

**CONTRACT FOR OVERHAUL**

**BETWEEN**

**M/S GUJARAT MINERAL DEVELOPMENT CORPORATION LIMITED**

**AND**

---

**For a period of \_\_ months effective from \_\_\_\_\_**

**For**

**Boiler and ESP Package for Overhaul of 250 (2x125) MW Akrimota Thermal Power Station**

**(ATPS)**

**District: Kutch in the state of Gujarat**

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(On INR **XX** Stamp Paper)

This **Capital Overhaul Agreement** (hereinafter referred to as “**the Contract**”) is made at Ahmedabad on this \_\_\_\_\_ day of \_\_\_\_\_, 2023.

**BETWEEN:**

**Gujarat Mineral Development Corporation Ltd**, a company incorporated under Indian Companies act, 1953 and having its corporate office at Khanij Bhavan, 132-Ring Road, Gujarat University Ground, Vastrapur, Ahmedabad 380 052 (hereinafter referred to as “**the Owner**” which expression shall, unless repugnant to the context or meaning thereof, include its administrators, successors, and assigns) **of the FIRST PART**;

**AND**

\_\_\_\_\_, a company incorporated under the Companies Act, 1956/2013 and having its Registered Office at \_\_\_\_\_ with fax number \_\_\_\_\_ and its designated representative \_\_\_\_\_ and hereinafter referred to as “**the Contractor**” (which expression shall mean total service provider unless it be repugnant to the context or meaning thereof be deemed to include its successors and permitted assigns) **of the SECOND PART**.

**WHEREAS:**

The Contractor is engaged, inter alia, in the business of Overhauling of Boiler and ESP for coal or lignite-based thermal power plants. The Contractor has acquired expertise in the above

business due to its longstanding and availability of required experience and skilled workforce with it. The Contractor has agreed to undertake the Contract for Overhaul of the Owner's 2X125 Akrimota Thermal Power Station

GMDC has been operating a 2X125 MW lignite-based thermal power Plant (Akrimota Thermal Power Station, ATPS) over the past 15 years. ATPS has two units of 125 MW each commissioned in July 2006, and March 2007 respectively. ATPS procures lignite required for generation of power from GMDC's mines (Mata na Madh, and Umarsar) located at proximity (~60 km) and transported directly to the Plant via road. Furthermore, the water supply to the power plant is ensured through nearest Kori creek (through 1.4 km long sea water intake channel).

The Contractor has offered, and the Owner has agreed to avail its services for Overhaul of the 2X125 MW Akrimota Thermal Power Station.

**NOW, THEREFORE**, in consideration of the foregoing premises and the mutual covenants and agreements hereinafter set forth, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Owner and the Contractor, intending to be legally bound, hereby agree as follows:

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## 1. Definitions of the terms and conditions of the RFP

### 1.1. Definitions

For the purpose of the Contract, the following words and expressions in this Section shall have the respective meanings set forth below:

**“Applicable Laws”** shall mean all laws, treaties, ordinances, rules, regulations applicable in India and amendments, re-enactments, revisions, applications, and adaptations thereto made from time to time and in force and effect, judgments, decrees, injunctions, writs and orders of any court, arbitrator or governmental agency or authority, rules, regulations, orders and interpretations of any Governmental Instrumentality, court or statutory or other body having jurisdiction over construction of the Plant, performance of the Work or supply of Goods, operation and maintenance of the Plant, including Applicable Permits, as may be in effect at the time of performance of work or supply of Goods hereunder by the Bidder, which time would include Latent Defects Period as appropriate, provided, however, that if at any time the Applicable Laws are less stringent than the standards set forth in the Contract hereto, the standard set forth in the Contract hereto shall be deemed to be the standards under Applicable Laws.

**“Applicable Permits & Clearances”** shall mean any and all Permits, Clearances, Authorizations, consents, licenses (including without limitation any import or export licenses), lease, ruling, exemption, filing, agreements, or Approvals, required to be obtained or maintained in connection with construction of the Plant, performance of Work, and the operation of the Plant respectively by the Bidder and the Owner in accordance with the Contract and their maintenance, as may be in effect at the time of Bidder’s supply of Goods hereunder; which time would include Latent Defects Period as appropriate.

**“Approval”** shall mean the written approval of the Owner and of the statutory authorities, wherever such authorities are specified by any codes or otherwise.

**“Arbitration Act”** shall mean Arbitration and Conciliation Act, 1996, or any amendment or re-enactment thereof.

**“Authorization”** shall mean approvals required under Applicable Law.

**“Bid”** shall mean the offer of the Bidder to the Owner in response to the Bid Enquiry

**“Bidder”** shall mean single corporate entity Bidding for the Contract for overhauling of Boiler and ESP

**“Bidder Permits”** shall mean all Permits, required by the Bidder from any Government Instrumentality for the performance of his obligations.

**“Bidder’s Representative”** shall mean the person named as such in the Contract or other person appointed and from time to time communicated to the Owner by the Bidder in his place in accordance with the terms of the Contract.

**“Bid Security/Earnest Money Deposit (EMD)”** shall mean the security provided by the Bidder to the Owner along with the Bid.

**“Commencement Date”** shall be the date 7 (seven) days from the date of signing of the LoA for services to be provided by the Bidder.

**“Contract”** shall mean the documents as set out in the form of Contract Agreement as may be amended, supplemented, or modified from time to time by agreement in Writing between the Parties.

**“Contract Period”** shall mean the period from the Commencement Date up to and including the last day of the Contract.

**“Documents”** shall mean and includes all design documents, engineering documents, Drawings, calculations, computer software (programs), computer media, samples, patterns, models, construction documents, erection documents, Operation and Maintenance Manuals, and other manuals, and the like as well as, all other data and information to be submitted by the Bidder and shall include without limitation, engineering, design and construction drawings, data sheets, specifications, plans, bills of Materials and estimates.

**“Governmental Authority”** shall mean the Government of India, the state government, any local authority constituted under an act of legislature, and any other authority exercising any power or function in pursuance of an act of legislature, or any rules and regulations made there under, and any successor thereof having legal jurisdiction over the matter or person in question.

**“Goods”** shall mean all of the equipment, machinery, apparatus, appliances, components and/or other Materials and things, which the Vendors are required to supply to the Owner under the Contract.

**“Good Industry Practice”** shall mean those practices, methods, acts, techniques and standards as may be followed or employed in the performance of the Work or supply of Goods and discharge of its obligations by the Bidder and which (i) are generally accepted internationally for use in the electric utility industry, taking into account conditions in India, in connection with power stations of the same or similar size and type as the Plant, (ii) are commonly used in prudent electric utility engineering, construction, project management and operations, and (iii) would be expected to result in performance of the Services and completion of Works in a manner consistent with Applicable Laws, Applicable permits, reliability and safety.

**“GUVNL”** shall mean Gujarat Urja Vikas Nigam Limited

**“Lumpsum Boiler and ESP Charges”** shall mean the comprehensive Boiler and ESP Overhaul charges payable by the Owner to the Bidder in respect of execution of all the services and supply of spares as indicated in Section 3 in this document.

**“Notice in Writing”** or **“Written Notice”** shall mean a Notice in Writing, typed, or printed or handwritten characters, sent (unless delivered personally or otherwise proved to have been received) by registered post or by electronic transmission to the last known private or business address or registered office of the addressee and shall be deemed to have been received when in the ordinary course of post or by electronic media it would have been delivered.

**“Overhaul”** shall refer to the planned maintenance being undertaken for the 2X125 MW Akrimota Thermal Power Station to enhance performance and reliability of the asset

**“Overhauling Activities”** shall refer to all the activities that are needed to be performed for successful Overhaul of the 2X125 MW Akrimota Thermal Power Station

**“Owner”** shall mean Gujarat Mineral Development Corporation Limited hereinafter referred to “GMDC”, in its capacity as Owner and shall include its successors and assigns, as well as authorized officers.

**“Owner’s Representative”** shall mean the person appointed by the Owner from time to time and notified as such to the Bidder to act as Owner’s Representative for the purposes of the Contract.

**“PMC”** shall mean the Project Management Consultancy appointed by Authority / GMDC for providing PMC services for turnaround of GMDC’s 2X125 MW Akrimota Thermal Power Station (ATPS)

**“Package”** shall mean a group of ATPS systems that are Packaged together for the execution of Overhaul

**“Party”** shall mean Owner or Bidder individually and “Parties” means Owner and Bidder collectively.

**“Personnel”** shall mean employees/personnel engaged by the Bidder who are based in India and are directly or indirectly engaged by the Bidder in the performance of the Bidder's obligations under this Agreement at the Plant.

**“Plant”** shall mean the 2X125 MW lignite based thermal power Plant operated by GMDC in Akrimota (Akrimota Thermal Power Station, ATPS), comprising of 2 units of 125 MW each

**“Procurement Activities”** shall mean the activities needed to be performed for Procurement of all the raw materials and services for Boiler and ESP Overhaul of the 2X125 MW Akrimota Thermal Power Station

**“Successful Bidder”** shall mean the Bidder who is selected by Authority / GMDC in providing services for Boiler and ESP Overhaul of GMDC’s 2X125 MW Akrimota Thermal Power Station (ATPS) and shall include such Successful Bidder’s legal representatives, successors and permitted assigns

**“Turnaround”** shall refer to the planned maintenance being undertaken for the 2X125 MW Akrimota Thermal Power Station to enhance performance and reliability of the asset

**“Willful Default”** shall mean an intentional or reckless breach or/ and omission by a Party of any of its obligations under the Contract

## **1.2. Interpretation**

Words importing Persons or Parties shall include related firms and corporations and any organization having legal capacity. Words importing the singular also include the plural and vice versa where the context requires. Words importing one gender also include other genders.

Unless inconsistent with the provisions of the Contract, the meaning of any shipping terms and the rights and obligations of the Parties there under shall be as set forth in the latest International Chambers of Commerce (ICC) official rules for interpretation of trade terms as per “INCOTERMS 2010”

### **1.3. Law, language, and measurements**

Applicable Law to this Contract shall be the Indian Law. The respective rights, privileges, duties and obligations of the Owner and the Successful Bidder under the Contract shall be governed and determined by the Laws of State and of the Republic of India.

All correspondence, information, literature, data, manuals, definitive documents, notices, waivers, and all other communication, written or otherwise, between the Parties in connection with this Contract shall be in English. The official text of this Contract shall be English.

All measurements shall be in metric system.

### **1.4. Stamp duty and similar charges**

The costs of stamp duties and similar charges imposed by law on the Contract or Agreement, or any part thereof shall be borne by the Successful Bidder.

### **1.5. Commencement of Contract**

The Successful Bidder, along with the payment of Performance Security, will enter into a Contract with the Owner on appropriate Stamp Paper (to be provided by the Successful Bidder) in token of acceptance of the terms and conditions of the contract, within 7 (seven) days of submission of its acceptance of the Letter of Award (LOA). In case of any necessity arising after executing the Contract and during the execution of the work, which requires alteration/modifications in the Contract, the same can be made in writing by either party, after mutual understanding and consent of both the parties. The Successful Bidder will have to start the work as per the Scope of Work described in the Section 3 of this document, within 7 (seven) days from the date of acceptance of the LOA. In case of failure to commence the work within the abovementioned period, the liquidated damages shall be levied as per the provision of Section 9.1 of this document

### **1.6. Successful Bidder's use of Owner's documents**

Copyright in the Owner's requirements and other Documents issued by the Owner to the Successful Bidder shall (as between the Parties) remain the property of the Owner. Ownership in all documents provided by the Successful Bidder to the Owner pursuant to the Contract including design, engineering, Drawings and Works layout (but excluding proprietary information and Manuals provided by Vendors of equipment for use of the Owner) shall vest in the Owner. The Successful Bidder may, at its Cost, copy, use and communicate any such documents for the purposes of the Contract. They shall not, without the Owner's consent, be used, copied, or communicated to a third-party by the Successful Bidder, except as necessary for the purposes of the Contract including performance of Work or supply of Goods.

The Successful Bidder shall indemnify the Owner in case of breach of this Section by the Successful Bidder. If these Documents are received by a third-party from the Successful Bidder and the third-party makes use of these Documents to cause harm or monetary loss to the Owner or use these Documents for their personal gain / monetary gain, the Successful Bidder shall compensate the Owner for the loss suffered as well as for the value of gain derived by third-party.

### **1.7. Confidential details**

The Successful Bidder shall treat the details of the Contract as private and confidential, except to the extent necessary to carry out his obligations hereunder. The Successful Bidder shall not publish, permit to be published, or disclose any particulars of the Contract in any trade or technical paper or elsewhere without the previous consent in writing of the Owner and at the Owner's sole discretion.

The Successful Bidder shall indemnify the Owner in case of breach of this Section. If the confidential details relating to this Contract or its contents are received by a third-party from the Successful Bidder and the third-party makes use of these details to cause harm or monetary loss to the Owner or use these Documents for their personal gain/ monetary gain, the Successful Bidder shall compensate the Owner for the loss suffered as well as for the value of gain derived by the third-party. The Successful Bidder shall not use the confidential details of the Contract for any other purpose except for the strict purpose of this Contract.

## **2. Appointment of Successful Bidder**

### **2.1. Appointment terms**

Based on the results of this Bid as per the evaluation criteria mentioned in Section 5 of Part 3 of the RfP, the Owner shall appoint the Successful Bidder, and the Successful Bidder shall accept the appointment to deploy skilled, qualified, and competent manpower, and necessary systems, infrastructure, equipment, spares, system, software, and tools as required for efficient execution of the Overhaul subject to the terms and conditions mentioned in the Contract.

The Owner reserves the right to increase or decrease the contractual work during the Contract period by giving prior notice in writing. Successful Bidder shall not be entitled to any compensation or indemnity on account of increase or decrease in the contractual work.

In case of requirement of execution of additional work as part of the scope of work detailed in Section 3 of this document during the Contract period, contractor shall be responsible to execute such additional work during the Contract period at the same rate finalized for the respective works. No escalation in the rate of the works for such additional work during the contract period shall be considered.

In case of a requirement of other works which are not covered in the scope of work detailed in Section 3 of this document, but the same is necessary for successful completion of the overhauling of the Boiler and ESP, the Successful Bidder may be assigned that work at the lowest rate derived and mutually agreed between the Successful Bidder and the Owner.

The MD 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 the Owner.

## 2.2. Duration of the Contract

The Contract shall be deemed to have come into force and effect 7 (seven) days from the date of acceptance of the Letter of Award (LOA) by the Owner to the Successful Bidder and the Successful Bidder shall execute the scope of work for provision of services and supply of material as covered in Section 3 within a period of 45 weeks from the date of acceptance of LoA. In the said duration, the Successful Bidder shall complete the following key activities in the Package as per the stipulated timelines, where T shall mean the date of acceptance of the LOA:

S. No	Activity	Duration
1	Mobilization	T + 2 weeks
2	Completion of supplies for Auxiliary Boiler	T + 10 weeks
3	Overhauling and commissioning of Auxiliary Boiler	T + 16 weeks
4	Completion of supplies for both units for Boiler and ESP	T + 28 weeks
5	Completion of pre-Overhauling activities for both units	T + 28 weeks
6	Overhauling and commissioning of boilers across both units	T + 40 weeks
7	Retrofitting of ESPs across both units	T + 40 weeks
8	Completion of Performance Guarantee Testing for both units	T + 45 weeks

The Contract shall be deemed to be successfully executed post completion of the activities, as certified by competent authority from the PMC and Owner. The Successful Bidder shall strive to complete the execution within the stipulated period of 45 weeks, however, in case of a delay, the Successful Bidder shall ensure completion of its contractual obligations as early as possible, while the Owner reserves the right to levy penalties/liquidated damages as described in Section 9.1 of this document.

## 3. Responsibilities of the Successful Bidder

The responsibilities of the Successful Bidder as part of the Contract have been segregated into two key categories – services and supply. The terms of reference / scope of work have been detailed for each category below.

### 3.1. Scope of services

The scope of the Contract shall be providing end-to-end services for Overhaul of the Boiler and ESP both units of the Plant, as part of the Boiler and ESP package. The Successful Bidder shall ensure execution of the scope of work is done in accordance with best-in-class practices, standards of safety, and mutually agreed terms with the Owner.

### 3.1.1. Pre-Overhauling activities

#### 3.1.1.1. Detailed Overhaul planning

1. The Successful Bidder shall create a detailed consolidated 'Overhaul Execution Plan' for the Boiler and ESP package in collaboration with the PMC, focusing on sequencing of activities, identification of interdependencies, and indicating clear milestones, in line with the timelines mentioned in Section 2.2 (Contract Duration) and Section 11.2 (Payment Milestones) of this document
2. The 'Overhaul Execution Plan' shall be used as the single source of truth for monitoring schedule compliance for the Successful Bidder, i.e., deviations in actual timelines vis-à-vis planned timelines
3. The 'Overhaul Execution Plan' shall be at an equipment level, encompassing all activities including but not limited to dismantling, inspecting, cleaning, repairing, installation, commissioning, and testing
4. The Successful Bidder shall prepare appropriate Quality Assurance Plan (QAP) or Quality Inspection Plan (QIP) and Quality Control Plan (QCP) for execution of the Overhaul and shall get it reviewed by competent authority from the PMC and the Owner. The Successful Bidder shall apprise the Owner about the plans to enable frequent audits, and highlight potential concerns, if any
5. The Successful Bidder shall prepare Boiler Overhaul and ESP Retrofitting protocols indicating the sequence of activities to be conducted along with set of readings to be measured before and after overhauling and retrofitting

#### 3.1.1.2. Owner readiness assessment and support

1. The Successful Bidder shall, in collaboration with the PMC, conduct audits and physical verification of existing inventory at the Plant to identify the equipment and associated spares and material readily available to be utilized during the Overhaul.
2. Successful Bidder will assess the availability of required spares at the Plant. They will conduct a gap analysis and incorporate the additional material to be procured in the 'Procurement Register' (detailed in Section 3.2.1) to ensure optimal Procurement and consumption of material
3. The Successful Bidder shall assess the workshop equipment prior to the start of the Overhaul. The details of the equipment available in the workshop as on date has been summarized below:

S. No	Description	Make	Status
1	Precision Lathe (12 feet)	Panther	Working
2	Lathe machine (3 feet)	Esteem	Working
3	Pillar Drilling Machine	Eifco	Working
4	Rough grinder	Eifco	Working
5	Power Hacksaw	Eifco	Working
6	Radial Drill Machine	HMT	Working

4. The Overhaul Plan created by the Successful Bidder shall mention requirement for equipment from the GMDC workshop. The Successful Bidder shall create an equipment usage plan in collaboration with PMC incorporating all interdependencies
5. The Successful Bidder shall be given access to the workshop equipment as per availability and Overhaul plan indicating requirement of workshop equipment. The Successful Bidder shall coordinate with the PMC to access the existing equipment and ensure no impact on execution timelines. If the Successful Bidder requires additional equipment to deliver the services defined in Section 3 of this document, the same shall be in the scope of the Successful Bidder
6. The Successful Bidder shall arrange and depute necessary operators as required for operating the workshop equipment

### **3.1.1.3. Statutory approvals**

The Successful Bidder shall obtain, on behalf of the owner, all necessary statutory approvals from Inspection Authorities, IBR, or other government authorities, as may be required, as per Applicable Laws at its own cost. Further, the Successful Bidder shall coordinate and arrange for hydro testing of the boilers as per IBR requirements, during the course of the Overhaul.

All necessary documentation prepared and / or obtained for such statutory approvals shall be submitted to the Owner for review prior to submitting for approvals to relevant authorities. Coordination and liaising with competent authority are in the scope of Successful Bidder.

### **3.1.1.4. Workforce deployment**

1. The Successful Bidder shall deploy a 'Boiler Package Leader' with strong technical expertise and experience of over 12 years, with prior experience in Overhauling, having successfully completed at least 2 EPC / ETC / R&M / Overhauling of CFBC Boilers in the last 12 years, in coal or lignite-based thermal power plants in India
2. Further, the Successful Bidder shall also deploy an 'ESP Package Leader' with strong technical expertise and experience of over 12 years, with prior experience in EPC / ETC / Retrofitting and commissioning of ESP units as per the latest environmental regulations (new emission standards vide notification no. S.O. 3305(E) dated 07<sup>th</sup> December 2015)
3. The 'Boiler Package Leader' and 'ESP Package Leader shall coordinate with the PMC and the Owner on all matters pertaining to the execution of the Overhaul
4. The minimum requirements for the Successful Bidder to ensure coverage of all equipment within the battery limits has been summarized below:

S. No	Member	Role	Minimum requirement	Minimum Qualification
1	Boiler Package Leader	Overall Boiler coordinator	1	Graduation in Mechanical /

S. No	Member	Role	Minimum requirement	Minimum Qualification
				Electrical / Instrumentation / or equivalent Engineering (BE / B.Tech) with at least 12 years' experience
2	ESP Package leader	Overall ESP coordinator	1	Graduation in Mechanical / Electrical / Instrumentation / or equivalent Engineering (BE / B.Tech) with at least 12 years' experience
3	Mechanical Lead	Supervisor for mechanical activities	1	Graduation in Mechanical / Electrical / Instrumentation / or equivalent Engineering (BE / B.Tech) with at least 7 years' experience
4	Electrical Lead	Supervisor for electrical activities	1	
5	Instrumentation Lead	Supervisor for C&I activities	1	
6	Safety Lead	Supervisor for ensuring EHS (environment, health, and safety) activities	1	
7	Quality Head	Supervisor to ensure adherence with Quality Assurance Plan	1	Graduation in Mechanical / Electrical / Instrumentation / or equivalent Engineering (BE/B.Tech) with at least 7 years' experience

5. The Successful Bidder shall ensure that all deployed personnel are available at the Plant at all times during the execution of the Overhaul. The 'Boiler Package Leader' and 'ESP Package Leader' shall be present at the owner's corporate office in Ahmedabad for progress review and other meetings that may be organized during the course of the Overhaul, as needed. The Successful Bidder shall arrange for their own accommodation for representatives travelling to Ahmedabad for such meetings
6. The Successful Bidder shall submit details of all deployed personnel for execution of the Overhaul to the PMC prior to deployment and ensure they are in line with Contractual requirements
7. The Successful Bidder shall arrange for a sufficient number of IBR certified welders per day (with prior experience in welding of ASTM SA-106 Gr.B / SA-210 / SS304 / SS316 tubes) and other resources (e.g., fitters, grinders, etc.) for

performing all welding activities and other tests as part of the Boiler and ESP package, as needed

8. The Successful Bidder should deploy sufficient workforce for simultaneous work on both the Boilers and ESPs at the Plant, in assurance with the 'Detailed Overhaul Plan', as detailed in Section 3.1 of this document
9. The Successful Bidder shall depute sufficient manpower for HR, Admin, Store management and HSE, as needed

#### **3.1.1.5. Infrastructure arrangement**

1. While the Owner will arrange for the accommodation and food for Successful Bidder's personnel deployed in the Plant on the basis of availability and on a chargeable basis, in case infrastructure is not available, the Successful Bidder shall be responsible for arranging the same for the entire course the Overhaul.
2. The Successful Bidder shall maintain a dedicated shed for conducting necessary works including but not limited to fabrication, repair, storage of material, etc. The Owner shall provide access to the available facilities and workshop in the Plant with prior written consent, as per availability
3. For timely and successful completion of the Overhaul, if new set of skilled operators are required for workshop equipment, the Successful Bidder shall arrange the same at its own cost

#### **3.1.1.6. Structural modifications**

The Successful Bidder shall be responsible for necessary structural modifications including supply, fabrication, and erection of any new structure to support piping, equipment, and provision of any additional platform if required for access to new equipment, or any other structural modification works required for execution of the Overhaul to aid the completion of the works defined in Section 3.1.2 of this document.

#### **3.1.1.7. Hanger inspection and servicing**

1. The Successful Bidder shall inspect all installed hangers, spring supports, flexible supports, rigid supports, etc. as per the battery limits defined in Section 3.2 of Part 1 of the RfP, and assess their load bearing capacities, prior to commencement of Overhaul. A detailed list of hangers available at the Plant has been appended in Annexure 4
2. The Successful Bidder shall replace all damaged / unsuitable / non-functional hangers, supports, and associated components, as needed for the execution of the Overhaul
3. The Successful Bidder shall be responsible for inspecting and repairing the existing boiler supports. As per design, the Boilers are top supported, however temporary fixed supports have been provided. The Successful Bidder shall replace all fixed supports with top supports as per design

4. The Successful Bidder shall be responsible for cold setting and hot setting of the hangers post commissioning and stabilization of the Boilers as per design

### 3.1.1.8. Scaffolding and platforms

Successful Bidder's scope shall include supply of all scaffolding, and / or platforms, as may be required for repair / Overhaul and commissioning. These items shall be specifically brought to the Plant solely for repair / Overhaul purpose and if no more needed for regular maintenance of the equipment, can however, be taken back by the Successful Bidder after completion of the work at the Plant.

### 3.1.1.9. Coil / Tube pulling equipment

The Successful Bidder shall be responsible for all coil / tube pulling arrangements, coil / tube supporting arrangements, required tools, chain blocks, pull lifts, slings, channels, and accessories required for the execution of the Overhaul.

### 3.1.1.10. Welding equipment

The Successful Bidder shall be responsible for arranging all welding machines, grinding machines, accessories for welding, cutting, grinding, along with consumables like 99.99% pure Argon gas, LPG, Oxygen, Acetylene, purging paper, grinding wheels, filler wires, welding rods, and other accessories required for the execution of the Overhaul.

The Successful Bidder shall arrange for welding rods of the following make only, as per IBR requirements, for welding of IBR lines. Copies of the approval certificates, obtained from the Director of Boiler, having validity for that batch of welding rods shall be furnished by the Successful Bidder to the PMC and the Owner, including the Manufacturer's test certificate indicating chemical composition and mechanical properties of the rods.

S. No	Specification	Rods to be used
1	Stainless steel Filler wire for 347H of size: 2.4 x 1000mm. AWS ER 347 stainless steel welding electrode of size: Dia. 2.5 / 3.15 mm conforming to AWS: E-347 Specification: 5.4	Bohler Thyssen/ Bohler/ Metrode (For SA 213 TP 347H Tube welding)
2	Filler wire AWS: ER 90S-B9, Size: 2.4 x 1000mm; Dia. 2.5/3.15mm Conforming to AWS E 9015-B9; SFA 5.5	BOHLER / METRODE. (For SA213-T91 Tube welding)
3	SS Welding Electrode AWS A5.4E309-16 OF SIZE: 2.5/3.15/3.20mm DIA	D&H SECHERON / ADOR / BOHLER / METRODE. (For 253 MA connector plate to SS pin welding)
4	SS Welding Electrode AWS A5.4E310 S OF SIZE:2.5/3.15/3.20mm DIA	D&H SECHERON / ADOR / BOHLER / METRODE. (For Insert plate welding)

S. No	Specification	Rods to be used
5	Welding electrode E NiCrFe-3 DIA. 2.5/3.15mm	D&H SECHERON / ADOR / BOHLER / METRODE. (For SS connector pin welding with T91 pad)
6	Dia. 2.5 mm Conforming to AWS E 9015-B9; SFA 5.5	BOHLER (For SA213-T91 Tube welding)

#### **3.1.1.11. Cranes**

1. Since the Overhauling and retrofitting will be conducted on both Boilers and ESPs simultaneously, the Successful Bidder shall arrange for required cranes with skilled operator in the Boiler and/or ESP area, as required
2. The Successful Bidder shall be responsible for load testing and certification of cranes along with qualified crane operators available at the Plant prior to the start of the Overhaul, as applicable

#### **3.1.1.12. Air compressors**

Since the Overhauling and retrofitting will be conducted on both Boilers and ESPs simultaneously, the Successful Bidder shall arrange for portable air compressors for carrying out the works during the shutdown, as needed. The Successful Bidder shall arrange suitable cables, terminations/ joints for extending power from the existing source/ socket to portable compressors/ other power machines.

#### **3.1.1.13. Consumables for Overhauling**

The Successful Bidder shall be responsible for ensuring availability of sufficient quantities of all consumables for the Overhauling and retrofitting of Boiler and ESP. Further, the Successful Bidder shall also ensure safe disposal of sewage and other wastes, as necessary, to ensure safe and clean operations.

#### **3.1.1.14. Dismantling of existing equipment**

1. The Successful Bidder shall be responsible for dismantling of existing equipment prior to the initiation of the Overhaul, as needed, including but not limited to the Boiler and ESP piping, insulation, refractory, supports, and other components
2. The Successful Bidder shall prepare a checklist for dismantling and list of readings to be taken at the time of dismantling and submit to competent authority from the PMC and the Owner for review
3. The Successful Bidder shall submit a floor plan for storing the dismantled Boiler and ESP components and submit it to the PMC for approval. The Successful Bidder shall ensure the components are appropriately stored in the area, as per the floor plan approved by the PMC, during the course of the Overhaul

### **3.1.1.15. Safety arrangements**

1. The Successful Bidder shall ensure the personnel deployed in the Plant adhere to the appropriate health, safety, and environment (HSE) requirements at the time of deployment. This will include medical tests required, if any, among other requirements to be aligned with the Plant HSE team
2. The Successful Bidder shall make own arrangement for proper electrical grounding of all systems, supplied by him as required by the system design. All required accessories including grounding cables are also included in Successful Bidder scope
3. Safe power supply and illumination for confined places shall be arranged by the Successful Bidder. Any illumination work necessary to fulfill the scope of services defined in this RfP shall be carried out by the Successful Bidder prior to the start of other work
4. A single point electrical supply of 415V, 32/63 Amp 3 phase and single point electrical supply of 230V, 16 Amp single phase power supply point from nearest available healthy source shall be supplied to the Successful Bidder by the Owner, free of cost. The Successful Bidder shall be responsible for the provision of cables for extending power to its apparatus
5. The Successful Bidder shall be solely responsible for ensuring the safety of the adjacent equipment / foundations and of the existing supporting structures. The Overhauling work by the Successful Bidder shall be carried out in such a manner that no damage is caused to existing equipment / foundations / structure and all precautions, including strengthening of existing structures, as may be necessary, shall be taken by the Successful Bidder to ensure safety of existing Plant / equipment / foundation / structures

### **3.1.1.16. Permits**

1. The Successful Bidder shall obtain and maintain in effect all applicable Contractor permits required in connection with the Successful Bidder's performance of its obligations hereunder, including but not limited to licenses to permit the Successful Bidder to do business in the jurisdictions where the work is to be performed, design, engineering, procurement, fabrication, construction, erection, testing and commissioning, start-up testing, tests before taking-over, export, import, and other applicable permits required to move, transport, and deliver material / equipment to and fro from the Plant
2. Successful Bidder shall obtain all necessary Contractor and Construction permits. If the Successful Bidder at any time becomes aware, whether as a result of notice from Owner or otherwise, of any applicable permit not obtained by him, the Successful Bidder shall promptly give notice thereof to Owner and the Successful Bidder shall be responsible for obtaining such applicable Permits
3. The Successful Bidder shall provide support to the owner in obtaining necessary Owner's permits, including but not limited to the following activities:
  - i. Overall co-ordination of permitting requirements

- ii. Attendance at meetings with Owner and third parties designated by Owner
- iii. Preparation of permit applications or, as applicable, application to transfer permits to the Owner
- iv. Assistance in preparation of responses to inquiries by governmental instrumentalities/ agencies
- v. Assistance in presentations at hearing of governmental instrumentalities / agencies
- vi. Provision of all available information and documents required by Owner in connection with obtaining any Owner Permits; and
- vii. Such other services as Owner may request from time to time required for Owner permits

### **3.1.2. Overhauling activities (Boiler)**

The Successful Bidder shall prepare a comprehensive list of activities to be undertaken during the Overhaul post completion of inspection of the Boiler, as part of the 'Overhaul Execution Plan', detailed in Section 3.1.1.1 of this document.

#### **3.1.2.1. Measurement of parameters**

The Successful Bidder shall prepare a list of all parameters to be measured prior to initiation of the Overhaul and post completion of the Overhaul. The Successful Bidder shall validate the list with competent authority from the Owner and the PMC and obtain approvals prior to initiation of the Overhaul. For measurement of the parameters, the Successful Bidder shall use the existing instrumentation installed at the Plant and highlight to the PMC and the Owner in case of any issues.

The Successful Bidder shall be responsible for measurement of all essential parameters, prior to overhauling of the Boiler, while dismantling as per Section 3.1.1.14. The Successful Bidder shall maintain a log of all the readings to be furnished to the competent authority from the PMC and the Owner

The Successful Bidder shall ensure that the readings observed post inspection, maintenance, and assembly of the Boiler are at par or better than the readings measured prior to dismantling. In case of deviations, the Successful Bidder shall furnish appropriate documental evidence justifying the deviations. The desired outcomes have been incorporated in Section 7 of this document.

#### **3.1.2.2. Dismantling and cleaning**

The Successful Bidder shall be responsible for dismantling of the Boiler components, storage of dismantled components in the areas earmarked by the PMC, and cleaning of the equipment with appropriate tools and safety precautions, prior to inspection of the components.

#### **3.1.2.3. Overhaul plan**

The Successful Bidder shall be responsible for performing comprehensive Overhaul of the Boiler. The list of activities to be carried out, across all key components, have

been detailed below as Plan 1 to 16. The key activities across all plans have been classified into two categories, as per the following definitions:

**Category 1:** Services required across key components to be undertaken as part of the Overhaul. Any additional services and procurement of associated material (i.e., not detailed as part of the Contract) for components classified as Category A identified during inspections post the initiation of the Overhaul, shall be notified to competent authority from the PMC and the Owner, and shall go through the 'Rate Settlement Mechanism', as detailed in Section 6 of this document.

**Category 2:** Services required for replacement of tubes and application of refractory across the boilers as per tentative quantities defined in Annexure 2. Services required for additional quantities of tubes or refractory shall be notified to the competent authority from the PMC and the Owner and shall go through the 'Quantity Variance Mechanism' defined in Section 5.2 of this document.

**Plan 1: Auxiliary Boiler**

The key activities to be executed by the Successful Bidder for repair / overhaul of the auxiliary boiler shall include, but not be limited to, the following. The indicative list of spares to be procured for the auxiliary boiler have been detailed in Annexure 2, Plan 1.

Further, the Successful Bidder shall prioritize the procurement and execution of the overhaul of the auxiliary boiler (as per timelines defined in Section 2.2), to ensure successful completion prior to shutdown of the units.

Component	Activity	Unit	Cat 1	Cat 2
<b>Tubes</b>	<ul style="list-style-type: none"> <li>- Cutting and removal of old tubes, supply, installation, and commissioning of new tubes in the waterwall (1264 Nos) and superheater panel (54 Nos) as per the specifications detailed in Annexure 2, Plan 1, including the following:               <ul style="list-style-type: none"> <li>- Non-destructive testing of new welded joints</li> <li>- Leak test</li> <li>- Hydro test up to 32 kg/m<sup>2</sup></li> <li>- Arrest leakages</li> </ul> </li> <li>- Submission of test certificates for MOC of tubes to the Owner</li> </ul>	Common	✓	
<b>Drum</b>	<ul style="list-style-type: none"> <li>- Drum surface preparation for new tube installation</li> <li>- Drum level checking and correction</li> <li>- Replacement of drum vent line (supply of drum vent line in Owner's scope)</li> </ul>	Common	✓	
<b>Baffle plates</b>	<ul style="list-style-type: none"> <li>- Supply, installation, and commissioning of baffle plates as per the specifications detailed in Annexure 2, Plan1</li> </ul>	Common	✓	
<b>Cover plates</b>	<ul style="list-style-type: none"> <li>- Cutting and removal of cover plates and breaking of refractory</li> <li>- Cover plate welding and cladding</li> </ul>	Common	✓	

Component	Activity	Unit	Cat 1	Cat 2
	application			
<b>Insulation and coils</b>	– Supply and apply insulation and coils across the Auxiliary Boiler as per specifications detailed in Annexure 2, Plan 1	Common	✓	
<b>Valve</b>	– Supply and apply gate valve at Start up vent and MS Line	Common	✓	
<b>Refractory</b>	– Installation of brick lining and application of refractory at burner mouth	Common		✓
<b>Field instruments</b>	– Inspection, testing, and calibration of existing field instruments associated with the Auxiliary Boiler – e.g., flow control valves, pressure gauges, thermocouples, etc.	Common	✓	
	– Removal and re-installation of all field instruments post testing and calibration	Common	✓	
<b>Hydro testing</b>	– Collaboration with relevant authority from IBR for inspection, and hydro testing of the Auxiliary Boiler, prior to initiation of operations and shutdown of the Plant	Common	✓	

### **Plan 2: Ash handling system**

The key activities to be executed by the Successful Bidder for repair / overhaul of the ash handling system shall include, but not be limited to, the following. The indicative list of spares to be procured for the ash handling system have been detailed in Annexure 2, Plan 2.

Component	Activity	Unit	Cat 1	Cat 2
<b>Bottom ash draglink</b>	– Supply, replacement, and commissioning of bottom ash draglink	Unit 1 and 2	✓	
<b>Ash cooler</b>	– Supply and install MS plates, SS310 plates, and baffle plate assembly as per specifications in Annexure 2, Plan 2	Unit 1 and 2	✓	
	– Inspection and cleaning of nozzles	Unit 1 and 2	✓	
	– Inspection and replacement of liner plate	Unit 1 and 2	✓	
	– Inspection of L-valve refractory and repair if required	Unit 1 and 2	✓	
	– Dismantling of air dock feeder and inspection of internals replacement/repair if required	Unit 1 and 2	✓	
<b>Ash cooler recirculation</b>	– Supply and install non-metallic bellows and MS plates as per specifications in Annexure 2, Plan 2	Unit 1 and 2	✓	

Component	Activity	Unit	Cat 1	Cat 2
<b>bellow</b>				
<b>Ash cooler sea water line</b>	– Supply and install SS 316L and MS/GI pipelines for sea water into ash cooler	Unit 1 and 2	✓	
<b>Ash rotary seal</b>	– Supply and replace ash rotary seal	Unit 1 and 2	✓	
<b>Ash draglink conveyer</b>	– Supply and replace chain link and flight	Unit 1 and 2	✓	
	– Supply of spares for ash draglink as per Annexure 2, Plan 2	Unit 1 and 2	✓	
<b>Refractory</b>	– Supply and apply LCC50, 11 Li, and LCC 80 GN refractory as per Annexure 2, Plan 2	Unit 1 and 2		✓

### **Plan 3: Non-pressure parts (Boiler)**

The key activities to be executed by the Successful Bidder for repair / overhaul of the Boiler non-pressure parts shall include, but not be limited to, the following. The indicative list of spares to be procured for the Boiler non-pressure parts have been detailed in Annexure 2, Plan 3.

Component	Activity	Unit	Cat 1	Cat 2
<b>Loop seal bellow</b>	– Supply and replace metallic bellows	Unit 1 and 2	✓	
<b>Burners</b>	– Inspect and repair burner tips and lance (long and short), replace if needed	Unit 1 and 2	✓	
<b>Level gauge</b>	– Inspect and clean level gauge glasses, replace if needed	Unit 1 and 2	✓	
<b>Plate-type heat exchangers</b>	– Inspect EPDM gaskets, studs with double nuts for PHE, replace if needed	Unit 1 and 2	✓	
<b>Refractory</b>	– Removal of existing refractory in the boilers	Unit 1 and 2	✓	
	– Supply and apply LCC 80 / LCC 80 GN / 11 Li refractory for loop seal return leg and syphon seal	Unit 1 and 2		✓

### **Plan 4: Pressure parts (Boiler)**

The key activities to be executed by the Successful Bidder for repair / overhaul of the Boiler pressure parts shall include, but not be limited to, the following. The indicative list of spares to be procured for the Boiler pressure parts have been detailed in Annexure 2, Plan 4.

Component	Activity	Unit	Cat 1	Cat 2
Furnace	– Supply and replace furnace nozzles, waterwall, evaporator bottom tubes as per specifications detailed in Annexure 2, Plan 4	Unit 1 and 2	✓	
	– Build up removal and tube coating for tubes in RTZ area	Unit 1 and 2	✓	
	– Inspect, clean, and/or repair screen tubes with protectors, replace if needed	Unit 1 and 2	✓	
	– Inspect, supply, and replace furnace bed tubes, furnace tubes, evaporator tubes, evaporator intermediate wall tubes, superheater tubes, and reheater tubes as per observations identified during the RLA and specifications detailed in Annexure 2, Plan 4	Unit 1 and 2		✓
	– Implement observations identified as part of Boiler RLA	Unit 1 and 2		✓
Drum	– Open manholes and inspect	Unit 1 and 2	✓	
	– Dismantle and remove drum internals	Unit 1 and 2	✓	
	– Clean and inspect drum internals	Unit 1 and 2	✓	
	– Clean drum inside surface area	Unit 1 and 2	✓	
	– Replace damaged internals and fasteners – Assemble drum internals	Unit 1 and 2	✓	
	– Change manhole gasket and Box-up	Unit 1 and 2	✓	
	– Conduct hydro testing	Unit 1 and 2	✓	
2 <sup>nd</sup> pass	– Supply and replace 2 <sup>nd</sup> pass inlet bellow	Unit 1 and 2	✓	
	– Inspect, supply, and replace economizer section tubes, 2 <sup>nd</sup> pass upper hanger tubes (SH1), 2 <sup>nd</sup> pass lower hanger tubes (SH2), front wall tubes (SH1), LH/RH side wall tubes (SH2), rear wall tubes (SH3), superheater (SH3, SH5) tubes, and reheater (RH1) tubes as per observations identified during the RLA and specifications detailed in Annexure 2, Plan 4	Unit 1 and 2		✓
	– Supply and apply insulation and aluminum coil as per specifications detailed in Annexure 2, Plan 4	Unit 1 and 2	✓	

Component	Activity	Unit	Cat 1	Cat 2
	– Open all manholes	Unit 1 and 2	✓	
	– Clean heating surface with hot water / wire brush	Unit 1 and 2	✓	
	– Inspect heating surface for bulging/ warping / erosion / overheating etc.	Unit 1 and 2	✓	
	– Check binders, lugs, etc. for super heater / reheater coils	Unit 1 and 2	✓	
	– Inspect, clean, and reweld manhole plates	Unit 1 and 2	✓	
	– Hydro jetting of 2 <sup>nd</sup> pass	Unit 1 and 2	✓	
	– Box-up post inspection, rectification, and installation of new components	Unit 1 and 2	✓	
	– Conduct hydro testing	Unit 1 and 2	✓	
<b>Economizer / LTSH</b>	– Open all manholes	Unit 1 and 2	✓	
	– Clean heating surface with hot water / wire brush	Unit 1 and 2	✓	
	– Clean hoppers and discharge pipe and check supports	Unit 1 and 2	✓	
	– Box-up post inspection, rectification, and installation of new components	Unit 1 and 2	✓	
	– Conduct hydro testing	Unit 1 and 2	✓	
<b>RTZ area</b>	– Supply and replace RTZ area tubes as per specifications detailed in Annexure 2, Plan 4	Unit 1 and 2	✓	
<b>Pipelines</b>	– Supply and apply insulation and aluminum coil as per specifications detailed in Annexure 2, Plan 4	Unit 1 and 2	✓	
<b>Soot blower</b>	– Supply and replace soot blowers for TAPH	Unit 1 and 2	✓	
	– Supply and replace soot blower for HRSB	Unit 1 and 2	✓	
	– Supply of lance tubes for soot blowers	Unit 1 and 2	✓	
	– Lubrication of soot blower (oil/grease), as needed	Unit 1 and 2	✓	
	– Supply of spares for LRSB, HRSB, rotary soot blowers	Unit 1 and 2	✓	
	– Servicing and repair of SBV head assembly, with checks for erosion of	Unit 1 and 2	✓	

Component	Activity	Unit	Cat 1	Cat 2
	seat/disc/stem			
	– Clean and inspect rack/pinion assembly for wear and damage check alignment and lubricate	Unit 1 and 2	✓	
	– Service rotary/traverse gearboxes	Unit 1 and 2	✓	
	– Inspect S.B. tube for crack/damage and clean nozzle	Unit 1 and 2	✓	
	– Replace Swivel tube bushing if required	Unit 1 and 2	✓	
	– Service traveling carriage assembly. Dismantle and inspect work, worm gear and bearings	Unit 1 and 2	✓	
	– Service power pack assembly	Unit 1 and 2	✓	
	– Dismantle clutch assembly for free and easy operation	Unit 1 and 2	✓	
	– Check chain tension. Service actuating lever and striking bolt etc.	Unit 1 and 2	✓	
	– Adjust limit switches during trial run for correct advance/retract	Unit 1 and 2	✓	
<b>SWAS</b>	– Supply and replace primary SWAS coolers for samples	Unit 2	✓	
	– Install MS lines for SWAS coolers	Unit 1 and 2	✓	
<b>Air lines</b>	– Inspect, supply, and replace 50 NB air lines across the furnace / 2 <sup>nd</sup> pass	Unit 1 and 2	✓	
<b>Refractory</b>	– Remove existing refractory in the boilers	Unit 1 and 2	✓	
	– Supply and apply LCC 50 refractory of LH/RH sides, rear, and front walls	Unit 1 and 2		✓

### **Plan 5: Cyclone**

The key activities to be executed by the Successful Bidder for repair / overhaul of the cyclone shall include, but not be limited to, the following. The indicative list of spares to be procured for the cyclone have been detailed in Annexure 2, Plan 5.

Component	Activity	Unit	Cat 1	Cat 2
<b>Cyclone</b>	– Supply and refurbishment of MS plates cylindrical and in conical area for the cyclones – Supply and apply brick lining for the cyclone refractory – Supply and apply insulite across the	Unit 1 and 2	✓	

Component	Activity	Unit	Cat 1	Cat 2
	cyclone			
<b>Vortex</b>	<ul style="list-style-type: none"> <li>– Supply and refurbishment of 10 mm SS310 and 8 mm MS plates for the shell</li> <li>– Supply and install anchors across the vortex</li> </ul>	Unit 1 and 2	✓	
<b>Bellows</b>	– Supply and replace inlet and outlet bellows in the cyclone as per specifications detailed in Annexure 2, Plan 5	Unit 1 and 2	✓	
<b>Refractory</b>	– Remove existing refractory in the cyclones	Unit 1 and 2	✓	
	<ul style="list-style-type: none"> <li>– Supply and apply refractory for top roof, inlet long wall, inlet short wall, inlet top wall, shell, COD, cyclone outlet, and cyclone downcomer as per specifications detailed in Annexure 2, Plan 5</li> <li>– Supply and apply mortar for the shell</li> <li>– Supply and install anchors for refractory, shell, and furnace</li> </ul>	Unit 1 and 2		✓
<b>Insulation</b>	– Supply and install aluminum sheet and insulation material for the shell	Unit 1 and 2	✓	

#### **Plan 6: Dampers and gates**

The key activities to be executed by the Successful Bidder for repair / overhaul of dampers and gates shall include, but not be limited to, the following. The indicative list of spares to be procured for the dampers and gates have been detailed in Annexure 2, Plan 6.

Component	Activity	Unit	Cat 1	Cat 2
<b>ID fan inlet and outlet dampers</b>	<ul style="list-style-type: none"> <li>– Supply and replace guillotine dampers for ID fan inlet and outlet</li> <li>– Supply and replace seal strips for dampers at ID fan inlet and outlet</li> </ul>	Unit 1 and 2	✓	
<b>PA and SA fan control dampers</b>	– Supply and replace bearings for PA and SA fan control dampers	Unit 1 and 2	✓	
<b>Guillotine gates</b>	– Supply and replace guillotine gates for ID fans	Unit 1 and 2	✓	
<b>General activities</b>	– Servicing of actuators. Replacement of worn-out parts.	Unit 1 and 2	✓	
	– Checking/repair or replacement of gates/ damper leaves/shaft and bearings etc.	Unit 1 and 2	✓	
	– Repack glands with new packing	Unit 1 and 2	✓	
	– Checking of seal airline system	Unit 1 and 2	✓	

Component	Activity	Unit	Cat 1	Cat 2
	– Check and ensure smooth operation of dampers/gates. Check and calibrate damper position marking.	Unit 1 and 2	✓	

### **Plan 7: Ducts**

The key activities to be executed by the Successful Bidder for repair / overhaul of ducts shall include, but not be limited to, the following. The indicative list of spares to be procured for the ducts have been detailed in Annexure 2, Plan 7.

Component	Activity	Unit	Cat 1	Cat 2
<b>Fan ducts</b>	– Supply and install fan ducts for PA, SA, and ID fans as per specifications in Annexure 2, Plan 7	Unit 1 and 2	✓	
<b>Insulation</b>	– Supply and install insulation material for the PA, SA, and ID fans as per specifications in Annexure 2, Plan 7	Unit 1 and 2	✓	
<b>Coils</b>	– Supply and install Aluminum coil for cladding for the PA, SA, and ID fans as per specifications detailed in Annexure 2, Plan 7	Unit 1 and 2	✓	
<b>Bellows</b>	– Supply and install ID outlet and suction bellow	Unit 1 and 2	✓	
<b>General activities (across ducts)</b>	– Cleaning/inspection/repair of duct	Unit 1 and 2	✓	
	– Check all safety explosion rupture sheets provided in the duct	Unit 1 and 2	✓	
	– Check and repair duct internal support pipes and stiffeners	Unit 1 and 2	✓	
	– Cleaning and inspection of TAPH	Unit 1 and 2	✓	
	– Cleaning/inspection/repair or replacement of expansion joint	Unit 1 and 2	✓	
	– Painting of duct inside as required	Unit 1 and 2	✓	
	– Inspection of nonmetallic expansion joints of PA Wind box	Unit 1 and 2	✓	
	– Repair of crack in wind box ducts	Unit 1 and 2	✓	

### **Plan 8: Fans**

The key activities to be executed by the Successful Bidder for repair / overhaul of the fans shall include, but not be limited to, the following. The indicative list of spares to be procured for the fans have been detailed in Annexure 2, Plan 8.

Component	Activity	Unit	Cat 1	Cat 2
SA fans	- Cleaning and inspection of impeller assembly.	Unit 1 and 2	✓	
	- Servicing and replacement of blade bearings, sealing elements etc. Adjustment of aerofoil	Unit 1 and 2	✓	
	- Check position and fixation of Compensating weights.	Unit 1 and 2	✓	
	- Servicing of guide vanes	Unit 1 and 2	✓	
	- Servicing of Servomotor	Unit 1 and 2	✓	
	- Inspection/servicing or replacement of fan bearings	Unit 1 and 2	✓	
	- Checking/repair of suction/discharge duct	Unit 1 and 2	✓	
	- Assembly of fan with specified clearances as per maintenance Q.A. Sheet.	Unit 1 and 2	✓	
	- Alignment of fan and coupling with motor	Unit 1 and 2	✓	
	- Servicing of lube oil pumps.	Unit 1 and 2	✓	
	- Cleaning of L.O. tank/filters/piping/valves etc. and repair/replacement of damaged parts	Unit 1 and 2	✓	
	- Cleaning and hydro test of L.O. Coolers	Unit 1 and 2	✓	
	- Servicing of C.W. piping & valves.	Unit 1 and 2	✓	
	- Alignment of L.O. pump and coupling with motor	Unit 1 and 2	✓	
	- Rebabbiting of bearing	Unit 1 and 2	✓	
	- Supply of suction silencer, impeller, and shafts as per specifications in Annexure 2, Plan 8	Unit 1 and 2	✓	
	- Reconditioning of fan	Unit 1 and 2	✓	
	- Trial run and re-commissioning of L.O. system	Unit 1 and 2	✓	
	- Trial run of fan and dynamic balancing	Unit 1 and 2	✓	
PA fans	- Rebabbiting of bearing	Unit 1 and 2	✓	

Component	Activity	Unit	Cat 1	Cat 2
	- Supply of suction silencer, impeller, and shaft as per specifications in Annexure 2, Plan 8	Unit 1	✓	
	- Check impeller weld joints by DPT for cracks	Unit 1 and 2	✓	
	- Servicing of regulating vanes	Unit 1 and 2	✓	
	- Servicing of guide vane actuator and lubrication of linkage etc.	Unit 1 and 2	✓	
	- Checking/repair of suction/discharge duct	Unit 1 and 2	✓	
	- Assembly of fan with specified clearances as per maintenance Q.A. sheets.	Unit 1 and 2	✓	
	- Alignment of fan and coupling with motor	Unit 1 and 2	✓	
	- Servicing of lube oil pump	Unit 1 and 2	✓	
	- Cleaning and repair of L.O. tank/filters/piping/valves/ etc.	Unit 1 and 2	✓	
	- Cleaning and hydro test of L.O. Coolers	Unit 1 and 2	✓	
	- Servicing of C.W. Piping & Valves.	Unit 1 and 2	✓	
	- Alignment of L.O. pump and coupling with motor	Unit 1 and 2	✓	
	- Trial run and recommissioning of L.O. system	Unit 1 and 2	✓	
	- Trial run of fan and dynamic balancing	Unit 1 and 2	✓	
<b>ID fans</b>	- Cleaning and inspection of impeller. Checking of weld joints by DPT	Unit 1 and 2	✓	
	- Cleaning and inspection of diffuser and cone	Unit 1 and 2	✓	
	- Checking of shaft protection tube	Unit 1 and 2	✓	
	- Servicing of Inlet guide vane/ actuators, lubrication of IGV control mechanism for free operation	Unit 1 and 2	✓	
	- Servicing of Outlet guide vanes and repair as required	Unit 1 and 2	✓	
	- Check shaft condition and run out	Unit 1 and 2	✓	
	- Checking/repair of suction/duct	Unit 1	✓	

Component	Activity	Unit	Cat 1	Cat 2
		and 2		
	– Assembly of fan with specified clearances as per maintenance Q.A. sheets.	Unit 1 and 2	✓	
	– Alignment of fan and coupling with motor	Unit 1 and 2	✓	
	– Servicing of lube oil pump	Unit 1 and 2	✓	
	– Cleaning of L.O. tank/filters/piping valves etc.	Unit 1 and 2	✓	
	– Cleaning and hydro test of L.O. Coolers	Unit 1 and 2	✓	
	– Servicing of C.W.piping/Valves	Unit 1 and 2	✓	
	– Alignment of L.O. pump and coupling with motor	Unit 1 and 2	✓	
	– Rebabbiting of journal bearing	Unit 1 and 2	✓	
	– Supply of impeller and shaft as per specifications in Annexure 2, Plan 8	Unit 1 and 2	✓	
	– Trial run and recommissioning of L.O. system	Unit 1 and 2	✓	
	– Trial run of I.D. fan and dynamic balancing	Unit 1 and 2	✓	
<b>Ash cooler fans</b>	– Supply of impeller and shaft as per specification in Annexure 2, Plan 8	Unit 2	✓	
<b>Insulation</b>	– Supply and install insulation material as per specifications in Annexure 2, Plan 8	Unit 1 and 2	✓	
<b>Coils</b>	– Supply and install Aluminium coil for cladding as per specifications detailed in Annexure 2, Plan 8	Unit 1 and 2	✓	

### **Plan 9: Hangers and supports**

The key activities to be executed by the Successful Bidder for repair / overhaul of the hangers and supports shall include, but not be limited to, the following. The indicative list of spares to be procured for the hangers and supports have been detailed in Annexure 2, Plan 9.

Component	Activity	Unit	Cat 1	Cat 2
<b>Internal pipe supports</b>	– Inspect and repair / replace internal pipe supports, as detailed in Annexure 3, including remedial actions as per observations from the RLA	Unit 1 and 2	✓	

Component	Activity	Unit	Cat 1	Cat 2
<b>External pipe supports</b>	– Inspect and repair / replace external pipe supports, as detailed in Annexure 3, including remedial actions as per observations from the RLA	Unit 1 and 2	✓	
<b>Soot blower, reheater, economizer drains</b>	– Inspect and repair / replace hangers/supports for soot blower, reheater, economizer drains as detailed in Annexure 3, including remedial actions as per observations from the RLA	Unit 1 and 2	✓	
<b>Air and flue gas ducts</b>	– Inspect and repair / replace hangers and supports for air and flue gas ducts as detailed in Annexure 3, including remedial actions as per observations from the RLA	Unit 1 and 2	✓	
<b>Cyclone</b>	– Inspect and repair / replace cyclone as detailed in Annexure 3, including remedial actions as per observations from the RLA	Unit 1 and 2	✓	

#### **Plan 10: HFO and LDO systems**

The key activities to be executed by the Successful Bidder for repair / overhaul of the HFO and LDO systems shall include, but not be limited to, the following. The indicative list of spares to be procured for the HFO and LDO systems have been detailed in Annexure 2, Plan 10.

Component	Activity	Unit	Cat 1	Cat 2
<b>Fuel oil firing system</b>	– Clean oil gun tips, inspect, and replace, as needed	Common	✓	
	– Clean oil hoses, inspect, and replace, as needed	Common	✓	
	– Service gun advance/retract mechanism	Common	✓	

#### **Plan 11: Lignite feeding system**

The key activities to be executed by the Successful Bidder for repair / overhaul of the Lignite feeding system shall include, but not be limited to, the following. The indicative list of spares to be procured for the Lignite Dosing System have been detailed in Annexure 2, Plan 11.

Component	Activity	Unit	Cat 1	Cat 2
<b>Gravimetric feeder</b>	– Inspect and repair gravimetric feeder including feeder belts, fasteners, MSRT machine, belt side wall (rib), gearbox, head pulley, tail pulley, carrying rollers with bearings, return rollers with	Unit 1 and 2	✓	

Component	Activity	Unit	Cat 1	Cat 2
	bearings, NDE bearing, bunker gate, pinion, output wheel, rack angle, circlip, spacer, COC link assembly (with and without flight), guide plates, sprockets, COC bearings, and MS pipes – Replace critical items post inspection, if needed			
<b>Lignite draglink conveyor</b>	– Inspect and repair lignite draglink conveyor including chain link assembly, gearbox, guide plates, sprockets, drive chain, forkey sprocket, sleeves, tail pulleys, bearings, manual gates, and glands – Replace critical items post inspection, if needed	Unit 1 and 2	✓	
<b>Lignite rotary air lock feeder</b>	– Inspect and repair gearbox, RALF bellows, manual gates, pipe for inlet chute, bearings, timing gears, glands, etc. – Lubricate / grease critical moving components – Replace critical items post inspection, if needed	Unit 1 and 2	✓	
<b>General activities</b>	– Close lignite bunker gate and clean feeder	Unit 1 and 2	✓	
	– Check bunker condition from inside	Unit 1 and 2	✓	
	– Check condition of liner	Unit 1 and 2	✓	
	– Replace the defective liners	Unit 1 and 2	✓	
	– Check the conditions of links of lignite feeder check all the joints for any looseness	Unit 1 and 2	✓	
	– Check bearing clearance and check MFT gates	Unit 1 and 2	✓	

### **Plan 12: Lime dosing system**

The key activities to be executed by the Successful Bidder for repair / overhaul of the Lime dosing system shall include, but not be limited to, the following. The indicative list of spares to be procured for the Lime dosing system have been detailed in Annexure 2, Plan 12.

Component	Activity	Unit	Cat 1	Cat 2
<b>Bag filters</b>	– Supply and install bag filters	Unit 1 and 2	✓	

Component	Activity	Unit	Cat 1	Cat 2
<b>Screw pump</b>	– Supply and install bearings	Unit 1 and 2	✓	
<b>Compressors</b>	– Supply and install cylinders, ovel flanges, gaskets, cover, valve, stud, nut hex, gland, v belt, oil filter, water flow indicator, and air filter	Unit 1 and 2	✓	
<b>Compressor belts</b>	– Supply and install belts	Unit 1 and 2	✓	
<b>Mill ball</b>	– Supply and install mill balls	Unit 1	✓	
<b>L-valves</b>	– Supply and install balls	Unit 1	✓	
<b>Compressor NRV</b>	– Supply and install MRV	Unit 1 and 2	✓	
<b>Mill gearbox</b>	– Supply and install coupling	Unit 2	✓	
<b>Chain conveyors</b>	– Supply and install chain link and guide plate	Unit 2	✓	
<b>DE / NDE pumps</b>	– Supply and install pump	Unit 2	✓	
<b>Main gearbox pumps</b>	– Supply and install pump	Unit 2	✓	
<b>Dilution blower</b>	– Supply and install belts	Unit 2	✓	
<b>HAG burner</b>	– Supply and install gun	Unit 2	✓	
<b>Ball valves</b>	– Supply and install ball	Unit 2	✓	
<b>Bag filter compressor</b>	– Supply and install air filter, oil filter, gear wheel and pinion, spacers, bolts, anti-vibration pads, damper, valves, display, sensor, harness, transducer, seal ring and oil separator	Unit 2	✓	
<b>Lime compressor</b>	– Supply and install lime conveying system compressor	Unit 2	✓	

### **Plan 13: Tubular air pre-heater (TAPH)**

The key activities to be executed by the Successful Bidder for repair / overhaul of the TAPH shall include, but not be limited to, the following. The indicative list of spares to be procured for the TAPH have been detailed in Annexure 2, Plan 13.

Component	Activity	Unit	Cat 1	Cat 2
<b>TAPH</b>	– Supply and install tubes – Supply and install SS plate for bellows and pipe – Supply and install insulation and	Unit 1 and 2	✓	

Component	Activity	Unit	Cat 1	Cat 2
	aluminum coil for cladding – Hydro jetting			
	– Inspection of cold end PA, SA in different passes	Unit 1 and 2	✓	
	– Check for any leakage	Unit 1 and 2	✓	
	– Cleaning of PA, SA tube banks from flue gas side	Unit 1 and 2	✓	
	– Check metallic expansion joints in PA and SA header	Unit 1 and 2	✓	
	– Inspect steam coil of SCAPH	Unit 1 and 2	✓	
	– Check tubes of SCAPH	Unit 1 and 2	✓	

#### **Plan 14: Valves**

The key activities to be executed by the Successful Bidder for repair / overhaul of the Valves shall include, but not be limited to, the following. The indicative list of spares to be procured for the Valves have been detailed in Annexure 2, Plan 14.

Component	Activity	Unit	Cat 1	Cat 2
<b>Economizer and ring header drain valve</b>	– Supply and install globe valve	Unit 1 and 2	✓	
<b>Start-up vent MOV</b>	– Supply and install gate valve	Unit 1 and 2	✓	
<b>Start-up vent control valve</b>	– Inspect and repair/recondition control valve to ensure proper functioning	Unit 1 and 2	✓	
<b>MS drain manual valve</b>	– Inspect and repair/recondition globe valve	Unit 1 and 2	✓	
<b>SH drain MOV</b>	– Supply and install wedge gate valve	Unit 1 and 2	✓	
<b>ERV</b>	– Inspect and repair/recondition globe valve	Unit 1 and 2	✓	
<b>SWAS</b>	– Inspect and repair/recondition gate valve	Unit 1 and 2	✓	
<b>Boiler fill drain line</b>	– Inspect and repair/recondition all high energy valves including globe valves, gate valves, ring header drain valve, interconnecting valve (economizer and ring header), superheater drain valves, soot blower valve	Unit 1 and 2	✓	

Component	Activity	Unit	Cat 1	Cat 2
<b>Main steam safety valve (MSSV)</b>	– Inspect and repair/recondition wedge gate valves	Unit 1 and 2	✓	
<b>IBD Mov</b>	– Supply and install global valve	Unit 1 and 2	✓	
<b>L-Valve</b>	– Inspect and repair/recondition L-valves	Unit 1 and 2	✓	
<b>Safety valves</b>	– Put match mark at the time of dismantling the valve	Unit 1 and 2	✓	
	– Dismantling, cleaning, and servicing of valves	Unit 1 and 2	✓	
	– Lapping of seat/disc, machining if required. Check spindle trueness	Unit 1 and 2	✓	
	– Servicing of blow down ring	Unit 1 and 2	✓	
	– Servicing of electrical assembly of electromatic valve	Unit 1 and 2	✓	
	– Assembly of the safety valve and floating as per specifications	Unit 1 and 2	✓	
<b>General activities (across all valves)</b>	– Dismantle the valve, inspection and servicing of all the parts.	Unit 1 and 2	✓	
	– Lapping of disc/seat, machining if required	Unit 1 and 2	✓	
	– Check spindle for wear/trueness. Replace if required	Unit 1 and 2	✓	
	– Change gland packing	Unit 1 and 2	✓	
	– Change body/bonnet gasket and sealing ring	Unit 1 and 2	✓	

### **Plan 15: Electrical**

The key activities to be executed by the Successful Bidder for repair / overhaul electrical parts shall include, but not be limited to, the following. The indicative list of spares to be procured for electrical parts have been detailed in Annexure 2, Plan 15

Component	Activity	Unit	Cat 1	Cat 2
<b>Heat tracing CKT cable</b>	– Supply and install FOPH tracing circuit	Unit 1 and 2	✓	
<b>FA fan</b>	– Supply and install motor for FA fan cooling fan	Unit 1 and 2	✓	
<b>Lignite</b>	– Supply and install lignite rotary feeder motor	Unit 1 and 2	✓	

Component	Activity	Unit	Cat 1	Cat 2
<b>feeding System</b>	– Supply and install lignite bunker gate actuators	Unit 1 and 2	✓	
<b>Soot blower</b>	– Supply and install motors	Unit 1 and 2	✓	
<b>Start up Inching MOV</b>	– Supply and install MOV actuator	Unit 1	✓	
<b>FOPH</b>	– Supply and install axial exhaust fans as per specifications provided in Annexure 2, Plan 15	Common	✓	

### **Plan 16: C&I**

The key activities to be executed by the Successful Bidder for repair / overhaul of C&I parts shall include, but not be limited to, the following. The indicative list of spares to be procured for C&I have been detailed in Annexure 2, Plan 16

Component	Activity	Unit	Cat 1	Cat 2
<b>Gravimetric feeder</b>	– Supply and install load cell	Unit 2	✓	
	– Supply and install speed sensor	Unit 1 and 2	✓	
<b>Ash cooler phe</b>	– Supply and install PHE temp control valve positioner	Unit 1 and 2	✓	
<b>Lignite draglink</b>	– Supply and install lignite draglink conveyor speed sensor	Unit 1	✓	
<b>TAPH</b>	– Supply and install TAPH thermocouple	Unit 1	✓	
<b>Control valve</b>	– Supply and install reheater and superheater valve, SH and RH attemperator positioner, and gland sealing and BFP RC control valve	Unit 1 and 2	✓	
<b>PRDS station</b>	– Supply and install PRDS and BFP discharge pressure transmitter	Unit 1 and 2	✓	
<b>FRS station</b>	– Supply and install FRS DP transmitter	Unit 2	✓	
<b>Feed water and steam flow</b>	– Supply and install feed water and steam flow transmitter	Unit 2	✓	
<b>IGV</b>	– Supply and install seal kit and IGV cylinder for PA, SA, and ID fan	Unit 1 and 2	✓	
<b>Ash Cooler valve</b>	– Supply and install cylinder and seal kit	Unit 1 and 2	✓	
<b>ID fan</b>	– Supply and install ID fan scoop positioner	Unit 1 and 2	✓	
<b>Bed Material</b>	– Supply and install passing seal kit	Unit 1 and 2	✓	

Component	Activity	Unit	Cat 1	Cat 2
<b>Feeding System Valve</b>				
<b>Furnace</b>	– Supply and install pressure transmitter	Unit 1 and 2	✓	
<b>Drum and Main steam Pressure</b>	– Supply and install pressure transmitter	Unit 1 and 2	✓	
<b>Burner system</b>	– Supply and install ignitor, ignitor tips, ignitor SOV, cylinder, and cylinder seal kit – Supply and install oil gun cylinder and oil gun cylinder seal kit – Supply and install oil gun SOV, oil valve SOV and steam valve SOV – Supply and install HFO flame scanner	Unit 1 and 2	✓	
	– Supply and install gas flame scanner	Unit 2	✓	
<b>Damper spare</b>	– Supply and install damper positioner for ash cooler flow control and burner flow control	Unit 1 and 2	✓	
	– Supply and install air flow control damper	Unit 2	✓	
<b>HFO and LDO system</b>	– Supply and install HFO and LDO tank	Common	✓	
<b>Lime Handling System</b>	– Supply and install switches, temperature gauges, belt sway and pull card rope, seal kit, SOV, actuator, and level transmitter as detailed in Annexure 2, Plan 16	Unit 1 and 2	✓	
	– Supply and install pressure gauge, pressure switch and pressure transmitters across various locations as detailed in Annexure 2, Plan 16	Unit 1 and 2	✓	
	– Supply and install temperature gauge for various locations as detailed in Annexure 2, Plan 16	Unit 1	✓	
	– Supply and install RTD for lime mill	Unit 1	✓	
	– Supply and install seal kit, SOV, actuator, level transmitter, tacho sensor assembly, electronics speed controller, load unload SOV, booster relay, flow switch, and radar type level transmitter, as detailed in Annexure 2, Plan 16	Unit 1 and 2	✓	
<b>HAG system</b>	– Supply and install air filter regulator	Unit 1	✓	
	– Supply and install positioner for hag jack shaft actuator, copper tube, air	Unit 2	✓	

Component	Activity	Unit	Cat 1	Cat 2
	filter regulator, ignitor set and flame scanner as detailed in Annexure 2, Plan 16			
<b>Screw pump</b>	– Supply and install speed sensor and controller	Unit 1	✓	
	– Supply and install electronic speed switch	Unit 2	✓	
<b>Bag filter purging system</b>	– Supply and install solenoid valve and pressure gauge	Unit 2	✓	
<b>Chain conveyor speed</b>	– Supply and install speed switch	Unit 2	✓	
<b>Bag filter control damper</b>	– Supply and install air filter regulator	Unit 2	✓	
<b>RC fan control damper</b>	– Supply and install I/P convertor	Unit 2	✓	
<b>Ash Cooler</b>	– Supply and install pressure transmitters, vibration probe and RTD	Unit 1 and 2	✓	
<b>Fans</b>	– Supply and install vibration probe	Unit 1 and 2	✓	
<b>BFP pumps</b>	– Supply and install vibration probe	Unit 1 and 2	✓	
<b>Hot Water pumps</b>	– Supply and install vibration probe	Unit 1 and 2	✓	
<b>Flue gas analyzer</b>	– Supply and install SO <sub>2</sub> , NO <sub>x</sub> , CO analyser and panel – Supply and install Zirconia Oxygen analyzer	Common	✓	
<b>TAPH</b>	– Supply and install TAPH O <sub>2</sub> outlet analyzer	Unit 1 and 2	✓	

#### 3.1.2.4. Radiography, leak testing, and arresting

The Successful Bidder shall conduct necessary non-destructive testing (NDT, e.g., dye penetrant test) to identify potential leakages in the boiler prior to arranging for hydro testing.

The Successful Bidder shall be responsible for arresting any leaks identified in the welding joints during hydro testing of the boilers and during the NDT. The Successful Bidder shall conduct radiography.

100% radiography and rectification of the failed and / or defective joints shall be in the scope of the Successful Bidder, at no additional cost. Qualified personnel with RT Level 2 certificates from IBR approved agencies shall be engaged by the Successful Bidder to conduct the radiography, as per appropriate safety guidelines and regulations.

### **3.1.3. Upgradation activities for ESP**

#### **3.1.3.1. Upgradation Plan**

The key activities to be executed by the Successful Bidder for retrofitting and upgradation of the ESPs shall include the following. The list of spares to be procured for the ESP have been detailed in Annexure 3

#### **1. Design and engineering**

- i. TR panel modified circuit drawing for EPIC-III controller
- ii. ESP control system interface network diagram
- iii. Cable specification for SIR / alternative high frequency rectifier (HFTR)
- iv. SIR / alternative high frequency rectifier (HFTR) installation diagrams with bus duct modification etc.
- v. Gas Distribution (GD) test procedure
- vi. Commissioning protocols
- vii. Performance Guarantee (PG) test procedure
- viii. O&M manual for SIR / alternative high frequency rectifier (HFTR) and EPIC-III controller

#### **2. Cleaning, painting, and protective coatings**

- i. Cleaning of all surfaces using wire brush
- ii. Painting of all MS fabricated parts with 02 (two) coatings of rust protective Zinc Phosphate primer
  - Collecting electrodes – will be applied with rust preventive oil Bonita Chemicals
  - Emitting electrodes spiral – no painting as SS/904L
  - Bought out finished components – as per manufacturers' standard
- iii. All MS fabricated parts being supplied shall be painted as specified above and exposed surface shall be finish painted as applicable
- iv. All Emitting/ Collecting Rapping motor/structure with cover shall be painted as per below paint specification
- v. All Existing TR sets body shall be painted as per below paint specification
- vi. All Existing handrail at hopper floor and ESP top roof floor shall be painted as per below paint specification

- vii. All Staircase handrail at ESP floor shall be painted as per below paint specification

The following painting shall be done at the site:

Surface cleaning	Manual means
Primer / mid coat	Two component polyamine epoxy mastic coating, Grey, 100 DFT
Finish coat	Two components chemically curing aliphatic acrylic polyurethane coating, 60 DFT

### **3. Electrical requirements**

- i. Design equipment as per ambient temperature of 50 degree C and relative humidity of 95%
- ii. Ensure all equipment is designed and suitable for
  - Electric power shall be as per 415 V +/- 10% ,50 Hz +/- 5% ,AC 3 Phase,4 Wire
  - DC Supply shall be of 24 volts
  - For instrumentation power supply shall be 110 V +/- 10% AC, 50 Hz +/- 1%, AC Single Phase

### **4. Switched Interface Rectifier (SIR) and Control for 4 fields**

- i. Supply and installation of 4 nos. SIR / alternative high frequency rectifier (HFTR) for 1st and 2nd fields (existing 1 ph TR shall be retained for remaining fields)
  - SIR is a High Voltage Power Supply for ESP, based on high frequency power conversion. SIR combines a transformer/high voltage rectifier (TR) and control system for energizing and controlling ESP fields in one integrated unit. SIR Controller is the advanced controller inbuilt in SIR, with an integrated rapping control & pulse optimization software. The controller optimizes the field charging with regard to process conditions resulting in lowest possible particulate emission for ESP
- ii. Modify bus duct for installing SIRs on ESP roof to the respective field connection

### **5. MCC and ACP**

- i. Repair ACP (Auxiliary Control Panel) feeders for 3 phase power supply to SIR at ESP roof top – existing feeders are 3-phase compatible with 400 Amp rating and shall be retained
- ii. Install and commissioning of feeder for hot air purging system in Unit 1 – spare feeder available at the Plant and ready to be used
- iii. Supply spare feeder for hot air purging system in Unit 2
- iv. Provide required electrical load data - Required power of 415V, 3 ph, 50 Hz, AC at input as per load list shall be provided by the Owner

### **6. ESP Control System and TR Controller**

- i. Supply and install advanced EPIC – III controller in 3<sup>rd</sup> and 7<sup>th</sup> fields, replacing the EPIC – II controller in existing panels
- ii. Establish common control network between SIR controllers and EPIC – III controllers for all fields of boiler unit ESPs over Ethernet protocol vis Ethernet switch and Ethernet Terminal Unit (ETU) which shall be installed in the Local Panel Control Room for online monitoring and control from a single point
- iii. Controllers shall have inbuilt feature for rapping sequence control

#### **7. Rapping geared motors**

- i. Supply spare geared motors as defined in Annexure 3
- ii. Service / repair existing geared motors to ensure compliance with the following specifications
  - Motor rating – 0.37 kW
  - Enclosure – TEFC
  - Protection class – IP 55
  - Efficiency – IE2 / EFF2
  - Insulation class – F / temp rise limited to Class B

#### **8. Hot air purging system, local heaters, shaft insulators, and hoppers**

- i. Supply and install hot air purging system for insulators at ESP roof with heater bank and blower for support and shaft insulators to keep the insulators clean and extend life
- ii. Modify existing MCC as per requirements

#### **9. Power and control cable**

- i. Supply and install the following cables for each SIR
  - 3.5Cx120 Sq. mm. Al., XLPE insulated cable from ESP control room Power feeder to ESP roof
  - 25 Sq. mm. Cu. Flat / cable for earthing (approx. 20 mts)
  - 35 Sq. mm. Cu. Flat / cable for return path (approx. 20 mts)
  - 4cx1.5 sq mm Cu. Armored control cable for rapping motor interface with SIR

#### **3.1.3.2. Commissioning activities**

The Successful Bidder shall be responsible for commissioning of the Boiler and ESP across both units of the Plant and ensuring observation for 72 hours after operationalization at full load with design parameters and continuous operation of machine, with observation of performance parameters and supervisory parameters.

#### **3.2. Scope for supply of material**

The Successful Bidder shall procure all material / equipment / spares as per the quantities and specifications detailed in Annexure 2 (Boiler) and Annexure 3 (ESP) for overhauling of both units of the Plant simultaneously.

The material / equipment / spares detailed in Annexure 2 (Boiler) have been classified into two categories, as per the following definitions:

**Category 1:** Material / equipment / spares required across key components to be undertaken as part of the Overhaul. Any additional material (i.e., not detailed as part of the BoQ in Annexure 2) for components classified as Category A identified during inspections, shall be notified to competent authority from the PMC and the Owner, and shall go through the 'Rate Settlement Mechanism', as detailed in Section 6 of this document.

**Category 2:** Multiple types of tubes and refractory required across the boilers as per tentative quantities defined in Annexure 2. Additional quantities of tubes or refractory over and above the quantities defined in the BoQ in Annexure 2 shall be notified to the competent authority from the PMC and the Owner and shall go through the 'Quantity Variance Mechanism' defined in Section 5.1 of this document.

### **3.2.1. Procurement planning**

1. The Successful Bidder shall create a 'Procurement Register' for the Boiler and ESP Package in collaboration with the PMC, including all the detailed item-wise Bills of Quantity (BoQs) with associated costs and technical specifications to ensure adherence to desired quality and exercise cost control within Contractual limits
2. The Successful Bidder shall prepare a 'Procurement Plan' for the Boiler and ESP Package for the purpose of monitoring all Procurement activities and ensuring timely delivery of all material across all Packages, in line with the timelines mentioned in Section 2.2 (Contract Duration) and Section 11.2 (Payment Milestones)
3. The Successful Bidder shall coordinate with the PMC in maintaining a digital data sheet (in excel format) of the 'Procurement Plan', with the desired timelines and costs vis-à-vis the actual timelines followed and costs incurred to track compliance. The Successful Bidder and PMC shall grant all requisite access to the data sheet to the Owner, and share necessary summaries for reporting purpose, if requested

### **3.2.2. Physical verification**

The Successful Bidder shall, in coordination with the PMC, conduct physical verification of existing inventory at the Plant to identify the equipment and associated spares and material readily available to be utilized during the Overhaul. Further, the Successful Bidder shall integrate the existing inventory with the 'Procurement Register' to ensure optimal Procurement and consumption of material.

### **3.2.3. Material management**

The Successful Bidder shall deploy sufficient manpower and appropriate material management systems (e.g., ERP solutions) or use the Owner's material management system to track movement of material and adherence to schedules and quality. The modalities for material management shall be mutually agreed between the Successful Bidder and the Owner, in consultation with the PMC, prior to initiation of procurement of material. Further, the Successful Bidder shall integrate the system with the digital data sheet described in Section 3.2.1 of this document.

### **3.2.4. Quality management**

The Successful Bidder shall ensure the procurement of material is as per the technical and design specifications provided in Annexure 2 (Boiler) and Annexure 3 (ESP), and adhere to highest standard of engineering and workmanship, to ensure after completion of the Overhaul, the Plant shall be capable of performing in a safe, reliable, sustainable, and in a manner acceptable to the owner.

### **3.2.5. Packing and transportation**

1. The Successful Bidder shall be responsible for packing and transportation of all material to be repaired / refurbished from the Plant to the Successful Bidder's / supplier's facilities and back to the Plant. The Successful Bidder shall also be responsible for loading, unloading, preservation, and storage of the material during transit
2. The Successful Bidder shall arrange for appropriate transit insurance and clearances from relevant authorities for all material to be transported from the Plant to the Successful Bidder's / supplier's facilities and back
3. The Successful Bidder shall be solely responsible to replace the material that may be damaged or lost in transit and shall bear the cost for all such material. Further, the Successful Bidder shall provide notice in writing to the owner, copying the PMC and the Owner with the details of the issue, as needed

### **3.2.6. Factory (FATs) and site acceptance tests (SATs)**

1. The Successful Bidder shall arrange for factory acceptance tests to be conducted for all the material / equipment at the Successful Bidder's/ supplier's facilities, prior to shipping, in the presence of the owner, the PMC, and other representatives deployed by the owner, if needed
2. The Successful Bidder shall arrange for appropriate certificate through Government approved NABL labs for material of construction (MOC) used for the material/equipment procured
3. The Successful Bidder shall provide a notice of at least 3 weeks prior to arranging for factory acceptance tests at the Successful Bidder's/ supplier's facilities and provide the procedure for conducting the test for the owner's approval
4. The factory acceptance tests shall include, but shall not be limited to, the following key activities:
  - i. Visual inspection: Inspection of the material / equipment for any physical defects, damage, or other issues
  - ii. Functional testing: Testing the material / equipment to ensure that it performs the intended functions and meets the specified performance criteria, as applicable
  - iii. Safety testing: Testing the safety features of the material / equipment to ensure that they function as intended and meet any applicable safety standards or regulations, as applicable

- iv. Documentation review: Reviewing the documentation related to the material / equipment, such as user manuals, technical specifications, and test reports
5. The Successful Bidder shall ship the material / equipment to the Plant only upon successful completion of the factory acceptance tests and sign-off by the owner and owner's representatives
6. Upon delivery and installation of material / equipment at the Plant, the Successful Bidder shall arrange for a site acceptance test in the presence of the owner, the PMC, and other representatives deployed by the owner, if needed, to ensure safe delivery of all material / equipment at the Plant
7. The Successful Bidder shall provide a notice of at least 3 weeks prior to arranging for site acceptance tests at the Plant and provide the procedure for conducting the test for the owner's approval
8. The site acceptance tests shall include, but shall not be limited to, the following key activities, as may be applicable:
  - i. Verification of installation: Verifying that the equipment or system has been installed correctly, according to the manufacturer's instructions and any applicable standards or regulations
  - ii. Functional testing: Testing the material / equipment to ensure that it performs the intended functions and meets the specified performance criteria
  - iii. Integration testing: Testing the integration of the material / equipment with other systems or components that it will be working with, prior to commissioning
  - iv. Operational testing: Testing the material / equipment under various operating conditions to ensure that it can perform reliably and consistently
  - v. Documentation review: Reviewing the documentation related to the material / equipment, such as user manuals, technical specifications, and test reports

#### **3.2.7. Storage of material in Plant**

The Successful Bidder shall be responsible for storage of all procured material / equipment at the Plant within the Successful Bidder's shed. The Successful Bidder shall be solely responsible for security of the material / equipment at the Plant. In case of theft / burglary / loss of material, the Successful Bidder shall bear the cost of replenishing the material and ensure timely delivery to minimize impact on the execution of the Overhaul.

### **3.3. Standards for performance of obligations**

The Successful Bidder represents and warrants that it has the requisite skills, experience, expertise, and capacity to fulfill its obligations and responsibilities under the Contract. The Successful Bidder shall perform all of its services hereunder in accordance and compliance with:

1. Accepted prudent industry practices

2. Incident reporting with corrective and preventive measures
3. Implementation of lessons learnt from incidents on similar facilities
4. All Applicable Laws
5. All applicable clearances to be obtained and maintained including but not limited to all relevant health and safety legislations, environment permits and licenses

The Successful Bidder shall have round-the-clock qualified, trained, and experienced, with valid necessary certifications, crew of adequate strength who are alert and vigilant for carrying out all the normal and emergency operations, start-up, and shutdown of Boilers and the ESPs across both units. Startup and shutdown of the plant will be done by ATPS engineers under supervision of the Successful Bidder.

### **3.4. Standards for Sub-contracting**

For the purpose of performing its obligations under the Contract, the Successful Bidder may appoint Sub-Contractors with prior written intimation to the Owner as deemed fit. Appointment of such Sub-Contractors by the Successful Bidder shall at no time mean that the Successful Bidder is relieved of its primary duty and liability to perform its obligations as set out in the Contract. The Contractor shall be responsible for:

1. Obtaining any and all necessary authorizations required for use of all Plant infrastructure / facilities in connection with the performance of its obligations hereunder
2. Ensuring adherence to standard operating procedures and safety standards by the Sub-Contractor and be liable in the event of any issue affecting the performance of the asset

## **4. Responsibilities and rights of the Owner**

### **4.1. Responsibilities of the Owner**

The Owner shall be responsible for the following key activities pertaining to the execution of the Overhaul of the Plant

#### **4.1.1. Access to Plant infrastructure**

The Owner will arrange for the Successful Bidder's accommodation and food and beverage requirements at the Plant for the key Personnel deployed on ground to oversee the execution of the Overhaul, on chargeable basis and on the basis of availability of accommodation. In case infrastructure is not available, the Successful Bidder shall be responsible for arranging the same. The Successful Bidder shall ensure that the Personnel are available at the Plant for the entire course of Overhaul and shall take requisite consent from the Owner with prior intimation through a Written Notice in case of any changes in availability of Personnel.

#### **4.1.2. Access to documents and data**

The Owner shall provide the Successful Bidder with access to available drawings, documents, design manuals, and operational information required for the successful execution of the Overhaul. In case any technical drawing, document is unavailable with the owner, then the same shall be developed by the Successful Bidder at its own cost.

#### **4.1.3. Shutdown and startup activities**

The shutdown (prior to commencement of the Overhaul), and startup of the plant (post successful completion of the performance guarantee tests) shall be done by the Owner, in the presence and supervision of the Successful Bidder.

### **4.2. Rights of the Owner**

The Owner, throughout the tenure of the Contract, reserves the following rights relating to preparation and execution of the Overhaul of the Plant, not specifically granted to the Successful Bidder.

#### **4.2.1. General policies and procedures**

The Owner reserves the rights for review and determination of general policies and procedures not previously delegated to the Successful Bidder as part of the scope of work.

#### **4.2.2. Audits**

The Owner may, from time to time, designate any responsible person on its behalf to conduct audits, pertaining to the Owner's capacity defined in the Contract, of financial (billing and invoicing), technical, safety, and to visit and inspect the Plant to discuss such affairs, which relate to the services provided by the Successful Bidder, with its authorized representatives.

#### **4.2.3. Access to data**

The Owner reserves the rights to access all records, documents, and data relating to the services provided by the Successful Bidder during the preparation and the execution of the Overhaul, including for making copies thereof or extracts.

The Owner shall have the right, at all times, on reasonable notice and at the premises of the Successful Bidder to examine drawings / design documents which have been prepared by the Successful Bidder

### **5. Quantity Variance Mechanism**

#### **5.1 For supply of material**

1. The quoted rates for all material / equipment / spares detailed in the BoQ in Annexure 2 shall remain the same irrespective of any variation in individual quantities
2. The quantities given in the BoQ in Annexure 2 for Category 1 shall remain fixed and will not be subjected to quantity variance
3. The quantities given in the BoQ in Annexure 2 for Category 2 are tentative and may change to any extent (both on plus and minus side)
4. Quantity variance shall be applicable on Category 2 items up to a limit of 15% (fifteen percent) of the lumpsum price for supply of material and lumpsum price of execution of Overhaul for Category B items / activities (both on plus and minus side)

## **5.2 For services**

1. The lumpsum price for execution of Overhaul for Category 2 activities as per Section 3.1.2 of this document shall vary proportionately with any change in quantity for Category 2 items (both on plus and minus side)
2. Quantity variance shall be applicable on Category 2 items up to a limit of 15% (fifteen percent) of the lumpsum price for supply of material and lumpsum price of execution of Overhaul for Category 2 items / activities (both on plus and minus side)

## **6. Rate Settlement Mechanism**

During the execution of the Overhaul, if the Successful Bidder identifies additional items to be procured and associated services to be performed, over and above the Category 1 items given in the BoQ in Annexure 2 (for Boiler), to restore the health of the equipment and ensure performance, such items and services shall be notified to the competent authorities of the PMC and the Owner prior to initiation of procurement or execution of the services.

A 'Rate Settlement Committee' shall be established with competent authorities from the PMC and the Owner. The Boiler Package Leader shall present the need for the additional items and / or services to the 'Rate Settlement Committee', with a rationale for the quantities of items to be procured and rates for the items and / or services discovered in the market. The committee shall reserve the right to negotiate the rates and authorize the Successful Bidder to initiate procurement of the identified items and / or execution of the services.

## **7. Performance Guarantee Testing (PGT) and acceptance procedures**

### **7.1. Performance Guarantee Testing (PGT)**

1. The Successful Bidder shall submit for PMC and Owner's approval, the detailed Performance Test procedure containing the following:
  - i. Object of the test
  - ii. Various guaranteed parameters and tests as per contract
  - iii. Method of conductance of test and test code
  - iv. Duration of test, frequency of readings and number of test runs
  - v. Method of calculation
  - vi. Correction curves
  - vii. Instrument list consisting of range, accuracy, least count, and location of instruments
  - viii. Scheme showing measurement points
  - ix. Sample calculation
  - x. Acceptance criteria
  - xi. Any other information required for conducting the test
2. The Performance /Acceptance tests shall be carried out by the Successful Bidder as per the procedures approved by competent authority of the PMC and the Owner in accordance with the procedures as per the ASME PTC 4.1 (for Boiler) and as per IS-11255, Part 1 and 3, 1985, reaffirmed 2003/2008 (for ESP)

3. The Successful Bidder shall make the equipment ready for carrying out the performance guarantee tests post completion of the Overhaul
4. The tests shall be binding on the Successful Bidder to determine compliance of the equipment with the desired outcomes. No separate performance tests need be done on equipment which is already tested at shop
5. All instruments required for performance testing shall be of the type and accuracy required by the code and prior to the test, the Successful Bidder shall get these instruments calibrated in an independent test institute. All test instrumentation required for performance tests shall be supplied by the Successful Bidder and shall be retained by him upon satisfactory completion of all such tests at site. All costs associated with the supply, calibration, installation, and removal of the test instrumentation shall be borne by the Successful Bidder. All calibration procedures and standards shall be subjected to the approval of the owner. The protecting tubes, pressure connections and other test connections required for conducting guarantee test shall conform to the relevant codes
6. Tools and tackles, thermo wells (both screwed and welded) instruments/ devices including flow devices, matching flanges, impulse piping, and valves etc., and any special equipment, required for the successful completion of the tests, shall be provided by the Successful Bidder.
7. After the conductance of Performance test, the Successful Bidder shall submit the test evaluation report of Performance test results to owner promptly but not later than two weeks from the date of conductance of Performance test. However, preliminary test reports shall be submitted to the owner after completing each test run

## 7.2. Desired outcome parameters

The Successful Bidder shall adhere to the desired outcome parameters defined below in order to ensure successful completion of the Overhaul and obtain an 'Operation Acceptance Certificate' by the PMC.

S. No	Parameter	Desired outcome (for each Unit)	Tolerance
<b>Boiler</b>			
1	Boiler Efficiency <i>(Estimated as per ASME PTC 4.1 method)</i>	83.0%	–
2	SH steam flow at the outlet	405 TPH at 100% BMCR	+5 TPH
3	Main steam flow at HP turbine inlet	367.18 t/h at 100% load	
4	SH steam temperature at the outlet	538 °C at 100% BMCR	+ 5 °C
5	RH steam temperature at outlet	537 °C at 100% BMCR	+ 5 °C
6	RH spray flow	0.5% at 100% TMCR	+ 0.2%
7	Hot Reheat Steam Flow at IP turbine inlet	340.45 t/h at 100% load	+3 TPH
8	Pressure drop from Eco inlet to SH	14.5 bar at 100% BMCR	+ 2 bar

S. No	Parameter	Desired outcome (for each Unit)	Tolerance
	outlet		
9	Pressure drop from RH inlet to RH outlet	1.90 bar at 100% BMCR	+ - 0.1 bar
10	Flue gas temperature leaving TAPH	135° C at 100% TMCR	+ - 5 °C
11	Flue gas pressure loss between cyclone outlet and TAPH outlet	18 mbar at 100% BMCR	+ - 5 bar
12	Limestone consumption	< 55 t/h	–
13	Minimum load without oil firing	50% BMCR	–
<b>ESP</b>			
1	Particulate matter (with limestone feeding in operation)	30 mg/Nm3	
2	SO <sub>2</sub> (with limestone feeding in operation, as per lignite and lime characteristics defined below)	600 mg/Nm3	
3	NO <sub>x</sub> (with limestone feeding in operation, as per lignite and lime characteristics defined below)	300 mg/Nm3	
4	Mercury (with limestone feeding in operation, as per lignite and lime characteristics defined below)	0.03 mg/Nm3	
5	ESP efficiency <i>(At design inlet dust load of 205 gm/Nm3 and emission of 30 mg/Nm3, (wet basis, actual O2%))</i>	99.985%	- 0.01%
6	Auxiliary Power Consumption <i>(Including SIR and TR corona power, hopper heater power, rapping motor power, insulator purge system power)</i>	525 KW	+ 2%
7	Pressure drop across ESP	20 mmWC	+ 2%
8	Air leakage across ESP	2.6 m3/sec (1% of design inlet gas flow)	+ 5%

### **Lignite Characteristics**

The Successful Bidder shall conduct proximate analysis, ultimate analysis, and particle size distribution tests for the lignite fired during the Performance Guarantee Test and submit the reports to the competent authority from the PMC and the Owner as part of the test.

The lignite characteristics used for estimation of the guaranteed values have been specified below:

**Proximate Analysis**

Parameter	Unit	Value	Range for Performance Testing
Moisture	%	35	30 – 35
Ash	%	21	18 – 35
Volatile	%	26	20 – 30
Fixed C	%	18	12 – 20
Sulphur	%	3.87	2 – 4.55
HHV	Kcal/kg	3,205	2000 – 3205

**Ultimate Analysis**

Parameter	Unit	Value
Carbon	%	30.52
Hydrogen	%	2.16
Nitrogen	%	0.51
Oxygen	%	6.94
Moisture	%	35.0
Ash	%	21.0

**Particle Size Distribution of Lignite**

Parameter	Value
> 6mm (max. 10 mm)	1%
0 – 6 mm	99% (min)
0 – 3.5 mm	85 – 90%
0 – 2 mm	50 – 60%
0 – 1 mm	20 – 30%
0 – 0.5 mm	10 – 20%

**Limestone Characteristics**

The Successful Bidder shall conduct analysis of the limestone consumed during the Performance Guarantee Test and submit the reports to the competent authority from the PMC and the Owner as part of the test.

The limestone characteristics used for estimation of the guaranteed values have been specified below:

Parameter	Unit	Value
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Parameter	Unit	Value
CaO	%	45.12
Fe2O3	%	5.03
Al2O3	%	2.78
P2O5	%	0.03
MnO	%	0.54
MgO	%	1.44
CaCO3	%	80.60
MgCO3	%	3.00
Moisture	%	2 – 3

#### Particle Size Distribution of Lignite

Parameter	Value
> 0.6 mm	5% (max)
0 – 0.4 mm	95% (min.)
0 – 0.315 mm	70 – 80%
0 – 0.2 mm	55 – 65%
< 0.090 mm	40 – 50%

#### Design parameters for upgraded ESP

The parameters for upgraded ESP used for estimation of the guaranteed values have been specified below:

S. No	Parameter	Unit	Value for each 125 MW boiler ESP	Acceptable limits
1	Gas volume [total for two ESPs in one boiler unit]	m <sup>3</sup> /s, wet, actual O <sub>2</sub>	260	+/-10 m <sup>3</sup> /s
2	Flue Gas temperature at inlet	Deg C	136	+/- 2 deg C
3	Moisture content in flue gas	% by volume	10	+/- 2%
4	Static pressure at ESP inlet	mmWC	- 265	+/- 5 mmWC
5	Inlet dust load (with Lime Feeding)	gm/Nm <sup>3</sup> , wet, actual O <sub>2</sub>	205	+ 5 gm/Nm <sup>3</sup>
6	Outlet Emission after the proposed upgrade	mg/Nm <sup>3</sup> , wet, actual O <sub>2</sub>	<=30	

### **7.3. Notice of tests**

The Successful Bidder shall issue 21 (twenty-one) days' notice to the Owner of the date after which he will be ready to commence the tests and the Successful Bidder shall commence the tests promptly thereafter.

### **7.4. Retesting**

If the unit fails to pass the test (which in the case of performance tests means not achieving the acceptable limits), the Owner reserves the right to ask the Successful Bidder to repeat such tests on the same terms and conditions. The retest shall be conducted by the Successful Bidder within 14 (fourteen) days of notification from the Owner.

### **7.5. Delayed tests**

If the tests could be carried out but are being unduly delayed by the Successful Bidder, the Owner may by notice inform the Successful Bidder to conduct the tests within 14 (fourteen) days after the receipt of such notice. The Successful Bidder shall conduct the tests on such days within that period as the Successful Bidder may fix and of which he shall issue notice to the Owner.

If the Successful Bidder fails to conduct the tests within such notice the Owner may himself proceed with the tests. All tests so conducted by the Owner shall be at the risk and cost of the Successful Bidder and the cost thereof shall be deducted from the contract price or charged to the Successful Bidder. The tests shall then be deemed to have been conducted by the Successful Bidder and the test results shall be binding on the Successful Bidder.

### **7.6. Independent inspector**

The Owner reserves his right to appoint an independent inspector, at its own cost, as its representative to discuss the test program, to approve the instrumentation, to witness the tests and to analyze the test results.

It is Successful Bidder's responsibility to co-ordinate for suitably carrying out the performance tests. The duration of the test shall be in accordance with the agreed test codes at the loads after necessary stabilizing period to obtain steady state conditions. All other tests to prove the guarantees as indicated in the Successful Bidder's offer shall also be conducted.

The equipment parameters during the performance test shall be adjusted as far as practicable to the guaranteed performance test conditions. The tests shall be conducted to prove guaranteed parameters as defined in the contract.

The performance test results shall be reported as computed from the performance test observations with corrections for site conditions, variations in load, etc., and test conditions. Such correction curves shall be submitted along with the bid. No additional allowances for errors in measurement are permissible. The measurement uncertainty on the performance test guarantee values, as reported on the basis of above tests shall not exceed the uncertainty limits specified.

## **7.7. Reporting of test results**

Immediately after the conclusion of the performance test, The Successful Bidder shall submit a test report (Six copies of each test) to the Owner stating whether the unit has passed or failed such test, accompanied by sufficient test data and calculations to demonstrate the level of performance attained with respect to each of the tested parameters.

The report(s) shall include as a minimum, the following:

- i. Description of the test procedures
- ii. Standards that were used
- iii. Instrumentation details and calibration
- iv. Full schematic diagrams with indication of instrument test location and identification tag of same
- v. Test logs and summary of test readings used for efficiency calculations
- vi. Full set of correction curves, if applicable
- vii. Computation of test results
- viii. Computations to prove measurement uncertainty is within acceptable limits
- ix. Boiler Efficiency
- x. Plant performance parameters
- xi. Templates for calculations (validated by the PMC)
- xii. Data reduction
- xiii. Chronology of events
- xiv. List of exceptions to procedure
- xv. Operator log sheets
- xvi. Detailed calculations at guaranteed loads
- xvii. Conclusions of performance tests: test passed or not

## **7.8. Acceptance of test report**

Within 14 (fourteen) days of receipt such test report(s), the Owner shall submit a notice to the Successful Bidder stating either:

- i. That Owner concurs with the information provided in the Successful Bidder's test report(s), or
- ii. That Owner disputes some or all of the information provided in the Successful Bidder's test report(s), the areas being disputed, and the levels of performance being disputed.

If Owner concurs with the information in the Successful Bidder's test report(s), the Owner shall, within 14 (fourteen) days of receipt of the test report, provide a written notice to the Successful Bidder accepting the results of the tests.

If Owner disputes any or all of the results contained in the Successful Bidder's test report(s), representatives of the Successful Bidder, Owner and the Engineer shall meet within 14 (fourteen) days of the receipt of the Owner notice at a mutually acceptable location to review and discuss the dispute.

## **7.9. Disagreements as a result of tests**

If the Owner and the Successful Bidder disagree on the interpretation of the test results, each shall give a statement of his views to other within reasonable time after such disagreement arises. The statement shall be accompanied by all relevant evidence. The Owner and the Successful Bidder shall mutually discuss and agree regarding the results of the test.

## **8. Reporting requirements and deliverables**

The Successful Bidder shall prepare and submit a comprehensive 'Overhaul Completion Report' incorporating the key activities undertaken, results of the Performance Guarantee Test, and list of material supplied to the Owner as part of the Overhaul, within 2 weeks of completion of the Overhaul, to mark the completion of the Overhaul.

Further, the Successful Bidder shall prepare and submit fortnightly progress reports with the PMC, and the Owner. Each progress report shall include:

1. Photographs and detailed descriptions of progress including each stage of design, procurement, manufacture, delivery at Site, construction, erection, testing and commissioning
2. A detailed description of the milestones achieved, and the Work/ Services performed prior to the date of the fortnightly progress report and the extent to which payments therefore have been received against the milestones
3. A description of the current status (the name of manufacturer, manufacture location, percentage progress, and the actual or expected dates of commencement of manufacture, Successful Bidder's inspections, tests, and delivery) of supplies and Equipment and of Successful Bidder's and all Major Sub-Contractors activities and engineering, manufacturing and construction progress as compared with the Project Schedule.
4. Copies of quality assurance reports including test results (i) from the manufacturing and fabrication facilities of all Sub-Contractors and (ii) with respect to all construction activity at the Facility Site
5. Safety statistics required under Applicable Laws, including details of any hazardous incidents and activities relating to environmental aspects and public relations.
6. Comparisons of actual and planned progress, with details of any aspects which may jeopardize the completion in accordance with the Contract, including Overhaul Execution Plan and the mitigation measures / action plan being (or to be) adopted to overcome such aspects. It shall include a clear identification and evaluation of problems and deficiencies in the Services (including but not limited to an evaluation of any factors which are anticipated to have a material effect on the Project Schedule).
7. Any other information as considered necessary by Owner / Owner's Representative.

## 9. Contract performance measurement

### 9.1. Key Performance Indicators (KPIs)

The Successful Bidder shall adhere to the following KPIs and targets during the Overhaul. In case of shortfall, liquidated damages shall be applicable and in case of superior performance, incentives shall be applicable as per the following sections:

#### 9.1.1. Time-based KPIs

Phase	KPI	Liquidated damages	Incentive
<b>Execution of Overhaul</b>	Schedule compliance with 'Overhaul Execution Plan' for Boiler and ESP package prepared by the Successful Bidder as per Section 3.1.1.1 of this document	0.5% of lumpsum price for Overhaul execution for every week of delay in completion of 'Overhaul Execution Plan'	0.5% of lumpsum price for supply of material and lumpsum price for Overhaul execution for every week of delivering ahead of schedule in completion of 'Overhaul Execution Plan'

#### 9.1.2. Performance-based KPIs

KPI	Threshold (for each Unit)	Liquidated damages
<b>Boiler</b>		
<b>Limestone consumption rate</b>	55 TPH	INR 18 Lakhs per 1 TPH increase in limestone consumption
<b>ESP</b>		
<b>ESP efficiency</b> <i>(At design inlet dust load of 205 gm/Nm<sup>3</sup> and emission of 30 mg/Nm<sup>3</sup>, (wet basis, actual O<sub>2</sub>))</i>	99.985%	INR 30 Lakhs for 0.01% shortfall in ESP efficiency
<b>Auxiliary Power Consumption</b> <i>(Including SIR and TR corona power, hopper heater power, rapping motor power, insulator purge system power)</i>	525 KW	INR 1.85 Lakhs per KW increase in APC of ESP
<b>Pressure drop across ESP</b>	20 mmWC	INR 6 Lakhs per mmWC increase in pressure drop
<b>Air leakage across ESP</b>	2.6 m <sup>3</sup> /sec (1% of design inlet gas flow)	INR 5.5 Lakhs per m <sup>3</sup> /sec increase in air in leakage

## **9.2. Overall ceiling on Liquidated Damages and incentives**

1. All liabilities due from the Successful Bidder arising out of the shortfall of performance levels mentioned under Section 9.1, as per the liquidated damages defined in Section 9.1, during the course of the Overhaul, shall be restricted to a maximum of 10% of the lump sum price for supply of material and Overhaul execution defined in Section 11.1 of this document
2. All incentives due to the Successful Bidder arising out of the enhanced performance levels mentioned under Section 9.1, as per the incentives defined in Section 9.1, during the course of the Overhaul, shall be restricted to a maximum of 5% of the lump sum price for supply of material and Overhaul execution defined in Section 11.1 of this document

## **10. Defect liability**

1. The Successful Bidder warrants that the Boiler and ESP or any part thereof shall be free from defects in the design, engineering, materials, and workmanship of the equipment supplied and of the work executed
2. The Defect Liability Period shall be 18 (eighteen) months from the date of Completion of the Overhaul (or any part thereof) or 12 (twelve) months from the date of Operational Acceptance of the equipment (or any part thereof), whichever first occurs, as certified by the PMC/owner /any agency on behalf of owner
3. If during the Defect Liability Period any defect should be found in the design, engineering, materials, and workmanship of the equipment supplied or of the work executed by the Successful Bidder, the Successful Bidder shall promptly, in consultation and agreement with the Owner regarding appropriate remedying of the defects, and at its cost, repair, replace or otherwise make good (as the Successful Bidder shall, at its discretion, determine) such defect as well as any damage to the equipment caused by such defect
4. The Owner shall give the Successful Bidder a notice stating the nature of any such defect together with all available evidence thereof, promptly following the discovery thereof. The Owner shall afford all reasonable opportunity for the Successful Bidder to inspect any such defect.
5. The Owner shall afford the Successful Bidder all necessary access to the Plant to enable the Successful Bidder to perform its obligations under this clause
6. The Successful Bidder may, with the consent of the Owner, remove from the Plant, any equipment or any part of the equipment that are defective if the nature of the defect, and/or any damage to the Plant caused by the defect, is such that repairs cannot be expeditiously carried out at the Plant
7. If the repair, replacement or making good is of such a character that it may affect the efficiency of the equipment or any part thereof, the Owner may give to the Successful Bidder a notice requiring that tests of the defective part of the equipment shall be made by the Successful Bidder immediately upon completion of such remedial work, whereupon the Successful Bidder shall carry out such tests.

8. If such part fails the tests, the Successful Bidder shall carry out further repair, replacement or making good (as the case may be) until that part of the equipment passes such tests. The tests in character shall in any case be not less than what has already been agreed by the Owner and the Successful Bidder for the equipment
9. If the Successful Bidder fails to commence the work necessary to remedy such defect or any damage to the equipment caused by such defect within a reasonable time (which shall in no event be considered to be less than fifteen (15) days), the Owner may, following written notice to the Successful Bidder, proceed to do such work, and the reasonable costs incurred by the Owner in connection therewith shall be deducted by the Owner from any payment due to the Successful Bidder or claimed under the Performance Security
10. If the equipment or any part thereof cannot be used by reason of such defect and/or making good of such defect, the Defect Liability Period shall be extended by a period equal to the period during which the equipment or such part cannot be used by the Owner because of any of the aforesaid reasons. Upon correction of the defects in the equipment or any part thereof by repair/ replacement, such repair/ replacement shall have the Defect Liability Period extended by a period of twelve (12) month from the time such replacement/repair of the equipment or any part thereof
11. If a defect in equipment or any part thereof supplied by the Successful Bidder occurs a total of once during the original Defect Liability Period, the extension of the original Defect Liability Period for the repaired or replaced part(s) or equipment shall not extend beyond a total of twenty-four (24) months from the beginning of the original Defect Liability Period
12. However, if there are recurring (more than once) failures in an equipment or any part thereof supplied by the Successful Bidder within twenty-four (24) months from the beginning of the original Defect Liability Period, the warranty shall be limited to a period of five (5) years from the end of the Defect Liability Period
13. At the end of the Defect Liability Period, the Successful Bidder liability ceases except for latent defects. The Successful Bidder's liability for latent defects warranty shall be limited to a period of five (5) years from the end of Defect Liability Period. For the purpose of this clause, the latent defects shall be the defects inherently lying within the material or arising out of design deficiency which do not manifest themselves during the Defect Liability Period
14. In case, there is any dispute between Owner and Successful Bidder regarding latent defects, a third party as mutually agreed upon by the Owner and the Successful Bidder shall be engaged by the Owner for settling the dispute
15. The third party, so engaged by the Owner, shall be paid fee plus reasonable expenditures incurred in the execution of its duties as mentioned above. These costs shall be recoverable from the Successful Bidder and the Successful Bidder shall bear and / or reimburse such costs to the Owner if the latent defect has been proved. If the dispute regarding latent defects cannot be settled as above, then the dispute shall be settled as per Section 14.6 (Arbitration) as deemed fit

## 11. Payment terms

### 11.1. Lumpsum Boiler and ESP Package Charges

The Successful Bidder shall quote the lumpsum charge for supply of material and lumpsum charge for Overhaul execution (services) for the duration of the execution of the Overhaul.

#### 11.1.1. Lumpsum charges for supply of material

The Successful Bidder shall quote the unit rate for all items detailed in the BoQ given in Annexure 2 and Annexure 3. The lumpsum charges for supply of material shall be calculated as the sum of the unit rates times the quantities detailed in the BoQ for all items.

#### 11.1.2. Lumpsum charges for Overhaul execution

The Successful Bidder shall quote the service charges for Category 1 and Category 2 activities separately as per the indicative format in Annexure 14. The lumpsum charges for execution of Overhaul shall be estimated as the sum of the charges quoted for Category 1 and Category 2.

### 11.2. Payment milestones

The Owner hereby covenants to pay the Successful Bidder for performance of the Contractual terms as payment terms specified hereunder –

T – date of acceptance of LOA

Category	Activity	% of total contract value	Timelines
Supply of material	Advance payment for procurement of spares, after submission of Performance Security and submission of item-wise price list	10%	T + 2 weeks
	Placement of POs for procurement of spares	25% (pro-rated <sup>1</sup> )	T + 10 weeks
	Delivery of material on site with physical verification, certification, and sign-off by the PMC	40% (pro-rated <sup>1</sup> )	T + 24 weeks
	Completion of SATs for equipment across both units and issue of certificate by PMC	5%	T + 28 weeks
	Completion of Guarantee Tests for both units and issue of Operation Acceptance Certificate by the PMC	5%	T + 45 weeks

<sup>1</sup> Bidders to provide detailed item wise price for the required spares detailed in Annexure 2 (Boiler) and Annexure 3 (ESP) of this document within 14 days from date of acceptance of LoA. The payment on delivery of material on site shall be prorated as per the items delivered against the required spares, upon certification by the PMC.

Category	Activity	% of total contract value	Timelines
	Submission of final 'Overhaul Completion Report' approved by Authority	10%	T + 48 weeks
	Completion of defect liability (warranty period)	5%	18 (eighteen) months from the date of Completion of the Overhaul or 12 (twelve) months from the date of Operational Acceptance of the equipment, whichever first occurs
<b>Overhaul execution</b>	Mobilization fee	5%	T + 2 weeks
	Completion of overhaul and guarantee of auxiliary boiler (including hydro test and light up) and issue of completion certificate by PMC	10%	T + 10 weeks
	Monthly payments against progressive installation of equipment on site	15% (per month)	Monthly payments in equal installments for 3 months during Overhaul execution
	Completion of the Overhaul activities for auxiliary boiler, main boilers, and ESP for both units and issue of Completion Certificate by the PMC	10%	T + 42 weeks
	Completion of Guarantee Tests for both units and issue of Operation Acceptance Certificate by the PMC	15%	T + 45 weeks
	Submission of final 'Overhaul Completion Report' approved by Authority	10%	T + 48 weeks
	Completion of defect liability (warranty period)	5%	18 (eighteen) months from the date of Completion of the Overhaul or 12 (twelve) months from the date of Operational Acceptance of the equipment, whichever first occurs

1. The Successful Bidder shall submit invoices upon achieving milestones stated in sub clause hereinabove. Authority shall make payment within 30 days of submission of invoices upon verifying the milestone for which invoice is submitted subject to deduction of any damages pursuant to Contract conditions
2. Applicable GST, over and above approved Lumpsum Charges for Boiler and ESP Package, at the time of invoicing shall be reimbursed by the Owner upon submission of proof thereof. The risk of applicability of any taxes, duties, and levies except GST, shall rest with the Successful Bidder
3. The Owner 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

## **12. Insurance**

### **12.1. Insurance of Equipment**

Successful Bidder shall, at their sole cost, in the joint names of Owner, Successful Bidder, and the Sub-Contractors, take insurance cover for full replacement value for the following:

1. "Material Damage Insurance" (Storage-cum-Erection Insurance) on an "All Risk" basis (including terrorists act, SRCC) of loss or of damage arising during period of Insurance coverage to any part of the Contract works, material and supplies Successful Bidder any transit and off-site storage, and anywhere in India for ex-works Indian factory and foreign supplies, materials, etc.
2. Such insurance shall be administered and managed by the Successful Bidder and shall be affected from the Commencement date of Contract and thereafter shall operate from the time the relevant property leaves the premises of the manufacturers in the country of origin, and shall continue during the ordinary course of transit and during storage on or off the Plant site, if any, and during erection and commissioning until the date on which Owner takes over the care, custody, and control of the Plant/Equipment, to the exclusion of the Successful Bidder

### **12.2. Rented Equipment**

1. All construction equipment shall be brought to and kept at the Site at the sole cost, risk and expense of the Successful Bidder. Owner shall not be liable for any loss or damage thereto. The Successful Bidder, at his sole discretion, may maintain adequate, appropriate and prudent insurance with respect to such construction equipment. The Successful Bidder shall obtain adequate insurance to cover all construction equipment rented or leased from third parties and also for the construction equipment of Sub-Contractor.
2. Any insurance policy carried by the Successful Bidder, any Sub-Contractor or any third party on or in respect of any construction equipment shall provide for waiver of the underwriter's right to subrogation against Owner, their assignees, subsidiaries, parent companies, affiliates, employees, insurers, and underwriters.

### **12.3. Statutory Insurance Benefits**

The Successful Bidder shall maintain with respect to the Work to be done under the Contract, in each applicable jurisdiction, all statutory benefits and other insurance required by law including without limitation unemployment insurance.

### **12.4. Third Party Insurance**

1. Successful Bidder shall, in the joint names of Owner, Successful Bidder and the Sub-Contractor's prior to the commencement of any work in the Plant pursuant to this Agreement, insure in an amount not being less than project cost thereof against any liability for damage or death or personal injury occurring in the Plant, obstruction, loss of amenity, trespass, nuisance or advertising liability pursuant to the Contract. Such insurance shall be endorsed or amended as to be considered primary, and any other

insurance maintained by Owner shall be in addition and not contributory to this insurance.

2. Indemnity amount indicated above shall be the minimum coverage that the Successful Bidder takes under the policy. Notwithstanding the above coverage, the Successful Bidder at their discretion will take policy for an appropriate coverage not less than the indemnification amount prescribed as above, so as to meet all the liabilities that may arise on account of third-party risks from the commencement of contract till the Owner takes over the care, custody, and control of the Plant, to the exclusion of Successful Bidder.

### **12.5. Insurance against Accident, etc. to Workmen; Other Insurance**

The Successful Bidder shall, at its sole expense, insure and shall maintain insurance as required by Indian and all other applicable laws for all actions, suits, claims, demands, costs, charges, and expenses arising in connection with the death of or injury to any person employed by the Successful Bidder or its Sub-Contractor for the purpose of the performance of the Work.

### **12.6. Disclosure**

Each Party shall, upon request, promptly furnish the other Party any information which is reasonably available and is related to the fulfillment of the contractual obligations as is necessary to enable the other Party to comply with its disclosure obligations under the insurance which it has taken out, the terms of which have been disclosed to the other Party in writing.

At the Owner's request, the Successful Bidder shall provide evidence of insurance covers, or a certificate of all insurances maintained.

### **12.7. Remedy on Failure to Insure**

If the Successful Bidder fail to effect and keep in force the insurance for which it is responsible under the Contract, Owner may effect and keep in force any such insurance, and pay such premiums as may be necessary for that purpose, and from time to time, after receipt of a reimbursement request therefore accompanied by relevant supporting documentation, deduct the amount so paid by Owner from any amounts due or which may become due to the Successful Bidder under the Contract or otherwise from the Owner.

### **12.8. Limitation of Liability**

Notwithstanding any other provisions, except in cases of criminal negligence or willful misconduct,

1. Whether expressed or implied, in no event, whether as a result of breach of contract, warranty, indemnity, tort (including negligence) strict liability or otherwise, shall either Party be liable to the other for loss of contract, loss of profit or revenue, loss of use, loss of data or information, loss of power, cost of replacement power, increased cost of operation and cost of capital or for any indirect, special, collateral, or consequential damages

2. The aggregate liability of the Successful Bidder to the Owner, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Value, provided that this limitation shall not apply to any obligation of the Successful Bidder to indemnify the Owner with respect to patent infringement.

### **12.9. Claims for losses/damages**

1. Successful Bidder/Sub-Contractor shall make all claims with the underwriter/s and undertake all formalities/step required for settlement of claims
2. Successful Bidder/Sub-Contractor shall hold harmless the Owner for non-settlement/short settlement/part settlement or repudiation of claims by the underwriter/s
3. Successful Bidder shall be obliged to replace / repair the Equipment/ components/parts/spares etc., without waiting for loss settlement by the underwriter/s

### **13. Non fulfilment of terms and conditions and Termination of Contract**

1. If at any time during the currency of this contract, if any breach occurs due to the reasons attributed to the Successful Bidder, the Owner 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.
2. If the Successful Bidder fails to carry out the work as per terms and conditions of the contract to the satisfaction of the Owner, the Owner shall be entitled to forfeit the Performance Security paid by the Successful Bidder as per Section 7.3 of Part 3 of the RfP. This, however, shall not absolve the Successful Bidder from its obligation to fulfill the contract. In such event, the Owner 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 Owner to complete the work and / or to get the work completed
3. 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 the Owner, the Owner has the right to forthwith terminate the Contract at its sole discretion, without assigning any reason, Under such events, the Owner shall be entitled to forfeit the Performance Security paid by the Successful Bidder as per Section 7.3 of Part 3 of the RfP, and the Owner shall have a right to complete the work and / or to get the work completed at the risk and cost of the Successful Bidder
4. For any reasons, if it is required, the Owner 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.

### **14. Contract terms and conditions**

#### **14.1. Statutory Obligations**

1. That the Successful Bidder shall obtain license under the Bombay Shops and Establishment 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
2. That the Successful Bidder shall get his own License under Contract Labor (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
  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 labor 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 Owner
  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
  5. The Successful Bidder has to issue to the employee's Identity card with their photos and shall also maintain relevant register
  6. That the Successful Bidder shall give leave/holiday to its workforce as per the provisions of labor laws applicable
  7. Every person deployed by the Successful Bidder in a Plant must wear safety gadgets to be provided by the Successful Bidder
  8. Any statutory clearance, permission required for the work, its completion, commissioning shall be in the Successful Bidder's scope
  9. The Successful Bidder will be required to obtain License from the office of the Labor Commissioner for the required strength of labor, before commencement of work at site and the same shall be maintained updated and valid throughout the currency of the contract
  10. If any amount becomes payable by the Owner as a result of any claim or application in terms of the provisions or non-compliance of provision of the 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 the Owner will not be responsible for any compensation
  11. That the Successful Bidder would obey with all applicable laws and maintain all such necessary records as necessitated under such enactments
  12. The Successful Bidder shall also indemnify the Owner 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
  13. 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 the Owner 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.

- a. The Factories Act of 1948 (63 to 1948) and Amendments and Rules (Amended up to date)
- b. The Electricity Act, 2003 and rules made there under
- c. The Indian Boiler Regulation Act, 1950 and rules made there under
- d. The Minimum Wages Act, 1948
- e. The Employees Compensation Act 1923 and Amendment Act 2010
- f. The Payment of Wages Act 1936 and Amendment Act 2012
- g. Payment of Bonus Act 1965 and Amended up to date
- h. Contract Labor Regulations & Abolition Act 1970
- i. Interstate Migrant Workmen (Regulations) Act 1979

#### **14.2. Bankruptcy**

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 the Owner 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 the Owner but not exceeding the value of the work for the time being remaining unexecuted
2. In the event of stoppage of performance under the contract, the period of option under this clause shall be decided by the Owner considering the situation, provided that the above option is not exercised, the Owner may terminate the contract by serving notice in writing to the Successful Bidder. The power and provision so reserved to the Owner 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

#### **14.3. 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 Owner 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.

#### **14.4. Canvassing not Permitted**

1. Successful Bidder should not canvass their offer personally or otherwise by approaching the Chairman or the Member of the Owner. If any Successful 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 Successful Bidder is found to canvass his offer or against his competitor's offer through personal approach to the competent authority or the officials of the Owner, their offer will be rejected without assigning any reason and the firm even is blacklisted

#### **14.5. Indemnification**

The Successful Bidder shall fully indemnify, save harmless and defend Owner, Owner's shareholders, the Owner, and the directors, agents and employees of the Owner (the "Owner Indemnified Parties") from and against any and all claims, including reasonable legal costs, (collectively the "Damages") by third Parties in respect of death or bodily injury or in respect to loss or damage to any property (other than the Plant or part there of not yet taken over) which arises out of or in consequence of the Services whilst the Successful Bidder has responsibility for the care of the works to the extent resulting from Successful Bidder's or their agents or employees intentional act, negligence, or strict liability or omission in the performance of the Services hereunder; provided that the foregoing obligation shall not apply to the extent the Owner Indemnified Parties are contributory negligent or strictly liable or to the extent such damages are caused by the intentional acts or omissions of the Owner Indemnified Parties. The Successful Bidder shall provide Undertaking of Indemnity, in the form of Annexure 14 of this document.

#### **14.6. Arbitration**

All questions, disputes, differences whatsoever which may at any time arises between the parties to this RFP and subsequent contract in connection with the RFP 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.

#### **14.7. Governing Law**

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

#### **14.8. Jurisdiction**

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

#### **14.9. Completion of Work**

1. Upon the Successful Bidder fulfilling the entirety of its obligations under the Contract to the satisfaction of the Owner and subject to terms and conditions of the Contract, it shall become eligible to apply for a Completion Certificate. The General Manger of the Owner 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 bill for the Works executed by it under the Contract

2. Upon completion of Works under the Contract and before the application for the Completion Certificate, the Successful Bidder shall clear the project of the Owner of all rubbish, dirt, structures, scrap, oily rags etc. Failure to clear the project may constrain the Owner to clear the said site at the risk and cost of the Successful Bidder
3. The Successful Bidder shall provide the Owner with any and all documents/records/proofs that may be demanded before issuance of Completion Certificate

#### **14.10. Accident and Responsibilities of Successful Bidder**

1. The entire responsibility on account of any accidents, damage or personal injury which may occurred to any of the Successful Bidder's vehicles/ equipment 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 Owner on this account. The Successful Bidder shall keep the Owner indemnified from all the consequence
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
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 Owner 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

#### **14.11. Foreclosure**

1. In case of any necessity arising due to local working conditions or any unforeseen reason not in the control of the Owner or of the Successful Bidder, Committee comprising of representative of the Owner, 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 Owner and the Successful Bidder
2. If after study of the prevailing conditions of the contract under execution, committee recommends to Foreclose the contract keeping in view the financial implication to both the Owner 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.

#### **14.12. Force majeure**

1. Force majeure is herein defined as any cause which is beyond the control of the Successful Bidder or the Owner 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:
2. Natural phenomena such as flood, draughts Cyclone, earthquake and epidemics, declaration of war
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
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 Owner
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 labor and machinery etc.) provided it is mutually established that the Force Majeure conditions did actually exist
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
7. The Successful Bidder or the Owner 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

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