 Eskom	Work Instructions	Medupi PowerStation
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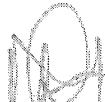


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1. Introduction

Every employer or user of machinery (lift) is required by law to provide safely equipment in connection with machinery and this can be achieved by a proper maintenance of the machinery. This document describes the scope of work, standards, safety, specifications and criteria that a competent lift service provider shall provide during the execution of the maintenance contract for the duration 5 years.

2. Supporting Clauses

2.1 Scope

2.1.1 Purpose

The purpose of this document is to describe in detail the maintenance scope for all the lifts at Medupi Power Station.

2.1.2 Applicability

This document is applicable to Medupi Power Station Lifts as stated in Appendix A.

2.1.3 Effective date

This document is effective from the date of the last signature by authorizer.

2.2 Normative/Informative References

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

2.2.1 Normative

1. ISO 9001:2008 - Quality Management Systems
2. SANS 53015:2012: Maintenance for lifts and elevators
3. SANS 14798:2009: Lifts (elevators) escalators and moving walks – Risk assessment and reduction methodology.
4. SANS 1545-6: 2015: Safety rules for the construction and installation of lifts- Part6: Electric lifts.
5. SANS 50081-80: safety rules for construction and installation of lifts-Part 80: Rules for the improvement of safety of existing passenger and goods lifts
6. Occupational Health & Safety Act and Regulations (85 of 1993): Lifts, Escalators and Passenger Conveyor Regulations and Electrical Machinery Regulations.GNR.828 of 17 September 2010, including subsections4(2)(3)(4), 5(1),6(1-5),7(a-f),7(2)

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7. 32-421 – Eskom Cardinal Rules
8. 32-85 - Eskom Information Security Policy
9. 32-95 - Eskom Incident Management Procedure
10. 32-93 - Eskom Vehicle and Driver Safety Management Procedure
11. 36-366 – Integrated Business improvement – prevention and improvement – Standard
12. 32-36 – Smoking policy
13. 32-255 – Lifting Machine procedure.
14. GGR 0992 - Eskom Generation Plant Safety Regulations
15. GGM1490 – Routine Work Management manual
16. GVLIR 0007 – Safety health and environment Specifications for Contractors

2.2.2 Informative

17. 237-0012 Rev 4: Medupi Maintenance User Requirement Specification
18. 240-86239677: Medupi Power Station Lifts Maintenance Strategy
19. 240-89385307: Medupi Power Station Lifts Spare Strategy

2.3 Definitions

Contractors	Service provider contracted to supply specific service to Eskom, Medupi Power Station
Competent lift mechanic	A person who has completed a Learnership or an apprenticeship in the trade of lift mechanic; has completed an electrical or mechanical trade qualification and has had at least one year post qualification general practical experience on lifts.
Competent lift service provider	A person that employs competent lift mechanics and a competent operator, a competent lift mechanic who is self-employed and undertakes to contract with the user of a lift to perform maintenance, examinations, and tests.
Lift	Any permanent or temporary lifting used for the conveyance of persons or persons and goods, or as an access goods only lift, that operates by means of a conveyance or platform running on a fixed guides and serving landings but does not include a hoist worked by and power or a material hoist.
Maintenance	Is the combination of technical, financial, administrative and managerial actions during the life cycle of an asset intended to retain it, or to restore it to a state in which it can perform the required function?

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2.4 Abbreviations

Abbreviation	Explanation
ISO	International Standard Organisation
NEC	New Engineering Manufacturer
OEM	Original Equipment Manufacturer
OHS Act	Occupational Health and Safety Act
PPE	Personal Protective Equipment
PSR	Plant Safety Regulation
RP	Responsible Person
SANAS	South African National Accreditation System
SANS	South African National Standards

2.5 Roles and Responsibilities

2.5.1 Maintenance must ensure the following.

- Manage the contract.
- Arrange access to site.
- Issuing a task order when required
- Complete monthly assessments
- Provide technical support.

2.5.2 Engineering must ensure the following:

- Ensure the lift spares strategy is developed and regularly updated if there are any changes to be covered.
- Render modification as and when required.
- Ensure the lift maintenance strategy is developed and regularly updated if there are any changes to be covered.
- Attend lifts technical meetings.
- Provide technical support.

2.5.3 Competent lift service provider responsibility:

- Comply with Eskom PSR requirements before any work/activity is performed in the plant.
- Attend yearly induction.
- Ensure that annexures are updated.

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- d) The contractor will be responsible for ensuring that repairs are executed as per Eskom instructions by a competent lift mechanic/technician.
- e) Ensure that all required documentation such as a Valid Medical certificate, and Police clearance for access to site are available.
- f) Attend all Meetings as requested by the Employer.
- g) Ensure that daily time sheets are signed.
- h) Advise the Employer on the spares required as per OEM.

2.5.3 Competent lift service provider responsibility:

- a) Conduct audit inspections.
- b) Ensure Service provider performance aligns with the discipline standards.
- c) Verify compliance and certification.

2.6 Process for Monitoring

This document will be monitored through Eskom document management process loaded on Open text/SharePoint. The documents must be reviewed and finalized within six months after its review date.

2.7 Related/Supporting Documents

N/A

3. Description of the scope/service

3.1 Executive overview

The scope of work cover's the Preventative Maintenance, Corrective maintenance (repairs), Service, Statutory Inspections, Assessments, and issue annexures on Lifts installed at Medupi Power Station as contemplated in the Occupational Health and Safety Act 85 of 1993, Reference: Lifts, Escalators and Passenger Conveyors Regulations including after-hours's emergency Standby service and provision of spares for all repairs/eventualities.

- a) The scope comprises of the preventative maintenance on lifts installed at Medupi Power Station.
- b) Exclusions: Lifts under construction shall be excluded at the start of this contract and will form part of contract once guarantee and warrantee expires or on instruction from the employer.
- c) The contractor must provide preventative maintenance service as per the OEM's maintenance.
- d) The contractor shall provide qualified and competent lift technician/mechanic with requites equipment and tools to execute maintenance and operating services.
- e) The contractor shall be conversant with OEM's equipment to be maintained.

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- f) The contractor ensures that the scheduled and emergencies maintenance service is timeously performed regardless of any industrial actions, provided unrestricted access is given.

3.1.1 Employer's requirements for the service

The scope of service includes:

3.1.1.1 Maintenance and Repairs

- a) The contractor shall inspect, service, repair and maintain the lifts under this contract at Medupi Power Station to meet their functional requirements. Only OEM spares, material, equipment, and appliances shall be used. In the event of limited supply, the exception of alternative reputable suppliers must first be cleared with the Employer.
- b) The contractor shall maintain the lifts as per OEM's specification, SANS 53015, and SANS 1545-1
- c) All work shall comply to legal and statutory requirement, Occupational Health and Safety Act 85 of 1993-Lifts Escalators and Passenger Conveyors Regulations
- d) Equipment and materials employed shall be new and manufactured in accordance to EN-81 standards and approved by the resident duly appointed juristic local authorities in SA. Specific brand equipment must be used for the same OEM.
- e) All maintenance activities shall be recorded. These records shall be available for inspection by the Employer in a Record Book, at all times. The record book must be kept updated by the Contractor and stored on site in the locked machine compartment. It shall be available at any time for audit/review.
- f) Planned monthly maintenance shall be carried out according to the SANS 53015-Maintenance for lifts-Rules for maintenance instructions.
- g) Maintenance shall be carried out during normal working hours Monday to Friday, with the exception of emergency breakdown, where response to call out may be after hours and weekends.

NOTE: Maintenance includes but not limited to the machine room, pit, ropes, and car and surrounding areas in and around the lift shaft i.e. all equipment related to the lift.

- h) The contractor may not perform any modifications to a lift without prior approval from the Employer. The contractor shall identify the risk for any required modifications and inform the Employer thereof in writing for approval. The Contractor shall provide the Employer with the mitigations to minimise the risk where required.

3.1.1.2 Flagging possible future capital projects such as refurbishment, upgrading of lifts, etc.

- a) The contractor shall identify in advance any need for future modifications to enhance the long-term health of the plant.
- b) The contractor shall review the Planned Maintenance work instruction, Spare strategy, maintenance strategy and any other duty as may be necessary to enhance the maintenance and reliability of the Lifts.

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3.1.1.3 Repairs

- a) The contractor shall provide spares and labour, to carry out all repairs irrespective of the cause of damage or fault. The contractor will however not be liable for any costs involved which arise as a result of accidental damage or vandalism. Repairs arising from activities shall be for Eskom's account with prior approval from Eskom by issue of a task order.
- b) The Contractor shall submit a quotation for the repairs to the Employers Representative. The quotation must detail all resources needed to do the repairs. The contractor shall provide detail repair program and a comprehensive service report.
- c) The contractor shall be responsible for all minor and major repairs needed to keep the lifts in a reliable, safe and running condition.

3.1.1.4 Take-over of Maintenance

- a) Upon acceptance of the contract, the contractor approved inspection authority carries out a thorough examination for each lift submits a detail examination report to the Employers Representatives within two (2) weeks from the date of commencement of Contract.
- b) The contractor shall check the running conditions of the lifts and shall immediately inform the Employer any defects found.
- c) Apart from the identified defective components or equipment it is deemed that all lifts are in good working order and the Contractor accepts full responsibility for maintaining the lifts.
- d) One (10 month prior to the termination or expiry of the contract, the contractor shall arrange scheduled handover to the Employer for all lifts in the Contract.
- e) The contractor's approved inspection authority carries out a thorough examination on each lift within one (1) month prior to the termination or expiry of the contract and submits detail test/examination report to the Employer's Representatives two weeks prior to the termination or expiry date of the Contract.
- f) The contractor ensures that all the lifts are in good working order, safe and satisfactory operational condition at the time of handover.
- g) The incumbent successive maintenance contractor shall be invited by the Employer's Representative to attend the joint site handover inspection.
- h) During the handover inspection, any defect and/or damage found in any of the lift caused by the negligence of the contractor as constructed from the terms and conditions of the contract shall be duly and timely rectified/repared at the contractors own expenses and to the satisfaction of the Employer before arranging for another hand over inspection of the lift.
- i) The contractor obligation shall not be released until all lifts are successfully handed over to the Employer.
- j) All expenses incurred in restoration of lift, including cost of works carried out by others due to the unnecessary delay upon the termination or expiry of the Contract shall be for the Contractor account.

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3.2 Specific duties of the Contractor

- a) The contractor shall attend daily toolbox meeting
- b) Attend all other meetings as requested by the Employer.
- c) The contractor shall provide sufficient qualified technical staff and safety personnel to ensure the scope under this contract is carried out safely to meet the performance targets and programmes.
- d) The contractor shall provide a lift Monthly Status Report in connection with all lift stoppages, defects and call backs to the Employer.
- e) The contractor shall service the lifts as per OEM's operating and service regime.
- f) The contractor in conjunction with the Employer shall prioritise repair of operational and maintenance defects when they arise.
- g) The contractor's competent lift mechanic/technician shall accompany the Employer's site representative during monthly inspections.
- h) The contractor shall appoint an Inspection Service Provider accredited by SANAS upon approval from the Employer to inspect the lifts at intervals not exceeding 24 months and issue a comprehensive, detail status Report for each lift as and when instructed by the employer.
- i) The contractor shall ensure that the Comprehensive report (Annexures certification) of all the lifts are valid at all times. Defective items identified by an approve Inspection service Provider accredited by SANAS shall be attended to within a specified period not exceeding 60 days as this renders the "Annexure" comprehensive report invalid and shall be reported by the inspection Service Provider to the National Department of Labour as per SANS 1545-1.
- j) The contractor shall provide a twenty-four hour, seven days a week emergency call back service to respond to any stoppage or malfunction of the equipment at any time after the contractor's working hours, with a response time of within 45 minutes for emergencies.
- k) The contractor shall clean the machine compartment/room, car top, inside lift car, and pit weekly or as and when required.
- l) The contractor shall maintain all records and drawings for the lifts under this maintenance contract. All records shall be kept in the machine compartment of each lift.

3.3 Parts Replacement

- a) **The contactor shall provide parts and labour to replace or repair the following:**
 - i. All parts including but not limited to door locks, door contacts, door operators, alarm systems, switches and holders, relays, liner circuits, reads and tape, proximities, striker arms, solenoids, cables and wiring(generator), breaks and liners, overloads, door closing mechanism, all relevant components for the day-to-day operation of the lifts, springs, flexible conductors and selectors.
 - ii. Moving parts or parts subject to normal wear and tear, selector, brake and governor including metal and carbon contacts, contact holders, insulators, springs, flexible conductors, arc deflectors or barriers where these can be replaced individually and are not integral parts of a switch which must be replaced as a complete unit will be included.

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- iii. The internal contacts of car-mounted stopping switches, brakes, car operating panel, car door interlock, and elevator shaft mounted operational switches, interior lighting, push buttons and landing door interlocks.
- iv. Brushes for motors.
- v. Suspension ropes, governor ropes, AC motors, Trailing cables and gearboxes.
- vi. Lubricants and cleaning materials
- vii. The employer reserves the right to supply any spare parts which may be required by the contract in the satisfactory execution of the required Works Information.
- viii. The contractor shall have available critical spares for repairs and replacements as per Addendum A.
- ix. The Employer may designate a storage place for the Contractor if required.

b) Spare Parts

The contractor will keep regularly spares for all lifts to ensure that downtime is kept to a minimum.

- a) All the parts shall be made available on site within 24 hours for replacement and rectification of the works.
- b) The contractor shall keep adequate stocks of essential spare parts, equipment and other components which are necessary to maintain the safe and satisfactory working condition and components of the lifts at all times.
- c) A permanent replacement of the genuine equipment, parts and /or components with alternative products shall not be implemented without the approval of the Employer.
- d) Any replacement of equipment, parts and /or components due to non-availability of spare parts and/or obsolescence shall be substantiated by the OEM of the product.
- e) The contractor shall provide a list of critical spares to the Employer, for APPROVAL where the need exists.
- f) The parts on this approved list shall then kept by the contractor as critical spares.

3.4 Equipment Inspection Required by Law

- a) The contractor shall examine and maintain the parts of a lift as prescribed by the relevant manufacture OEM or by an inspector.
- b) The contractor will carry out a thorough inspection of the lift equipment covered by the maintenance contract every 24 months.
- c) The inspection must be performed by a registered lift inspector to perform such inspection in terms of Occupational Health and Safety legislation.
- d) The Contractor will post the required documentation to the Department of Labour in confirmation of the inspection and also post a confirmation to the Employer.
- e) The contractor shall supply the Employer with comprehensive report (Annexure B) upon completion of the inspection within 30 calendar days.

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- f) Any deficiencies noted during the inspection will be rectified by Contractor if it forms part of the works under this maintenance contract.

3.5 Legal Obligation

- a) The Contractor shall replace parts on an inspection which are discovered to be potentially dangerous to the safety of personnel on site, irrespective of whether such parts are excluded from the contract or not.
- b) The contractor shall have the authority to take any lift out of service if it is discovered to be potentially dangerous to the safety of personnel on site.
- c) The Employer reserves the right to employ an independent inspection service provider to inspect the lifts as per Occupational Health and Safety Act 85 of 1993
- d) The Contractor shall inform the Employer of any legal inspection required three months in advance prior to the expiring dates.
- e) The contractor shall ensure that the comprehensive report of all the lifts are done and valid at all times.
- f) The Contractor shall ensure that the defects identified during an inspection are closed within the specified time as indicated on the comprehensive report.
- g) The Contractor shall inform the Employer as soon as the contractor become aware of such a defect or safety related item.
- h) The Contractor shall submit a safety file in line with the Construction Regulations and Eskom safety requirements.

3.6 Management strategy and Startup

3.6.1 The Contractor's plan for service

In the case of a breakdown that lasts longer than 2 hours the contractor shall provide a detail activity schedule in MS Project Plan to correct any defects needed to get the lift operational.

This MS Projects Schedule includes:

- a) Description of defect.
- b) Reasons for lengthy repairs.
- c) Activities and sub activities detailing repair regime.
- d) Spare required.
- e) Additional manpower required. Additional manpower must be requested in writing by the contractor to the Employers Representative, Employers Representative shall issue a task order allowing the contractor to bring in additional resources.
- f) Date lift will be back in service.

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3.6.2 Management meetings

Regular meetings of a general nature may be convened between the Contractor and the Employer as follows:

Title and purpose	Approximate time & interval
Kick off meeting and scope clarification	Within 1 week before contract award
Risk register and compensation events	Monthly
Safety meeting	Monthly
Assessment Meetings	Monthly
Contractual Meeting	Monthly

- a) Meetings of a specialist nature may be convened at ad-hoc times and locations to suit the both parties. Records of these meetings shall be submitted to the contract manager by the person convening the meeting within five days of the meeting.
- b) All meetings shall be recorded using minutes or a register prepared and circulated by the person who convened the meeting. Such minutes or register shall not be used for confirming actions or instructions under the contract as these shall be done separately by the person identified in the conditions of contract to carry out such actions or instruction.

3.6.3 Contractor's management, supervision and key people

The key person's requirements for the contractor's key people required to render the service:

Designation	Site Manager	Safety Officer	Lift Technician/Mechanic	Technician Assistant	Lift Operators (Outages)
Quantity	1	1	4	6	6
Qualifications	Qualified Lift Mechanic/Technician	National Diploma is safety management or equivalent	Qualified Lift Mechanic/Technician	Senior certificate	Senior certificate

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Medupi Power Station Lifts User Requirement Specification

Unique Identifier: 240-148908582

Revision: 2

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Certifications & Registrations	Provide Certificates & Proof of Registration with Authorities	Provide Certificates & Proof of Registration with Authorities	Provide Certificates & Proof of Registration with Authorities	Provide Certificates & Proof of Registration with Authorities	Provide Certificates & Proof of Registration with Authorities
Experience	Minimum of 3 years of practical related experience	Minimum of 1 years of practical related experience	Minimum of 1 years of practical related experience	None	None

- i. Competent Lift Mechanic means a person who-
- ii. Has completed a leadership or apprenticeship in the trade of lift mechanic.
- iii. Has completed an electrical or mechanical trade qualification and has had at least one year post qualification general practical experience on lifts; or
- iv. Has obtained a minimum of a NQF level five (5) electrical or mechanical engineering qualification and has had at least one (1) year post qualification general practical experience on lifts.
- v. The contractor shall ensure that only competent persons be allowed to work on plant the Employers Representative is entitled to verify the qualifications of the Contractor.
- vi. The contractor must be knowledgeable about the conditions and scope of work contained in this contract and capable of executing the scope of work.
- vii. The Employers Representative may, having stated reasons, instruct the Contractor to remove a key person. The Contractor then arranges that, after one day, key person has no further connection with the work included in this contract.
- viii. The Contractor may not replace any of the staff members, without prior written request and approval thereof from the Employers Representative.

3.6.4 Site Establishment

- a) Site establishment fee applicable to this contract will be paid to the contractor as quoted.
- b) The employer will provide site establishment area, Contractor to provide their own office containers, furniture and Appliances with equipment which may be inclusive of workstations, ablution systems and distribution Box and tools required for site establishment as per the specification on table 1 below:

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Table 1: Mobile Workspace Requirements Estimates

Description	Est QTY	Size	Detail layout	Furniture
Mobile Office (Site manager, Safety officer)	1	12 x 3 m	2 offices, kitchen, and toilet	2 office tables, 2 office chairs, 4 visitors chairs
Mobile office 4 Technicians, 6 Technician assistants	1	15 x 7 m	1 office, 1 kitchen, large open plan area for workers	1office table, 1 office chair, tables with chair for 10 people
Mobile toilets male and female	1		Female: 3 toilets, 3 basins Male: 2 toilets, 3 urinals, 2 basins	None
Mobile tool containers	1	6 x 2.35m	Steel Shipping container with shelving.	Shelving on both long sides and checkout counter on one side.

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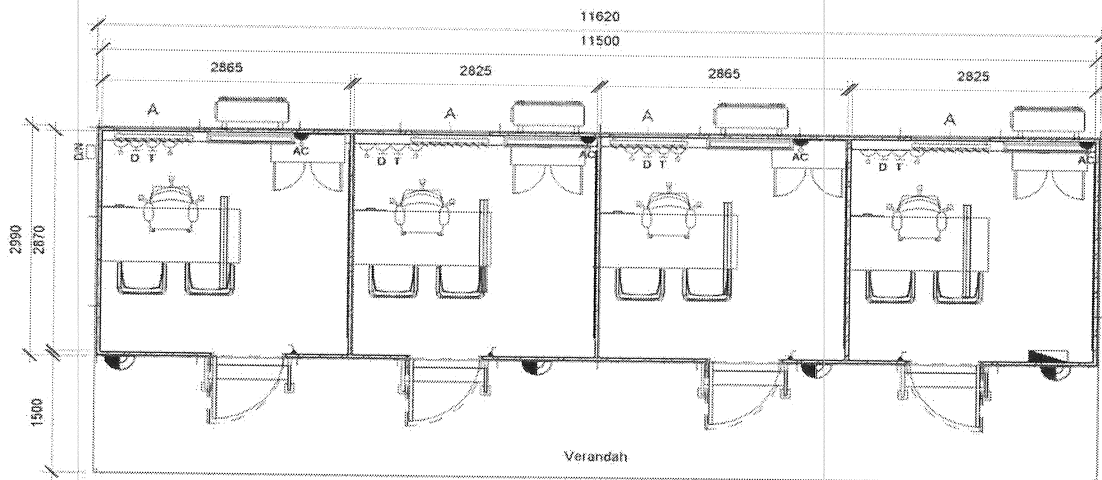


Figure 1

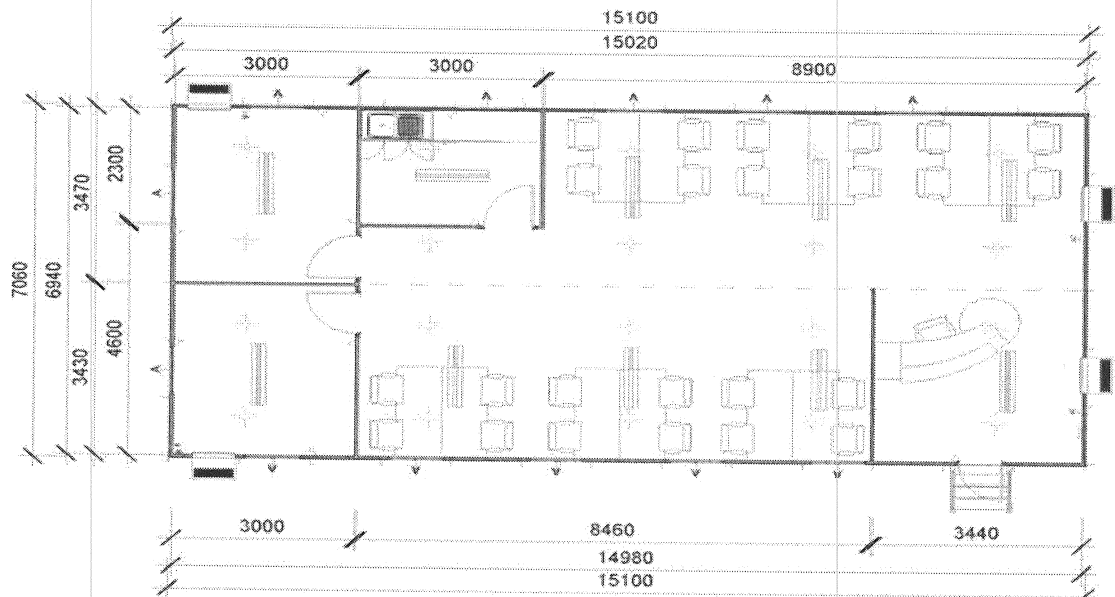


Figure 2

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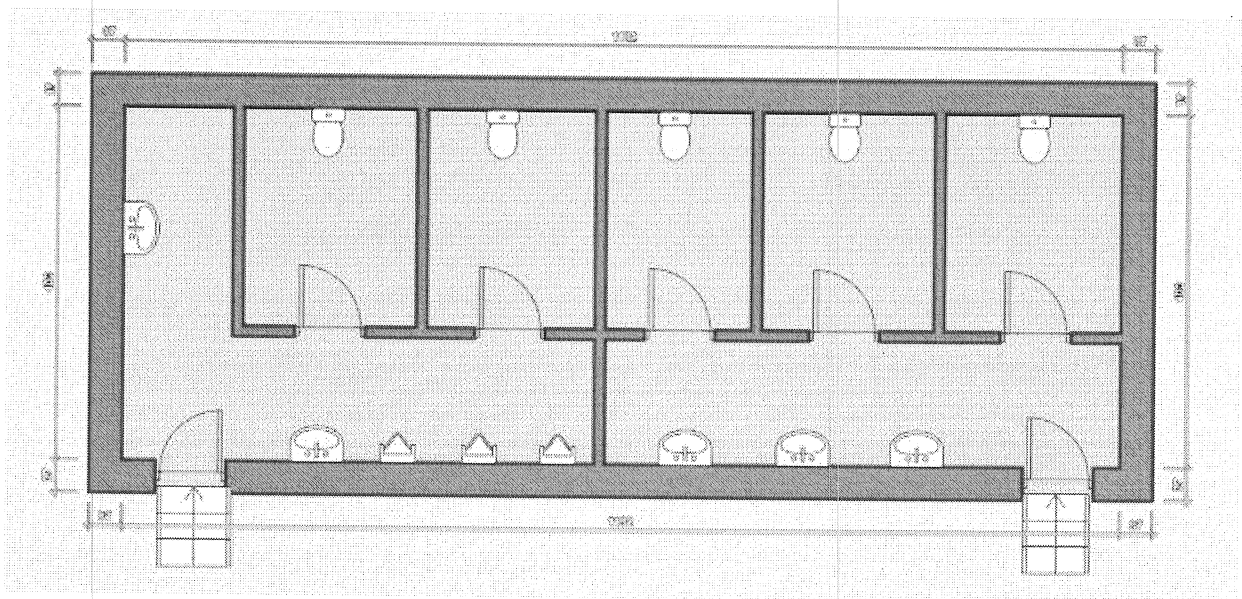


Figure 3

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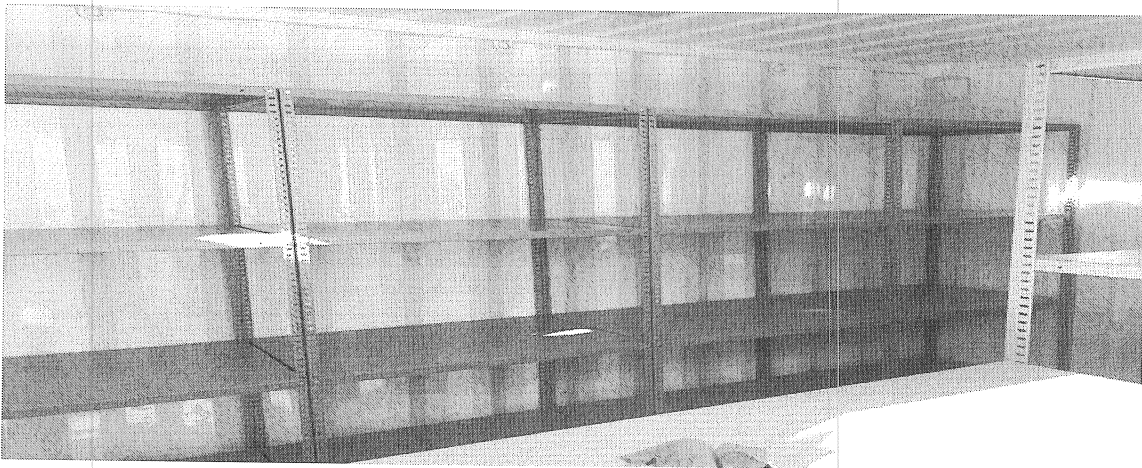


Figure 4

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a) Transport

Transport fee applicable to this contract will be paid to the contractor as quoted, for the following vehicles:

Vehicle Type	Quantity
Double Cab Bakkie (4x4)	02
Single cab	01
7 Seater	01

3.7 Documentation Control

- a) Document management control will be handled as per the Employer's document and records management procedure 32-1216 which is obtainable from the Employers Representative All communication will be in writing.
- b) All NEC standard forms shall be used, e.g. Task orders, Early Warnings, Defect certificates and Assessments.

3.7.1 Procedures, Records and Reports

The Contractor implements following procedures or paperwork over the first month of this contract.

- a) Business Organisation Chart- Organogram
- b) Safety procedures
- c) Execution Method Statements

The following policies, procedures and specification shall be complied with by the contractor at all times:

- i. Eskom site regulations-where applicable
- ii. Safety, health and environmental requirements to be met by Contractors.
- iii. Eskom Site transport requirements-where applicable
- iv. Construction Regulations
- v. Occupational, health and Safety Act
- vi. Eskom Life Serving Rules
- vii. Quality requirements for engineering and construction works (available on request)
- viii. All Relevant Eskom standards, policies and procedures.

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3.7.2 Record Book- Machine Room

- a) The Contractor will provide on-site record of all activities carried out on the equipment.
- b) This record will be permanently displayed and kept in the machine compartment/room.

3.7.3 Sub-contracting

Only sub- Contractors authorized by the Employer will carry out work on the equipment in terms of this contract.

- a) Preferred subcontractors
- b) If the Contractor subcontracts work, he is responsible for providing the Service as per the contract.
- c) This implies that the Subcontractor's employees and equipment is the Contractor's.
- d) Limitations on subcontracting
 - i. *The Contractor submits in writing the name of each propose Subcontractors with certificates and registration documentation to the Employers Representative for acceptance/ rejection.*
 - ii. *The Contractor does not appoint a proposed Subcontractor until the Employers Representative has accepted him.*
- e) Possession, Control of Equipment
- f) The contractor will not assume possession or control of any part of the equipment all of which shall remain exclusively the property of the Employer.

3.8 Records of defined cost

In order to substantiate the Defined Cost of compensation events, the Employer may require the contractor to keep records of amounts paid by him for people employed by the Contractor, Plant and Materials, work subcontracted by the Contractor and Equipment.

The contractor will complete the site daily log, and this will be submitted to the Employers Representatives for his signature before 12am of the following morning barring weekends. The Friday and weekend logs will be submitted before 12 am Mondays. The log will include but not be limited to the following:

- a) Date and day
- b) site Conditions
- c) Work Done
- d) Labour on site
- e) Any incidents during that period
- f) Any communication that took place

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3.9 PROVISIONS

a) Equipment and spares

All equipment and spares that belong to the employer which are with the contractor must be handed back to the employer.

b) Information and other things

All record books and service information must be given to the employer.

3.10 Management of work done by Task Order

A task order will be issued for tasks at hand as per description from the Employers Representative who will be managing this contract on the Employer's behalf.

3.11 Contractor to note and comply with the following

- a) The employer reserves the right to have any of the contractors personnel removed off site without any compensation to the contractor in the event of the contractor's personnel being in the contravention with the OHS Act or any of the Employers Lifesaving rules, regulations and procedures.
- b) The employer reserves the right to request disciplinary/corrective action if, and when, required.
- c) The contractor will operate under the direction and instructions of the Employer.
- d) The Contractor will provide all safety apparel, safety equipment and cleaning materials to comply with the construction regulation.

3.12 Working at the Affected Property

3.12.1 Employer's site entry and security control, permits and site regulations

- a) The contractor's safety file is approved by Employers Safety department.
- b) All personnel have undergone screening for criminal records and outstanding arrests warrants.
- c) All personnel have attended site-specific safety induction training.
- d) Compiled with the requirements as stated in the General Works Information

3.13 People restrictions, hours of work, conduct and records

Employer's normal working hours will apply and contractors key people delivering service will sign a daily attendance register as per the Employer's condition of service.

a) The Contractors Regular Working Hours,

The Contractors Regular Working Hours in terms of the contract, are Monday to Thursdays 07:00 to 16:15, Fridays 07:00 to 12:00 excluding Public Holidays. All work done outside normal working hours will be at no additional cost to the employer.

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b) Callouts-Overtime

- i. The contractor shall provide a callout service to respond to any stoppage or malfunction of the equipment at any time after the Contractor's working hours, providing a 24hour standby service, with response time of within 45 minutes for emergencies.
- ii. Callout service shall consist of emergency adjustments to restore an inoperative or faulty unit to safe and satisfactory condition.
- iii. In the case of major breakdown, a repair plan of action must be submitted to the Employer within 2 hours.
- iv. Repair work to commence on the exact time agreed between the Employer and the Contractor on this plan of action. No additional cost to the Employer for this service will be acceptable if during normal working hours.
- v. Before leaving the site and on completion of execution of work each time, the contractor shall report to the Employer Representative for signing off the job card. In the event of an emergency, after-hours or weekend work, all job cards shall be signed off by the Employer Representative on the following day.
- vi. Planned overtime must be approved by Eskom before commencement of work.
- vii. Non-technical personnel (e.g. Site manager and safety officer) will not be required to work standby and overtime.
- viii. Standby and cell phone allowance will be paid as per Eskom standby procedure.
- ix. Lift operators will be working on shift basis during outages, as and when required to assist in operating the lift.
- x. Shift allowance will be paid to lift operators as per the Eskom shift allowance procedure.
- xi. The contractor shall provide qualified personnel on a 24-hour standby service for the duration of the contract.

Standby, Outage and Overtime Manpower requirements

Description	Site Manager	Safety officer	Technician	Technician Assistant	Lift operators
Standby and Overtime	Not required to work Standby and Overtime	Not required to work Standby and Overtime	Two(2) Technician per week (First and second callout)	Two Technician Assistant per week (First and second callout)	N/A
Outage					Two (2) Lift Operators will be required to work day and night shift during outages for 12 hours

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3.14 Quality assurance requirements

3.14.1 Quality Requirements

- a) The Contractor guarantees to utilize the OEM approved parts, components and lubricants.
- b) The Employer may, by arrangement, inspect completed work. If, in opinion of the employer, the work does not comply with the quality requirements expected from Contractor, the Employer shall instruct the contractor to rectify the faults at no additional cost to the employer. The Contractor will comply with the instructions.
- c) All Quality Control documentation must be submitted to the Employer's Representative for acceptance prior to any work commencing.
- d) The Contractor shall comply with the quality requirements as stated in QM-58(As applicable).

3.15 Guarantees on repairs.

The employer requires twelve months guarantee on all repair work done on the lift.

4. Acceptance

This document has been seen and accepted by:

Name	Designation	
Prince Twala	Senior Supervisor Electrical	
Derick Chauke	Electrical Maintenance Manager	
Langa Zuma	Aux Engineering Manager	
Thabo Lamola	SNR Technician Compliance	
Xolani Mcawe	Technician Electrical	
Vhutali Mandavha	Snr Technician Electrical	
Khotso Magaela	Technician Electrical	

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5. Revisions

Date	Rev	Compiler	Remarks
September 2024	2	Cathrine Hlanyane	To re-establish a maintenance contract for lifts at Medupi Power Station
August 2019	1	Peter Maheso	To establish a maintenance contract for lifts at Medupi Power Station

6. Development Team

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

- a) Xolani Mcawe
- b) Prince Twala
- c) Khotso Magaela
- d) Vhutali Mandavha

7. Acknowledgements

Thanks to the Electrical Maintenance team for their contribution towards the development of this document.

Appendix A : Affected Property

A.1 Medupi Power Station Lifts List

Lift Description	Make	Data Spec
Unit 6 Boiler Goods Lift	Otis	Traction and sheave Rated load-2500Kg, 33 passengers 8 stopsG,1 to 7 Rated Speed -1,75m/s
Unit 5 Boiler Goods Lift		
Unit 4 Boiler Goods Lift		
Unit 3 Boiler Goods Lift		
Unit 2 Boiler Goods Lift		

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Medupi Power Station Lifts User Requirement Specification

Unique Identifier: 240-148908582

Revision: 2

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Unit 1 Boiler Goods Lift		
Unit 6 Boiler Passenger Lift	Otis	Traction and sheave Rated load-1000Kg, 13 passengers 8 stops G,1 to 7 Rated Speed -2.0m/s
Unit 5 Boiler Passenger Lift		
Unit 4 Boiler Passenger Lift		
Unit 3 Boiler Passenger Lift		
Unit 2 Boiler Passenger Lift		
Unit 1 Boiler Passenger Lift		
Unit 6 Aux bay Lift	Otis	Gen 2 Rated load-1275Kg, 17 passengers 8 stops G,1,2 & 3 Rated Speed -1.0m/s
Unit 5 Aux bay Lift		
Unit 4 Aux bay Lift		
Unit 3 Aux bay Lift		
Unit 2 Aux bay Lift		
Unit 1 Aux bay Lift		
Unit 6 ACC lift	Alimak	Rack and Pinion Rated load-700kg Rated Speed -0.6m/s 2 Stops
Unit 5 ACC lift		
Unit 4 ACC lift		
Unit 3 ACC lift		
Unit 2 ACC lift		
Unit 1 ACC lift		
Smokestack North Lift	Torgar	Rack and Pinion Rated load-1000kg Rated Speed-0.6m/s
Smokestack South Lift		
10K Ton Silo		
1K Ton Silo(South)		
Workshop and Stores Lift	Vimec	Hydraulic Rated Load-400kg
Admin Block Lift		

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		Rated Speed-0.1m/s
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Addendum A: Spare parts

Type of spare	Description
Speed Variable Drive passenger	
Speed Variable Drive goods	
Contactora 80A coil voltage 400	LC1D80...C (CONTACTOR:TESYS DECA;400 VAC;220 VAC;80)
36 W lights	
Buffers	
gearbox	
lights(aux)	
7.5kW motor	
8.6kW motor	
emergency lights	
pit lights (lamp)	fluorescent light 18W;230Vac
pit lights (holder)	
36 W ballast	

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key switch normally closed	XB2-BG21
key switch normally closed	XB2-BS142
encoder	
limit switch	
lift buttons	
Scanners	
CONTACTOR	LC1-D40 40A 18.5kW, 3 POLE, 1NO+1NC, Voltage = 380-660V, control voltage = 220/230 Vac, thermal current = 60A, insulation voltage = 690V. IEC 60947.
traction motor	WTY2-2500-175-DN, 29.6kW, 21.9Hz, 1350kg, 1.75m/s, 400V, 2148Nm, ip55, load=2500kg, 30A, 20 pole, S5-40% 240F/h, nr.: 09040413. Insulation class = 5.
traction motor braker coil (brake)	
traction motor	WTY2-1000-200-S-DN, 12.7kW, 12.5Hz, 1250kg, 2 m/s, 400Vac, 1610Nm, IP55, Nr.: 09040413, 100 kg load, 32A, 20 pole, S5-40% 240F/h.
PLC	Mitsubishi FX3U Series Logic Module, 100 → 240 V ac Supply, Relay Output, 64-Input, Sink, Source Input
converter	Otis Semiconductor Converter, type: DCSS5-E, input: 230Vac, 1.6A, 3.1A max, Output: 0...Vinput, 1A and 3 Amax. PCB no.: 499227000388, 1.2kg, IP20.
CONTACTOR	3AC, 110A, 125A thermal current, 1000 V insulation, impulse voltage = 8kV. 18.5 kW @ 230V & 37kW @ 400 V
GUINEA POWER SUPPLY	F1334,INPUT 100-240VAC,1,1A,50-60HZ, OUTPUT 17VDC TO 1,7V DC
TRANSFORMER	TS-160 TRANSFORMER
RELAY	RCP8 002,10A,48V COIL VOLTAGE,50-60HZ,10A 250Vac,10A 30Vdc
OVERLOAD	PKMZMO-20
TIMER	RE7RM
TIMER RCM	570L24
CONTACTOR	GB2DB07
DISPLAY,CIRCUIT BOX	AE2-4915 PLUS SCREEN
boiler Passenger Fan	
Door Control Box	GBA24350BH10
contactor 9A coil voltage 230	LC1D09A
PCB CONTROLER CARD	
Hybrid cable (Alimak lifts)	
Lift emergency led light and intercom power supply	EML0103
8W 4FT COMBAT LED GLASS TUBE	

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SWITCH SFTY:500 V;10 A;SPST	AZ15-ZO (Gate switch)
filter, EMC	
Aux contact	LAD N11 / LC1D40AU7
LIMIT SWITCH	T4VH 336-11Z-M20
LIMIT SWITCH	ZS 235-11Z-M20
filter	RF 4100-MHU
converter	PU210
Cables, Steel rope	F1080041
Cables, Steel rope	F04868157
Elevator door	hydra type
Safety gear	QJB2500
speed governor	4- speed governor, XSQ115-02 (DCA20602C4/C10), 770N and 1.75m/s, <110 m hosting height, sheave pitch = 240 mm, 8 mm rope, pulling force = 1000-2000 N
speed governor	5- speed governor, XSQ115-02 (DCA20602C4/C11), 833.5N and 2 m/s, <110 m hosting height, sheave pitch = 240 mm, 8 mm rope, pulling force = 1000-2000N
SPEAKER AND PC BOARDS (intercom)	
Door Shoes	XAA237E1
BULB LED E27 R63	LED0104
Elevator door roller (For otis lift)	otis 20220402F
Elavotor Rope Wire	12 mm steel wire rope ungalvanized; length 260m ;core (FC)
Sealed Lead Acid Battery	12V 7AH
MAR1 CHRONOS TIMER	MAR1 88826115,CROUZET
BEARING	6014RS
BEARING	32010XJ
BEARING	33207

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