



Electro Precipitator Plant Scope of Work

**Duvha Power Station
Emissions**

**Title: Refurbishment, supply and delivery
of Electro Precipitator Hammers at
Duvha Power Station.**

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1. Contract Objectives

- The purpose of this contract is to ensure availability of quality and correct spares at Eskom Duvha power station.
- To establish an effective and efficient maintenance and repair process for ESP Hammers.
- Procurement lead times will be shortened by a draw off directly against a contract, instead of following the procurement process.

The parties are committed to the following:

- Continuous improvement of Plant performance
- Retention of critical skills.
- Cost Efficiency
- Safety (Zero harm policy)

2. Detailed Scope of work

The hammers and all its components are to be made of mild steel material.

The contractor will refurbish and supply two types of hammers, the wire rapper and plate rapper hammers. The rest of the spares are required to repair the damaged hammers that the contract will keep on their site for repairs.

The following list is for the refurbishment and supply of hammers and components required for repairs:

Hammer	Stock number		
Wire rapper hammer	53506		
Hammer head	n/a		
Flat bar 50x8x310	n/a		
Flat bar 50x8x55	n/a		
Washer	n/a		
Carrier bolt	n/a		
Bolts, nuts and washer	n/a		
Clip connection	n/a		
Rivet	n/a		

Bush	n/a		
Paint	Red oxide		
Plate rapper hammer	53507		
Hammer head	n/a		
Flat bar 50x8x310	n/a		
Washer	n/a		
Carrier bolt	n/a		
Bolts, nuts and washer	n/a		
Clip connection	n/a		
Rivet	n/a		
Bush	n/a		
Paint	Red oxide		

The scope of work includes:

- Transporting of the damaged/failed hammers within 24 hours after removal notification from the Duvha representative, in a safely and securely by the Contractor
- Test to be in accordance with the instruction as per Duvha requirements prior to strip down.
- Strip and inspect Hammer as outlined and within the limits of the component/operation price time schedule (See price list)
- Compile inspection report listing all the parts with condition and also if needed to be replaced or refurbished as outlined and within the limits of the component/operation price time schedule
- All parts to be marked with a unique job/project number and small parts to be stored in a suitable container also marked with the unique job/project number
- All parts/stripped components to be stored in a manner not to incur environmental / accidental damaged
- Submit scope of work based on inspection report and QCP to the Duvha representative for acceptance and signatures and approval to start work.
- Submit comprehensive quotation with referenced unique job/project number to Duvha representative for acceptance

- Submit comprehensive time schedule to the Service Manager for approval
- Hammers to be repaired according to the agreed scope of work
- Assembling of hammers and adhering to the hold points on the QCP which must be communicated in writing 72 hours prior to this event. Contact the Duvha representative when required
- The Service Manager or his delegate accepts the Hammers and signs off the QCP before the Hammers leave the Contractor's premises unless instructed otherwise.
- The data pack shall be submitted to Duvha power station within seven days of the delivery of the Hammers to the station
- The Hammers to be transported safely and securely to Duvha power station by Contractor
- The Contractor shall supply engineering services as and when required
- The Contractor shall supply training as and when required
- The Contractor to do material analysis as and when required.
- The supply of hammer components as on price list to Duvha main stores as per request with relevant certificates.
- The contractor may be required to come to site and give maintenance recommendations as and when required.

3. Work to be performed by the Contractor on the Affected Property (deliverables)

3.1 Emergency work

- The Service Manager may declare an emergency, the Contractor shall work on a 24 hours basis to clear the emergency
- Engineering inputs are required during deviations from planned reconditioning procedures

3.2 Other Services, Equipment, and Things supplied by the Contractor

As agreed with the Service Manager from time to time

3.3 Spares Management

- The Contractor maintains, at his premises on a consignment stock basis, the necessary quantity of spares required to refurbish or repair the hammer in his works, timeously.

- This will help the contractor meet emergency orders without delays.

3.4 Quality Assurance

The Contractor complies with the Employer's quality requirements, and all site regulations issued by the Employer

Modification requirements are to be clarified with the Employer's engineering department, and designed, implemented and commissioned, to the relevant system engineer's requirements

The Contractor provides the complete QA&QC documentation including that of his Subcontractor(s), for all Plant , Material and Equipment, in compliance with SANS 9001:2000 Edition 3, "Quality management systems-requirements", and the Employer's standard GGS 0462 Rev 0 "Quality requirements for engineering and construction workers" The Contractor provides generic QCP for approval to be used as a guide. The agreed QCP will be used in specific tasks

4.5 Environmental

All work complies with the relevant environmental regulations as required.

5.6 Project meetings

From the Contractor starting date progress meetings with the Service Manager or his delegates will be conducted on a regular basis or such frequency as is deemed appropriate and mutually agreed with the Contractor

The Service Manager or his delegates schedules meetings to discuss and resolve any technical or commercial matters on an as required basis. These may include changes in production environment and / or requirements.

4. Work and things supplied by the Employer for the Affect Property

4.1 General

The contractor will supply all spares required to repair the hammers.

4.2 Inspection Authority

When applicable the Employer will appoint an approval Inspection Authority for the Affected Property.

5. Program and Planning

The Contractor adheres to the agreed programmes submitted to the Service Manager

The Contractor adheres to the Employer's maintenance planning system. The Contractor supplies information to the Service Manager which allows the Service Manager to update the planning system. This information is submitted on a monthly

basis per repair activity. During emergency breakdowns the information is submitted on a daily/weekly basis or other period as agreed.

Using the work break structure, the Contractor develops a network structure / programme. This is in the form of a Gantt chart, based on precedence network principles, in which all the activities present in the work breakdown structure (to minimum third level) is shown together with network logic. This network is constructed to reflect the sequence(s) of activities, using subsequent resource scheduling to stagger the activities into the most probable sequence. The Contractor gives a single time estimate for the duration of each activity.

All contractual dates are integrated into the Contractors programme. The programme includes the activities performed by Subcontractor(s), the interface points between different Subcontractor's work, the Employer's operations, the work of Others as well as the interface points between the Contractor's work and the individual Subcontractor's work.

6. Requirements for Inspection report:

- After inspections, report all the defects and provide a brief Inspection report (with Company letterhead) for each unit inspected to the Contract supervisor overview.
- The Contractor must supply a failure report for all major components.

7. Detailed plan for inspection activities:

- During inspections the supplier will be required to provide additional resources for the duration of the opportunity, these resources will be required to carry out inspections on a 24 hour basis.
- The *Contractor* will be informed of upcoming opportunity and the duration thereof, the *Contractor* is then required to plan for resources according to the scope of work and duration and provide a program for each short maintenance outage.
- Requirements for the program are:
 - Bar Chart indicating daily time scale.
 - The starting date and the completion date.
 - All non-working days
 - A method statement for each operation identifying the Equipment and other resources which the Contractor plans to use.
 - All interfaces required from the Employer and others.
 - Provisions for float and time risk allowance.
 - The dates when the Contractor will need access to a part of the site, acceptance, Plant and Material and other things to be provided by the Employer.

- In addition to the above information the *Contractor* shows the following information on each revised program:
 - The actual progress achieved as well as the forecast for the remaining work.
 - How the *Contractor* plans to deal with any delays and to correct notified *Defects*.
- The *Contractor* submits a revised program to the *Employer* for acceptance within one day after a change to the program has occurred
 - Providing QC updates and review progress
 - Preparing and completion of quality control plans
 - Ensuring compliance to the Eskom Supplier Contract Quality Requirements Specification (QM58)
 - Perform plant inspections, identify defects and initiate corrective actions and recommendations in the Inspection report.

8. Interpretation and terminology

Abbreviation	Meaning given to the abbreviation
ESP	Electro Static Precipitators
ECSA	Engineering Council of South Africa
PM	Planned maintenance
QCP	Quality control Package