

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



**BID  
FOR  
BAVIAANSPOORT 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                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CIDB Contractor grading designation required</b> | Grade 2ME or higher                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Experience required</b>                          | 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.<br>Please attach the following on a client letter head, contactable references and client stamp:<br><ol style="list-style-type: none"><li>1. copy of purchase order /appointment letter/confirmation letter</li><li>2. Completion letter / certificate</li></ol> |
| <b>Labour Compliance</b>                            | Letter of Good Standing                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Value for Money</b>                              | 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.                                                                                                                                                                                                                                                                                |
|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

**TECHNICAL DETAILS OF COAL- FIRED BOILERS**

|    |                                   | <b>BOILER NO:1</b> | <b>BOILER NO:2</b> | <b>BOILER NO:3</b> |
|----|-----------------------------------|--------------------|--------------------|--------------------|
| 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                     |                    |                    |                    |

**NB.: Details of the boiler shall be taken by the service provider during compulsory site inspection / briefing. Failure to comply with the criteria stated above shall result in the quotation offer being disqualified for further consideration.**

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 **Baviaanspoort Prison**.

10. **SECURITY CHECK ON PERSONNEL**

The **Department of Correctional Services (Baviaanspoort)** 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 **Baviaanspoort 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 cause 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 <sub>2</sub> content of exhaust with CO <sub>2</sub> 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<br>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<br>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 all 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 |

**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 65.5m 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              |
|         |                                                                                       |      | <b>Sub Total 1</b>     | <b>R</b>       |

| 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                                                          | litre | 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              |
|         |                                                                                        |       | <b>Sub Total 2</b>     | 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              |
|         |                                          |      | <b>Sub Total 4</b>     | <b>R</b>       |

| 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              |
|         |                                                      |        | <b>Sub Total 5</b>     | <b>R</b>       |

| 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              |
|         |                                                                                         |          | <b>Sub Total 6</b>     | <b>R</b>       |

| PART NO: | SCHEDULED PARTS                                                                | UNIT  | PROVISIONAL QUANTITIES | 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              |
|          |                                                                                |       | <b>Sub Total 7</b>     | R              |

| PART NO: | SCHEDULED PARTS                                | UNIT | PROVISIONAL QUANTITIES | 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              |
|          |                                                |      | <b>Sub Total 8</b>     | 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              |
|          |                                                                                                                                                            |      | <b>Sub Total 9</b>     | R              |

| PART NO: | SCHEDULED PARTS                                                                        | UNIT | PROVISIONAL QUANTITIES | 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      | Sautor electric motor IP 55 ID                                                         | S    | 1                      | R              |
| 202      | FD electrical motor (SMM) Squirrel cage 3 phase TEFC D1325 5,5KW                       | S    | 1                      | R              |
|          |                                                                                        |      | <b>Sub Total 10</b>    | R              |

| PART NO: | SCHEDULED PARTS                                                          | UNIT | PROVISIONAL QUANTITIES | 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              |
|          |                                                                          |      | <b>Sub Total 11</b>    | 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 PRICE 2024 |
|---------|------------------------------------------------------------------|--------------------|------------------------|----------------|
| 1       | Replacement exchange resin                                       | Lire               | 1                      | R              |
| 2       | Testing of water softener resin                                  | S                  | 1                      | R              |
| 3       | Replacement filtration media                                     | Per m <sup>3</sup> | 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              |
|         |                                                                  |                    | <b>Sub Total 12</b>    | R              |

| PART NO | SCHEDULED PARTS             | UNIT      | PROVISIONAL<br>QUANTITIES | NEW PRICE<br>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                 |
|         |                             |           | <b>Sub Total 13</b>       | R                 |

| PART NO | SCHEDULED PARTS                                                         | UNIT          | PROVISIONAL QUANTITIES | NEW PRICE 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              |
|         |                                                                         |               | <b>Sub Total 14</b>    | R              |

| PART NO | SCHEDULED PARTS                                                                                                                                                                          | UNIT   | PROVISIONAL QUANTITIES | NEW PRICE 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              |
|         | <b>LABOUR</b>                                                                                                                                                                            |        |                        |                |
| 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              |
|         |                                                                                                                                                                                          |        | <b>Sub Total 15</b>    | R              |

**SUMMARY PAGE**

**BID FOR BAVIAANSPOORT 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 BAVIAANSPOORT 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 stocker /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

**SCHEDULE AND CHECK LIST****FOR****BID FOR BAVIAANSPOORT 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