

BID NUMBER: ID-3210453

**REPUBLIC OF SOUTH AFRICA
DEPARTMENT OF PUBLIC WORKS**



**BID
FOR
ZONDERWATER CORRECTIONAL SERVICES
SERVICE, REPAIRS AND MAINTENANCE OF COAL FIRED BOILERS
AND
ALL STEAM RELATED GENERATION COMPONENTS
FOR
THE PERIOD OF 12 MONTHS**

*OFFICE OF THE REGIONAL MANAGER
DEPARTMENT OF PUBLIC WORKS
PRIVATE BAG X229
PRETORIA
0001*

DATE: _____

Responsive and Evaluation Criteria

The responsive criteria required for quotation is tabulated below.

Description	Responsive Criteria Requirement
CIDB Contractor grading designation required	Grade 2ME or higher
Experience required	Experience in the maintenance of coal fired boilers and steam reticulation related projects for the minimum period of (6 – 36) months term contract / projects completed in the last five (05) years. Please attach the following on a client letter head, contactable references and client stamp: <ol style="list-style-type: none">1. copy of purchase order /appointment letter/confirmation letter2. Completion letter / certificate
Labour Compliance	Letter of Good Standing
Value for Money	All prices must be market related. In case of prices which are not market related, the Department reserves the right to adjust the bill of quantity prices or to disqualify the bidder.

Important notes to Service Provider(s)

- **Final Summary MUST be fully completed by the contractor; failure will invalidate the contractor's quotation.**
- **The Contractor is advised NOT TO EXECUTE any additional work other than specified above/ or one the scope of works.**
- **The Contractor SHALL NOT TAKE any instruction(s) from the Client department or any person other than the relevant Works Manager when executing the service.**
- **The Contractor MUST visit the site to acquaint themselves with the condition of the service to be rendered.**
- **Quantity of material listed is provisional, the Contractor will only be paid for material used on site and proof of purchase for the material utilized for this service must be attached to the invoice.**
- **The Guarantee provided MUST comply with requirement set out in the Scope of Works.**
- **Electrical Work MUST be executed by a qualified Installation Electrician.**
- **Mechanical Work MUST be executed by a qualified Artisan/Tradesman.**
- **Plumbing Work MUST be executed by a qualified Artisan/Tradesman.**
- **Works MUST be done according to SABS and Public Works Standards.**
- **NO HIDDEN service(s) (e.g. underground) will be covered before being verified by the Works Manager.**
- **Kindly be advised that the above service is NOT to be sub-contracted in its entirety to third parties as the agreement is only between the Department and the Contractor herein.**
- **The contractor must ensure compliance with Occupational Health Safety Act of 1993. Failure may lead to contract being suspended with immediate effect.**

- **Please provide VAT No. (if registered)**
- **Please provide CIDB Registration number**

- **The contractor shall notify the Works Manager of any additional faulty components detected, that are not appearing on the scope of works before going ahead with the job.**
- **If any of the above mentioned components/items are not replaced, the quoted amount will be deducted from the total quotation amount.**
- **Redundant material must be left on site for verification.**
- **Ensure that all the worn parts are being replaced with the same SABS approved ones.**
- **The contractor must give a (03) three months written guarantee on the above work.**
- **For major parts repairs or equipment replaced the guarantee must be 12 months**

SPECIAL CONDITIONS OF CONTRACT

1. VALUE-ADDED TAX

All prices, rates, tariffs etc. in this tender document shall exclude Value-Added Tax (VAT).

2. PRICES

All prices for items in this document shall include for additional costs, if any, that may occur as a result of these of Contract as well as for the supply of all scaffolding and normal plant and everything necessary for the proper execution of the work.

3. THE BID

The pages of this BID are numbered consecutively. The BIDDER shall, before submitting his BID, check the numbers of the pages and should any be missing or duplicated, or the reproduction be indistinct, or if any doubt exists as to the full intent or meaning of any description, or this BID contains any obvious errors, the BIDDER shall obtain a directive in writing from the Department.

The text of this BID and other document as prepared by the Department shall be adhered to and no alteration, erasure, omission or addition thereto by the BIDDER shall be accepted.

4. DOCUMENTS

Should there be any contradiction between these, the Conditions of Contract (PW 677) and the Conditions of the BID (PW 210), the contradiction must be brought to the attention of the relevant official who will make a ruling, and such ruling will be final.

The following documents shall be read in conjunction with this BID.

- a) State Tender Board General Conditions and Procedures (ST 36).
- b) Occupational Health and Safety Act, Act no 85 of 1993 and the Pressure Equipment Regulations (PER)
- c) Municipal by-laws and any special requirements of the Local Authority.
- d) The Document PW379.

The BIDDER shall study these documents and acquaint himself with the contents thereof as no claims in this regard shall be accepted.

The above mentioned documents are available from the office of the **Regional Manager, AVN Building, 251 Nana Sita Street, Pretoria, 0001** for information.

5. PROVISIONAL QUANTITIES

All quantities in this BID document are provisional and inserted in order to obtain competitive tenders. The Department reserves the right to increase or decrease quantities and exclude installations during the progress of the contract and such increases or decreases shall not alter the rates for any item.

6. RATES

Each item to be serviced as listed in this tender document must be priced. "No cost", "R0.00", "Free", "N/A" or unfair and unreasonable tariffs for servicing shall not be accepted and may lead to disqualification of the BID. The Department reserves the right to make such adjustments to individual tariffs in these schedules as necessary to eliminate errors, discrepancies or what they consider to be unreasonable or unbalanced rates.

This is not a lump sum contract.

7. CONTRACT PERIOD, RENEWAL AND TARIFF ADJUSTMENT

This BID shall be valid for a period of 12 months commencing from the date of the letter of acceptance of the tender.

Note:-

The contract tariffs shall remain fixed for 12 calendar months including escalation, and no further adjustments will be allowed except that for an increase in VAT will apply.

Any extension of this contract will only be approved if required by the Regional Bid Committee.

8. ACCESS TO PREMISES

The Contractor undertakes to:

- a) Arrange with the occupants of buildings regarding access to the premises in order to execute the required service.
- b) Take adequate precautions to prevent damage to buildings, to fittings and furnishing inside the premises and elsewhere on the site.
- c) Accept liability and to indemnify the Department against any claims whatsoever arising from his conduct and/or the conduct of his employees.
- d) Safeguard all his employees in accordance with the regulations of the Unemployment Insurance Act 1966, (Act no 30 of 1966) and any amendments thereof.
- e) Comply with all by-laws and requirements of the Local Authority.
- b) Carry out maintenance, servicing and repairs during normal working hours

9. ACCESS CARDS TO SECURITY AREAS

Should the work fall within a security area, the Contractor shall obtain, either from the Correctional Services Client Department access cards for his personnel and employees who work within such an area.

The Contractor shall comply with any regulations or instructions issued from time to time, concerning the safety of persons and property, by **Zonderwater Prison**.

10. **SECURITY CHECK ON PERSONNEL**

The **Department of Correctional Services (Zonderwater)** may require the Contractor to have his personnel or a certain number of them security classified.

In the event of the Department requesting the removal of a person or persons from the site for security reasons, the Contractor shall do so forth with and the Contractor shall thereafter ensure that such person or persons are denied access to the site and/or to any documents or information relating to the work.

11. **TRAINED STAFF**

The Contractor shall use competent trained staff directly employed and supervised by him/her and shall take all the necessary steps to maintain the installations and keep it in perfect working condition. The Department reserves the right to inspect the Bidder's premises for plant, equipment and general good management before the bid is awarded.

Note:

A Statement of Experience gained and on what type of equipment shall be submitted with the tender.

REDUNDANT MATERIAL, RUBBISH AND WASTE

All rubbish and waste shall be removed from the site by the Contractor.

12. **ASSOCIATED ELECTRICAL WORK (N/A)**

Note:

All such work shall be carried out by, or under the supervision of a qualified person, and comply with the Occupational Health and Safety Act (Act No 85 of 1993)

13.1 **SCOPE OF CONTRACT**

This contract is for the maintenance and repairs to **Coal Fired boilers** in the GAUTENG Province PETORIA REGIONAL OFFICE JURISDICTION, in properties, namely official BOILER HOUSE at **Zonderwater Prison**, for a period of 12 months as specified.

The Contractor shall submit to **Head of the Sub Directorate Technical Maintenance** the a **program with fixed calendar dates when equipment will be serviced** within 14 days after the contract has been awarded, to enable the **Head of the Sub Directorate Technical Maintenance** to arrange for inspections.

Any deviations from this program shall be brought to the attention of the **Head of the Sub Directorate Technical Maintenance** by facsimile at least 7 days prior to the due.

The Contractor shall supply, at his own cost, all consumable material such as oil, grease, waste, hacksaw blades, welding rods and material for all other forms of welding, insulation tape, cleaning materials and chemicals etc. necessary for the proper execution of repairs, maintenance and servicing.

No claims for consumables shall be accepted. Where repairs are required to specialise items of equipment the Contractor shall arrange for such work to be carried out by specialists approved by the Department. Should the Contractor wish to make use of sub-contractors, he shall apply to the Department for written approval before making use of their services. **No mark-up or handling fees on sub-contractor's invoices shall be accepted.**

PREVENTATIVE MAINTENANCE SERVICE SCHEDULES (ANNEXURE A)

Servicing shall be carried out strictly as stated on the service schedules and the Contractor shall after each service submit the service sheet, completed job card and invoice must be handed in to the Registry section at DPW Pretoria Regional Office.

The Contractor shall make his own arrangements for printing and duplicating of service schedules and job cards.

The service schedule shall be counter signed by the officer in charge (**Head of Facilities**) of the building in which the equipment is situated and he shall endorse the schedule to the effect that the equipment is, in his opinion, operating satisfactorily.

13. OFFICIAL ORDER FOR REPAIRS

- a) An official order for repairs shall be issued to the Contractor.
- b) Instructions for repairs may only be issued to Contractors by officials of this Department (DPW PTA R/O) who are the appointed persons responsible to issue the instruction. For each repair the complaint number issued for that repair as well as details regarding the defects shall be given to the Contractor in writing.

Any instruction given by the Client and attended to by the contractor will not be honored by DPWI but by the Client Department.

- c) No payments shall be made for work executed without the necessary written authority, such as official order number and signed job cards.
- e) Payments can be delayed if order numbers and complaint numbers do not appear on invoices submitted for payment and incorrect calculations.

14. EXECUTION OF REPAIRS

In the event of repairs having to be carried out urgently during the course of a programmed service, details of such repairs shall be reported immediately to the **Head of the Technical Maintenance/Control Works Manager/Chief Works Manager** for further instructions and/or authority to proceed.

No work may be carried out without prior instruction from the **Head of the Technical Maintenance/Control Works Manager/Chief Works Manager**

The Contractor shall respond to all normal breakdown calls within 2(two) hours of receipt of the call. Should this not be possible, it is the responsibility of the Contractor to obtain an extension of time. The written request shall clearly state all the reasons for the extension request. Permission for extension shall be in writing.

For emergency services the response time shall be 1 (one) hour from the receipt of the call night or day. Only breakdowns which affect public health could cause an environmental disaster, or the operation and safety of sensitive equipment, shall be treated as emergency repairs.

In the event of the contractor not responding in the required time, the Department of Public Works reserves the right to call on any other contractor to carry out the service. Any additional cost incurred shall be for the account of the successful bidder.

15. **JOB CARDS FOR REPAIRS**

Job cards shall be completed in all respects for each and every repair undertaken. Job cards shall be in accordance with the example included in this document and duplicating or printing thereof shall be for the Contractor's own cost.

Job cards shall be completed in duplicate, legibly in ink after completion of each repair and all unused lines shall be ruled through. The job card must be submitted with the invoice, the contractor shall submit a copy of the fully completed job card to the User Department for audit purposes and for verification of the deletion of the unused lines. Incomplete and incorrect job cards shall be returned to the contractor with his invoice.

16. **ACCOUNTS FOR SERVICING AND REPAIRS**

Accounts for servicing shall be accompanied by a Service Schedule.

Accounts for repairs executed, shall be accompanied by a job card.

The contractor shall cross-reference all prices and tariffs on invoices with the applicable prices and tariffs in the tender document.

Note:

Any over payments discovered at a later stage shall be rectified and the Department shall recover the overpayment.

The appointed bidder shall structure his quote and invoice to include the item numbers as per the tender Document Annexure A and B

17. **PAYMENT TO CONTRACTORS**

Accounts can be submitted weekly or monthly. Payments of accounts complying with all the requirements shall be **made within 30 days electronically into the contractors banking account after receipt thereof.**

18. **PROFIT ON MATERIAL (NON SCHEDULE ITEMS)**

20 % mark-up is allowed on non-scheduled material, equipment and requirements only and not on labour, transport and sub-contractor's services. The percentage mark-up shall then be calculated on the price excluding VAT. **Supplier invoice is required on all non schedule items.**

19 **TRANSPORT COST**

- a) The Contractor shall make the necessary arrangements to have the required material or equipment available to execute the scheduled repairs, therefore no claims for delivery cost or transport cost to collect material or equipment for scheduled repairs shall be accepted.

TECHNICAL SPECIFICATION

STEAM GENERATING INSTALLATION

OPERATION AND MAINTENANCE TO INSTALLATIONS, SYSTEMS AND EQUIPMENT:

FA17.01 GENERAL

Monthly operation and maintenance responsibilities for each installation at the various facilities including all units and components as specified shall commence with access to the particular installation(s). A difference shall be made in payment for the operation and maintenance prior to and after practical completion of repair work.

Operation and maintenance responsibilities of the completed installation shall commence upon the issue of a certificate of practical completion.

This part of the Contract shall include:

- (a) Preventative maintenance;
- (b) Corrective maintenance,
- (c) Breakdown maintenance, and

As defined in Additional Specification SA: General Maintenance, for the specified installations described under FA 01 of this specification as well as FA 17.05 for operation specifications.

The operation and maintenance work to be performed and executed shall be done strictly in accordance with Additional Specification SA: General Maintenance, and as specified in Particular Specification PFA and this specification.

The said operation and maintenance work shall be executed in accordance with the relevant codes of practice, statutory regulations, standards, regulations, municipal laws and by-laws and the manufacturers' specifications and codes of practice.

The operation and maintenance schedules and frequency of operation and maintenance shall be developed under the maintenance control plan to be instituted by the Contractor, as specified in Additional Specification SA: General Maintenance.

All new equipment, components and materials supplied and installed under the maintenance contract shall be furnished with a prescribed manufacturer's guarantee.

The operation and maintenance work and items on each installation are to be categorized for each maintenance activity under the following headings:

- (a) Coal-fired boilers
- (b) Combustion equipment
- (c) Coal handling equipment
- (d) Ash handling equipment
- (e) Grit collection and draught equipment
- (f) Water treatment and feed-water tanks
- (g) Electrical installation and controls.

FA 17.02 PREVENTATIVE MAINTENANCE

This maintenance of the installations, systems and equipment shall be done in accordance with Additional Specification SA: General Maintenance and the Particular Specification related to this work.

The maintenance work to be performed and executed shall include, but not be limited to the items listed in tables FA 17.02/1, FA 17.02/2, FA 17.02/3, FA 17.02/4, FA 17.02/5 and FA 17.02/6 below under the respective headings.

These actions and findings shall be logged and reported on the relevant approved schedules and reports for each installation forming part of this Contract.

TABLE FA 17.02/1: ACTIONS AND MAINTENANCE

ITEM	MAINTENANCE DESCRIPTION	ACTION RESPONSIBILITY	ACTION
1	Measure CO ₂ content of exhaust with CO ₂ analyzer.	Boiler house supervisor	Check/Record
2	Blow-down gauge glasses.	Boiler house supervisor	Check/Record
3	Test level controls for correct functioning.	Boiler house supervisor	Check/Record
4	Inspect boiler valves for leakages.	Boiler house supervisor	Check/Record
5	Inspect boiler feed-water pumps for leakages, correct functioning and bearing noises.	Boiler house supervisor	Check/Record
6	Clean exterior of boiler and keep boiler plant room clean.	Boiler house supervisor	Clean/Record
7	Check stoker grate tension and report to Contractor if need to be adjusted. Contractor to adjust tension in accordance with manufacturer's specification, if reported.	Boiler house supervisor and Contractor	Check/Record Adjust
8	Check stoker grate links and rods for any damages. All damages to be reported to Contractor who shall replace any damaged links or/and rods.	Boiler house supervisor and Contractor	Check/Record Repair
9	Complete log book actions as specified in FA 06, FA 12, FA 13, FA 14 and FA 15.	Boiler house supervisor	Check/Record
10	Test safety valves as described by the boiler manufacturer.	Contractor	Test/Record
11	Check the furnace draught gauge for correct operation in accordance with the manufacturer's specification.	Contractor	Check/Record
12	Inspect stoker brickwork and refractories and if found to be damaged it must be repaired.	Contractor	Check/Record

13	Lubricate all required lubrication points, including soot blowers, stoker drive shaft bearings, guillotine door and check stoker drive oil level.	Boiler house supervisor and Contractor	Check/Service/Record
14	Visual inspection of all boiler house equipment and installations for any pending defects, faults, etc.	Boiler house supervisor and Contractor	Check/Record
15	Inspect and test all control functions and readjust if necessary.	Contractor	Test/Record/Adjust
16	Clean out al strainers.	Contractor	Check/Service/Record
17	Inspect and test soot blowers for correct operation.	Contractor	Check/Record
18	Inspect all V-Belts and replace if necessary.	Contractor	Check/Record Replace
19	Inspect all brickwork and refractories and repair and/or replace where necessary.	Contractor	Check/Record/Repair
20	Inspect all seals and joints for leakages and replace if necessary.	Contractor	Check/Record Replace
21	All grease nipples to be greased with specified grease in accordance with equipment manufacturer's specification.	Contractor	Check/Service/Record
22	Test and analyse water quality, adjust and repair water treatment equipment if necessary and where specified, supply and deliver chemicals and salts.	Contractor and chemical supplier	Test/Record Adjust/Repair
23	Sample and analyse coal quality.	Boiler house supervisor, coal supplier and Contractor	Check/Record Test
24	Check ash removal implementation and report.	Boiler house supervisor, ash removal company and Contractor	Check/Record
25	Test and record boiler efficiency.	Boiler house supervisor and Contractor	Test/Record
26	Check coal conveying equipment for correct functioning and check for any visual faults or defects and repair if necessary.	Contractor	Check/Record/Repair
27	Inspect service, repair and replace where required all electrical equipment and installations.	Contractor	Test/Record Adjust/Repair
28	Inspect, service all steam and condensate piping and equipment.	Contractor	Test/Record Adjust/Repair
29	Lubricate ID and FD damper control units.	Contractor	Check/ Record Service
30	Replace ID and FD fan bearing grease.	Contractor	Check/ Record Service
31	Brush and clean fire tubes and clean flue, back plate, combustion chamber and remove all grit and soot deposits. Inspect and repair where necessary.	Contractor	Check/Record Service/Repair

32	Check boiler water side for scale deposits and clean and descale.	Contractor	Check/Record Service/Repair
33	Replace stoker gear box and drive oils.	Contractor	Check/Record Service/Repair
34	Check, inspect, service all coal conveying equipment and repair where necessary.	Contractor	Check/Record Service/Repair
35	Check, inspect service and repair if necessary grit collectors and chimney stacks.	Contractor	Check/Record Service/Repair
36	Inspect, repair and replace where necessary all lagging and cladding.	Contractor	Check/Record Service/Repair
37	Inspect stoker chassis, repair and replace as required.	Contractor	Check/Record Service/Repair
38	Fully test, inspect, service, adjust, repair and replace as required ID and FD dampers.	Contractor	Check/Record Service/Repair
39	Inspect, descale, clean out, repair and replace as required feed-water tanks.	Contractor	Check/Record Service/Repair

TABLE FA 17.02/2: ANNUAL ACTIONS AND MAINTENANCE

ITEM	MAINTENANCE DESCRIPTION	ACTION RESPONSIBILITY	ACTION
1	All as listed under table above	Boiler house supervisor and Contractor	Check/Record Adjust/Repair
2	Annual survey by Occupational, Health and Safety Inspector.	Contractor, Department and Inspector	Inspect/Test Service/Repair
3	Inspect and repaint all equipment and building elements where required.	Contractor	Inspect/Test Service/Repair
4	Inspect, clean, repair blow-down sump.	Contractor	Inspect/Test Service/Repair
5	Remove, strip, service, repair, adjust and repair level controls, alarms and safety equipment.	Contractor	Inspect/Test Service/Repair

FA 17.03 CORRECTIVE MAINTENANCE

Corrective maintenance of the installations, systems and equipment shall be done in accordance with Additional Specification SA: General Maintenance and the Particular Specification related to this work.

Contractor shall inspect and check all equipment, materials, systems and installations for any pending breakdowns, maladjustments or anomalies of equipment.

Contractor shall report and take actions to correct such defects.

.04 BREAKDOWN MAINTENANCE

Breakdown maintenance of the installations, systems and equipment shall be done in accordance with Additional Specification SA: General Maintenance.

All A breakdown problems experienced shall be acted upon within the time limitations allowed in the General Maintenance specifications.

All breakdown maintenance shall be done in accordance with the relevant specifications, standards, regulations and codes.

The Contractor shall have access to the necessary spares, equipment and tools for any possible breakdowns.

FA 17.05 OPERATIONS OF BOILERS

It is required in terms of this contract that the Department of Public Works and Infrastructure, in addition to the functions described above, takes over the running and operation of the complete boiler house including the removal and disposal of ash.

Occupational Health and Safety Act

It is required that the boilers be operated at all times strictly in accordance with the regulations and requirements of the Occupational Health and Safety Act (as amended). This covers i.e. the following:

- (1)The boiler operators shall be qualified to operate the boilers in terms of the Act.
- (2)The minimum number of operators required in terms of the regulations shall be adhered to at all times.
- (3)A comprehensive log book shall be kept of all operations carried out on the boilers.
- (4)All statutory tests and requirements shall be met and recorded.
- (5)It is essential that all boiler operators' must provide a boiler **Attendant/Operation certificate** from **accredited institution**. It is paramount that they have the right qualification to operate this type of equipment. (No other certificate will be taken to consideration)

Steam Quality and Availability

It is required that steam be produced and be available immediately upstream of all pressure reducing valves and steam using appliances that operate at boiler pressure at a pressure of 700 kPa gauge at all times. This may require that at times two of the three boilers per boiler house operate simultaneously in order to satisfy the steam draw-off requirements of the various appliances. It is estimated that the steam draw-off will amount to approximately 96 tones per day.

The current prison regime requires that steam be available for cooking purposes, laundry operation and domestic hot water production at least twenty fourth hours (24hrs) . After that the banking will however be done in accordance with the manufacturer's specifications at all times.

Change-over of Boilers

It will be required that the boilers in use be changed in accordance with the manufacturer's specifications in order that the steaming load be spread evenly between the boilers in each boiler house and to provide adequate time for routine maintenance, cleaning and repair (as may be required from time to time).

Maintenance and repair of the boilers shall be carried out as specified elsewhere in this document.

Coal Supply

The coal supply will be the responsibility of the client. The contractor must make sure that the right quality has been delivered. In case there is any deviation from required standard of material it is the responsibility of the contractor to advise the client within a reasonable time period.

Ash Removal

The contractor will be required to arrange for the regular removal of ash from the site. A suitable temporary ash storage space will be not provided by the User Client, but this may not be allowed to become over full resulting in ash being dispersed over the prison premises

Chemicals and Water Treatment

For this particular installation the contractor shall be responsible for providing the required quality and quantity of chemicals and salts to operate and maintain the coal-fired boilers for a period of his contract. The Contractor shall ensure that the boiler feed water supply to the boiler conforms to the following by providing the required water treatment.

Total dissolved solids 350 mg/litre (max)

Total alkalinity 350 to 700

Caustic alkalinity 350 mg/litre (max)

150 mg/litre (min)

Phosphate residual 30 to 60 mg/litre

Sulphate residual 30 to 50 mg/litre

Calcium hardness Zero

pH 10,5 to 11,4 mpling and analysing of feed water shall form part of the Contractor's preventative maintenance responsibilities. Monthly reports will be provided to the Technical Maintenance Manager stating test results and subsequent actions.

The chemicals and water treatment system shall comply in all respects with the specification FA 14 and the boiler manufacturer's requirements.

TECHNICAL SPECIFICATION

FB STEAM DISTRIBUTION INSTALLATIONS

FB 13 MAINTENANCE TO INSTALLATIONS, SYSTEMS AND EQUIPMENT

FB 13.01 GENERAL

Monthly maintenance responsibilities for each installation including all units and components as specified shall commence with access to the site. A difference shall be made in payment for the maintenance prior to and after practical completion of repair work.

Maintenance responsibilities of the completed installation shall commence upon the issue of a certificate of practical completion for repair work, and shall continue for the remainder of the 36-months contract period.

This part of the Contract shall include:

- (a) Routine preventative maintenance;
- (b) Corrective maintenance, and
- (c) Breakdown maintenance,

as defined in Additional Specification SA: General Maintenance, for the specified installations described under FB 01 of this specification.

The maintenance work to be performed and executed shall be done strictly in accordance with Additional Specification SA: General Maintenance, and as specified in Particular Specification PFB and this specification.

The said maintenance work shall be executed in accordance with the relevant codes of practice, statutory regulations, standards, regulations, municipal laws and by-laws and the manufacturers' specifications and codes of practice.

The maintenance schedules and frequency shall be developed under the maintenance control plan to be instituted by the Contractor, as specified in Additional Specification SA: General Maintenance.

All new equipment, components and materials supplied and installed under the maintenance contract shall be furnished with a prescribed manufactures guarantee.

The maintenance work and items are to be categorized by the Contractor for each maintenance activity under the following headings:

- (a) Steam piping installation
- (b) Condensate piping installation
- (c) Supports and bracketing
- (d) Lagging and cladding
- (e) Steam ancillary equipment
- (f) Condensate ancillary equipment
- (g) Condensate pumping systems
- (h) Electrical controls, panels and wiring.

The Contractor shall be remunerated monthly, based on his performance, for maintaining the complete installation in a perfect functional condition.

FB 13.02 ROUTINE PREVENTATIVE MAINTENANCE

The routine maintenance of the installations, systems and equipment shall be done in accordance with Additional Specification SA: General Maintenance and the Particular Specification related to this work.

The routine maintenance work to be performed and executed shall include, but not be limited to the items listed in tables FB 13.02/1, FB 13.02/2, FB 13.02/3 and FB 13.02/4 below under the respective headings. These actions and findings shall be logged and reported on the relevant approved schedules and reports

TABLE FB 13.02/1: ACTIONS AND MAINTENANCE

ITEM	MAINTENANCE DESCRIPTION	ACTION RESPONSIBILITY	ACTION
1	Inspect all steam and condensate installations for any visible defects, leaks, damages or/and pending faults.	Contractor	Check/Record
2	Check and record all pressure gauge readings and readjust equipment if necessary.	Contractor	Adjust/Check/Record
3	Check operation of condensate pumps and controls for correct functioning.	Contractor	Check/Record
4	Check steam trap arrangements for correct operation.	Contractor	Check/Record
5	Report any faults, defects, leaks, damages, etc, to Engineer.	User Client	Check/Record/Report
6	Blow down all dirt pockets and record.	Contractor	Service/Record
7	Clean out all strainers and record.	Contractor	Service/Record
8	Check all valve gland seals and packings for leaks and replace and repair if necessary.	Contractor	Check/Service/Repair/Record
9	Check, inspect and repair if necessary all expansion joints for leaks and damages.	Contractor	Check/Repair/Record
10	Check sight glasses and repair, clean and replace where necessary.	Contractor	Check/Service/Repair/Record
11	Check all safety devices for correct operation and repair and replace where necessary.	Contractor	Check/Service/Repair/Record
12	Check and test all electrical control functions and operations. Repair and report any faults and defects.	Contractor	Check/Service/Repair/Record

13	Complete logbook and report.	Contractor	Report
14	Service, repair, clean, replace seals, gaskets, reset and/or replace worn parts as directed by the manufacturer of all steam traps.	Contractor	Check/Service/Repair/Report
15	Service, repair, replace glasses and gaskets where necessary and clean all sight glasses.	Contractor	Check/Service, Repair, Report
16	Repair lagging and cladding where necessary.	Contractor	Check/Repair/Report
17	Repair all steam leaks.	Contractor	Check/Repair/Report
18	Clean out and repair all condensate tanks.	Contractor	Check/Service/Report
19	Test, inspect and repair all condensate pumps.	Contractor	Check/Service/Repair/Report
20	Lubricate all lubrication points in accordance with the manufacturer's specification.	Contractor	Check/Service/Report
21	Complete logbook and report.	Contractor	Report

TABLE FB 13.02/2: ANNUAL ACTIONS AND MAINTENANCE

ITEM	MAINTENANCE DESCRIPTION	ACTION RESPONSIBILITY	ACTION
1	All as listed under table above	User Client / Contractor	Check/Record/Adjust/Repair
2	Annual survey by inspector	Contractor, Department and Inspector	Inspect / Test / Service / Repair
3	Inspect and repaint all equipment where required.	Contractor	Inspect / Test / Service / Repair
4	Remove, strip, service, repair, adjust and replace where necessary all pressure control and safety valve equipment.	Contractor	Service / Repair / Adjust / Report
5	Complete logbook and report.	Contractor	Report

FB 13.03 CORRECTIVE MAINTENANCE

Corrective maintenance of the installations, systems and equipment shall be done in accordance with Additional Specification SA: General Maintenance and the Particular Specification related to this work.

Contractor shall inspect and check all equipment, materials, systems and installation for any pending breakdowns, maladjustments or anomalies of equipment.

Contractor shall report and take actions to correct such defects.

FB 13.04 **BREAKDOWN MAINTENANCE**

Breakdown maintenance of the installations, systems and equipment shall be done in accordance with Additional Specifications SA: General Maintenance.

Breakdown problems experienced shall be acted upon within the time limitations allowed in the General Maintenance specifications.

Breakdown maintenance shall be done in accordance with the relevant specifications, standards, regulations and codes.

Contractor shall have access to the necessary spares, equipment and tools for any possible breakdowns.

TECHNICAL DETAILS OF COAL- FIRED BOILERS

		BOILER NO:1	BOILER NO:2	BOILER NO:3
1	Manufacturer			
2	Model no			
3	Boiler no			
4	Registration certificate no			
5	Boiler type			
6	Design code			
7	Factory no			
8	Manufacturing date/ year			
9	Maximum continuous rating			
10	Design pressure rating			
11	Authorized working gauge pressure			
12	Normal operation pressure			
13	Safety blow-off pressure			
14	Test pressure			
15	FD fan model no			
16	Chain grade stoker			
17	FD fan power capacity			
18	Stoker pulling motor capacity			
19	ID fan power capacity			
20	Feed pump			
21	Feed pump power capacity			
22	Grit collector			
23	Chimney stack type			
24	Boiler control panel			
25	Level control			

PART NO	SCHEDULED PARTS FOR STEAM & CONDENSATE RETICULATION AND VARIOUS MECHANICAL EQUIPMENTS	UNIT	PROVISIONAL QUANTITIES	NEW PRICE 2024
1	15mm ball float valve	S	1	R
2	20mm ball float valve	S	1	R
3	25mm ball float valve	S	1	R
4	15 – 25 mm Steam barrel nipples	S	1	R
5	40 – 50 mm Steam barrel nipples	S	1	R
6	Armstrong 800 Steam trap repair kit: 4.27mm orifice	S	1	R
7	Armstrong 800 Steam trap gasket sets	S	1	R
8	15mm Spirax FT14 Steam traps	S	1	R
9	20mm FT14 Spirax Steam traps	S	1	R
10	25mm FT14 Spirax Steam traps	S	1	R
11	15 to 20mm Spirax Sarco sight glass window repair kits	S	1	R
12	15mm brass horns valves	S	1	R
13	20mm brass horns valves	S	1	R
14	25mm brass horns valves	S	1	R
15	32mm brass horns valves	S	1	R
16	15mm S'S trim globe valve 10 bar	S	1	R
17	20mm S'S trim globe valve 10 bar	S	1	R
18	25mm S'S trim globe valve 10 bar	S	1	R
19	15 – 25 mm cone face steam unions	S	1	R
20	15mm copper tubing, class 2 5.5m length	S	1	R
21	20mm copper tubing, class 2 5.5m length	S	1	R
22	25mm copper tubing, class 2 5.5m length	S	1	R
23	40mm copper tubing, class 2 5.5m length	S	1	R
24	50mm copper tubing, class 2 5.5m length	S	1	R
25	80mm copper tubing, class 2 6.5m length	S	1	R
26	15mm heavy duty steam pipe 6,1m length S40	S	1	R
27	20mm heavy duty steam pipe 6,1m length S40	S	1	R
28	25mm heavy duty steam pipe 6,1m length S40	S	1	R
29	40mm heavy duty steam pipe 6,1m length S40	S	1	R
30	50mm heavy duty steam pipe 6,1m length S40	S	1	R
31	80mm heavy duty steam pipe 6,1m length S40	S	1	R
32	Valve gland packing 12,5mm	S	1	R
33	Valve gland packing 10mm	S	1	R
34	Valve gland packing 6mm	S	1	R
35	Graphite pipe jointing compound; 5kg container	S	1	R
36	Rope packing; non asbestos; 40mm x 30mm	S	1	R
37	Rope packing; non asbestos; 25mm x 30mm	S	1	R
			Sub Total 1	R

PART NO	SCHEDULED PARTS	UNIT	PROVISIONAL QUANTITIES	NEW PRICE 2024
38	15mm flap type brass body non return valves	S	1	R
39	20mm flap type brass body non return valves	S	1	R
40	25mm flap type brass body non return valves	S	1	R
41	40mm flap type brass body non return valves	S	1	R
42	50mm flap type brass body non return valves	S	1	R
43	15mm steam strainers, brass body	S	1	R
44	20mm steam strainers, brass body	S	1	R
45	25mm steam strainers, brass body	S	1	R
46	40mm steam strainers, brass body	S	1	R
47	50mm steam strainers, brass body	S	1	R
48	Rope packing; non asbestos; 15mm x 30mm	S	1	R
49	Packing material: 1,5mm Graphite impregnated, wire reinforced sheet 1,2m x 2,4m x 1,5m	S	1	R
50	Packing material: 3mm Graphite impregnated, wire reinforced sheet	S	1	R
51	Valve gland packing 8mm	S	1	R
52	Paint: PWT TPA no 1 container	liter	1	R
53	Fibre glass wool sheeting rolls 50mm x 1,2m	S	1	R
54	Pressure Guage, 100mm dia, bottom entry x 10mm BSP thread, range 0 to 2000 KPA	S	1	R
55	10mm siphon tube	S	1	R
56	10mm cock valves	S	1	R
57	15mm TLV steam traps	S	1	R
58	20mm TLV steam traps	S	1	R
59	25mm TLV steam traps	S	1	R
60	Steam Separator 6"	S	1	R
61	Expansion Bellows 5"	S	1	R
62	Lagging preformed pipe section fiber glass ½"	S	1	R
63	Lagging preformed pipe section fiber glass ¾"	S	1	R
64	Lagging preformed pipe section fiber glass 1"	S	1	R
65	Lagging preformed pipe section fiber glass 1½"	S	1	R
66	½ " brass globe valves	S	1	R
67	¾" brass globe valves	S	1	R
68	1" brass globe valves	S	1	R
69	1 ½" brass globe valves	S	1	R
70	Lagging preformed pipe section fiber glass 1 ¾"	S	1	R
71	Lagging preformed pipe section fiber glass 2"	S	1	R
72	Lagging preformed pipe section fiber glass 2½"	S	1	R
73	Lagging preformed pipe section fiber glass 2 ¾"	S	1	R
74	Lagging preformed pipe section fiber glass 3"	S	1	R
75	Lagging preformed pipe section fiber glass 4"	S	1	R
76	Lagging preformed pipe section fiber glass 5"	S	1	R
77	Lagging preformed pipe section fiber glass 6"	S	1	R
			Sub Total 2	R

PART NO	SCHEDULED PARTS	UNIT	PROVISIONAL QUANTITIES	NEW PRICE 2024
78	Galvanized muffs ½"	S	1	R
79	Galvanized muffs ¾"	S	1	R
80	Galvanized muffs 1"	S	1	R
81	Galvanized muffs 1½"	S	1	R
82	Galvanized muffs 1¾"	S	1	R
83	Galvanized muffs 2"	S	1	R
84	Galvanized muffs 2½"	S	1	R
85	Galvanized muffs 2¾"	S	1	R
86	Galvanized muffs 3"	S	1	R
87	Galvanized muffs 4"	S	1	R
88	Galvanized muffs 5"	S	1	R
89	Galvanized muffs 6"	S	1	R
90	40mm conex straight connector	S	1	R
91	50mm conex straight connector	S	1	R
92	Gate valves ½"	S	1	R
93	Gate valves ¾"	S	1	R
94	Gate valves 1"	S	1	R
95	Gate valves 1 ½"	S	1	R
96	Gate valves 1 ¾"	S	1	R
97	Gate valve 2"	S	1	R
98	Gate valve 3"	S	1	R
99	Gate valve 4"	S	1	R
100	15mm cast steel body strainer	S	1	R
101	20mm cast steel body strainer	S	1	R
102	25mm cast steel body strainer	S	1	R
103	40mm cast steel body strainer	S	1	R
104	1/2 " brass angle globe valve	S	1	R
105	1½" brass globe valve	S	1	R
106	Temperature Thermometer Ispesl 0-120°C	S	1	R
107	Pressure relieve Bailey 323 2"	S	1	R
108	15mm pressure reducing valve 100-700 Kpa	S	1	R
109	Pressure reducing valves ¾" 100-700KPA	S	1	R
110	Circulating pump Moway	S	1	R
111	Condensate pump Mand B 40M0/75	S	1	R
112	Level switch Mobrey	S	1	R
113	Safety valve pull up type ¾"	S	1	R
114	Safety valve pull up type 1"	S	1	R
115	Central Heating radiators	S	1	R
116	Central Heating Pearch Cocks	S	1	R
			Sub Total 3	R

PART NO	SCHEDULED PARTS	UNIT	PROVISIONAL QUANTITIES	NEW PRICE 2024
117	15mm conex male adaptor	S	1	R
118	20mm conex male adaptor	S	1	R
119	25mm conex male adaptor	S	1	R
120	15mm conex straight connector	S	1	R
121	20mm conex straight connector	S	1	R
122	25mm conex straight connector	S	1	R
123	50mm cast steel globe valves	S	1	R
124	65mm cast steel globe valves	S	1	R
125	75mm cast steel globe valves	S	1	R
126	15mm cast steel pressure reducing valves	S	1	R
127	20mm cast steel pressure reducing valves	S	1	R
128	25mm cast steel pressure reducing valves	S	1	R
129	32mm cast steel pressure reducing valves	S	1	R
130	40mm cast steel pressure reducing valves	S	1	R
131	50mm cast steel pressure reducing valves	S	1	R
132	65mm cast steel pressure reducing valves	S	1	R
133	75mm cast steel pressure reducing valves	S	1	R
134	300 litre vertical calorifiers	S	1	R
135	500 litre vertical calorifiers	S	1	R
136	1000 litre vertical calorifiers	S	1	R
137	2000 litre vertical calorifiers	S	1	R
138	3000 litre vertical calorifiers	S	1	R
139	300 litre horizontal calorifiers	S	1	R
140	500 litre horizontal calorifiers	S	1	R
141	1000 litre horizontal calorifiers	S	1	R
142	2000 litre horizontal calorifiers	S	1	R
143	3000 litre horizontal calorifiers	S	1	R
144	Condensate pump Ebara CMA.075 T	S	1	R
145	Condensate pump Ebara CMA.100 T	S	1	R
146	Condensate pump Ebara CMA.200 T	S	1	R
147	15mm brass angle globe valves	S	1	R
148	20mm brass angle globe valves	S	1	R
149	25mm brass angle globe valves	S	1	R
			Sub Total 4	R

PART NO	SCHEDULED PARTS	UNIT	PROVISIONAL QUANTITIES	NEW PRICE 2024
150	15mm 90° BSP thread steam elbows	S	1	R
151	20mm 90° BSP thread steam elbows	S	1	R
152	25mm 90° BSP thread steam elbows	S	1	R
153	15mm 90° BSP thread steam bends	S	1	R
154	20mm 90° BSP thread steam bends	S	1	R
155	25mm 90° BSP thread steam bends	S	1	R
156	15mm 90° weld on black elbows	S	1	R
157	20mm 90° weld on black elbows	S	1	R
158	25mm 90° weld on black elbows	S	1	R
159	15mm 90° weld on black bends	S	1	R
160	20mm 90° weld on black bends	S	1	R
161	25mm 90° weld on black bends	S	1	R
162	Key Steel 6mm	S	1	R
163	Key steel 8 mm	S	1	R
164	Key steel 10mm	S	1	R
165	Key steel 12 mm	S	1	R
166	2.5mm mild steel welding rods	S	1	R
167	PTFE thread tape	p/roll	1	R
168	M6 – M12 x 50mm mild bolts and nuts	S	1	R
169	M14 – M20 x 50mm mild bolts and nuts	S	1	R
170	M6 – M12 x 100mm mild bolts and nuts	S	1	R
171	M14 – M20 x 100mm mild bolts and nuts	S	1	R
172	BSP thread reducing bushes 15-10mm	S	1	R
173	BSP thread reducing bushes 20-15mm	S	1	R
174	BSP thread reducing bushes 20-10mm	S	1	R
175	BSP thread reducing bushes 25-10mm	S	1	R
176	BSP thread reducing bushes 25-15mm	S	1	R
177	BSP thread reducing bushes 25-20mm	S	1	R
178	Square condensate tanks 300 litre	S	1	R
179	Square condensate tanks 500 litre	S	1	R
180	Square condensate tanks 1000 litre	S	1	R
181	Condensate tank level switches float type	S	1	R
182	Condensate tank level switches liquid level 3 probes	S	1	R
			Sub Total 5	R

PART NO	SCHEDULED PARTS FOR BOILERS	UNIT	PROVISIONAL QUANTITIES	NEW PRICE 2024
1	15mm copper tubing; class 2; 5.51m length	L	1	R
2	20mm copper tubing; class 2; 5.5m length	L	1	R
3	25mm copper tubing; class 2; 5.5m length	L	1	R
4	80mm copper tubing, class 2 5.5m length	L	1	R
5	50mm copper tubing, class 2 5.5m length	L	1	R
6	40mm copper tubing, class 2 5.5m length	L	1	R
7	15mm heavy duty steam pipe 6,1m length S40	L	1	R
8	20mm heavy duty steam pipe 6,1m length S40	L	1	R
9	25mm heavy duty steam pipe 6,1m length S40	L	1	R
10	Valve gland packing 12,5mm roll	Roll	1	R
11	Valve gland packing 10mm roll	Roll	1	R
12	Valve gland packing 6mm roll	Roll	1	R
13	Graphite pipe jointing compound 5kg container		1	R
14	PTFE thread sealing tape roll	Roll	1	R
15	Rope packing; non asbestos; 40mm x 30m roll	Roll	1	R
16	Rope packing; non asbestos; 25mm x 30m roll	Roll	1	R
17	Rope packing; non asbestos; 15mm x 30m roll	Roll	1	R
18	Manhole gaskets, spirally wound; 460mm x 340mm x 5mm thick x 32mm winding with	No	1	R
19	Side wall header gaskets, spirally wound; 125mm x 82mm x 5mm thick x 10mm winding width	No	1	R
20	Gland packing for Sulzer HCP 15-6½ boiler feed water pump; 6 packing per set	No	1	R
21	Lined webbing; non asbestos; rolls of 50mm x 6mm x 30m	Rolls	1	R
22	Packing material: graphite impregnated wire reinforced sheets, 1,2m x 2,4m x 1,5m	Sheet	1	R
23	Packing material: graphite impregnated, wire reinforced sheets 1,2m x 2,4m x 3,0m	Sheet	1	R
24	Acetylene 8,kg cylinder	Cylinder	1	R
25	Industrial quality Oxygen 11,5kg cylinder	Cylinder	1	R
26	Welding electrodes 2,5mm x 5kg	Kg	1	R
27	Welding electrodes 3,2mm x 5kg	Kg	1	R
28	Brazing rods 1,5mm x 5kg	Kg	1	R
29	Brazing rods 2,5mm x 5kg	Kg	1	R
30	Brazing flux 500g container	G	1	R
31	Silver solder 100g	G	1	R
32	Copper to copper gas welding rods	Kg	1	R
33	Gear box oil SAE 90 5 litre container	Litre	1	R
34	Motor oil SAE 30 5 litre container	Litre	1	R
35	Hydraulic oil CONDOR 310 20 litre containers	Litre	1	R
36	Paraffin 20 litre containers	Litre	1	R
37	General purpose grease 5kg containers	Kg	1	R
38	High temperature soot blower grease 15kg	Kg	1	R
39	Bolts, 6 - 8mm dia x 25mm long & nuts (HTS)	S	1	R
40	Bolts, 8mm dia x 40mm long & nuts (HTS)	S	1	R

			Sub Total 6	R
PART NO:	SCHEDULED PARTS	UNIT	PROVISI ONAL QUANTITI ES	NEW PRICE 2024
41	Bolts, 10mm dia x 25 - 50mm long & nuts (HTS)	S	1	R
42	Bolts, 12mm dia x 40 - 50mm long & nuts (HTS)	S	1	R
43	Bolts, 16mm dia x 40 - 65mm long & nuts (HTS)	S	1	R
44	Bolts, 16mm dia x 80 - 100mm long & nuts (HTS)	S	1	R
45	Bolts, 20mm dia x 50 - 100mm long & nuts (HTS)	S	1	R
46	Paint: PWT TPA no 1; 5 litre containers	litre	1	R
47	Refractory Mortar; 25kg bags (Refcast 50)	Kg	1	R
48	Fibre glass wool sheeting: 50mm x 1,2mm x 6m roll	Roll	1	R
49	Pressure recorder charts for Negretti and Zambra P/N 9D192X	S	1	R
50	Conveyor belting for ach conveyor 400mm wide x 12mm thick 3 ply	M	1	R
51	Troughing rollers for ash conveyor 177mm width x 100mm dia x 25mm shaft dia	S	1	R
52	Return rollers for ash conveyor 485mm width x 100mm dia x 25mm shaft dia	S	1	R
53	Idler rollers for ash conveyor 485mm width x 150mm dia x 25mm shaft dia	S	1	R
54	Compensating rollers for ash conveyor 485mm width x 150mm dia x 25mm shaft dia	S	1	R
55	Conveyor belting for coal conveyor 550mm wide x 12mm thick, 3 ply	M	1	R
56	Troughing rollers for coal conveyor 100mm width x 190mm dia x 20mm shaft dia	S	1	R
57	Return rollers for coal conveyor 100mm width x 535mm dia x 20mm shaft dia	S	1	R
58	Roller bearings: SKF 6311 ZZ	S	1	R
59	Roller bearings: SKF 6310 ZZ	S	1	R
60	Roller bearings: SKF 6306 ZZ	S	1	R
61	Roller bearings: SKF 6308 ZZ	S	1	R
62	Roller bearings; MJR 38mm shaft dia	S	1	R
63	Roller bearings; RM 11	S	1	R
64	Roller bearings; NTN 22211 W 33 K	S	1	R
65	Roller bearings; KOYO 22209 RWK 33	S	1	R
66	Roller bearings; KOYO 30215J	S	1	R
67	Roller bearings; SKF 6003	S	1	R
68	40mm steam Barrel nipples	S	1	R
69	50mm steam barrel nipples	S	1	R
70	15mm gate valves	S	1	R
71	20mm gate valves	S	1	R
72	25mm gate valves	S	1	R
73	40mm gate valves	S	1	R
74	50mm gate valves	S	1	R
75	15 stainless steel ball valves	S	1	R
76	20 stainless steel ball valves	S	1	R
77	25 stainless steel ball valves	S	1	R
78	15mm long radius 90° steam bend	S	1	R

79	20mm long radius 90° steam bend	S	1	R
80	25mm long radius 90° steam bend	S	1	R
			Sub Total 7	R
PART NO:	SCHEDULED PARTS	UNIT	PROVISI ONAL QUANTITI ES	NEW PRICE 2024
81	40mm long radius 90° steam bend	S	1	R
82	50mm long radius 90° steam bend	S	1	R
83	15mm C/C weldon Elbows	S	1	R
84	20mm C/C Weldon Elbows	S	1	R
85	25mm C/C Weldon Elbows	S	1	R
86	40mm C/C Weldon Elbows	S	1	R
87	50mm C/C Weldon Elbows	S	1	R
88	15mm C/C Weldon T pieces	S	1	R
89	20mm C/C Weldon T pieces	S	1	R
90	25mm C/C Weldon T pieces	S	1	R
91	40mm C/C Weldon T pieces	S	1	R
92	50mm C/C Weldon T pieces	S	1	R
93	15mm C/C Weldon straight connectors	S	1	R
94	20mm C/C Weldon straight connectors	S	1	R
95	25mm C/C Weldon straight connectors	S	1	R
96	45mm C/C Weldon straight connectors	S	1	R
97	50mm C/C Weldon straight connectors	S	1	R
98	25 to 15mm C/C Weldon reducing sockets	S	1	R
99	25 to 20mm C/C Weldon reducing sockets	S	1	R
100	15mm Spirax ft 14 ball float trap	S	1	R
101	20mm Spirax ft 14 ball float trap	S	1	R
102	25mm Spirax ft 14 ball float trap	S	1	R
103	15mm Armstrong 800 Inverted Bucket Trap	S	1	R
104	20mm Armstrong 800 Inverted Bucket Trap	S	1	R
105	20mm Armstrong 812 Inverted Bucket Trap	S	1	R
106	25mm Armstrong 812 Inverted Bucket Trap	S	1	R
107	15mm Steam strainer brass body	S	1	R
108	20mm Steam strainer brass body	S	1	R
109	25mm Steam strainer brass body	S	1	R
110	15mm Steam flap type Non return valve	S	1	R
111	20mm Steam flap type non return valve	S	1	R
112	25mm Steam flap type non return valve	S	1	R
113	40mm Steam flap type non return valve	S	1	R
114	50mm Steam flap type non return valve	S	1	R
115	15mm Sight glass 50mm single window brass body	S	1	R
116	20mm Sight glass 50mm single window brass body	S	1	R
117	25mm Sight glass 50mm single window brass body	S	1	R
118	15 – 20mm sight glass window repair kit	S	1	R
119	15mm cone face steam unions	S	1	R

120	20mm cone face steam unions	S	1	R
121	25mm cone face steam unions	S	1	R
122	40mm cone face steam unions	S	1	R
			Sub Total 8	R
PART NO:	SCHEDULED PARTS	UNIT	PROVISIONAL QUANTITIES	NEW PRICE 2024
123	50mm cone face steam unions	S	1	R
124	15mm S/S trim steam globe valve 1000 kPa	S	1	R
125	20mm S/S trim steam globe valve 1000 kPa	S	1	R
126	25mm S/S trim steam globe valve 1000 kPa	S	1	R
127	40mm S/S trim steam globe valve 1000 kPa	S	1	R
128	50mm S/S trim steam globe valve 1000 kPa	S	1	R
129	15 - 25mm steam barrel nipples	S	1	R
130	50 to 40mm C/C reducing sockets	S	1	R
131	40 to 25mm C/C reducing sockets	S	1	R
132	40mm Mobrey modulating control valves	S	1	R
133	40mm Mobrey modulating control valve overall kit	S	1	R
134	20mm Hornes valves	S	1	R
135	25mm Hornes valves	S	1	R
136	40mm Hornes valves	S	1	R
137	0-100°C 75mm face dial thermometer	S	1	R
138	0-100°C Angle poise thermometer	S	1	R
139	10mm BSP gauge cock	S	1	R
140	10mm Syphon tube	S	1	R
141	15mm Quarter turn valves (Boiler)	S	1	R
142	20mm Quarter turn valves (Boiler)	S	1	R
143	15mm Parallel slide valve (Boiler)	S	1	R
144	20mm Parallel slide valves (Boiler)	S	1	R
145	25mm Mobrey sequencing valves (Boiler)	S	1	R
146	Pressure gauge 100mm dia bottom entry x 10mm BSP thread range 0 to 2000 kPa	S	1	R
147	Nylatron Elevator Buckets Outside length 320mm width 180mm depth 130mm projection 165mm wall thickness 8mm approx weight 1,13kg approx capacity 4,50 litre	S	1	R
148	Coal screws flight pitch 150mm x 14m	S	1	R
149	Gear box for 2.5kW 380 Volt 3PH Motor	S	1	R
150	Motor 2.5kW 380 Volt 3PH	S	1	R
151	Cross feed flight pitch 200mm x 17m	S	1	R
152	Gear box make ISQ 206118, Type VF130AP13285 Ratio 30MTGB3	S	1	R
153	Motor 5.5kw 380 Volt 3PH	S	1	R
154	Feed water pumps Grundfos Model no. A96501222P31233 Serial no. CR10-16A-FJ-A-E-HQQE	S	1	R
155	Feed water pumps stork MCH 14A-7	S	1	R
156	Elevator belt buckets 150 x 115 x 85mm	S	1	R
157	Guillotine door cables 6mm x 450mm	S	1	R

158	Bearings FJU210 flanges	S	1	R
159	V belts SPZ1600	S	1	R
160	V belts 16 N x 3170	S	1	R
161	20mm gauge column glass tubes	S	1	R
			Sub Total 9	R
PART NO:	SCHEDULED PARTS	UNIT	PROVISI ONAL QUANTITI ES	NEW PRICE 2024
162	20mm gauge column glass tube cone rubbers	S	1	R
163	Horns valves ¾"	S	1	R
164	Front end gasket	S	1	R
165	Rear end gasket	S	1	R
166	50mm cast steel straight globe valve	S	1	R
167	40MM blow down valve	S	1	R
168	Grit trolley	S	1	R
169	Fuel trim 73/6000 (151294/151309POT+KNOB) JT	S	1	R
170	Water Mert Kent WP4000 2" (SENS 1566131)	S	1	R
171	Condensate meter Meinecke WPD 50 2"	S	1	R
172	Ware Control valve Bernad 0276000	S	1	R
173	Level switch Mobrey	S	1	R
174	Rope packing; non asbestos; 15mm x 30mm	S	1	R
175	Manhole gaskets, spirally wound; 405mm x 305mm x 5mm thick x 32mm winding width	S	1	R
176	Lined webbing, non asbestos; 50mm x 6mm x 30mm	S	1	R
177	Packing material: 1,5mm Graphite impregnated, wire reinforced sheet 1,2m x 2,4m x 1,5m	S	1	R
178	Packing material: 3mm Graphite impregnated, wire reinforced sheet	S	1	R
19	Paint: PWT TPA no 1 container	S	1	R
180	Refractory mortar; (Refcast 50)	S	1	R
181	Fibre glass wool sheeting rolls 50mm x 1,2m	S	1	R
182	Conveyor belting for ash elevator 200mm wide x 10mm thick-3py	S	1	R
183	Parts for: Mark 4 Stoker for the boilers	S		
184	Stoker mat common links	S	1	R
185	Stoker mat drive links	S	1	R
186	Stoker mat drive sprockets	S	1	R
187	Stoker roller	S	1	R
188	Stoker links rods	S	1	R
189	Carbo-frax blocks	S	1	R
190	Carbo-frax blocks supports	S	1	R
191	Carbo-frax end blocks	S	1	R
192	Carbo-frax distant pieces	S	1	R
193	Washers 14mm	S	1	R
194	3mm split pins	S	1	R
195	Guillotine door 1050 x 300 x 90	S	1	R
196	Feed water pump Calpido CP3KW 5.8 amp 380 Volt	S	1	R
197	Ash extractor frame complete	S	1	R

198	5 groove pulleys	S	1	R
199	Mobrey control valve PC board Type 86436	S	1	R
200	Level switch Mobrey	S	1	R
201	Sauter electric motor IP 55 ID	S	1	R
202	FD electrical motor (SMM) Squirrel cage 3 phase TEFC D1325 5,5KW	S	1	R
			Sub Total 10	R
PART NO:	SCHEDULED PARTS	UNIT	PROVISI ONAL QUANTITI ES	NEW PRICE 2024
203	Stoker electrical motor R47 DT 80K4 0,55 KW	S	1	R
204	ID fan electrical motor AFMAC model 6312 30KW	S	1	R
205	Feed pump electrical motor hawker sidely DF 160 MP 15KW 80C rise 3 phase	S	1	R
206	Feed Pump electrical motor WEG 160M 15KW 3 phase	S	1	R
207	Feed pump electrical motor Siemens K4 95503 15KW 3 phase	S	1	R
208	Electrical motor 0,75 KW 3 phase RPM 2850 230-240 volts	S	1	R
209	Electrical motor Moway CMC075T 0,55KW 0,75HP RPM2800	S	1	R
210	Electrical motor Ebara CMAR-00T 0,75KW RPM2850 1,0HP	S	1	R
211	Bearings SKF 6208	S	1	R
212	Bearings 630903/2	S	1	R
213	Steam Separator 6"	S	1	R
214	Expansion Bellows 5" single	S	1	R
215	expansion bellows5" double	s	1	R
216	Grit trolley	S	1	R
217	Fuel trim 73/6000	S	1	R
218	Water Mert Kent WP4000 2"	S	1	R
219	Condensate meter Meinecke WPD 50 2"	S	1	R
220	Ware Control valve Bernad 0276000	S	1	R
			Sub Total 11	R

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WATER TREATMENT- PARTS AND MATERIALS PRICE SCHEDULE

1.1 All items scheduled on the price list must be completed in full.

PART NO	SCHEDULED PARTS	UNIT	PROVISIONAL QUANTITIES	NEW RATES 2024
1	Replacement exchange resin	Litre	1	R
2	Testing of water softener resin	S	1	R
3	Replacement filtration media	Per m³	1	R
4	Internal sand blasting for metal softeners	Per kg	1	R
5	Corrosion protection for metal softeners	Per litre	1	R
6	Replacement nossels 50mm dia PVC pipe	Per m	1	R
7	Iron contamination protection for a sodium on exchange resin bed	Per litre	1	R
8	Test kit	S	1	R
9	Yes/No tablets	Per 250	1	R
10	TDS meter	S	1	R
11	Accuracy test solution for TDS meter	Per litre	1	R
12	Auto duplex head for water softener 300 litre / 120 x 5	S	1	R
13	Auto duplex head for water softener 1500 litre	S	1	R
14	Auto duplex head service pack 300 litre / 150 x 5	S	1	R
15	Auto duplex head service pack	S	1	R
16	Auto duplex head service pack 1500 litre	S	1	R
17	Auto duplex head timer drive motor 300 litre	S	1	R
18	Auto duplex head timer drive motor 400 litre to 600 litre	S	1	R
19	Auto duplex head timer drive motor 800 litre and larger	S	1	R
20	Water softener vessel 300 litre	S	1	R
21	Water softener vessels 400 litre to 600 litre	S	1	R
22	Water softener pre filter 32mm	S	1	R
23	Water softener pre filter cartridge 32mm	S	1	R
24	Water softener pre filter 40mm	S	1	R
25	Water softener pre filter cartridge 40mm	S	1	R
26	Water softener pre filter 50mm	S	1	R
27	Water softener pre filter cartridge 50mm	S	1	R
28	Brine tank for 300 litre -1500 litre polorylean	S	1	R
29	Calibration of an existing water meter	S	1	R
30	Water meter 32mm	S	1	R
31	Water meter 40mm	S	1	R
			Sub Total 12	R

PART NO	SCHEDULED PARTS	UNIT	PROVISIONAL QUANTITIES	NEW RATES 2024
32	Water meter 50mm	S	1	R
33	Water meter 65mm	S	1	R
34	Water meter 80mm	S	1	R
35	Condensate meter 32mm	S	1	R
36	Condensate meter 40mm	S	1	R
37	Condensate meter 50mm	S	1	R
38	Condensate meter 80mm	S	1	R
39	Galvanized piping 15mm	per meter	1	R
40	Galvanized piping 20mm	per meter	1	R
41	Galvanized piping 25mm	per meter	1	R
42	Galvanized piping 32mm	per meter	1	R
43	Galvanized piping 40mm	per meter	1	R
44	Galvanized piping 50mm	per meter	1	R
45	Galvanized piping 65mm	per meter	1	R
46	Galvanized piping 80mm	per meter	1	R
47	Galvanized piping 100mm	per meter	1	R
48	Galvanized elbow 15 - 25mm	S	1	R
49	Galvanized elbow 32 - 65mm	S	1	R
50	Galvanized elbow 80mm	S	1	R
51	Galvanized elbow 100mm	S	1	R
52	Galvanized socket 15 - 25mm	S	1	R
53	Galvanized socket 32 - 40mm	S	1	R
54	Galvanized socket 50mm	S	1	R
55	Galvanized socket 65mm	S	1	R
56	Galvanized socket 80mm	S	1	R
57	Galvanized socket 100mm	S	1	R
58	Galvanized nipple 15 - 40mm	S	1	R
59	Galvanized nipple 50mm	S	1	R
60	Galvanized nipple 65mm	S	1	R
61	Galvanized nipple 80mm	S	1	R
62	Galvanized nipple 100mm	S	1	R
63	Galvanized union 15 - 25mm	S	1	R
64	Galvanized union 32mm	S	1	R
65	Galvanized union 40mm	S	1	R
66	Galvanized union 50mm	S	1	R
67	Galvanized union 65mm	S	1	R
68	PTFE tape	S	1	R
69	PVC piping 15 - 25mm	per meter	1	R
70	PVC piping 32 - 40mm	per meter	1	R
			Sub Total 13	R

PART NO	SCHEDULED PARTS	UNIT	PROVISIONAL QUANTITIES	NEW RATES 2024
71	PVC piping 50mm	per meter	1	R
72	PVC piping 65mm	per meter	1	R
73	PVC piping 80mm	per meter	1	R
74	PVC piping 100mm	per meter	1	R
75	PVC elbow 15 - 25mm	S	1	R
76	PVC elbow 32 - 40mm	S	1	R
77	PVC elbow 50mm	S	1	R
78	PVC elbow 65mm	S	1	R
79	PVC elbow 80mm	S	1	R
80	PVC elbow 100mm	S	1	R
81	PVC sockets 15 - 25mm	S	1	R
82	PVC sockets 32 - 40mm	S	1	R
83	PVC socket 50mm	S	1	R
84	PVC socket 65mm	S	1	R
85	PVC socket 80mm	S	1	R
86	PVC socket 100mm	S	1	R
87	PVC to steel connector 15 - 25mm	S	1	R
88	PVC to steel connector 32 - 40mm	S	1	R
89	PVC to steel connector 50mm	S	1	R
90	PVC to steel connector 65mm	S	1	R
91	PVC to steel connector 80mm	S	1	R
92	PVC to steel connector 100mm	S	1	R
93	PVC Glue	500ml	1	R
94	Chemical dosing pump	S	1	R
95	Chemical containers – 54 litre	S	1	R
96	Chemical containers – 70 litre	S	1	R
97	Chemical containers – 120 litre	S	1	R
98	Chemical containers – 230 litre	S	1	R
99	Boiler PWT No 1 paint	5 litres	1	R
100	Salt	50 kg	1	R
101	Manhole gaskets on boilers	S	1	R
102	Handhole gaskets	S	1	R
103	Rates to treat boiler make up water	Per cub meter	1	R
104	Rates to treat condensate return	Per cub meter	1	R
105	Independent testing for condensate water as per part 3 (Sanas approved)	S	1	R
106	Independent testing for renal dialysis water (Sanas approved)	S	1	R
107	Independent testing for water storage tanks (Sanas approved)	S	1	R

108	RO membrane BW 30-4040	S	1	R
109	RO membrane BW 30-2540	S	1	R
			Sub Total 14	R

PART NO	SCHEDULED PARTS	UNIT	PROVISIONAL QUANTITIES	NEW RATES 2024
110	Vent filters micro cell point 2	S	1	R
111	Cabon filter Coconut base cabon for removal of microbologocal contamination	per kg	1	R
112	UV lights 4 - 6 Watt	S	1	R
113	UV ligts 8 - 10 Watt	S	1	R
114	UV lights 20 30 Watt	S	1	R
115	UV lights 40 Watt	S	1	R
116	UV lights 85 Watt	S	1	R
117	Renal Dialysis monthly inspections, test replacement of filters and water analyse reports- labour only	S	1	R
118	3 monthly CIP wash out inspections testing replacement of filters and water analyse reports - chemicals and labour RO's only	S	1	R
119	3 monthly CIP wash out inspections testing replacement of filters and water analyse reports - chemicals and labour LOUP only	S	1	R
120	Calibration of all systems water pressures and analitical equipment PLC's, HP, water levels, gauges and loop pressures - all on site calibrations on equipment, certificates and reports	S	1	R
	LABOUR			
121	Artisan	p/h	1	R
122	Artisan Assistant	p/h	1	R
123	Transport can only be calculated from Church Square to the site	p/km	1	R
			Sub Total 15	R

SUMMARY PAGE

BID FOR ZONDERWATER PRISON: SERVICE, REPAIR AND MAINTENANCE OF COAL FIRED BOILERS AND ALL STEAM RELATED GENERATION COMPONENTS FOR THE PERIOD OF 12 MONTHS

The total tender price for this service must include all labour and material required for the proper execution of the work and shall be carried over to the Tender Form which must be returned together with this document.

Amount for Sub Total 1 R _____

Amount for Sub Total 2 R _____

Amount for Sub Total 3 R _____

Amount for Sub Total 4 R _____

Amount for Sub Total 5 R _____

Amount for Sub Total 6 R _____

Amount for Sub Total 7 R _____

Amount for Sub Total 8 R _____

Amount for Sub Total 9 R _____

Amount for Sub Total 10 R _____

Amount for Sub Total 11 R _____

Amount for Sub Total 12 R _____

Amount for Sub Total 13 R _____

Amount for Sub Total 14 R _____

Amount for Sub Total 15 R _____

Sub Total R _____

Value-added Tax (VAT) R _____

TOTAL R _____

TENDERER'S SIGNATURE: _____

ADDRESS: _____

DATE: _____

PRICED SPECIFICATION:

A priced specification must be submitted with the tender documents.

ANNEXURE A

PREVENTATIVE MAINTENANCE SERVICE

SCHEDULE AND CHECK LIST FOR

BID FOR ZONDERWATER PRISON: SERVICE, REPAIR AND MAINTENANCE OF COAL FIRED BOILERS AND ALL STEAM RELATED GENERATION COMPONENTS FOR THE PERIOD OF 12 MONTHS

- | | |
|---|-----------|
| 1. Check pump, electrical control motor and bearings for wear and noise | [] |
| 2. Check all leaks, gladding, and dirt on the boiler | [] |
| 3. Check all electrical connection | [] |
| 4. Check FD & ID fans with V-belts and adjust to correct tension | [] |
| 5. Check water level on the gage glass column | [] |
| 6. Check the condition of chain grate stoker /coal screw | [] |
| 7. Check for the steam leakages from steam pipes | [] |
| 8. Check all safety valves for 100% operation | [] |
| 9. Check the mobrey valve float is 100% operation | [] |
| 10. Check block fired tubes | [] |
| 11. Check pressure release valve whether it still locks and open at the required pressure | |
| 12. Check coal soot blower-whether dirty or clean | [] |
| 13. Check the rate at which the CO2 is exhausted | [] |
| 14. Check the condition of the boiler drain valve | [] |
| 15. All defective equipment shall be recorded and reported to the client | [] |
| 16. Check the control panel | [] |
| 17. Check all loose connection. | [] |
| 18. Check the hourly log book (record book) | [] |
| 19. Check the condition of the gearbox which controls the stoker. | [] |
| 20. Check the chain grate stoker/coal screw speed. | [] |
| 21. Check the condition of the exhausted through the chimney. | [] |
| 22. Check the type of coal used. | [] |

22. Check the rate at which the coal is delivered into the boiler.

[]

REMARKS

NOTE:

All minor and incidental repairs such as the replacement of nuts, bolts, washers, self tapping screws, pop rivets etc. shall form part of the service. The Contractor shall allow for such repairs, (material and labour cost), in his price for servicing.

CONTRACTORS SIGNATURE

DATE: _____

CLIENT DEPARTMENT SIGNATURE

DATE: _____

STAMP

ANNEXURE B**PREVENTATIVE MAINTENANCE SERVICE****SCHEDULE AND CHECK LIST****FOR**

BID FOR ZONDERWATER PRISON: SERVICE, REPAIR AND MAINTENANCE OF COAL FIRED BOILERS AND ALL STEAM RELATED GENERATION COMPONENTS FOR THE PERIOD OF 12 MONTHS

- | | |
|---|---------|
| 1. Check dirt and cladding. | [] |
| 2. Check the delivery pressure (hot or warm water) | [] |
| 3. Check the steam pressure to the calorifier | [] |
| 4. Check the warm water temperature from the calorifier | [] |
| 5. Check the pressure release valve | [] |
| 6. Check the water feed pump | [] |
| 7. Check the hot water circulation pump | [] |
| 8. Check steam and water pipes leaking | [] |
| 9. Check bracket and the lagging on the pipes | [] |
| 10. Check the steam trap. | [] |
| 11. Check sight glass | [] |
| 12. Check steam valve | [] |
| 13. Check the non return valve | [] |
| 14. Check the strainers | [] |

REMARKS _____

NOTE:

All minor and incidental repairs such as the replacement of nuts, bolts, washers, self tapping screws, pop rivets etc. shall form part of the service. The Contractor shall allow for such repairs, (material and labour cost), in his price for servicing.

CONTRACTORS SIGNATURE

CLIENT DEPARTMENT SIGNATURE