRESSER   | BELT DRESSER   | NOS  | 40    |
| 86 | HACK SAW BLADE   | HACK SAW BLADE,12"   | NOS  | 40    |
| 87 | POWER HACK SAW BLADE   |  | NOS. | 48    |
| 88 | FEVIQUICK  | FEVIQUICK,5ML  | NOS  | 240   |
| 89 | NEOPRENE RUBBER INSERTION SHEET, SIZE:3MM THICK, SHORE HARDNESS: 65-75, FINISHING:SMOOTH                     | NEOPRENE RUBBER INSERTION SHEET, SIZE:3MM THICK, SHORE HARDNESS: 65-75, FINISHING:SMOOTH                     | Kg   | 800   |
| 90 | NEOPRENE RUBBER INSERTION SHEET, SIZE:5MM THICK, SHORE HARDNESS: 65-75, FINISHING:SMOOTH                     | NEOPRENE RUBBER INSERTION SHEET, SIZE:5MM THICK, SHORE HARDNESS: 65-75, FINISHING:SMOOTH                     | Kg   | 800   |
| 91 | RED OXIDE, ZINC RICH PRIMER, REF:IS 2074   | RED OXIDE, ZINC RICH PRIMER, REF:IS 2074   | LTR  | 400   |
| 92 | SMOKE GREY PAINT, TYPE: LUXOL HIGH GLOSS SYNTHETIC ENAMEL, MAKE: BURGER OR OTIAN PAINT, PACKING: 20 LTR PACK | SMOKE GREY PAINT, TYPE: LUXOL HIGH GLOSS SYNTHETIC ENAMEL, MAKE: BURGER OR OTIAN PAINT, PACKING: 20 LTR PACK | LTR  | 400   |
| 93 | THINNER (5-LTR TIN)  | THINNER (5-LTR TIN)  | LTR  | 400   |
| 94 | PAINT BRUSH 50MM   |  | NOS  | 96    |
| 95 | OIL PAPER SHEET SIZE:0.5 MM THICK AND STANDARD DIMENSION   | OIL PAPER SHEET SIZE:0.5 MM THICK AND STANDARD DIMENSION   | NOS  | 80    |
| 96 | OIL PAPER SHEET SIZE:1.0 MM THICK AND STANDARD DIMENSION   | OIL PAPER SHEET SIZE:1.0 MM THICK AND STANDARD DIMENSION   | NOS  | 80    |



|     |  |  |      |      |
|-----|--|--|------|------|
| 97  | OIL PAPER SHEET SIZE:2.0 MM THICK AND STANDARD DIMENSION   | OIL PAPER SHEET SIZE:1.0 MM THICK AND STANDARD DIMENSION   | NOS  | 80   |
| 98  | RUBBER HAND GLOVES 14" ACID RESISTANCE   | RUBBER HAND GLOVES 14" ACID RESISTANCE   | PAIR | 96   |
| 99  | HAND GLOVES - HEAT RESISTANCE ASBESTOS   | HAND GLOVES - HEAT RESISTANCE ASBESTOS   | PAIR | 24   |
| 100 | MS BOLT M 8 X 50 GRADE 4.6 FULL THREAD WITH ONE WASHER AND ONE NUT   | MS BOLT M 8 X 50 GRADE 4.6 FULL THREAD WITH ONE WASHER AND ONE NUT   | KG   | 320  |
| 101 | MS BOLT M10 X 50, GRADE :4.6 FULL THREAD WITH ONE WASHER AND ONE NUT   | MS BOLT M10 X 50, GRADE :4.6 FULL THREAD WITH ONE WASHER AND ONE NUT   | KG   | 400  |
| 102 | MS BOLT M12 X 60, GRADE:4.8 FULL THREAD WITH ONE / TWO WASHER AND ONE NUT  | MS BOLT M12 X 60, GRADE:4.8 FULL THREAD WITH ONE / TWO WASHER AND ONE NUT  | KG   | 400  |
| 103 | MS BOLT M 16 X 110 GRADE 4.6 FULL THREAD WITH ONE WASHER AND ONE NUT   | MS BOLT M 16 X 110 GRADE 4.6 FULL THREAD WITH ONE WASHER AND ONE NUT   | KG   | 800  |
| 104 | MS BOLT M16 X 80, GRADE :4.8 FULL THREAD WITH ONE WASHER AND ONE NUT   | MS BOLT M16 X 80, GRADE :4.8 FULL THREAD WITH ONE WASHER AND ONE NUT   | KG   | 600  |
| 105 | MS BOLT M 20 X 120 GRADE 4.6, FULL THREAD WITH ONE WASHER AND ONE NUT  | MS BOLT M 20 X 120 GRADE 4.6, FULL THREAD WITH ONE WASHER AND ONE NUT  | KG   | 1200 |
| 106 | MS BOLT M24 X 150, GRADE 4.8 FULL THREAD WITH DOUBLE WASHER AND ONE NUT  | MS BOLT M24 X 150, GRADE 4.8 FULL THREAD WITH DOUBLE WASHER AND ONE NUT  | KG   | 1200 |
| 107 | MS BOLT M 24 X 100, GRADE :4.6 FULL THREAD WITH ONE WASHER AND ONE NUT   | MS BOLT M 24 X 100, GRADE :4.6 FULL THREAD WITH ONE WASHER AND ONE NUT   | KG   | 2000 |
| 108 | PVC FOOT VALVE 75MM (INSIDE 3" BSP FEMALE THREAD)  | PVC FOOT VALVE 75MM (INSIDE 3" BSP FEMALE THREAD)  | No.  | 48   |
| 109 | PVC HOSE NIPPLE (ONE SIDE 3" BSP MALE THREAD AND OTHER SIDE TAPPER FOR 3" HOSE PPE)  | PVC HOSE NIPPLE (ONE SIDE 3" BSP MALE THREAD AND OTHER SIDE TAPPER FOR 3" HOSE PPE)  | No.  | 48   |
| 110 | HOSE CLAMP 3"  | HOSE CLAMP 3"  | No.  | 192  |
| 111 | HEAVY DUTY GREY HOSE PIPE, SIZE-3", WORKING PRESSURE 4.5KG/CM2, BURSTING PRESSURE-18 KG/CM2, MAX WORKING TEMP - 60-70 DEGREE | HEAVY DUTY GREY HOSE PIPE, SIZE-3", WORKING PRESSURE 4.5KG/CM2, BURSTING PRESSURE-18 KG/CM2, MAX WORKING TEMP - 60-70 DEGREE | Mtr  | 240  |
| 112 | O-RING CORD 3 MM, MOC - VITON  | O-RING CORD 3 MM, MOC - VITON  | Mtr  | 400  |



|     |  |  |     |     |
|-----|--|--|-----|-----|
| 113 | O-RING CORD 4 MM, MOC - VITON          | O-RING CORD 4 MM, MOC - VITON          | Mtr | 400 |
| 114 | O-RING CORD 5 MM, MOC - VITON          | O-RING CORD 5 MM, MOC - VITON          | Mtr | 400 |
| 115 | O-RING CORD 8 MM, MOC - VITON          | O-RING CORD 8 MM, MOC - VITON          | Mtr | 200 |
| 116 | O-RING KIT BOX (INCH SIZE)             | O-RING KIT BOX (INCH SIZE)             | NO  | 24  |
| 117 | O-RING KIT BOX (MM SIZE)               | O-RING KIT BOX (MM SIZE)               | NO  | 24  |
| 118 | TEFLONE SHEET;SIZE:1 MM THICK          | 1 MM ,PTFE                             | KG  | 20  |
| 119 | TEFLONE SHEET;SIZE:2 MM THICK          | 2 MM;PTFE                              | KG  | 20  |
| 120 | TEFLONE BAR;SIZE-25 MM                 | 500 MM LONG                            | NOS | 8   |
| 121 | TEFLONE BAR;SIZE-50 MM                 | 500 MM LONG                            | NOS | 8   |
| 122 | TEFLONE BAR;SIZE-75 MM                 | 500 MM LONG                            | NOS | 8   |
| 123 | ON LINE SEALING MATERIAL (AS REQUIRED) | ON LINE SEALING MATERIAL (AS REQUIRED) | SET | 12  |
| 124 | TARPOLINE SIZE: 3'X6'                  | TARPOLINE SIZE: 3 meter X 6 meter      | NOS | 24  |
| 125 | CERAMIC TAPE<br>SIZE:30MMX3MM          |  | MTR | 200 |
| 126 | CERAMIC TAPE<br>SIZE:50MMX5MM          |  | MTR | 200 |
| 127 | PRESSED WOOL FELT, SIZE:5 MM           |  | KG  | 80  |
| 128 | PRESSED WOOL FELT, SIZE:10 MM          |  | KG  | 80  |

### Electrical Maintenance

| Sr.No. | Material Description / Specification  | UOM   | Qty. |
|--------|---|-------|------|
| 1      | Smoke gray paint (4Ltr Tin) ref. Make: Asian paint/berger paint/Nerolac                         | Liter | 200  |
| 2      | RED OXIDE, ZINC RICH PRIMER, REF:IS 2074 (4Ltr Tin) ref. Make: Asian paint/berger paint/Nerolac | Liter | 200  |
| 3      | THINNER 800 (5Ltrs ) suitable to ref. Make: Asian paint/berger paint/Nerolac paint.             | Liter | 150  |
| 4      | CRC-2/26, SPRAY BOTTLE 500ml, APPLICATION: CONTACT CLEANING, MAKE: STANVAC                      | Nos.  | 100  |
| 5      | SPRAY BOTTLE - WD-40 , 420MI (AEROSOL) FOR LULTI PURPOSE USE.                                   | Nos.  | 100  |



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| 6  | RUSTOLINE ANTICORROSIVE 1 LTR TIN  | Liter | 100  |
| 7  | <b>HT TAPE ROLL</b> : SCOTCH HT SELF BONDING Electrical vynyle tape, 3M SCOTCH,Size-WIDTH-19MMxLENGTH-66Feet,Strong self adhesive For HT joint.    | Roll  | 100  |
| 8  | PVC INSULATION TAPE: Size ref.: 1.8cm X 6.5m X 125mm Ref.MAKE: STEEL GRIP, ANCHOR, (RED-500nos ,YELLOW-500nos,BLUE-500nos,BLACK-500nos each COLOR) | Nos.  | 2000 |
| 9  | ALLUMINIUM FOIL TAPE SIZE 2 INCH WITH ADHESIVE : size: 48mm X 50Mtr.   | Roll  | 50   |
| 10 | COTTON WASTE (50Kg each)   | Kg.   | 400  |
| 11 | TB CONNECTOR ,KUT10 SIZE - 10 SQ MM FOR C & L-TYPE CHANNEL Ref.Make Elmex.   | Nos.  | 500  |
| 12 | TB CONNECTOR : ELEMEX CONNECTOR 16SQ.MM, KUT16, 500V,  | Nos.  | 500  |
| 13 | TB CONNECTOR : ELEMEX CONNECTOR 35SQ.MM, KUT35, 500V   | Nos.  | 500  |
| 14 | M-SEAL ADHESIVE : REGULAR EPOXY COUMPOUND FOR INDUSTRY USE (100GM PKT)   | Kg.   | 2    |
| 15 | Hacksaw Blade: HIGH SPEED HSS POWER HACKSAW BLADE 12": SIZE: 300 x25 X1.25.  | Nos.  | 20   |
| 16 | AG-4 BUFFING WHEEL 4", Ref. MAKE:BOSCH   | Nos.  | 200  |
| 17 | CUTTING WHEEL FOR AG-4 M/C , SIZE:100X3X16 MM A24-R5-BFW , MAKE:CARBORENDOM ONLY   | Nos.  | 100  |
| 18 | GRINDING WHEEL, 100 X 4 X 16 MM(MAX RPM.13.745)  | Nos.  | 20   |
| 19 | PAINTING BRUSH 25MM 1"   | Nos.  | 50   |
| 20 | PAINTING BRUSH 50MM 2"   | Nos.  | 50   |
| 21 | PAINTING BRUSH 100MM, 4"   | Nos.  | 10   |
| 22 | STEEL WIRE BRUSH : Stainless steel heavy duty wire brush for rust removing- industry use, For Manual Rust removing.                                | Nos.  | 20   |
| 23 | EMERY PAPER Roll ( SIZE 0.4MM): Emery cloth paper roll Grits 60mm , 50Mtr  | Nos.  | 2    |
| 24 | EMERY cloth PAPER ROUGH Roll: Emery cloth paper roll Grits 100mm , 50Mtr   | Nos.  | 4    |
| 25 | WASHING POWDER - Ref. NIRMA/ RIN ETC.  | Kg.   | 20   |



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| 26 | C-TYPE Mild steel channel : DIN Rail Mild steel C Type slotted channel (35 x 7.5 mm, 1Mtr/each) FOR MCB MOUNTING ARRANGEMENT   | Meter | 50   |
| 27 | LOCTITE-638,BEARING RETAINER COMPOUND, 50ml.   | Nos.  | 5    |
| 28 | LOCTITE-641,BEARING RETAINER COMPOUND, 50 ml.  | Nos.  | 5    |
| 29 | CABLE TIE, 100 MM Nylon standard cable tie   | Nos.  | 400  |
| 30 | CABLE TIE,200 MM Nylon standard cable tie (200mm X 3.6mm)  | Nos.  | 1000 |
| 31 | CABLE TIE,300 MM Nylon standard cable tie (300mm X 4.8mm)  | Nos.  | 1000 |
| 32 | CABLE TIE, 600 MM Nylon standard cable tie for heavy duty industry use.  | Nos.  | 300  |
| 33 | SILICON SEALANT : General Purpose 260ML/280ml for heavy duty industry use.   | Nos.  | 50   |
| 34 | WIRE COPPER FLEXIBLE CABLE 2.5SQ.X 3 CORE Ref.Make Polycab/Finolex.  | Meter | 600  |
| 35 | Transperant plastic sheet: PLASTIC TRANSPARENT SHEET DOUBLE LAYER TYPE. For Rapping and Equipment covering.  | Kg.   | 200  |
| 36 | TARPOLINE DUCK POLITHINE 12 X 6 FT , GSM 150   | Nos.  | 10   |
| 37 | PLASTIC ROLL FOR RAPPING, LENGTH: 100 MTR,SIZE: 1.5 MTR  | Roll  | 10   |
| 38 | Canvas Tarpaulin water proof type, : Heavy duty Canvas water proof tarpaulin 300GSM, width:2.5Mtr, Length 3Mtrs, Hole for Fixing distance sulatable to covering, hole both side, dia 12mm.   | Nos.  | 5    |
| 39 | Canvas Tarpaulin water proof type, : Heavy duty Canvas water proof tarpaulin 300GSM, Width:2.5Mtr, Length 3.5Mtrs, Hole for Fixing distance sulatable to covering, hole both side, dia 12mm. | Nos.  | 5    |
| 40 | Tarpaulin : Water Proof Heavy duty Tarpaulin duck Polithine : size : 12 X 6 Ft. 200GSM.  | Nos.  | 5    |
| 41 | 8480 CARBON CLEANER FOR QUICK FLASH OVER CLEANING FOR ELECTRICAL EQPT. MAKE - STANVAC  | Nos.  | 30   |
| 42 | 4 Amp HRC Fuse: Type; NH000, 4-Amp, Breaking Cap:- 690V Ac/120KA, As per IEC 60 269-2, IS; 13703, Make: Siemens.   | Nos.  | 100  |
| 43 | 6 Amp HRC Fuse: Type; NH000, 6-Amp, Breaking Cap:- 690V Ac/120KA, As per IEC 60 269-2, IS; 13703, Make: Siemens.   | Nos.  | 100  |
| 44 | 10 Amp HRC Fuse: Type; NH000, 6-Amp, Breaking Cap:- 690V Ac/120KA, As per IEC 60 269-2, IS; 13703, Make: Siemens.  | Nos.  | 100  |
| 45 | 16 Amp HRC Fuse : Type; NH000, 16-Amp, Breaking Cap:- 690V Ac/120KA, As per IEC 60 269-2, IS; 13703, Make: Siemens.  | Nos.  | 100  |
| 46 | 20 Amp HRC Fuse: Type; NH000, 20-Amp, Breaking Cap:- 690V Ac/120KA, As per IEC 60 269-2, IS; 13703, Make: Siemens.   | Nos.  | 100  |



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| 47 | 40 Amp HRC Fuse: Type; NH000, 40-Amp, Breaking Cap:- 690V Ac/120KA, As per IEC 60 269-2, IS; 13703, Make: Siemens.  | Nos. | 100 |
| 48 | 63 Amp H.R.C.FUSE :Type; NH000, Breaking Cap:- 690V Ac/120KA, As per IEC 60 269-2, IS; 13703,MAKE :L & T ,Siemens   | Nos. | 100 |
| 49 | 80 Amp HRC Fuse: Type; NH000, 80-Amp, Breaking Cap:- 690V Ac/120KA, Siemens.  | Nos. | 100 |
| 50 | 100 Amp HRC Fuse: Type; NH000, 80-Amp, Breaking Cap:- 690V Ac/120KA, Siemens.   | Nos. | 50  |
| 51 | 160 Amp HRC Fuse: Type; NH-1, 160-Amp, Breaking Cap:- 690V Ac/120KA, Siemens.   | Nos. | 50  |
| 52 | 315 Amp HRC Fuse: Type; NH-1, 160-Amp, Breaking Cap:- 690V Ac/120KA, Siemens.   | Nos. | 50  |
| 53 | Fuse :- Type : 4 Amp Type: HF, Size: (14 x 51),IEC-269-2.   | Nos. | 100 |
| 54 | Fuse :- Type : 6 Amp Type: HF, Size: (14 x 51),IEC-269-2.   | Nos. | 100 |
| 55 | Fuse :- Type : 10 Amp Type: HF, Size: (14 x 51),IEC-269-2.  | Nos. | 100 |
| 56 | Fuse :- Type : 16 Amp Type: HF, Size: (14 x 51),IEC-269-2.  | Nos. | 100 |
| 57 | Fuse :- Type : 20 Amp Type: HF, Size: (14 x 51),IEC-269-2.  | Nos. | 100 |
| 58 | Fuse :- Type : 32 Amp Type: HF, Size: (14 x 51),IEC-269-2.  | Nos. | 100 |
| 59 | 2 Amp NS Type Fuse :- 2 Amp, NS-Type Control Fuse, Make Siemens.  | Nos. | 100 |
| 60 | 4 Amp NS Type Fuse :- 4 Amp, NS-Type Control Fuse, Make Siemens.  | Nos. | 100 |
| 61 | 6 Amp NS Type Fuse :- 6 Amp, NS-Type Control Fuse, Make Siemens.  | Nos. | 100 |
| 62 | 10 Amp NS Type Fuse :- 10 Amp, NS-Type Control Fuse, Make Siemens.  | Nos. | 100 |
| 63 | <b>10 Amp TIA Type HBC Fuse :-</b> 10 Amp (TIA 10), TIA Type HBC Fuse Link, Breaking Capacity; 660Vac/80KA, as per IS 9224, Ref: IS 13703, IEC 269. Make : GE Power controls. | Nos. | 100 |
| 64 | <b>16 Amp TIA Type HBC Fuse :-</b> 16 Amp (TIA 16), TIA Type HBC Fuse Link, Breaking Capacity; 660Vac/80KA, as per IS 9224, Ref: IS 13703, IEC 269. Make : GE Power controls. | Nos. | 100 |



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| 65 | <b>25 Amp TIA Type HBC Fuse</b> :- 25 Amp (TIA 25), TIA Type HBC Fuse Link, Breaking Capacity; 660Vac/80KA, as per IS 9224, Ref: IS 13703, IEC 269. Make : GE Power controls.  | Nos. | 100 |
| 66 | <b>63 Amp TIA Type HBC Fuse</b> :- 63 Amp (TIA 63), TIA Type HBC Fuse Link, Breaking Capacity; 660Vac/80KA, as per IS 9224, Ref: IS 13703, IEC 269. Make : GE Power controls.  | Nos. | 100 |
| 67 | <b>100 Amp TIA Type HBC Fuse</b> :- 100 Amp (TIA 100), TIA Type HBC Fuse Link, Breaking Capacity; 660Vac/80KA, as per IS 9224, Ref: IS 13703, IEC 269. Make : GE Power controls.   | Nos. | 50  |
| 68 | MCB, 10 AMP, 4 POLE, CHARACTERISTIC OF MCB-"C",Un-415 VOLT,50HZ,MAKE -ANY STANDARD   | Nos. | 50  |
| 69 | MCB, 25 AMP, 4 POLE,CHARACTERISTIC OF MCB-"C",Un-415VOLT,50HZ,MAKE -ANY STANDARD   | Nos. | 50  |
| 70 | MCB, 63 AMP, 4 POLE,CHARACTERISTIC OF MCB-"C",Un-415 VOLT,50HZ,MAKE-ANY STANDARD   | Nos. | 50  |
| 71 | MCB, 32 AMP, 4 POLE,CHARACTERISTIC OF MCB-"C",Un-415 VOLT,50HZ,MAKE-ANY STANDARD   | Nos. | 50  |
| 72 | MCB, 10 AMP, 2 POLE, AC, MAKE -ANY STANDARD  | Nos. | 50  |
| 73 | MCB, 16 AMP, 2 POLE, AC, MAKE -ANY STANDARD  | Nos. | 50  |
| 74 | MCB, 10 AMP, 2 POLE, DC, MAKE -ANY STANDARD  | Nos. | 50  |
| 75 | MCB, 16 AMP, 2 POLE, DC, MAKE -ANY STANDARD  | Nos. | 50  |
| 76 | MCB, 2 AMP, 2 POLE, DC, MAKE -ANY STANDARD   | Nos. | 50  |
| 77 | MCB, 4 AMP, 2 POLE, DC, MAKE -ANY STANDARD   | Nos. | 50  |
| 78 | MCB, 6 AMP, 2 POLE, DC, MAKE -ANY STANDARD   | Nos. | 50  |
| 80 | <b>DIGITAL TIMER</b> FOR STREET LIGHT, INPUT : 200-250VAC, OUTPUT : 200-250VAC, SINGLE POLE, MIN 30AMP, 250VAC, 50HZ   | Nos. | 30  |
| 82 | Contactora:Make:MICROELETTRICA SCIENTIFICA MILANO ITALY,Type:LTNS00602*B01,U(V)-750,Ith (A)-80,Volt Bob-220 Vcc (220 V dc),Spec.,Cod.,Conf.Comm-232/02,Sett./Anno-07/02 N*003,2-pole,Auxilliary Contacts Type-3 NO+3NC,220 V DC coil | Nos  | 1   |
| 84 | Contactora:Make::MICROELETTRICA SCIENTIFICA MILANO ITALY,Type:N190/FS,2 P N/C SINT,Aux.Contacts-1 NO+5 NC,Coil voltage:220 V dc,   | Nos  | 1   |



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| 86  | Contactotr:Make:MICROELETTRICA SCIENTIFICA MILANO ITALY,Type:LTNS01252*A00,U(V)-750,Ith (A)-150,Volt Bob-220 Vcc (220 V dc),Spec.,Cod.,Conf.Comm-1805/1,Sett./Anno-36/01 N*002 | Nos  | 1  |
| 88  | CONTACTOR,TYPE:SC-N3,Z408,MAKE-FE(FUJI ELECTRIC),COIL VOLTAGE:220 V AC,AUXILLIARY CONTACT:2NO+2NC,AC-1=Ith=100A,Uimp=8 KV,Ui=1000V(Main)                                       | NOS. | 10 |
| 90  | L.T. CONTROL SWITCH REVERSING,MAKE:ANY STANDARD,CAT NO:5IT/1,16 AMP.:415 V,3-PH,50 Hz  | NOS. | 10 |
| 92  | CONTACTOR,AUX.CONTACTOR,TYPE:K22E,COIL VOLTAGE:110 V AC,MAKE:ABB   | NOS. | 10 |
| 94  | BIMETALLIC RELAY,CURRENT RANGE-48 to 65 AMP.,TYPE-LR2D3359,MAKE - SCHNEIDER ELECTRIC   | NOS. | 10 |
| 96  | MCB,MAKE:-ABB,TYPE:S 282 UC,2-POLE,K 2A AC 400,DC 440,T 15 6000,WITH SLIDING CONTACT:NO 13 -14,NC 21-22  | NOS. | 10 |
| 98  | MCB,MAKE:ABB,TYPE:S 282 UC,2-POLE,K 6A AC 400,WITH SLIDING CONTACT:NO 13 -14,NC 21-22  | NOS. | 10 |
| 100 | MCB,MAKE:ABB,TYPE:S 271 C 6,1-POLE,WITH SLIDING CONTACT:NO 13 -14,NC 21-22   | NOS. | 10 |
| 81  | DC CONTACTOR WITH ADD ON BLOCK,TYPE-CM400D,Ith-600A,Vi-660V,400AC3,300hp,220KW,415VOLT,50Hz,COIL VOLTAGE-220V DC,MAKE-CGL  | NOS. | 10 |
| 82  | MCCB,3-POLE,60 A,WITH OVER CURRENT SETTING RANGE-25 to 35 A,WITH E/F & S/C PROTECTION  | NOS. | 10 |
| 83  | CONTACTOR:MAKE:MICROELETTRICA SCIENTIFICA MILANO ITALY,TYPE:LTNS01252*A00,U(V)-750,Ith (A)-150,VOLT Bob-220 Vcc (220 V dc),Spec.,Cod.,Conf.Comm-1805/1,Sett./Anno-36/01 N*002  | NOS. | 10 |
| 84  | Power Contactor, Make : Siemens, Type : 3TF34-00-0A, coil voltage: 110V AC.  | No.  | 1  |
| 85  | Power Contactor, Make : Siemens, Type : 3TF32-00-0A, coil voltage: 110V AC.  | No.  | 5  |
| 86  | Power Contactor with sliding contact 2NO+NC Make : Siemens, Type : 3TF52, coil voltage: 110V AC.   | No.  | 2  |
| 87  | Aux.Contactor, Make : Siemens, Type : 3TH30-22E-OBG4, Coil voltage: 220V DC with surge voltage protector.  | No.  | 10 |
| 88  | Aux.Contactor, Make : Siemens, Type : 3TH30-31E, Coil voltage: 110V AC.  | No.  | 10 |
| 89  | Aux. Contactor, Make : Siemens, Type : 3TH30-22E, Coil Voltage: 110V AC.   | No.  | 5  |
| 90  | Auxiliary Contactor :- Siemens 3TH30 40E 220V DC 4NO, Make Siemens   | No.  | 5  |



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| 91  | POWER CONTACTOR: Make : SEIPL - TELEMECANIQUE,<br>TYPE : LC1-D18F7, AUX. CONTACT : 1 NO + 1 NC, COIL VOLTAGE :<br>110V, CURRENT RATING : 18 AMP,        | No. | 7  |
| 92  | ADDON BLOCK, MAKE : TELEMCHANIC, TYPE :<br>LADN 22, CONTACT : 2NO+2NC,  | No. | 15 |
| 93  | POWER CONTACTOR, Make : SEIPL - TELEMECANIQUE,<br>TYPE : LC1 - D50F5, AUX. CONTACT : 1 NO + 1 NC, COIL VOLTAGE :<br>110V, CURRENT RATING : 50 AMP,      | No. | 3  |
| 94  | POWER CONTACTOR, Make : SEIPL - TELEMECANIQUE,<br>TYPE : LC1 - D65F5, AUX. CONTACT : 1 NO + 1 NC, COIL VOLTAGE :<br>110V, CURRENT RATING : 65 AMP,      | No. | 3  |
| 95  | POWER CONTACTOR, Make : SEIPL - TELEMECANIQUE,<br>TYPE : LC1 - D95F5, AUX. CONTACT : 1 NO + 1 NC, COIL VOLTAGE :<br>110V, CURRENT RATING : 95 AMP,      | No. | 1  |
| 96  | POWER CONTACTOR, Make : SEIPL - TELEMECANIQUE,<br>TYPE : LC1 - D1 115F55, AUX. CONTACT : 1 NO + 1 NC, COIL VOLTAGE<br>: 110V, CURRENT RATING : 115 AMP, | No. | 1  |
| 97  | POWER CONTACTOR, Make : SEIPL - TELEMECANIQUE,<br>TYPE : LC1 - F150, AUX. CONTACT : 1 NO + 1 NC, COIL VOLTAGE :<br>110V, CURRENT RATING : 150 AMP,      | No. | 1  |
| 98  | POWER CONTACTOR, Make : SEIPL - TELEMECANIQUE,<br>TYPE : LC1 - F185, AUX. CONTACT : 1 NO + 1 NC, COIL VOLTAGE :<br>110V, CURRENT RATING : 185 AMP,      | No. | 1  |
| 99  | POWER CONTACTOR, Make : SEIPL - TELEMECANIQUE,<br>TYPE : LC1 - D25F7, AUX. CONTACT : 1 NO + 1 NC, COIL VOLTAGE :<br>110V, CURRENT RATING : 25 AMP,      | No. | 1  |
| 100 | AUXILIARY CONTACTOR MAKE : C&S, TYPE : CAD32MD,<br>COIL VOLTAGE : 220 VDC, CONTACT : 2 NC   | No. | 2  |
| 101 | AUXILIARY CONTACTOR MAKE : TELEMCHANIC, TYPE :<br>CAD32MD, COIL VOLTAGE : 220 VDC, CONTACT : 3 NO + 2 NC,   | No. | 2  |
| 102 | AUXILIARY CONTACTOR MAKE : TELEMCHANIC, TYPE :<br>CAD32BD, COIL VOLTAGE : 24 VDC, CONTACT : 3 NO + 2 NC,  | No. | 10 |
| 103 | AUXILIARY CONTACTOR MAKE : TELEMCHANIC, TYPE :<br>CAD50MD, COIL VOLTAGE : 220 VDC, CONTACT : 5 NO,  | No. | 2  |
| 104 | AUXILIARY CONTACTOR MAKE : TELEMCHANIC, TYPE :<br>CAD32F7, COIL VOLTAGE : 110 VDC, CONTACT : 3 NO + 2 NC  | No. | 2  |
| 105 | Power Contactor,<br>Make : TC, Type : LC1F115A, Ith : 200A, Coil Voltage : 110VAC   | No. | 1  |
| 106 | Auxiliary Contactor :- Type LA6-DK01 220V DC 2NO+2NC, Make TC   | No. | 15 |
| 107 | Auxiliary Contactor :- Type CA2-DN-1229 AC11 4A 415/440 A1-A2 2NO<br>2NC 110V CONTROL VOLTAGE Ith 10A Ui 660v AC 114A, Make TC                          | No. | 5  |
| 108 | Power Contactor:- Type-LC1 D323-A60,AC 3 32A,Ith 50A,Ui 660V,V 415V<br>KW 15 HP20,V 660 KW 18.5 HP 25, Coil voltage: 110V AC, Make-C&S (TC)             | No. | 3  |



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| 109 | Auxiliary Contactor:- Type-LC1 D803-A60,AC 3 80A,Ith 10A,Ui 660V,V 415V 37KW 60HP,V 660 45KW 60HP, Coil voltage: 110V AC, Make-C&S (TC) | No. | 2  |
| 110 | BMR, MAKE : TELEMECHANIC, TYPE : LRD3355, RANGE : 30 - 40 AMP,  | No. | 4  |
| 111 | BMR, MAKE : TELEMECHANIC, TYPE : LRD3359, RANGE : 48 - 65 AMP,  | No. | 4  |
| 112 | BMR,MAKE : TELEMECHANIC, TYPE : LRD4365, RANGE : 80 -104 AMP,   | No. | 1  |
| 113 | BMR, MAKE : TELEMECHANIC, TYPE :LRD-3357, RANGE : 37 - 50 AMP   | No. | 4  |
| 114 | BMR, MAKE : TELEMECHANIC, TYPE : LRD-3363, RANGE : 63 - 80 AMP  | No. | 1  |
| 115 | BMR, MAKE : TELEMECHANIC, TYPE : LR9-F5369, RANGE : 90 - 150 AMP  | No. | 1  |
| 116 | BMR, MAKE : TELEMECHANIC, TYPE : LRD-21, RANGE : 12 - 18 AMP  | No. | 6  |
| 117 | BMR, MAKE : TELEMECHANIC, TYPE : LR9-F5371, RANGE : 132 - 220 AMP,  | No. | 1  |
| 118 | BMR, MAKE : TELEMECHANIC, TYPE : LRD-10, RANGE : 4 - 6 AMP  | No. | 10 |
| 119 | BMR, MAKE : TELEMECHANIC, TYPE : LRD-08, RANGE : 2.5 - 4 AMP  | No. | 6  |
| 120 | BMR, MAKE : TELEMECHANIC, TYPE : LRD-16, RANGE : 9 - 13 AMP   | No. | 10 |
| 121 | BMR, MAKE : TELEMECHANIC, TYPE :LRD-12, RANGE : 5.5 - 8 AMP   | No. | 6  |
| 122 | Bi-Metalic Relay,<br>Make : TC, Type : LR1D09314, Current Range : 7A to 10A   | No. | 1  |
| 123 | Power Contactor,<br>Make : TC, Type : LC1F115A, Ith : 200A, Coil Voltage : 110VAC   | No. | 1  |
| 124 | CT operated Bi- Metalic Relay,<br>Make : TC, Type : LR1F(M)105, Current Range : 65A to 105A   | No. | 1  |
| 125 | Bi- Metalic Relay,<br>Make : TC, Type : LR1D66359, Current Range : 48A to 57A   | No. | 3  |
| 126 | Bi- Metalic Relay,<br>Make : TC, Type : LR1D16321, Current Range : 13A to 18A   | No. | 4  |
| 127 | BiaMetalic Relay:- Type: LR1-D09312 , Range: 10-13A, Make TC  | No. | 5  |
| 128 | Bimetalic relay(BMR):- TYPE- LR1-D09310,RANGE- 4 TO 6 AMP,Ith -10A, Ui-660v ac,Fuse(max)-16A, Make: Telemechanic.                       | No. | 10 |
| 129 | Bimetalic relayBimetalic relay(BMR):- TYPE- LR1-D25 322,RANGE- 18 TO 25 AMP,Ith -10A, Ui-660v ac,Fuse(max)-16A, Make: Telemechanic.     | No. | 6  |
| 130 | Bimetalic relayBimetalic relay (BMR):- TYPE- LR1-D16 321,RANGE- 13 TO 18 AMP,Ith -10A, Ui-660v ac,Fuse(max)-16A, Make: Telemechanic.    | No. | 2  |
| 131 | Bimetalic relay(BMR):- TYPE- LR1-D12 316,RANGE- 10 TO 13 AMP,Ith - 10A, Ui-660v ac,Fuse(max)-16A, Make: Telemechanic.                   | No. | 6  |
| 132 | Bimetalic relay (BMR):- TYPE- LR1-D09308,RANGE- 2.5 TO 4 AMP,Ith - 10A, Ui-660v ac,Fuse(max)-16A, Make: Telemechanic.                   | No. | 2  |
| 133 | Bimetalic relay(BMR):- TYPE- LR1-D09305,RANGE- 0.63 TO 1 AMP,Ith - 10A, Ui-660v ac,Fuse(max)-16A, Make: Telemechanic.                   | No. | 2  |



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| 134 | Power Contactor With Coil & Aux.side contact: Power Contactor CM 400, Ith 600Amp, Ui 660V, Range: 400Amp, AC3, 300HP, Coil Volt: 415V AC, Ref.IS 13947-4 & IEC-947-4 , Make CG. | Nos.   | 1   |
| 135 | Coil : Coil Voltage 110V AC, For, Power Contactor CM 400, Ith 600Amp, Ui 660V, Range: 400Amp, AC3, 300HP, Coil Volt: 415V AC, Ref.IS 13947-4 & IEC-947-4 , Make CG.             | Nos.   | 1   |
| 136 | LED 100 Watt fitting  | Nos    | 100 |
| 137 | LED 150 Watt fitting  | Nos    | 100 |
| 138 | LED 200 Watt fitting  | Nos    | 100 |
| 139 | LED 250 Watt fitting  | Nos    | 100 |
| 140 | LED 350 Watt fitting  | Nos    | 100 |
| 141 | 2.5 Sqmmx 4 Core Copper flexible cable  | Mtr    | 500 |
| 142 | CFL/LED LIGHT, WATT :23,V:240,HZ:50,COLOUR TEMP:6500 K,LUMEN:1350,BASE:E 27,SCREW TYPE,AMP:175 MA,Make:Havells,bajaj  | Nos    | 30  |
| 143 | Tube light Electronics Ballast :- For 1 x 36W, Double T8 Type, 230VAC Tube light  | Nos    | 150 |
| 144 | Tube light Electronics Double Type Ballast :- For 2 x 36W, Double T8 Type, 230V ac Tube light   | Nos    | 100 |
| 145 | LED TUBE LIGHT FITTING,240VAC, BATTEN 20WATT, MODEL R20PBC,ISO STANDARD MAKE :Syska,Bajaj   | Nos    | 300 |
| 146 | TUBELIGHT SIDE HOLDER FOR 2x36WATT  | Nos    | 150 |
| 147 | CABLE,SINGLE STRAND CABLE, SIZE-0.5SQMM,MAKE: ANY REPUTED   | Meters | 90  |
| 148 | TUBE LIGHT STICK , WATT:36 W, VOLTAGE: 230 V,POWER SAVER STAR RATING: AT LEAST 3 STAR   | Nos    | 300 |
| 149 | LED LIGHT FITTING 30 WATT, FLOOD LIGHT TYPE,Make:Oreva,Bajaj,   | Nos    | 50  |
| 150 | 70W HPSV Lamp,Type-SV 70E,E-27,Make-CGL,Bajaj   | Nos.   | 300 |
| 151 | 70W ballast for HPSV / MH Lamp,Type/Cat.Ref : HDBL 07 S/MH, Make-CGL,Bajaj  | Nos.   | 300 |
| 152 | Capacitor,10 mfd,250VAC For 70 W HPSV lamp  | Nos.   | 150 |
| 153 | IGNITER'S:- 30K, 220-240 VAC,50HZ, IGN Suitable for 70/150/250/400W HPSV fitting  | Nos.   | 150 |
| 154 | Bi- Metallic Relay, Make : Siemens, Type : 3AU50-00-1D, Current Range : 6.3A to 10A   | No.    | 5   |
| 155 | Bimetalic relay(BMR) :- TPYE:-3UA55 00-2C, Range :-16 TO 25 AMP,Make-SIEMENS  | No.    | 3   |
| 156 | Bimetalic relay(BMR) :-TPYE 3UA55 00-2B,Range 12.5 TO 20 AMP ,Make-SIEMENS  | No.    | 3   |
| 157 | Bimetalic relay(BMR) :-TYPE:- 3UA52 00-2F21 Range:- 32 TO 50 AMP,Make-SIEMENS   | No.    | 3   |
| 158 | Bimetalic relay(BMR):- TYPE -3UA50 00-1J Range-6.3 TO 10 AMP,Make-SIEMENS   | No.    | 3   |



|     |   |     |   |
|-----|---|-----|---|
| 159 | Bimetalic relay(BMR) :- TYPE- 3UA52 00-1J Range-8 TO 12.5 AMP ,Make-SIEMENS   | No. | 3 |
| 160 | Bimetalic relay(BMR):- TYPE:- 3UA50 00-0K ,Range 2 TO 3.2 AMP,Make-SIEMENS    | No. | 3 |
| 161 | Bimetalic relay(BMR): -TYPE- 69KW 3UA50 00-5B Range-4 TO 6.3AMP ,Make-SIEMENS | No. | 3 |

### C&I Maintenance

| S. no. | Material description  | Qty | UOM    |
|--------|---|-----|--------|
| 1      | Teflon tape (1/2" SIZE)   | 200 | Nos    |
| 2      | AC 90, Make Stanvac, Rust Removal                                       | 60  | Nos    |
| 3      | WD-40   | 100 | Nos    |
| 4      | Contact cleaner OKS 2621  | 60  | Nos    |
| 5      | Rustoline (ltr)   | 30  | Ltr    |
| 6      | CRC-2/26, Spray bottle  | 20  | Nos    |
| 7      | Silicon sealant   | 16  | Nos    |
| 8      | lock tite 406   | 10  | Nos    |
| 9      | cable tie (300 mm) (1 pack -100 nos.)                                   | 30  | Packet |
| 10     | Hacksaw blade (Mirinda)   | 20  | Nos    |
| 11     | PLASTIC PACKING WIRE ROLL (1 Kg/Roll)                                   | 30  | kg     |
| 12     | PLASTIC TRANSPARENT SHEET DOUBLE LAYER TYPE (WIDTH: 25 FEET APPROX.) KG | 400 | kg     |
| 13     | Aluminum foil Tap   | 100 | Nos    |
| 14     | M SEAL  | 20  | kg     |
| 15     | Insulation tape   | 200 | Nos    |
| 16     | Cotton waste  | 200 | kg     |
| 17     | AA battery cell   | 100 | Nos    |

### Chemistry Lab

| Sr.No. | Fine Chemical Name                  | Quantity | UOM |
|--------|-------------------------------------|----------|-----|
| 1      | 1:10 PHENANTHROLINE                 | 20gm     | gm  |
| 2      | 1-AMINO,2-NAPHTHOL,4-SULPHONIC ACID | 250gm    | gm  |
| 3      | 2-PROPANOL (ISO-PROPANOL)           | 10ltr    | ltr |
| 4      | 4, DIMEHYL AMINO BENZALDEHYDE       | 400gm    | gm  |
| 5      | ACETIC ACID                         | 1ltr     | ltr |
| 6      | ACETONE                             | 5ltr     | ltr |
| 7      | AMMONIA BUFFER SOLUTION             | 500ml    | ml  |
| 8      | AMMONIA SOLUTION                    | 5ltr     | ltr |



|    |   |        |     |
|----|---|--------|-----|
| 9  | AMMONIUM MOLYBDATE  | 500gm  | gm  |
| 10 | AMMONIUM SULPHATE   | 500gm  | gm  |
| 11 | BARIIUM CHLORIDE  | 250gm  | gm  |
| 12 | BENZENE   | 500ml  | ltr |
| 13 | BUFFER Solution PH 4 Make:- EUTECH  | 1 btl  | btl |
| 14 | BUFFER Solution PH 7 Make:- EUTECH  | 1 btl  | btl |
| 15 | BUFFER Solution PH 10 Make:- EUTECH   | 1 btl  | btl |
| 16 | CALCIUM OXIDE POWDER EXTRA PURE   | 250gm  | gm  |
| 17 | CHLOROFORM  | 1ltr   | ltr |
| 18 | CITRIC ACID   | 500gm  | gm  |
| 19 | CONDUCTIVITY CALIBRATION STANDARD Set   | 1 set  | set |
| 20 | DI-POTASSIUM HYDROGEN ORTHO PHOSPHATE   | 200gm  | gm  |
| 21 | ERICHROME BLACK T INDICATORE (AR)   | 100gm  | gm  |
| 22 | ETHYLENE DIAMINE TETRA ACETIC ACID DI SODIUM SALT (ONLY A.R. G.R.) (01BLT=500GMS) | 500gm  | gm  |
| 23 | FORMALDEHYDE SOLUTION   | 500ml  | ml  |
| 24 | GLYCEROL (GLYCERINE)  | 500ml  | ml  |
| 25 | SILICA STANDARD SOLUTION (1 ppm)  | 500ml  | ml  |
| 26 | PHOSPHATE STANDARD SOLUTION (100 ppm)   | 500ml  | ml  |
| 27 | Hydrazine Standard Solution (200 ppm)   | 500ml  | ml  |
| 28 | Ammonia Standard Solution (1 ppm)   | 500ml  | ml  |
| 29 | HYDRO FLUORIC ACID 40%  | 500ml  | ml  |
| 30 | HYDROCHLORIC ACID (AR/GR)   | 1ltr   | ltr |
| 31 | HYDROGEN PEROXIDE 50%   | 2ltr   | ml  |
| 32 | MAGNESIUM OXIDE LIGHT   | 200gm  | gm  |
| 33 | MERCURIC CHLORIDE   | 250gm  | gm  |
| 34 | METHENOL  | 1ltr   | ltr |
| 35 | METHYL ORANGE   | 100gm  | gm  |
| 36 | METHYL RED INDICATOR POWDER   | 10gm   | gm  |
| 37 | N-1 NAPHTHYL ETHELYNE DIMETHE DIHYDROCHLORIDE                                     | 100gm  | gm  |
| 38 | NESSLERS REAGENT Bottle   | 5 btl  | btl |
| 39 | NICKEL NITRATE  | 1000gm | gm  |
| 40 | NITRIC ACID   | 1000ml | ml  |
| 41 | O - TOLIDINE Bottle (Capacity:- 500ml)  | 5 btl  | btl |
| 42 | OXALIC ACID   | 500gm  | gm  |
| 43 | PETTERN & REEDERS INDICATOR   | 100gm  | gm  |
| 44 | PHENOLPHELINE POWDER  | 200gm  | gm  |
| 45 | POTASSIUM NITRITE   | 500gm  | gm  |
| 46 | POTASSIUM DICHROMATE  | 200gm  | gm  |
| 47 | POTASSIUM HYDROGEN PHTHALATE  | 100gm  | gm  |
| 48 | POTASSIUM HYDROXIDE PALLETS   | 1000gm | gm  |



|    |   |        |     |
|----|---|--------|-----|
| 49 | POTASSIUM IODATE                            | 100gm  | gm  |
| 50 | POTASSIUM IODIDE                            | 100gm  | gm  |
| 51 | POTASSIUM PERMANGANATE                      | 1000gm | gm  |
| 52 | POTTESIUM CHROMATE                          | 500gm  | gm  |
| 53 | PYROGALLOL                                  | 500gm  | gm  |
| 54 | SILICA GEL SELF INDICATING COARSE           | 1000gm | gm  |
| 55 | SILVER NITRATE CRYSTAL AR/LR (01BTL=100GMS) | 200 gm | gm  |
| 56 | SODIUM CARBONATE                            | 500gm  | gm  |
| 57 | SODIUM HYDROGEN SULPHITE                    | 200gm  | gm  |
| 58 | SODIUM HYDROXIDE PELLETS                    | 1000gm | gm  |
| 59 | SODIUM IODIDE                               | 50gm   | gm  |
| 60 | SODIUM META BY SULPHITE (AR)                | 500gm  | gm  |
| 61 | SODIUM NITRITE                              | 500gm  | gm  |
| 62 | SODIUM SILICATE (AR)                        | 200gm  | gm  |
| 63 | SODIUM SULPHATE ANHYDROUS                   | 200gm  | gm  |
| 64 | SODIUM SULPHITE ANHYDROUS                   | 1000gm | gm  |
| 65 | SODIUM THIO SULPHATE                        | 500gm  | gm  |
| 66 | STARCH                                      | 100gm  | gm  |
| 67 | TISSUE PAPER ROLL BIG                       | 30 nos | nos |
| 68 | TOLUENE                                     | 2ltr   | ml  |
| 69 | TRI AMMONIUM CITRATE                        | 200gm  | gm  |
| 70 | TRI SODIUM CITRATE DIHYDRATE                | 200gm  | gm  |
| 71 | UNIVERSAL PH INDICATOR ( 500ml bottle)      | 5 btl  | btl |
| 72 | WATMAN FILTER PAPER NO.42                   | 1      | pkt |
| 73 | WATMANN FILTER PAPER NO.40                  | 1      | pkt |
| 74 | WATMANN FILTER PAPER NO.41                  | 1      | pkt |
| 75 | WATMANN FILTER PAPER NO.44                  | 1      | pkt |

**Note**

1. If any consumables items, except the list mentioned herein above, if required to carry out any job, shall then be arranged by the successful bidder for which the payment shall be done by GMDC team at mutually agreed rates.
2. All the unused consumables on completion of the contract shall be handed over to the GMDC.
3. Bidder must maintain above consumables items in own store and day to day update.

## Annexure J: Manpower Deployment for Maintenance Work

The tentative manpower for various activities under this contract shall be as under:

| Category of manpower                        | No. of Manpower Required |     |     |       | Qualification   | Min. Experience<br>(in Years)  |
|---|--------------------------|-----|-----|-------|---|--|
|   | BMD                      | TMD | BoP | Total |   |  |
| Resident Manager                            |                          | 1   |     | 1     | BE (Mech/Elect)   | 12-20 years relevant experience in site/plant administration                     |
| Planning Engineer                           |                          | 1   |     | 1     | BE/DIPLOMA<br>(Mech/Elect)  | 8-12/12-14 years relevant experience in plant maintenance execution and planning |
| HR/Admin                                    |                          | 1   |     | 1     | Graduate/Diploma/Suitable   | 2-5 years relevant experience in site HR/IR/Accounts activities                  |
| Account Officer                             |                          | 1   |     | 1     | Graduate/Diploma/Suitable   | 2-5 years relevant experience in site Accounts activities                        |
| Safety Officer                              |                          | 1   |     | 1     | Diploma in Safety   | 2-5 years relevant experience in safety  |
| Storekeeper                                 |                          | 2   |     | 2     | Graduate/Diploma/Suitable   | 2-5 years relevant experience in site stores management activities               |
| Mechanical In-Charge                        | 1                        | 1   |     | 2     | BE/DIPLOMA<br>(Mech/Elect)  | 6-8/10-12 years relevant experience in plant maintenance execution and planning  |
| Engineers / Supervisors                     | 6                        | 3   | 3   | 12    | BE/DIPLOMA<br>(Mech/Elect)  | 4-6/8-10 years relevant experience in plant maintenance execution and planning   |
| M/w Fitter                                  | 3                        | 3   | 2   | 8     | ITI (M/w Fitter) course pass out from recognized institute          | At least 10 years post qualification   |
| Fore-Man                                    | 1                        | 1   | 0   | 2     | ITI (M/w Fitter) course pass out from recognized institute          | At least 20 years post qualification   |
| Fitter                                      | 7                        | 4   | 2   | 13    | ITI (Fitter) course pass out from recognized institute              | At least 07 years post qualification   |
| Valve Fitter                                | 1                        | 1   | 1   | 3     | ITI (Fitter) course pass out from recognized institute              | At least 15 years post qualification   |
| Insulation Fitter                           | 2                        | 2   | 0   | 4     | ITI (Insulation Fitter) course pass out from recognized institute   | At least 03 years post qualification   |
| Welder cum gas cutter                       | 4                        | 2   | 2   | 8     | ITI (Welder / Arc Welder) course pass out from recognized institute | At least 05 years post qualification   |
| Rigger                                      | 10                       | 7   | 4   | 21    | 7th Pass  | At least 05 years post qualification   |
| Grinder cum gas cutter                      | 4                        | 2   | 2   | 8     | 10th Pass   | At least 05 years post qualification   |
| Workshop Machinist                          | 2                        | 0   | 0   | 2     | ITI (Tuner Certificate) course pass out from recognized institute   | At least 05 years post qualification   |
| Helper                                      | 16                       | 9   | 8   | 33    | ITI (Fitter) course pass out from recognized institute              | At least 03 years post qualification   |
| Insulation Helper                           | 2                        | 2   | 0   | 4     | 7th Pass  | At least 05 years post qualification   |
| Vibration Analyst and Dynamic Balancing Man | 1                        | 0   | 0   | 1     | B.E. (MECH) from recognized institute                               | 15 years experience in power plant of more than 100MW                            |
| Electrician                                 | 1                        | 1   | 1   | 3     | ITI (Electrician) course pass out from recognized institute         | 5 years experience in power plant of more than 100MW                             |
| Field Supervisor                            | 2                        | 1   | 1   | 4     | B.E. or DIPLOMA (MECH) from recognized institute                    | 10 years experience in power plant of more than 100MW                            |
| Online Sealing Fitter                       | 1                        | 0   | 0   | 1     | ITI (Fitter) course pass out from recognized institute              | 10 years experience in power plant of more than 100MW                            |
| IBR Welder                                  | 1                        | 1   | 0   | 2     | IBR Certificate course  | At least 05 years post qualification   |



| <b>EMD</b>   |    |   |   |    |   |  |
|--|----|---|---|----|---|--|
| Electrical In-Charge   | 1  |   |   | 1  | BE/DIPLOMA (Elect/Instrumentation)                                  | 6-8/10-12 years relevant experience in plant electrical maintenance execution and planning |
| Engineers / Supervisors  | 3  |   |   | 3  | BE/DIPLOMA (Elect/Instrumentation)                                  | 6-8/10-12 years relevant experience in plant electrical maintenance                        |
| Technician   | 3  | 3 | 3 | 9  | ITI (Electrician) course pass out from recognized institute         | At least 3 years post qualification  |
| Helper   | 4  | 4 | 4 | 12 | Class 7 pass out from recognized institute                          | At least 3 years post qualification  |
| Fitter   | 1  | 1 | 1 | 3  | ITI (Fitter) course pass out from recognized institute              | At least 3 years post qualification  |
| <b>C&amp;I</b>   |    |   |   |    |   |  |
| C&I In-Charge  | 1  |   |   | 1  | BE (Instrumentation)  | 6-8/10-12 years relevant experience in plant C&I maintenance execution and planning        |
| Engineers / Supervisors  | 3  |   |   | 3  | BE (Instrumentation)  | 6-8/10-12 years relevant experience in plant C&I maintenance                               |
| Technician   | 10 |   |   | 10 | ITI (Instrument mechanic) course pass out from recognized institute | At least 3 years post qualification with 03 years relevant experience in plant             |
| Helper   | 12 |   |   | 12 | Class 7 pass out from recognized institute                          | At least 3 years post qualification  |
| Fitter   | 3  |   |   | 3  | ITI (Fitter) course pass out from recognized institute              | At least 3 years post qualification with 03 years relevant experience in plant             |
| Welder + Grinder   | 2  |   |   | 2  | ITI (Welder / Arc Welder) course pass out from recognized institute | At least 03 years post qualification- with 03 years relevant experience in plant           |
| <b>Housekeeping</b>  |    |   |   |    |   |  |
| Area 1<br>Reject pump, main gate security, KBL, intake, weighbridge, SWTP area, CT fan, Auxiliary boiler | 8  |   |   | 8  | Experienced   | 2-3 years relevant experience  |
| Area 2<br>Fire, Canteen and store  | 5  |   |   | 5  | Experienced   | 2-3 years relevant experience  |
| Area 3<br>BMD-TMD office, Workshop, HR-admin office  | 5  |   |   | 5  | Experienced   | 2-3 years relevant experience  |
| Area 4<br>Turbine floor, Service building  | 8  |   |   | 8  | Experienced   | 2-3 years relevant experience  |



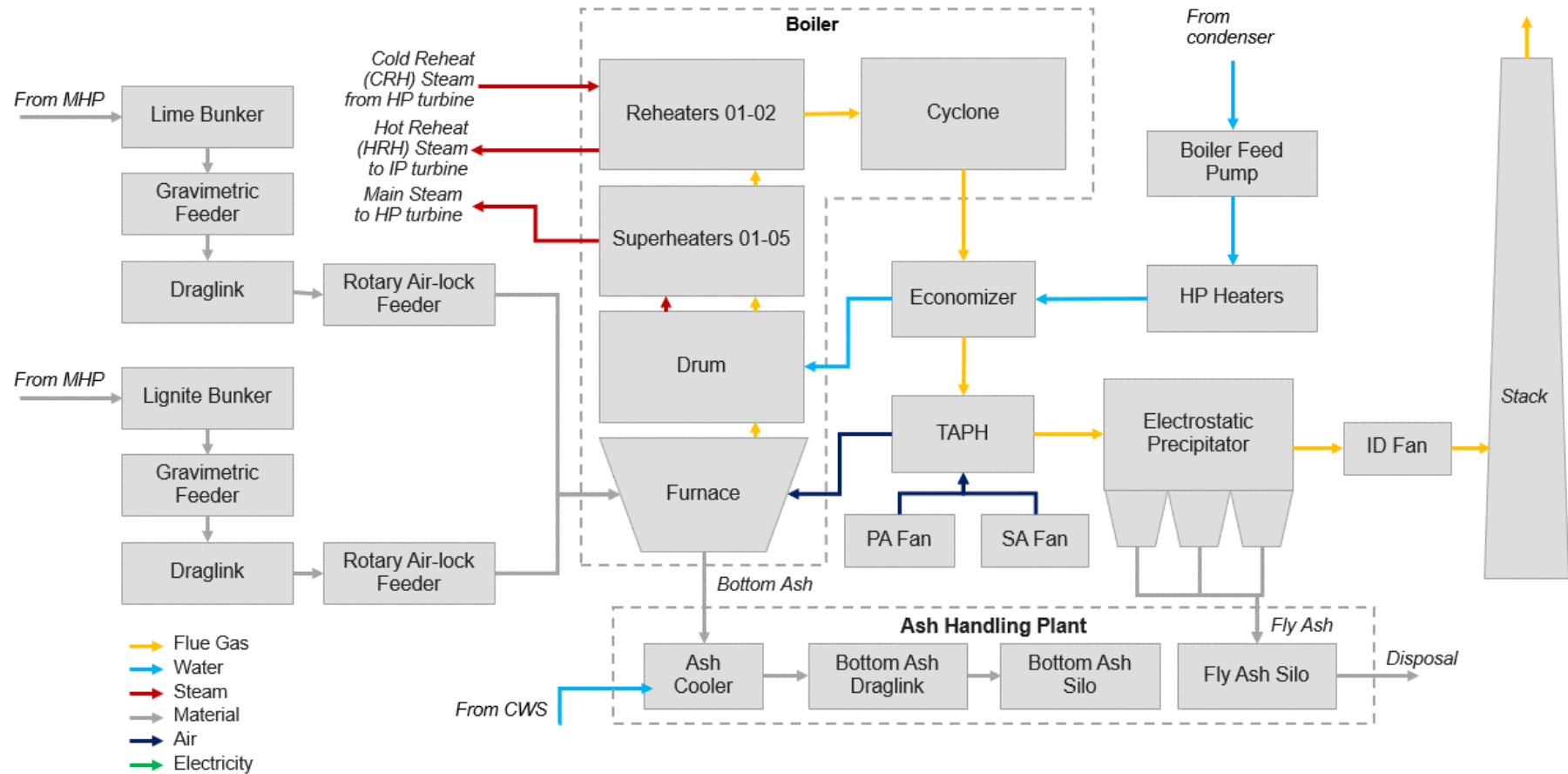
|  |    |    |                           |   |
|--|----|----|---------------------------|---|
| Area 5<br>TG Building area, Switchyard, Boiler<br>area | 20 | 20 | Experienced               | 2-3 years relevant experience                                       |
| Sweepers (all washrooms)                               | 8  | 8  | Experienced               | 2-3 years relevant experience                                       |
| Supervisor   | 4  | 4  | Graduate/Diploma/Suitable | 7-10 years relevant experience in site stores management activities |
| <b>Lifts</b>   |    |    |                           |   |
| Qualified attendant cum operator                       | 2  | 2  | Experienced               | 2-3 years relevant experience                                       |

### Note

1. Manpower requirement for AC systems will be on need basis to complete the required job.
2. Above is only an indicative list of manpower required. The successful bidder must ensure effective maintenance of BTG and related auxiliaries as described in the detailed scope of work. For the same, if less/additional manpower is required, the successful bidder is expected to ensure sufficient manpower without any extra cost burden on GMDC.

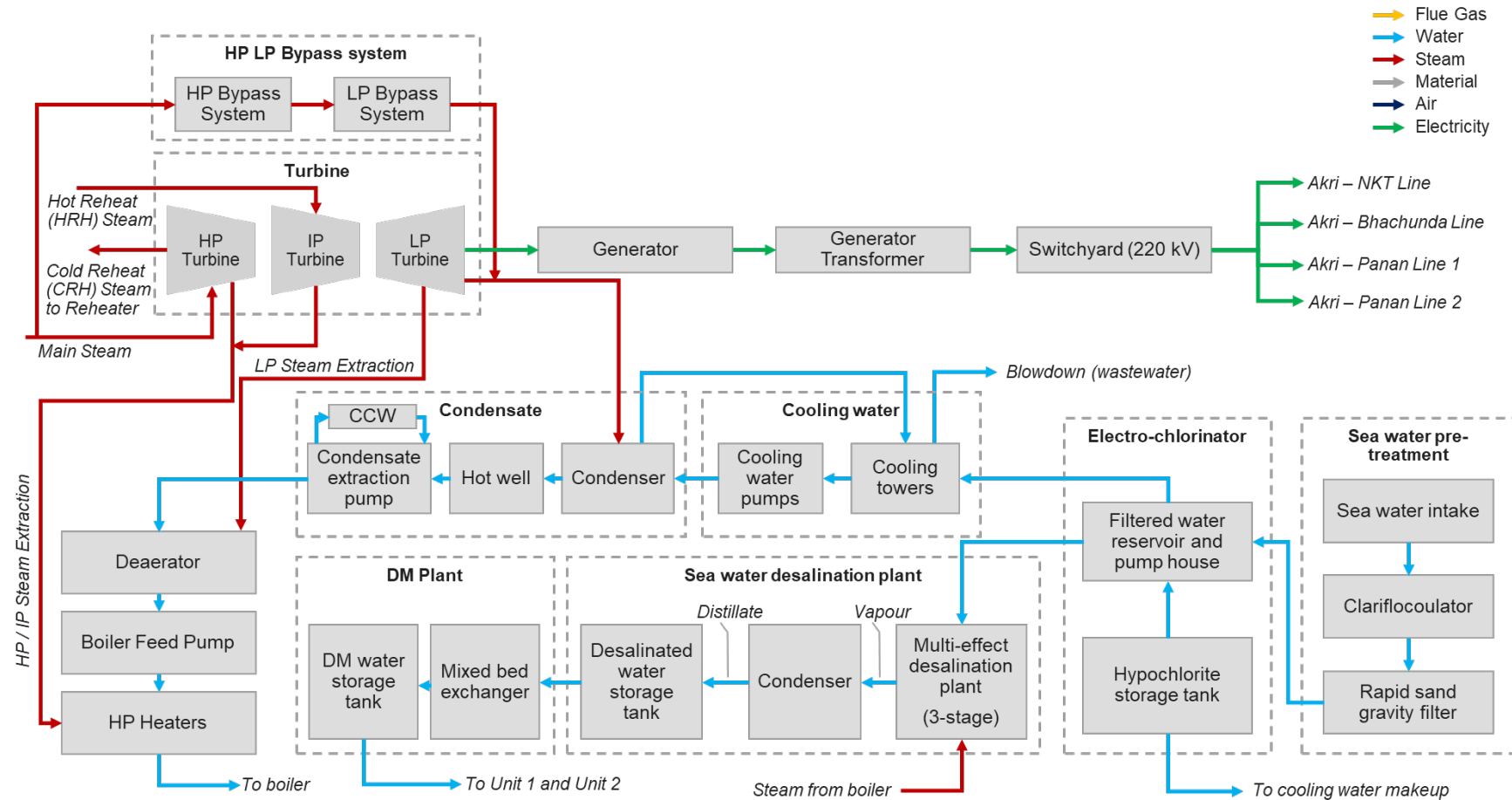
### Annexure K: Flowcharts

#### Boiler Process Flow Diagram





### Turbine and BoP Process Flow Diagram



## FORM PA

### CHECK LIST OF DOCUMENTS ENCLOSED WITH TENDER

#### TECHNICAL BID

| <b>Sr. No.</b> | <b>Document</b>  | <b>Declaration (Strike out whichever is not applicable)</b> |
|----------------|--|---|
| 1.             | Tender Processing Fee  | Yes/No  |
| 2.             | EMD  | Yes / No  |
| 3.             | Form-PA (check list of documents enclosed with tender)   | Yes / No  |
| 4.             | Form-PB (Status of the Bidder)   | Yes / No  |
| 5.             | Form-PC-(CA Certification for Financial Details and work carried out during the last seven years of bidder)) | Yes / No  |
| 6.             | Form-PD (Declarations)   | Yes / No  |
| 7.             | Form- PE (Undertaking of Genuineness of Document)  | Yes / No  |
| 8.             | Form PF (Undertaking of Indemnity)   | Yes / No  |
| 9.             | Form PG (Site Visit)   | Yes / No  |
| 10.            | Power of Authority to sign the documents (Duly Notarized on Stamp paper of Rs. 300)                          | Yes / No  |

#### PRICE BID

|          |   |          |
|----------|---|----------|
| <b>1</b> | Online Price bid submission in <b>Form-PP</b> | Yes / No |
|----------|---|----------|



**FORM PB**

**STATUS OF THE BIDDER**

| <b>Particulars</b>   | <b>Details</b> |
|--|----------------|
| Name of the Bidder:  |                |
| Address :  |                |
| Registered office :  |                |
| For correspondence :   |                |
| Telephone No.  |                |
| Fax No.  |                |
| E-mail Address   |                |
| Attested copies of Deeds, Articles of association to be enclosed   |                |
| Name & contact number of person holding power of attorney (Attested copy of power of attorney to be enclosed)  |                |
| Names of Partners with their Present and permanent address   |                |
| Name of Bankers with full address and Telephone No& Bank Account Details (Cancelled Cheque to be enclosed)   |                |
| PAN of Bidder  |                |
| GST Registration No. of Bidder   |                |
| PF Registration No.  |                |
| Whether enlisted in other dept., if yes, then furnish the details pertaining to class and the amount qualified to tender   |                |
| Was the applicant or its partners or Directors black listed in past by any Govt. or any other body.  |                |
| Details pertaining to the work incomplete, if any  |                |
| Details of the litigation, court cases and arbitration either completed or under progress during last 10 years by/ against any partner/proprietor of present entity in any capacity. |                |

Signature and Stamp of the Bidder



## FORM PC

### 1. Turnover and Net Worth

On the basis of the **audited books of accounts** produced before us by M/s. \_\_\_\_\_, we certify that as per the books of account Net worth and Turn Over of the firm M/s \_\_\_\_\_ are as under:

1.1 Net Worth= Rs. \_\_\_\_\_ for the Year ended on 31.03.2021  
Rs. \_\_\_\_\_ for the Year ended on 31.03.2022  
Rs. \_\_\_\_\_ for the Year ended on 31.03.2023

**Average Net Worth Rs.** \_\_\_\_\_

1.2 Turn Over = Rs. \_\_\_\_\_ for the Year ended on 31.03.2021  
Rs. \_\_\_\_\_ for the Year ended on 31.03.2022  
Rs. \_\_\_\_\_ for the Year ended on 31.03.2023

**Average Turnover of Rs.** \_\_\_\_\_

### 2. Details of Work Carried Out by the Bidder During the Last Seven Years (i.e. period from: 01/09/2016 to 31/08/2023)

| Sr. No. | Description of work with Work place | Name of client with postal address | Work Order number and date | Contract Period |           | Actual Quantity worked | Amount without GST of work order | Work experience certificate attached |
|---------|-------------------------------------|------------------------------------|----------------------------|-----------------|-----------|------------------------|----------------------------------|--------------------------------------|
|         |                                     |                                    |                            | From (Date)     | To (Date) |                        |                                  |                                      |
|         |                                     |                                    |                            |                 |           |                        |                                  | Yes/No                               |
|         |                                     |                                    |                            |                 |           |                        |                                  | Yes/No                               |
|         |                                     |                                    |                            |                 |           |                        |                                  | Yes/No                               |
|         |                                     |                                    |                            |                 |           |                        |                                  | Yes/No                               |
|         |                                     |                                    |                            |                 |           |                        |                                  |                                      |

Signature and Stamp of the Bidder

Signature and Stamp of the CA

**TO BE CERTIFIED BY CHARTERED ACCOUNTANT SHOWING MEMBERSHIP NO/ FIRM REGISTRATION NO**



**FORM PD**

**Declaration**

(On letter head of the Bidder)

DATE:

To,  
The General Manager (Power),  
Gujarat Mineral Development GMDC Ltd.,  
“KhanijBhavan”, 132 ft. Ring Road,  
University Ground, Vastrapur,  
Ahmedabad-380015

Dear Sir,

I/we here by solemnly declare that

1. Any of our Directors or Partners, jointly or severally and/or individually or our firm/GMDC have not been black listed by the Central Govt. or the State Govt. or its undertakings.
2. We have not put any condition in our offer with respect to Tender No. \_\_\_\_\_,
3. We have accepted all the terms and conditions, including Annexure, Corrigendum if any, as specified in the Tender Document No. \_\_\_\_\_ unconditionally.

I/we here by further declare that, if the declaration is found untrue, the GMDC shall be entitled to take any action against us severally and/or individually or our firm/GMDC in this regard in any manner that may be deemed fit by GMDC.

Yours faithfully,

\_\_\_\_\_  
Signature and Stamp of the Bidder



**FORM PE**  
**(Format for Affidavit)**

**A F F I D A V I T**

**Undertaking Regarding Geniuses Of Documents**  
**(On Non-Judicial Stamp Paper Of Rs 300/-)**

I/We, \_\_\_\_\_, Partner/Director/Legal Attorney/Accredited  
Representative of M/s. \_\_\_\_\_ solemnly declare that:

1. I/We are submitting Tender for the work \_\_\_\_\_  
\_\_\_\_\_ against Tender No. \_\_\_\_\_
2. None of the Partners/Directors of our firm/GMDC is relative of employee of GMDC.
3. All information furnished by us in respect of fulfillment of eligibility criteria and qualification information of this Tender is complete, correct and true.
4. All documents/credentials submitted along with this Tender are genuine, authentic, true and valid.
5. If it is found at any point of time that our documents are not genuine then in that case our tender will be rejected, earnest money deposited by us will be forfeited and we will be debarred from participating in further/future GMDC tenders and/or any action as deemed fit by GMDC may be taken against us, including termination of the contract, forfeiture of all dues including Earnest Money / Security deposit and banning/delisting of our entity and all related persons etc.

**SIGNATURE OF THE BIDDER**

**WITH SEAL**

Dated .....



## FORM PF

### Undertaking Of Indemnity (On Letter head of the Bidder)

To,

The General Manager (Power)  
Gujarat Mineral Development Corporation Ltd.  
Khanij Bhavan  
132' Ring Road, University Ground,  
Vastrapur,  
Ahmedabad.

Dear Sir,

We M/s. ----- hereby undertake that, we shall at all times, indemnify and keep indemnified that GMDC Limited from any and all liability for damages resulting from or arising out of or in any way connected with the operations covered by the Tender No. \_\_\_\_\_. We shall be responsible for all risk arising in connection with or on account of the operations covered by the contract covered by the above tender and shall make good all losses and damages arising there from. In case, the GMDC Limited shall incur any cost or expense or suffer any loss on account of any claim demand or course of action brought against us and arising out of the operations covered by the Bidder/tender, the GMDC Limited shall have the power (without being bound to do so) to define, contest or compromise any such claim demand or cause of action. Any amount that may become payable by GMDC Limited and any cost expense etc. that may be incurred by the GMDC Limited in this behalf, shall also be recoverable from us, without prejudice to your other rights.

Yours faithfully,

For -----

(Signature & Stamp of the Bidder)



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## FORM PG

### Declaration

(On letter head of the Bidder)

#### Site Visit

We \_\_\_\_\_ hereby certify that we have fully understood the site condition in respect of Tender No. \_\_\_\_\_ for all the works mentioned above at \_\_\_\_\_. We have obtained all relevant details, information, data, existing working conditions, existing industrial environment etc. We have also studied the working conditions as proposed in the tender and availability of power supply, water supply, man power, machineries, transportation facility etc.

We hereby agree and undertake not to raise any dispute and/or objection at any stage on any ground whatsoever, during the currency of the contract if awarded to us.

#### **SIGNATURE OF THE BIDDER WITH SEAL**

Dated .....



**PRICE BID FORM – PP**

**(To be submitted online)**

| <b>Sr.<br/>No.</b> | <b>Description</b>   | <b>Total amount per<br/>month (INR,<br/>Excluding GST)</b> | <b>Total amount per<br/>year (INR,<br/>Excluding GST)</b> |
|--------------------|--|--|---|
| 1                  | Comprehensive Maintenance (preventive, predictive, breakdown, shutdown, and general routine) of Boiler, Turbine, Generator and Auxiliaries, and Balance of Plant (BoP) |  |   |

GST shall be reimbursed extra as per prevailing and applicable rates on submission of proof thereof.

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**Please note the following details for Compulsory e-confirmation for Bank Guarantee through ICICI Bank through SFMS under our:**

Gujarat Mineral Development Corporation Limited (GMDC)  
132 Ft Ring Road, Near University Ground Vastrapur, Ahmedabad.  
Bank Name: ICICI Bank Ltd  
IFS Code: ICIC0000024  
UIC GMDC530265584 for Field 7037 MT760

## **FORMAT OF BANK GUARANTEE FOR EARNEST MONEY DEPOSIT (EMD)**

(On Non-judicial Stamp paper to be submitted along with submission of bids)

..... (Name of the Bank)  
Address.....  
Guarantee No.....  
A/C Messrs..... (Name of Bidder)  
Date of Expiry.....  
Limit to liability (currency & amount).....  
Invitation For Tender No..... Dated.....( bidding document )  
For..... (Name of Facilities)

**Subject:** Earnest Money Deposit Bank Guarantee.

Date.....2023

To,

Gujarat Mineral Development Corporation Ltd.  
132 Ft Ring Road,  
Near University Ground  
Vastrapur,  
Ahmedabad.

Dear Sir,

In consideration of Gujarat Mineral Development Corporation (hereinafter called "GMDC") which expression shall unless repugnant to the subject of context include his successors and assigns having agreed to exempt M/s..... (herein after called "Bidder") from demand



under the terms and conditions of “Technical Bid Document” ( hereinafter called the said “Bidding Document”) issued by the GMDC vide TenderNo. \_\_\_\_\_ for the work \_\_\_\_\_

( Name of the facilities ) from Earnest Money Deposit (EMD) of Bid for the due fulfillment by the Bidder of the terms and conditions contained in the said Bidding Document on production of Bank Guarantee for INR \_\_\_\_\_

( \_\_\_\_\_ only ) ( figure in words).

- 1.** We the \_\_\_\_\_ ( Name of Bank ) hereinafter referred to as “Bank” having our registered office at \_\_\_\_\_ ( address of Bank ) do hereby undertake and agree to indemnify and keep indemnified GMDC to extent of INR \_\_\_\_\_ ( \_\_\_\_\_ only ) ( figures in words ) against any losses, damage cost, charges and expenses caused to or suffered by or that may be caused or suffered by GMDC by reason of any breach or breaches by the Bidder of any of the terms and conditions contained in the said Bidding Document and unconditionally pay the amount claimed by GMDC on demand and without demur to the extent aforesaid.
- 2.** We \_\_\_\_\_ (Name of Bank) do hereby undertake to pay the amounts due and payable under the guarantee without any demur merely on a demand by you stating that the amount claimed is due by way of loss or damage caused to or would be caused or suffered by you by reason of any breach by the said Bidder of any of the terms or conditions contained in the said Bidding Document by reason of the Bidder’s failure to fulfill the conditions of said Bidding Document. Any such demand on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding INR \_\_\_\_\_.
- 3.** We \_\_\_\_\_ ( Name of Bank ) further agree that GMDC shall be the sole judge of and as to whether the Bidder has committed any breach or breaches of terms and conditions of the said Bidding Document and the extent of loss, damages, costs, charges and expenses caused to or suffered by or that may caused to or suffered by GMDC on account hereof to the extent of the Bid Security required to be deposited by the Bidder in respect of the said document and the decision of GMDC that the Bidder has committed such breach or breaches and as to the amount or amounts of loss, damages, costs, charges, and expenses caused to or suffered by or that may be caused to or suffered by GMDC shall be final and binding on us.
- 4.** We \_\_\_\_\_ (Name of Bank) further agree that guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance on the said Bidding Document and that it shall continue to be enforceable till you certify that terms and conditions of the said Bidding Document have been fully and properly carried out by the said Bidder and accordingly discharge the guarantee. Unless a demand or claim under this guaranteed is made on us in writing on or before the (date) \_\_\_\_\_ we shall be discharged from all liability under this guarantee.
- 5.** We \_\_\_\_\_ ( Name of Bank ) further agree with you that you have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Bidding Document or to extend time of performance by the said Bidder from time to time or to postpone for any time or from time to time any of the powers exercisable by you against the said Bidder and to forbear or enforce any of the terms and conditions relating to the said Bidding Document and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said Bidder or for any forbearance act or omission on your part or any indulgence by you to the said Bidder or any such matter or thing whatsoever under the law relating to sureties would but for this provision have effect of so relieving us.



- 6.** It shall not be necessary for GMDC to proceed against the Bidder before proceeding against the Bank and the Guarantee herein contained shall be enforceable against the Bank, notwithstanding any security which GMDC may have obtained from the Bidder at this time when proceeding are taken against Bank hereunder be outstanding or unrealized.
- 7.** We \_\_\_\_\_ (Name of Bank) further undertake to unconditionally pay the amount claimed by GMDC merely on demand and without demur to the extent aforesaid.
- 8.** We, the said Bank lastly undertake not to revoke this guarantee during its currency except with the previous consent of GMDC in writing.
- 9.** This Guarantee will not be discharged due to the change in the constitution of the Bank or the said bidder.
- 10.** The Bank has under its constitution power to give this guarantee and \_\_\_\_\_ Mr. \_\_\_\_\_ who has signed it on behalf of the Bank have authority to do so.

Yours faithfully

For.....

(Name of the Bank)

Notwithstanding anything contained hereinabove

- (I) Our liability under this Bank Guarantee shall not exceed Rs \_\_\_\_\_/- (**Rupees \_\_\_\_\_ only**)
- (II) This Bank Guarantee is valid up to \_\_\_\_\_ (Date).
- (III) We are liable to pay the guarantee amount or any part thereof under this bank Guarantee only and only if you serve upon us a written claim or a demand on or before \_\_\_\_\_ (date).
- (IV) This bank guarantee is operative only when accompanied with SFMS advice from us.

Yours faithfully

For \_\_\_\_\_ (Name of the Bank)

**Yours faithfully**

**For.....**

**(Name of the Bank)**