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	Specification	Kusile Power Station
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Title: **Kusile Power Station Scope of Work for the Supply and Installation of Maintenance Ancillary Services Workshop Tools, Equipment and Machines**

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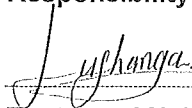

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1. Introduction

Kusile Power Station Management has decided to partner with a suitably qualified supplier on procurement and installation of essential workshop tools, equipment, and machines to support the ongoing maintenance and operational efficiency of the units. This document will outline the detailed specifications and requirements for the tools, equipment, and machinery to be acquired for Maintenance Ancillary Services (MAS) workshops for uninterrupted power generation.

2. Supporting Clauses

2.1 Scope

The scope of work (SOW) provides a comprehensive detail on types, standard, and configurations of tools and equipment essential for sustaining the station's high performance. The scope included here does not substitute procurement procedures that will be followed during the procurement process.

2.1.1 Purpose

The purpose of this document is to provide the detailed requirements and specifications necessary for the procurement and installation of tools, equipment, and machinery for the proposed contract at Kusile Power Station.

2.1.2 Applicability

This document is applicable to Kusile Power Station.

2.1.3 Effective date

This document shall be effective from the date of authorisation as indicated on the cover page.

2.2 Normative/Informative References

2.2.1 Normative

- [1] 240-99527377: Inspection Manual for Civil Works at Eskom's Power Station
- [2] 32-1034: Eskom Procurement and Supply Chain Management Procedure
- [3] Machinery Directive (2006/42/EC) & ANSI/RIA R15.06-2012 standard
- [4] ISO 13850: Safety of machinery - Emergency stop - Principles for design
- [5] ISO 14119: Safety of machinery - Interlocking mechanical protective devices.
- [6] ISO 13849-1: Safety of machinery - Safety-related parts of control system - Part 1: General design principles
- [7] ISO 12100: Safety of machinery - General design principles - Risk assessment and risk reduction
- [8] 36-681 Rev 2: Generation Plant Safety Regulations

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2.2.2 Informative

- [1] ISO 9001 Quality Management Systems
- [2] 32-727 Safety, Health, Environment, and Quality (SHEQ) Policy
- [3] 240-48929482: Tender Technical Evaluation Procedure

2.3 Definitions

2.3.1 Supplier: Service provider contracted for supplying and installation of specific tools, equipment, machinery, and documentation to Kusile Power Station.

2.3.2 Client: Eskom, Kusile Power Station

2.3.3 Client Representative: Any person appointed in writing by Client as the delegated Client representative in terms of the provisions.

2.3.4 Plant: Any structure, machinery, apparatus, or equipment which does not fall within the scope of the operating regulations for high voltage systems, and excludes, mobile, portable lifting equipment, domestic circuits' appliances, and tools.

2.4 Abbreviations

Abbreviation	Explanation
CNC	Computerised Numerical Control Machine
ISO	International Standard Organisation
KPI	Key Performance Indicators
MAS	Maintenance Ancillary Services
NEC	New Engineering Contracts
SOW	Scope of work
SC	Supply Contract
SSC	Short Supply Contract

2.5 Roles and Responsibilities

2.5.1 The Supplier

- a) To supply the products according to the Product Specification outlined in the NEC3 SC contract.
- b) To ensure the structural statutory inspections are done by liaising with relevant Client Representative prior commencement with works onsite. The inspections shall include but not be limited to the following:
 - i) Checking for foundation failure or settlement
 - ii) Checking the structural condition of buildings' cladding

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- iii) Checking condition of floors i.e. screeds, floor slabs.
- iv) Checking the condition of the roof sheeting
- v) Checking condition of all concrete and steel members or elements
- c) The Supplier obeys an instruction which is following this contract and is given to him by Eskom.
- d) All Supplier employees shall comply with Eskom's policies and site regulations, adherence to Eskom's Life Saving Rules, adherence to Generation Occurrence Management Procedure, Smoking Policy, Zero Tolerance on alcohol usage, etc. These policies will be detailed during the induction training process.
- e) The number of staff required for the equipment installation is decided by the Client, however after the reviewing of bill of quantities, the Supplier may recommend adjustments. Any recommendations must be submitted to the Client for approval.
- f) Ensures that throughout the duration of the contract, the Supplier is responsible for maintaining adherence to all relevant safety, health and environmental regulations as stipulated in the Kusile Maintenance URS. Further roles and responsibilities can be obtained from the NEC3 SC book.
- g) Supplier shall submit all documentation as requested by the Employer.

2.5.2 The Client

- a) Compiles and submit scope of work with technical specifications. Eskom and the Supplier shall function as stated in this contract and in a spirit of mutual trust and co-operation.
- b) Eskom supplies items which has committed to supply as stated in the Product Specification.
- c) Eskom has the right to replace the Client Representative after he has notified the Supplier of the name of the replacement.
- d) Eskom may give an instruction to the Supplier which changes the Product Specification, according to the terms of this contract.
- e) Performs Quality Control of delivery at the Employer premises.

2.5.3 Management and Reporting

- a) The type of reports, level of detail and frequency of reporting will be mutually agreed by the Client and the Supplier during the contract negotiations. These reporting requirements may change from time to time on request by the Client.
- b) The Supplier is expected to have a representative attend all scheduled meetings related to activities, which may occur on daily, weekly, or monthly.
- c) The Supplier to be represented at all Client safety meetings held during installation of equipment.
- d) The Supplier to be represented at any ad-hoc meetings that may arise to address any issues related to specification and safety related matters.
- e) Liaison meetings shall be held with the Client's Representative or his/her delegate on as and when required basis to discuss any technical details, or concerns.

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2.5.4 Supplier's Management, Meetings and Key People

- a) Before installation activities starts on site, an inaugural meeting will be held with the Supplier and the Client to explain all Site Regulations requirements in detail.
- b) The Supplier will be issued with a file of current Site Regulations upon arrival. The file remains the property of the Client and the Supplier is responsible for maintaining it and updating it with any new or revised regulations issued by the Client.
- c) The Supplier must ensure that all personnel operating cranes, mobile equipment and vehicles are authorised and/or licensed, this includes but not limited to:
 - i) Forklifts
 - ii) Mobile Cranes
 - iii) Light Duty Vehicles
- d) The Supplier is responsible for regular inspections and daily equipment checks of all the mobile equipment and vehicles. Records of these checks must be maintained while onsite.
- e) The Supplier must ensure that all personnel performing activities in the workshop are authorised, this includes but not limited to.
 - i) Plant safety regulation
 - ii) Fossil fuel firing regulations
 - iii) Confined space regulations
 - iv) Working at heights
 - v) Heat stress areas
 - vi) Scaffolding Compliance (Not tempering with the scaffolding certified safe to be used)
 - vii) Hazardous substances
 - viii) Hazardous locations

2.6 Process for Monitoring

The primary process for monitoring will be governed by Eskom Procurement and Supply Chain Management Policy (32-1033). This policy provides related principles to be applied to ensure uniform application of processes within Eskom Holdings SOC Ltd and its subsidiaries.

2.7 Related/Supporting Documents

- a) New Engineering Contract 3 Supply Contract Book
- b) ACT NO 85 of 1993: Occupational Health and Safety Act & Regulations

3. Applicable Scope of Work (SOW)

The document content entails supply and installation of workshop tools and equipment, machinery and the workshop design layout review and optimization at Kusile Power Station.

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3.1 Activities Information

- a) The Contract between Eskom Kusile Power Station and the Supplier will be for a duration indicated on the NEC document (Legal contract document)
- b) The Supplier will be responsible to design the workshop layout and for installation and commissioning of all purchased equipment and tools for the setup of the MAS workshop at Kusile Power Station.
- c) The Supplier will be responsible for ensuring that the workshop areas meet all regulations applicable, and the supplier shall inform the Client of any improvements required to meet regulatory standards.
- d) The Supplier will provide basic operational training for the procured tools, equipment, and machinery.

3.2 General Requirements

- a) The Supplier shall be responsible to ensure activities executed in the workshop is of high-quality standard.
- b) The Supplier shall be responsible for producing formal inspection reports for all inspections undertaken on the tools, machinery, and equipment.
- c) The Supplier will supply User Requirement documentation for each piece of workshop tools, equipment, and machinery.
- d) The contract entered with the Supplier is non-exclusive. Any work performed under this contract requires prior written permission from the Client.
- e) Please note that equipment will only form part of the workshop once it has been commissioned and handed over to Eskom. The Supplier shall take cognisance of the fact that the contract start date can deviate.
- f) The Supplier shall provide guarantees and warranties applicable to every equipment that has been purchased.
- g) The Supplier shall supply all their PPE for personnel, including:
 - i) Safety shoes/safety boots,
 - ii) Branded reflective trousers and branded jackets,
 - iii) Hard hat with secure chin strap,
 - iv) Industrial dust mask,
 - v) Disposable dust coveralls,
 - vi) Goggles, face shield, gloves, and ear protection (ear plugs/muffs)
 - vii) Additional PPE required for hot work activities.

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3.2.1 Welding and Fabrication Workshop

Item	Specification
Band saw horizontal	Capacity (mm) 254 x 457, Blade speeds (fpm) 50, 125, 200, 275, Motor Output 2Hp (1.5kW), Floor Space (mm) 1600 x 710 x 1080, Electrics 380V, 3-phase, 50cyl, Blade size 3365mm x 25mm
Band saw horizontal CNC	Capacity (mm) 254 x 457, Blade speeds (fpm) 50, 125, 200, 275, Motor Output 2Hp (1.5kW), Floor Space (mm) 1600 x 710 x 1080, Electrics 380V, 3-phase, 50cyl, Blade size 3365mm x 25mm
Band saw vertical	Throat 520mm, Working Height 310mm, Blade Speeds 20 - 500m/min, Blade Width 16mm, Blade Length 3880mm, Table Size 600 x 500mm, Table 15-deg 4-way, Motor Power 2 Hp
Bench with vice (2x/bench)	Jaw width 150mm, Opening 175mm
Bending machine	hydraulic 25mm, Adira QHD 20040 / Davi MCB 3037
Bending machine hydraulic 3mm	Adira QHD 20041 / Davi MCB 3038
Bending Machine/Press Brake.	Up to 20mm Thickness plate bending
Boiler Tube bender.	20mm - 500mm Radius. Up to 8mm thickness
Drill, Reversible, Air with key chuck	Chuck size 13mm, Speed 800rpm, air pressure 630kPa, Air hose 10mm.
Folding machine	Folding machine
Gas and welding/Cutting set	Set with trolley and large bottles (Internal and external)
Grinder, Air Die, Heavy duty	Collet size 6 & 3mm, Speed 20000rpm, Air press 630kPa, Motor power 0.9 HP, Air hose 10mm
Guillotine hydraulic	Work length 3000mm and plate dimension 25 mm
Guillotine.	Up to 16mm plate effective bed 1500mm x 2500mm.
Hack Saw	Hi-Tension Hack Saw Frame Cast aluminium handle and end pieces with permanent blade pins, blade storage.
Iron Worker.	HIW 115 Cylinder
Laser Cutter	Bystar 3015, 4.4kW
Oxy Acetylene Gas Cutting	Up to 120mm plate effective bed 3000 MM* 6000MM, CNC Machine
Pedestal drilling machine	Capacity Drilling capacity in 35 mild steel (mm), Spindle taper 4 (morse taper), Distance from spindle to column (mm) 300, Distance from spindle to table min/max (mm) 70 - 885, Distance from spindle to base max (mm) 1245 Table Rotation of table to head 36
Pedestal drilling machine - normal	Drill capacity 14mm steel, 700W variable speed 450 - 4000 rpm, Depth of feed 60mm, chuck size 24mm
Pedestal grinder	220v 300W, two grinding discs, speed 2950rpm, disc size 150x20#36 and 150x40#80, 360mm wheel size
Pedestal grinder - large	Grinding/ Contact Wheel Size (mm) 300 x 50 x 32, Motor power continuous (hp) 3 Spindle speed (rpm) 1400 or 2800 Weight (kg) 90 / 140, Power supply 380/3/50

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Pipe bender - big size up to 3"	Multi-function rolling pipe bender, 9 round pipe moulds: 16 - 76 mm
Pipe Cutter	Heavy Duty Tube Cutter for 1/8" to 1 1/8" (50 to 250mm) O.D. Cutter includes retractable reamer/file and spare carbide cutting wheel. Carbide wheel cuts hard and soft copper, aluminium, brass, thin wall steel and stainless steel.
Plasma Cutting Machine.	Up to 16mm plate effective bed 1500mm x 2500mm.
Workshop layout design	Refer to MAS workshop plan for welding and fabrication
Plate Rolling Machine.	Up to 20mm Thick plate rolling, effected length of 2500mm
Welding machine.	450Amps. 380 supply

4. Acceptance

This document has been seen and accepted by:

Name	Designation
Fhatuwani Nelufhangani	Maintenance Ancillary Manager
Phetheni Mhlongo	Senior Advisor Technical Support
Abel Vuma	Middle Manager Maintenance Group

5. Revisions

Date	Rev.	Compiler	Remarks
November 2024	0	FJ Mahlangu	Outline the Purchasing and Installation of MAS workshop tools and equipment

6. Development Team

The following people were involved in the development of this document:

- Fani Mahlangu
- Phetheni Mhlongo
- Fhatuwani Nelufhangani
- Bino Ngwenya
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7. Acknowledgements

- None

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