Eskom	Scope of Work	Peaking Engineering

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Content Page

1. Introduction 4
2. Supporting Clauses 4
2.1 Scope 4
2.1.1 Purpose 4
2.1.2 Applicability 5
2.1.3 Effective date 5
2.2 Normative/Informative References 5
2.2.1 Normative 6
2.2.2 Informative 6
2.3 Definitions 6
2.4 Abbreviations 6
2.5 Roles and Responsibilities 7
2.6 Process for Monitoring 7
2.7 Related/Supporting Documents 7
3. Scope of Work 7
3.1 General Building Maintenance 7
3.2 Building Envelope and Structural Repairs 9
3.2.1 Roofing and Waterproofing 9
3.2.2 Walls, Masonry and Concrete 9
3.2.3 Painting and Corrosion Protection 10
3.3 Doors, Windows and Access Systems 10
3.4 Flooring and Ceilings 10
3.5 Plumbing, Water and Sewer Systems 11
3.6 Electrical Building Services 12
3.7 Roads and Civil Infrastructure 12
3.8 Fencing, Gates and Security Infrastructure 13
3.9 Fire Protection Infrastructure 13
3.10 Defect Specific Work 13
3.10.1 Drakensberg PS 13
3.10.2 Ingula PS 13
3.10.3 Gariep PS 14
3.10.4 Vanderkloof PS 14
3.10.5 Port Rex PS 14
3.10.6 Gourikwa PS 14
4. Technical Service Requirements 15
4.1 Leak Detection, Roof Inspection and Roof Waterproofing 15
4.2 Painting and Corrosion Protection 17
4.2.1 Machine Hall Crane beam – Drakensberg PS 19
4.3 Walls, Masonry and Concrete 20
4.3.1 General Concrete Repairs 21

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4.3.2 Crack Repairs 22
4.4 Doors, Windows and Access Systems 23
4.5 Flooring and Ceilings 24
4.5.1 Control Room – Drakensberg PS 26
4.5.2 Floor Tiles (Underground Works – Machine Hall and Valve Hall) – Drakensberg & Gariep PS 29
4.6 Plumbing, Water and Sewer Systems 34
4.7 Electrical Building Services 35
4.8 Roads and Civil Infrastructure 37
4.8.1 Layerworks and Compaction for Patch Repairs 38
4.8.2 Concrete Pavement Repairs 38
4.9 Stormwater Drains and Culverts Cleaning – Access Roads 39
4.10 Survey Work 39
4.11 Fencing, Gates and Security Infrastructure 40
4.12 Fire Protection Infrastructure 40
4.13 *Contractor's* Procurement of Plant and Materials 41
5. Acceptance 41
6. Revisions 42
7. Development Team 42
8. Acknowledgements 42
Appendix A – Applicable Standards 43

Figures

Tables

Table 1: Timeframes for Maintenance Categories 8
Table 2: Planned Maintenance Schedule 8
Table 3: Coating Thickness 31

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1. Introduction

The purpose of this Scope of Work (SoW) is to define the requirements for the provision of building and infrastructure maintenance services on an "as and when required" basis for the Peaking Power Stations listed below:

- Drakensberg Power Station
- Ingula Pumped Storage Scheme
- Vanderkloof Power Station
- Gariep Power Station
- Port Rex Power Station
- Gourikwa Power Station

This SoW provides preventative, corrective, reactive, emergency, refurbishment, and minor construction services to ensure that all buildings, civil infrastructure, utilities and support facilities remain safe, functional, reliable, compliant, and fit-for-purpose throughout the contract period.

The scope has been developed using the requirements contained in Buildings and Structures System Health Report for Peaking Power Stations. The SOW is intended to address both routine maintenance requirements and the identified asset health risks across the stations. Particular focus will be placed on defects associated with water ingress, waterproofing failures, deteriorated building finishes, drainage deficiencies, roofing defects, flooring failures, structural deterioration, sewage infrastructure defects, access systems and building envelope degradation.

2. Supporting Clauses

2.1 Scope

2.1.1 Purpose

The purpose of this document is to provide a standardized maintenance framework for building and infrastructure assets across Drakensberg, Ingula, Vanderkloof, Gariep, Port Rex and Gourikwa Power Stations.

The objective is to:

- Improve building reliability
- Maintain asset integrity
- Ensure statutory compliance
- Eliminate safety hazards
- Preserve asset value
- Address building defects before they impact operations
- Reduce risks associated with water ingress and building deterioration

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2.1.2 Applicability

This Scope of Work applies to:

- Administration Buildings
- Offices
- Control Buildings
- Workshops
- Stores
- Machine Halls
- Transformer Halls
- Visitor Centres
- Security Buildings
- Sewage & Water Treatment Plant Buildings/ Associated Infrastructure
- Ablution Facilities
- Switchgear Buildings
- Battery Rooms
- Fuel Forwarding Facilities
- Roads and Parking Areas
- Culverts and Associated Drainage Structures
- Fencing and Access Control Infrastructure
- Associated utilities and supporting infrastructure

located at:

- Drakensberg PS
- Ingula PS
- Vanderkloof PS
- Gariep PS
- Port Rex PS
- Gourikwa PS

2.1.3 Effective date

This document becomes effective upon approval and implementation.

2.2 Normative/Informative References

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

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2.2.1 Normative

[1] Occupational Health and Safety Act (Act 85 of 1993)

[2] Construction Regulations 2014

[3] SANS 10400 National Building Regulations

[4] Eskom Safety, Health and Environmental Standards

[5] Eskom Civil Engineering Standards

[6] Eskom Maintenance Strategy for Civil Plant

[7] ISO 9001 Quality Management Systems

[8] Applicable Municipal By-laws

[9] Applicable SANS Standards.

2.2.2 Informative

[10] I Buildings System Health Report for Peaking Power Stations

[11] Station Audit Reports

[12] Original Building Designs and Drawings.

2.3 Definitions

Definition	Description
Corrective Maintenance	Maintenance undertaken to restore an asset after a defect or failure.
Reactive Maintenance	Maintenance undertaken after notification of a fault.
Emergency Maintenance	Work required immediately to eliminate safety, environmental or operational risks.
Defect	A condition impairing safety, functionality, appearance or reliability.

2.4 Abbreviations

Abbreviation	Explanation
OHS	Occupational Health & Safety
PPE	Personal Protective Equipment
CoC	Certificate of Compliance
SANS	South African National Standards
UPS	Uninterrupted Power Supply
SHR	System Health Report
PM	Preventative Maintenance

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2.5 Roles and Responsibilities

Role	Responsibility
Asset Management	Asset integrity management and technical reviewers
Civil Engineering Team	Civil & Structural infrastructure inspections, assessments, and monitoring
Engineering Manager	Approval of scope, assessments, and recommendations
System Engineer	Technical review of Civil & Structural infrastructures

2.6 Process for Monitoring

Monitoring shall include:

- Monthly contract review meetings
- Defect tracking
- Quality inspections
- System Health Monitoring
- Service level monitoring
- Annual review of contract performance
- Reporting on outstanding and completed defects

2.7 Related/Supporting Documents

Refer to Section 2.2.

3. Scope of Work

3.1 General Building Maintenance

The SoW makes provision for the *Contractor* to provide:

- Planned maintenance
- Corrective maintenance
- Reactive maintenance
- Emergency maintenance
- Minor refurbishment works
- Minor construction works
- Condition assessments
- Inspection services
- Repair and replacement of defective components

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Work shall be performed upon instruction from the *Service Manager*.

Unless a different period is agreed upon for a specific Task Order, the *Contractor* responds to and completes work within the following minimum timeframes, measured from moment of notification by the *Service Manager* as per Table 1 below:

Table 1: Timeframes for Maintenance Categories

Category	Response Time (on site)	Completion Target
Emergency Maintenance	2 hours	Risk eliminated/made safe same day; permanent repair per agreed programme
Reactive Maintenance	48 hours	10 working days, or per accepted programme for larger repairs
Corrective Maintenance	By agreed Task Order date	Per accepted programme in the Task Order
Planned Maintenance	Not applicable	Per frequency in Table 2

As a minimum, Planned Maintenance is as per Table 2.

Table 2: Planned Maintenance Schedule

Area	Activity	Frequency
Buildings – General	Cleaning	6 Monthly
Roads	Cleaning	6 monthly
Building – Roofing	Silver coating (where applicable)	Annually
Buildings – Gutters & Downpipes	Cleaning	6 monthly
Stormwater Drainage	Cleaning	Annually (before rainy season)
Drainage (Powerhouse & Building)	Cleaning	6 monthly
Sewage Treatment Plant (Drakensberg PS)	Cleaning, infrastructure repairs where required	Annually

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3.2 Building Envelope and Structural Repairs

3.2.1 Roofing and Waterproofing

The *Contractor* is required to execute the following services:

- Repair roof leaks
- Replace damaged roof sheeting
- Replace roof tiles
- Repair flashings
- Repair roof waterproofing systems
- Screeding roof slabs
- Repair roof penetrations
- Repair damaged cladding
- Repair or replace gutters
- Repair or replace downpipes
- Perform roof cleaning

The Contractor notes the works includes the following areas as a minimum:

- Remediation of Water ingress at Drakensberg Visitors Center and Admin Building
- Machine Hall Building Waterproofing at Gariep PS
- Building water ingress defects at Gourikwa PS
- Water ingress defects at Port Rex PS (Control Room)

3.2.2 Walls, Masonry and Concrete

The *Contractor* is required to:

- Repair wall cracks
- Repair concrete deterioration
- Repair damaged plaster
- Repair structural and non-structural masonry
- Seal water penetration paths
- Repair damp-proofing defects
- Repair retaining walls
- Repair concrete floors and slabs
- Sealing of walls around the air-conditioning vent covers

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3.2.3 Painting and Corrosion Protection

The scope includes but is not limited to:

- Internal and External painting
- Structural steel painting
- Window frame painting
- Door and fence painting.
- Corrosion treatment.
- Application and/ or renewal of protective coating systems.

The *Contractor* ensures that all *works* are executed in compliance with the manufacturer's specifications.

3.3 Doors, Windows and Access Systems

The *Contractor*, as a minimum executes the following:

- Repair and/ or replace doors
- Repair and/ or replace door frames
- Repair and/ or replace locks and ironmongery
- Repair and/ or replace emergency exit systems
- Repair and/ or replace roller shutter doors
- Replace glazing and broken windows
- Repair and/ or replace blinds
- Repair and/ or replace weather seals

Specific focus shall be placed on damaged external doors and access doors identified at Gourikwa and Drakensberg PS.

3.4 Flooring and Ceilings

The *Contractor* is required, as a minimum, to:

- Repair and/ or replace floor finishes
- Replace damaged carpets
- Repair timber floors
- Repair and/ or replace raised flooring systems
- Repair and/ or replace anti-slip strips
- Install ramps, where required.

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- Repair and/ or replace water-damaged / damaged ceilings.
- Floor Epoxy Coating

Attention shall be given to:

- Heaving floor tiles at Gariep and Drakensberg PS.
- False floor defects and ceiling upgrades at Drakensberg PS – Control & Communication Room.
- Floor covering deterioration at Vanderkloof PS.
- Water-damaged ceilings at multiple stations.

The *Contractor* notes that the heaving tiles within the power stations are to be removed and floors replaced with an epoxy coating system.

3.5 Plumbing, Water and Sewer Systems

The *Contractor* is required, as a minimum, to:

- Repair leaks
- Replace valves
- Repair and/ or replace toilets
- Repair and/ or replace urinals
- Repair and/ or replace wash basins
- Repair and/ or replace geysers
- Repair and/ or replace hydroboils
- Repair water reticulation systems
- Repair and/ or replace water dispensers
- Repair sewer systems
- Unblock drains
- Repair and/ or replace manholes

Particular focus is required to address:

- Sewer backflow defects at Gourikwa PS.
- Sewage plant deficiencies at Gariep PS.
- Water ingress related to plumbing failures across all stations.

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3.6 Electrical Building Services

The *Contractor* is required, as a minimum, to:

- Repair and/ or replace lighting systems
- Repair and/ or replace socket outlets
- Repair and/ or replace distribution boards
- Repair and/ or replace earth leakage units
- Repair access control power supplies
- Reroute power and control cables
- Repair and/ or replace gate motor electrical systems
- Repair UPS systems
- Perform testing
- Issue CoCs where required

3.7 Roads and Civil Infrastructure

The *Contractor* is required, as a minimum, to:

- Repair potholes using cold mix or hot mix asphalt as appropriate to the extent of the repair (see Technical Service Requirements, Section 3.16)
- Repair internal and external roads, where required
- Repair/install paved surfaces
- Paint/repaint road markings
- Repair/install kerbs
- Repair stormwater drainage systems
- Repair parking areas
- Repair walkways
- Repair concrete pavement joints, including joint resealing, spall repair, and any other repairs require, where concrete road/apron pavements exist
- Repair bridge and culvert components (expansion joints, bearings, parapets/guardrails, deck waterproofing and drainage)
- Clean and clear stormwater drains and culverts along access roads
- Provide survey services as and when required

The *Contractor* performs routine maintenance as per Table 2 above.

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3.8 Fencing, Gates and Security Infrastructure

The *Contractor* is required, as a minimum, to:

- Repair and/ or replace perimeter and electric fencing system components
- Repair and/ or replace gate motors
- Repair and/ or replace sliding gates
- Repair and/ or replace security barriers
- Repair access automation systems
- Repair and/ or replace security doors

3.9 Fire Protection Infrastructure

The *Contractor* is required, as a minimum, to:

- Service fire extinguishers
- Service hose reels
- Repair fire doors
- Repair fire signage
- Maintain fire detection devices
- Repair associated building fire protection systems

The *Contractor* is to note that the stations have existing Fire Detection and Protection service contracts, and any services related to fire detection and protection will be adhoc.

3.10 Defect Specific Work

The *Contractor* as a minimum, executes the defect specific services stated below.

3.10.1 Drakensberg PS

The *Contractor* as a minimum, executes the following defect specific services:

- Water ingress
- Roof sheet damage
- Ceiling defects
- Building waterproofing
- Floor defects
- Overhead crane/ crawl beams

3.10.2 Ingula PS

The *Contractor* as a minimum, executes the following defect specific services:

- Storm damage repairs

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- Building envelope degradation
- Power and control cables rerouting
- Removal of redundant cable racks

3.10.3 Gariep PS

The *Contractor* as a minimum, executes the following defect specific services:

- Roof waterproofing failures
- Building cladding, where required
- Effluent spillages
- Floor tile failures
- Building corrosion

3.10.4 Vanderkloof PS

The *Contractor* as a minimum, executes the following defect specific services:

- Water ingress
- Waterproofing deterioration
- Floor covering defects
- Concrete deterioration

3.10.5 Port Rex PS

The *Contractor* as a minimum, executes the following defect specific services:

- Water ingress
- Building envelope deterioration.

3.10.6 Gourikwa PS

The *Contractor* as a minimum, executes the following defect specific services:

- Water ingress
- Roof defects
- Damaged doors
- Sewer defects
- Cracked walls and deteriorated finishes

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4. Technical Service Requirements

4.1 Leak Detection, Roof Inspection and Roof Waterproofing

The *Contractor* is required to investigate, assess, repair and maintain roofing systems, waterproofing systems and associated rainwater disposal infrastructure to eliminate water ingress and maintain the weather-tight integrity of buildings. Particular emphasis shall be placed on defects identified in the Buildings System Health Report, including water ingress at Drakensberg, Gariep, Ingula, Vanderkloof, Port Rex and Gourikwa Power Stations.

The *Contractor* as a minimum, will:

- Inspect the condition of roofs, gutter systems, roof coverings, flashings, roof waterproofing systems and rainwater disposal systems to determine the source of water ingress.
- Inspect HVAC ducts, roof penetrations and associated sealing systems where these may contribute to water ingress.
- Assess roof slopes and identify areas where ponding or pooling water occurs.
- Verify the adequacy of gutter and downpipe sizing relative to roof catchment areas.
- Submit a detailed inspection report containing findings, photographic evidence, root cause analysis and proposed remedial measures for acceptance by the *Service Manager*.
- Carry out the approved repairs and remedial works to ensure that roofs are watertight and leak-free.
- Assess gutters and downpipes and repair brackets, joints, supports, outlets and associated components.
- As a minimum, clean gutters and downpipes of dirt, debris and corrosion, and repaint them in accordance with Eskom corrosion protection specifications.
- Perform flood testing and/or rain penetration testing in accordance with SANS 10400-K:2011 and submit the required test documentation.
- Provide workmanship and material guarantees for all roof repair and waterproofing works.
- Notify the *Employer* of any additional urgent defects identified during inspections.

Where an existing waterproofing system is to be replaced:

- The replacement waterproofing system should not exceed the dead load of the existing system by more than 10%.
- Should the replacement system exceed this limit, the *Contractor* engages an ECSA registered Professional Structural Engineer/ Technologist to:
    - Conduct a structural assessment
    - Perform structural calculations
    - Confirm the adequacy of the existing structure
    - Produce a structural assessment report and methodology statement

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- The report and supporting calculations are submitted to the *Service Manager* for acceptance before implementation.

The service includes as a minimum:

- Inspection and leak detection
- Roof waterproofing
- Roof sheeting repairs
- Roof tile repairs
- Flashing repairs
- Fascia board repairs
- Barge board repairs
- Roof sealing
- Gutter replacement
- Downpipe replacement
- Roof coating systems
- Local repairs to exposed roof support elements

The *Contractor*:

- Submits roof-access methodologies and fall-protection plans before commencing work at height.
- Investigates water ingress pathways before any repair work is undertaken.
- Ensures that wet, unstable or unsound substrates are not concealed without treatment and acceptance.
- Ensures replacement roofing materials, sealants and fixings are fully compatible with the existing roofing system.
- Applies waterproofing systems strictly in accordance with manufacturer specifications.
- Supplies all product data sheets, technical specifications and warranty certificates.
- Notes that all major roof replacement, structural modifications and asbestos-containing roofing systems are excluded from ordinary maintenance works and are only conducted following specific instruction by the *Employer*.

Notwithstanding the above, the Contractor submits detailed:

- Method Statements.
- Quality Control Plans (QCPs).
- Inspection and Test Plans (ITPs).
- Product Specifications.

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- Material Data Sheets.

for acceptance by the *Service Manager* before commencement of any roofing or waterproofing *works*.

4.2 Painting and Corrosion Protection

The *Contractor* undertakes painting, coating and corrosion protection *works* for buildings and associated infrastructure.

The scope includes, as a minimum:

- Internal and External walls
- Ceilings
- Structural steel
- Doors and Door frames
- Window frames
- Gates and Fencing
- Gutters and Downpipes
- Fascia boards and Barge boards
- Exposed steelwork
- Roof support structures

For repainting works, the *Contractor* ensures:

- Two coats of acrylic PVA paint are applied to internal and external wall surfaces unless otherwise specified.
- Paint systems are selected to suit site environmental conditions and exposure classifications.

Unless otherwise instructed by the *Service Manager*, colours shall match Eskom Corporate Identity requirements and generally consist of:

- Plascon Inspired Y1-C2-3 (Pale Linen);
- Plascon Inspired Y2-D2-3 (Veldrift);
- Plascon Inspired Y2-D2-2 (Stone Wash);
- Plascon Inspired Y2-D2-1 (Waxen Tint).

The Contractor is required to:

- Obtain approved colour swatches from an approved supplier.
- Ensure compliance with Eskom Corporate Identity Standards.
- Submit product data sheets and Safety Data Sheets (SDS) prior to commencement.
- Assess substrate conditions and identify causes of coating failure.

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- Recommend compatible coating systems.

The *Contractor* ensures that surface preparation includes:

- Removal of loose paint and rust
- Removal of oil and grease
- Removal of mould and biological growth
- Surface cleaning
- Feathering of existing paint edges
- Repair of defective surfaces

The *Contractor* further ensures:

- Adjacent surfaces and equipment are protected
- Covers, handles and removable fittings are removed where practical
- Reinstatement is completed upon completion of the *works*
- Coating application shall comply with manufacturer specifications relating to:
    - Coverage rates
    - Surface preparation
    - Film thickness
    - Overcoating intervals
    - Environmental conditions
- The completed coating system is to be:
    - Uniform in appearance
    - Fully bonded
    - Free of defects
    - Free of contamination
    - Applied to the specified coating thickness
- Where applicable, project-specific coating warranties shall be submitted for acceptance.

Notwithstanding the above, the Contractor submits detailed:

- Method Statements.
- Quality Control Plans (QCPs).
- Inspection and Test Plans (ITPs).
- Product Specifications.
- Material Data Sheets.

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for acceptance by the *Service Manager* before commencement of any painting *works*.

4.2.1 Machine Hall Crane beam – Drakensberg PS

The service includes as a minimum:

- Overhead crane crawl beams
- Crane rails
- Rail clips
- Rail fixing systems
- Rail support structures
- Crane girders
- Crane access walkways
- Structural steel supporting crane systems

Corrosion resulting from continuous water ingress from bedrock seepage is causing deterioration of rail fixings, rail support systems, concrete channels, and structural steel components.

The *Contractor* is required, as a minimum, to:

- Identify seepage and water ingress points.
- Assess corrosion caused by continuous wetting.
- Design and install water diversion measures.
- Install bunds, drains and containment systems where required.
- Repair water-damaged concrete.
- Seal leakage pathways where practical.

Water ingress and pooling currently create the ideal conditions for crevice corrosion and accelerated deterioration of the rail fixing components.

4.2.1.1 Crane Rail Corrosion Repairs

The Contractor is required to:

- Inspect all crane rail systems,
- Perform condition assessments,
- Conduct dimensional checks,
- Assess rail alignment,
- Assess rail fastening systems and
- Assess supporting concrete beams and channels.

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Works may include:

- Rail clip replacement,
- Rail fixing replacement,
- Fastener replacement,
- Structural steel repair,
- Corrosion rehabilitation,
- Reinstatement of rail alignment and
- Concrete rehabilitation.

4.2.1.2 Concrete Rehabilitation

The *Contractor* repairs:

- Spalled concrete.
- Delaminated concrete.
- Cracked concrete.
- Water damaged concrete.
- Corrosion affected concrete adjacent to steelwork.

Refer to Section 4.3.1 for repair specifications.

4.3 Walls, Masonry and Concrete

The service includes as a minimum, repair of:

- Cracked walls
- Water-damaged walls
- Masonry defects
- Concrete defects
- Penetrations
- Damp walls
- Plaster failures
- Retaining wall defects
- Building envelope deterioration

The *Contractor*:

- Assesses whether defects are structural or non-structural.
- Assesses whether movement is active or dormant.

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- Identifies any relationship between cracking and water ingress.
- Reports structural defects to the *Service Manager* before repairs commence.

The *Contractor* removes all loose and unsound materials to a sound substrate and ensure compatibility of repair materials with existing construction.

Major structural repairs, underpinning and structural strengthening remain outside the ordinary maintenance scope and requires separate engineering instructions. The service includes local non-structural repair of plaster, masonry, cracks, water-damaged finishes, penetrations, retaining-wall finishes and concrete identified in a Task Order.

The *Contractor* assesses whether cracking or movement is active, structural or associated with water ingress and reports suspected structural distress before repair.

Loose and unsound material is removed to a sound substrate. Exposed reinforcement is treated using an accepted repair system.

Repair mortar, plaster, brick and block are compatible and properly bonded, cured and finished.

Structural design, significant reinforcement repair, underpinning and major retaining-wall work require separate engineering scope and instruction.

4.3.1 General Concrete Repairs

The *Contractor* repairs concrete defects including:

- Spalling
- Cracking
- Corrosion damage
- Exposed reinforcement
- Delamination
- Loss of concrete cover

The *Contractor*:

- Saw-cuts repair perimeters to a minimum depth of 10 mm.
- Removes defective concrete to sound material.
- Avoids damaging existing reinforcement.
- Creates dovetailed repair edges where required.
- Cleans and treats corroded reinforcement.
- Removes all debris and dust before repair.
- Saturates substrates where required by manufacturer specifications.
- Apply approved repair mortars in accordance with manufacturer specifications.
- Cure repairs for a minimum of seven days where specified.

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Where repair depths exceed 100 mm:

- Micro-concrete or structural replacement concrete shall be utilised instead of repair mortar, subject to acceptance by the *Supervisor*.

4.3.2 Crack Repairs

The Contractor assess and classify all cracks as:

- Structural or non-structural
- Moving or non-moving

The selected repair methodology will be appropriate to the crack classification and subject to *Service Manager* acceptance.

Typical repair methods include:

- Epoxy injection
- Cementitious grout injection
- Flexible sealant repairs
- Crack routing and sealing
- Surface treatment systems

The *Contractor* repairs all cracks greater than 0.2 mm wide unless instructed otherwise by the *Service Manager*.

For dormant cracks, the *Contractor*:

- Open a groove approximately 20–30 mm wide and up to 50 mm deep.
- Cleans and prepares the crack.
- Fills using an approved repair system.

For dry cracks on horizontal surfaces, the *Contractor*:

- Forms a V-shaped groove approximately 10 mm deep.
- Cleans the crack thoroughly.
- Fills by capillary action with low-viscosity epoxy resin.
- Removes excess material after curing.
- Grinds and finishes the surface to match surrounding concrete.

The *Contractor* ensures all repaired cracks provide:

- Watertightness

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- Durability
- Long-term serviceability
- Structural integrity where applicable

Notwithstanding the above, the *Contractor* submits detailed:

- Method Statements.
- Quality Control Plans (QCPs).
- Inspection and Test Plans (ITPs).
- Product Specifications.
- Material Data Sheets.

for acceptance by the *Service Manager* before commencement of any concrete *works*.

4.4 Doors, Windows and Access Systems

The service includes the inspection, maintenance, repair, replacement and installation of doors, windows, frames, glazing, ironmongery, roller shutter doors, access control systems and associated building access infrastructure.

The *Contractor* performs maintenance on:

- External and internal doors
- Security doors
- Fire-rated doors
- Roller shutter doors
- Aluminium doors and windows
- Timber doors and frames
- Steel doors and frames
- Window glazing systems
- Blinds and window tinting
- Door closers
- Panic bars and emergency exit mechanisms
- Hinges, locks and latches
- Access control systems
- Magnetic locking systems
- Electric strikes
- Door seals and weather strips

The *Contractor*:

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- Assesses all defective components and submit recommendations to the *Service Manager*.
- Repairs or replaces damaged doors, door frames and associated hardware.
- Repairs damaged aluminium window and door systems.
- Replaces broken or cracked glazing with equivalent safety glazing where required.
- Repairs damaged hinges, rollers, closers and locking mechanisms.
- Repairs or replaces weather strips and seals to prevent air and water ingress.
- Ensures all windows and doors operate freely and close correctly.
- Repairs damaged access control components.
- Adjusts and tests magnetic locks and electric strikes.
- Repairs roller shutter doors and associated motors.
- Maintains the integrity of fire-rated doors and emergency exit systems.

For glazing repairs, the *Contractor* ensures:

- Glass complies with applicable SANS requirements.
- Safety glazing is utilised where required.
- Existing tinting and shading characteristics are matched as closely as practicable.

For access systems:

- The *Contractor* verifies correct operation of all access systems after completion.
- Security settings and programming are only changed following approval by the *Service Manager*.
- All repairs preserve the safety, security, waterproofing and operational performance of the facility.

Notwithstanding the above, the *Contractor* submits detailed:

- Method Statements.
- Quality Control Plans (QCPs).
- Inspection and Test Plans (ITPs).
- Product Specifications.
- Material Data Sheets.

for acceptance by the *Service Manager* before commencement of any of the *works*.

4.5 Flooring and Ceilings

The service includes maintenance, repair and replacement of flooring systems, suspended ceilings, raised access floors and associated finishes.

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The *Contractor* performs repairs to:

- Floor Tiles (Ceramic, Porcelain etc.),
- Concrete floors,
- Timber floors,
- Vinyl floors,
- Epoxy flooring,
- Carpets,
- Raised access flooring systems,
- Suspended ceilings,
- Ceiling grids,
- Ceiling boards,
- Bulkheads,
- Cornices, and
- Access panels.

The *Contractor*:

- Investigates root causes of floor failures before undertaking repairs,
- Assesses defects resulting from movement, moisture, vibration, settlement or water ingress,
- Replaces damaged flooring with materials matching existing finishes where reasonably practicable,
- Repairs loose, cracked, lifting or broken tiles,
- Repairs damaged timber flooring systems,
- Replaces damaged carpets and vinyl flooring,
- Removes trip hazards, and
- Repairs floor levels where localized settlement has occurred.

For raised floors, the *Contractor*:

- Inspects support pedestals and framing systems,
- Replaces unstable floor panels, and
- Ensures floor loading capacities are maintained.

The *Contractor* notes that the raised floor in the Control Room (Drakensberg PS) is to be replaced with new.

For ceiling works, the *Contractor:*

- Removes damaged ceiling board,

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- Replaces water-damaged ceiling finishes,
- Repairs ceiling suspension systems,
- Reinstates access panels and service openings, and
- Matches existing ceiling systems.

All flooring and ceiling materials shall be installed in accordance with manufacturer's specifications.

Notwithstanding the above, the *Contractor* submits detailed:

- Method Statements,
- Quality Control Plans (QCPs),
- Inspection and Test Plans (ITPs),
- Product Specifications, and
- Material Data Sheets.

for acceptance by the *Service Manager* before commencement of any ceiling and flooring *works*.

4.5.1 Control Room – Drakensberg PS

The *Contractor* is required to replace the raised modular floor panels with panels of the same dimensions as existing - 600mm × 600mm. The finished product must be a continuous floor finish with no uneven surfaces that could pose a safety hazard. The *Contractor* must submit specifications of the new floor which should be in accordance with the latest Eskom Standards for the Ergonomic Design of Power Station Control Suites.

The panels are to consist of cementitious infill and as per the latest standard, the floors should have a grey/ beige colour to match with the overall colour basis of the room. The floor colour should not be completely plain but have a varying effect to reduce the impact of dirt.

The floor material should be hard-wearing, sound-deadening floor material and have antistatic properties which is also advisable when using computer equipment.

The flooring product can be used as sheeting for large spaces or cut to fit onto computer flooring. If required, inlays can be made with different colours to create a pattern on the floor, and it recommended that the product utilised is linoleum or similar approved.

To define the operator’s workspace more clearly, darker overlays can be positioned around the operator’s desk. This overlay will typically be charcoal black, to minimise wear and tear and dirt appearance. The overlays can be removed for cleaning and easily replaced later. The overlays must have a bevelled edge to reduce unevenness for chair castors.

The *Contractor* is to submit a sample of the floor panels prior to start of the work for acceptance by the *Service Manager*.

4.5.1.1 Steel under Structure/sub-structure

The under-structure system and the interfaces to the panels shall be such that the floor shall remain sturdy and firm no matter how many panels are removed for work to be carried out. The sub floor should be structurally strong enough to support the raised access floor and the environment it supports. The *Contractor* further confirms the final floor loading capabilities on refurbishment.

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4.5.1.2 Ceiling

The ceiling panels in the Control Room are aging and have water damage. The full extent of the scope will be determined and accepted by the *Service Manager* once the *Contractor* has inspected and submitted a detailed refurbishment plan.

The extent of work therefore required for the refurbishment of the ceiling is as follows:

- The *Contractor* assesses the entire ceiling and the remaining panels in-situ.
- The *Contractor* replaces the ceiling panel with new and with a new ceiling panel which has been previously accepted by the *Service Manager* and is in accordance with relevant Eskom and regulatory standards.
- A refurbishment strategy and detailed inspection report, with photographic evidence is provided by the *Contractor* to the *Service Manager* for acceptance.
- Only accepted and approved repair work is executed thereafter.
- It is recommended that the *Contractor* replaces the entire ceiling panel in the Control and Equipment Room with new.
- There is a possibility that the existing ceiling panel material may contain asbestos or similar material that may cause harm and/ or skin irritation. The *Contractor* assesses the material prior to commencement of work and plans the refurbishment accordingly. Where the material is confirmed to contain asbestos, the *Contractor* ensures assessment, handling, removal and disposal is carried out by a contractor accredited and registered in terms of OHS Act to handle such material. All waste material is subsequently disposed safely and at a designated landfill site.
- The *Contractor* assesses the suspended ceiling and replaces damaged and missing ceiling panels and associated supporting aluminium frames and brackets. The ceiling must match the existing. Depending on the condition and extent of damage to the ceiling, the *Employer* may opt to replace the complete suspended ceiling which is generally white and comprises of suspended acoustic boards/tiles.

4.5.1.3 Access Floor

The access floor panels are to be structurally rigid isotopic or linear assemblies fabricated entirely from non-combustible components and shall consist of a dead flat full-hard steel top sheet, resistance-welded to a steel bottom section of irregular or regular domed formation. The exterior and interior surfaces of the access floor panel shall be protected from corrosion by a process of cleaning and dip phosphate. The core interior of the panel shall be filled with a non-combustible cementitious compound which will support no less than 90% of the top surface of the panel. The exterior surface of the panel shall be coated with an epoxy coated finish.

For a freestanding system the access floor panels shall provide for positive engagement with the pedestal at all four corners.

For a system in which the panels are screwed down at their corners the access floor panel shall be provided with four corrosion resistant captured fasteners. The fasteners shall bolt through the panel and clamp the panel to the pedestal’s heads. The panels shall be able to be removed by releasing the four fasteners. A more suitable solution is advisable instead of boards for the ceiling area. The *Contractor* is to make a proposal, which should be accepted and approved prior to installation, or replace the existing boards with a more suitable material.

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4.5.1.4 Under Structure

The under-structure system consists of a steel or aluminium factory assembled pedestal head and base which shall be surface treated and have a corrosion-resistant finish. This assembly shall be capable of supporting a minimum load of 22.5 kN.

The maximum depth of the access floor panel and the pedestal assembly shall not exceed assembly over a range of 50 mm (25 mm up 25 mm down) without rotation of the pedestal head.

The nut shall have an anti-rotation and vibration-proof feature.

For a freestanding system the pedestal head shall have locating studs on which the access floor panels positively locate as well as locating tabs and ridges which positively position and self-align the pedestal head with access floor panel.

For a system in which the panels are screwed down at their corners the pedestals head shall have four threaded holes to accept the panel fasteners as well as locating tabs and ridges which positively position and self-align the pedestal head with the access floor panel.

For both the free standing and the screw-down the access floor head rests on a conductive plastic gasket.

For a stringer system the pedestal head shall be designed to receive Snap-On or bolt on stringers.

Stringers shall be manufactured from a minimum of 20-gauge steel channel section with a Snap-On attachment to the pedestal.

Each stringer shall be surface treated and have a corrosion-resistant finish and be provided with a factory-applied and conductive bonded gasket on the top surface.

The design of all under structure systems and their interfaces to the panels shall be such that the floor shall remain sturdy and firm no matter how many panels are removed for work to be carried out under the access floor.

4.5.1.5 Finishes

The raised access floor shall be finished with one of the following finishes:

- High pressure laminate of 1.5 mm thickness adhered to the full surface of the access floor panel for use in a Snap-On stringer or free-standing system.
- The laminate shall have an integral trim edge or be bevelled along its edge and shall not crack or split or come away from the edge of the panel.
- Static control linoleum of 2.0 mm thickness fully flexible antistatic or static conductive 600mm × 600mm vinyl tiles adhered to the full surface of the access floor panel for use in a Snap-on stringer or freestanding system.
- The linoleum shall be bevelled along its edge.

4.5.1.6 Loading Performance Specifications

Type of Load	Panel Grade		
	Type 1	Type 2	Type 3
Concentrated load on a 25 mm × 25 mm area:	2.7 kN	4.5 kN	5.5 kN

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Maximum deflection on top surface (Not to increase when load is applied continuously for 24 hours) Maximum permanent set on top surface Safety factor = design load (Failure shall be ductile and not sudden)	2.00 mm 0.25 mm × 3	2.00 mm 0.25 mm × 3	2.00 mm 0.25 mm × 3
Uniformly distributed load per m^2: Maximum deflection on underside Maximum permanent set on underside	9.0 kN 1.00 mm 0.25 mm	13.5 kN 1.00 mm 0.25 mm	16.5 kN 1.00 mm 0.25 mm
Rolling loads: Under rolling load test conditions edge to edge deflection between loaded and unloaded panels shall not exceed 2.00mm and maximum permanent set shall not exceed 0.50mm (bolt on top surface for all rolling load tests) 75mm Ø × 24mm wide hard plastic wheel Number of passes 150mm Ø × 50mm wide hard plastic wheel Number of passes 20 mm Ø ×75mm wide hard plastic wheel Number of passes	 3.5 kN 10 2.7 kN 20 000 2.25 kN 40 000	 4.9 kN 10 3.5 kN 20 000 2.25 kN 250 000	 6.0 kN 10 4.5 kN 20 000 2.25 kN 500 000
Impact: Load dropped onto an area of 25 mm × 25 mm Maximum permanent set	 0.43 kN 1.50mm	 0.43 kN 1.50mm	 0.43 kN 1.50mm
Pedestal assembly: Axial load Horizontal force applied at a height of 300mm from the sub-floor after the adhesive has cured - minimum resistance	 22.5 kN 10 kg	 22.5 kN 10 kg	 22.5 kN 10 kg

4.5.2 Floor Tiles (Underground Works – Machine Hall and Valve Hall) – Drakensberg & Gariep PS

The *Contractor* is required to remove the existing heaved floor tiles in the Machine Hall and Valve Hall in the underground powerhouse complex at Drakensberg and Gariep Power Station.

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The *Contractor* supplies all labour, supervision, materials, consumables, equipment and accessories required for the removal of the existing floor tiles and the subsequent preparation and application of a heavy-duty epoxy floor coating system to concrete floor surfaces.

The epoxy flooring system is to be suitable for industrial (power station) applications.

4.5.2.1 Surface Assessment

Prior to commencement of the works, the Contractor:

- Inspects the existing concrete substrate
- Identifies moisture ingress, if any
- Identifies cracking, delamination and spalling
- Identifies contamination from oils, grease or chemicals
- Measures floor levels where required
- Performs moisture content testing where recommended by the coating manufacturer.

A condition assessment report together with the proposed coating system is submitted to the *Service Manager* for acceptance before commencement of the works.

4.5.2.2 Surface Preparation

Surface preparation is considered critical to the success of the system.

The *Contractor*:

- Removes all existing loose coatings.
- Removes dirt, dust, laitance, grease and contaminants.
- Removes oil contamination using approved degreasers.
- Mechanically prepare concrete surfaces using one or more of the following methods:
    - Diamond grinding/ Shot blasting/ Scarifying or Mechanical abrasion.

The prepared substrate is to ne structurally sound, dry, free of dust and contaminants and provide an open textured surface suitable for bonding.

All surface preparation is to comply with the coating manufacturer's specifications.

4.5.2.3 Concrete Repairs

Prior to application of the coating, the *Contractor* repairs concrete defects such as cracks, spalling, surface defects, voids and honeycombing.

Repairs are to be undertaken using an approved epoxy repair mortar or cementitious repair materials compatible with the proposed coating system.

All repairs are to be completed and cured in accordance with manufacturer's recommendations before the coating system is applied.

4.5.2.4 Epoxy Coating System

Unless otherwise specified in the Task Order, the epoxy coating system consists of:

- Primer Coat:
    - Solvent-free or low VOC epoxy primer
    - Applied to prepared concrete surfaces

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- Applied at the manufacturer's specified coverage rate

- Body Coat:
  - High-build two-component epoxy coating
  - Minimum Dry Film Thickness (DFT): 300–500 microns

- Final Coat:
  - Two-component coloured epoxy finish coat
  - Resistant to abrasion and chemicals
  - Uniform colour and finish

4.5.2.5 Coating Thickness

Unless otherwise instructed by the *Service Manager*, coating thickness is as per Table 3:

Table 3: Coating Thickness

Area	Minimum Total Dry Film Thickness
Offices and Administration Areas	500 microns
Workshops and Stores	1.0 mm
Machine Halls	1.0 – 2.0 mm

Notwithstanding the above, the final coating thickness shall comply with the coating manufacturer's approved system.

4.5.2.6 Colour Requirements

Floor colours shall be selected and approved by the *Service Manager* before application.

Typical colours may include:

- Light Grey (Powerhouse Complex)
- Mid Grey (Powerhouse Complex)
- Safety Green
- Safety Yellow (Workshops)
- Safety Red
- Blue

The *Contractor* provides colour samples prior to commencement.

4.5.2.7 Environmental Conditions

The *Contractor* notes that product application will not proceed when:

- Surface moisture and relative humidity exceed manufacturer limits
- Concrete temperature is outside specified limits

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- Condensation is present
- Rain or water ingress can affect curing

The *Contractor* monitors and records:

- Ambient temperature
- Surface temperature
- Relative humidity

4.5.2.8 Application Requirements

The *Contractor*:

- Mixes materials strictly in accordance with the manufacturer specifications.
- Ensures paint coatings applied by trained applicators.
- Applies coatings uniformly.
- Avoids runs, air bubbles, pinholes and holidays.
- Observes minimum and maximum overcoating intervals.

Application methods may include:

- Roller application
- Squeegee application
- Airless spray application
- Trowel application

4.5.2.9 Inspection and Quality Control

The *Contractor* submits:

- Product Data Sheets
- Safety Data Sheets
- Method Statements
- Quality Control Plans
- Inspection and Test Plans

The following inspections are carried out:

- Surface preparation inspection
- Repair work inspection
- Primer inspection

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- Coating thickness verification
- Final finish inspection

The *Service Manager* reserves the right to witness any hold point during the *works*.

4.5.2.10 Acceptance Criteria

The completed floor is to be fully bonded to the substrate, free of blistering, delamination, pinholes and contamination and have no visible defects. The finish is to have a uniform colour and finish and meet the specified coating thickness.

Any defective work shall be repaired at the *Contractor's* expense.

4.5.2.11 Protection and Curing

The Contractor:

- Protects the coated floor from traffic during curing.
- Prevents contamination during curing.
- Barricades work areas where required.

The floor shall not be handed over until the manufacturer's stated curing period has been achieved.

4.5.2.12 Warranty

The Contractor provides:

- A minimum workmanship warranty of twelve (12) months.
- Manufacturer's material warranty.
- Product certification and technical data sheets.

Any defects arising during the warranty period due to poor workmanship or defective materials shall be corrected at no additional cost to the *Employer*.

Notwithstanding the above, the *Contractor* submits detailed:

- Method Statements.
- Quality Control Plans (QCPs).
- Inspection and Test Plans (ITPs).
- Product Specifications.
- Material Data Sheets.

for acceptance by the *Service Manager* before commencement of any *works*.

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4.6 Plumbing, Water and Sewer Systems

The service includes fault finding, inspection, maintenance, repair, replacement, testing and commissioning of water reticulation systems, sanitary plumbing systems, sewer systems, drainage systems and associated building services infrastructure within the Task boundary.

The *Contractor* maintains, repairs or replaces:

- Water pipes and fittings
- Hot and cold-water reticulation systems
- Toilets and urinals
- Wash hand basins
- Hydroboils
- Geysers
- Water dispensers
- Isolation valves
- Pressure reducing valves
- Sewer pipes
- Traps and waste fittings
- Inspection chambers
- Manholes
- Sewage systems
- Surface drainage systems
- Rodding eyes
- Stormwater outlets

The *Contractor*:

- Isolates and controls water and sewer systems before commencing work.
- Prevents contamination and maintains hygienic working conditions throughout execution of the *works*.
- Confirms system pressure, temperature, capacity, electrical supply, mounting requirements and safety devices before replacing equipment.
- Ensures replacement fittings are compatible with existing installations and readily maintainable.
- Supports, secures and protects pipework against mechanical damage and corrosion.
- Ensures joints are leak-free and all systems are pressure tested, leak tested and function tested prior to handover.
- Flushes water systems before returning them to service.

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- Tests drainage systems for free flow and positive discharge.
- Cleans and disinfects sanitary installations before handover.
- Investigates repeated drain blockages, sewer backflow, root intrusion, inadequate gradients, collapsed pipelines and persistent leakage and provides recommendations to the *Service Manager*.
- Repairs sewer backflow defects, missing rodding eye caps, leaking manholes and blocked sewer lines identified at stations such as Gourikwa and Gariep PS.
- Provides plumbing and/or electrical compliance certificates where required.
- Excavations, major underground reticulation replacements, municipal interfaces and sewer treatment plant upgrades shall be separately instructed by the *Service Manager*.
- Legionella management or specialist water treatment is excluded unless specifically identified within a Task Order.

Notwithstanding the above, the *Contractor* submits detailed:

- Method Statements.
- Quality Control Plans (QCPs).
- Inspection and Test Plans (ITPs).
- Product Specifications.
- Material Data Sheets.

for acceptance by the *Service Manager* before commencement of any wet *works*.

4.7 Electrical Building Services

The service includes fault finding, inspection, testing, repair, replacement and minor installation associated with building electrical infrastructure and ancillary building systems.

The *Contractor* maintains:

- Internal and external lighting systems
- Parking lot lighting
- Distribution boards
- Circuit breakers
- Earth leakage systems
- Isolators
- Socket outlets
- Dedicated outlets
- Light switches
- Occupancy sensors

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- Wiring systems
- Trunking systems
- Hand dryers
- UPS installations
- Gate motor supplies
- Access control power supplies
- Electrical locks
- Security-related electrical systems

The *Contractor*:

- Performs all work using competent, qualified and legally authorised personnel.
- Verifies ratings, fault levels, conductor sizing, earthing arrangements, enclosure ratings and compatibility before replacement,
- Labels all distribution boards and update schedules following modifications,
- Reinstates all blanks, barriers, covers and warning labels,
- Performs earth continuity testing,
- Performs earth leakage testing,
- Performs insulation resistance testing where applicable,
- Conducts operational and functional testing after repairs,
- Repairs and replaces defective lighting fittings, lamps, switches, wiring and cable trays,
- Repairs gate motor power supplies and associated controls,
- Repairs electrical hand dryers,
- Repairs access-control electrical systems,
- Provides Certificates of Compliance (CoC) where required by legislation,
- Removes all temporary electrical supplies after completion of the Task, and
- Works on plant generation systems, protection systems and high-voltage installations is excluded unless specifically instructed within a Task Order.

All electrical works shall comply with applicable Eskom Electrical Standards and Lighting specifications.

Notwithstanding the above, the *Contractor* submits detailed:

- Method Statements,
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- Material Data Sheets.

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for acceptance by the *Service Manager* before commencement of any electrical *works*.

4.8 Roads and Civil Infrastructure

The service includes maintenance, repair and replacement of roads, parking facilities, walkways and associated civil infrastructure within power station boundaries.

The *Contractor* maintains, as a minimum:

- Asphalt, concrete, gravel and paved roads.
- Parking areas
- Walkways
- Pavements
- Kerbs
- Stormwater systems
- Retaining walls
- Road signage
- Road markings
- Side drains
- Surface drainage infrastructure
- Access roads

The *Contractor*:

- Establishes approved traffic accommodation measures before affecting any road, pedestrian walkway or parking area.
- Neatly defines repair boundaries.
- Removes failed material and prepares the substrate.
- Compacts all replacement material in controlled layers.
- Repairs potholes.
- Repairs asphalt defects.
- Patches potholes and localised pavement failures using cold mix asphalt where the repair area does not exceed 5m^2 per defect, or for emergency/temporary reinstatement of trafficable surfaces pending a permanent repair.
- Patches and reinstates potholes and pavement failures using hot mix asphalt (HMA) where the repair area exceeds 5m^2 per defect, or where a permanent, full-depth reinstatement is required. The *Service Manager* may direct the use of hot mix asphalt irrespective of area where traffic loading, location (e.g. heavy vehicle routes, plant access roads) or site conditions warrant it.
- Repairs concrete pavement defects.
- Reinstates road markings and parking demarcations.

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- Repairs concrete aprons, walkways and kerbs.
- Repairs stormwater drainage systems.
- Ensures repaired surfaces drain effectively without ponding.
- Identifies underground services before excavation.
- Restores excavated areas to original operational condition.
- Corrects settlement and differential movement resulting from repair activities.
- Major road reconstruction and geometric redesign are excluded unless specifically instructed by the *Service Manager*.

4.8.1 Layerworks and Compaction for Patch Repairs

Where a pothole or pavement failure extends below the surfacing into the base, subbase or subgrade, the *Contractor* excavates the failed pavement layers to sound, undisturbed material before reinstatement. The extent of removal is agreed with the *Service Manager* where it exceeds the area of visible failure.

Reinstatement material matches or exceeds the G-classification (per TRH14) of the original pavement layer being replaced, where the original pavement design or as-built records are available. Where no design record exists, the *Contractor* reinstates using material not weaker than G6 (subbase) and G4(base), or as otherwise accepted by the *Service Manager*. Layers are placed and compacted in accordance with COTO, in lifts not exceeding 150mm compacted thickness, to the following minimum densities (MOD AASHTO):

- Subgrade (in-situ or reinstated): 93%, top 150mm 95%
- Subbase: 95%
- Base: 98%

Each layer is tested and accepted by the *Service Manager* before the next layer or the asphalt/concrete surfacing is placed over it. Layers found not to meet the specified density are reworked and retested at the *Contractor's* cost.

4.8.2 Concrete Pavement Repairs

Where in-situ concrete pavements, aprons or hardstands exist, the service includes repair of the following concrete pavement-specific defects, in addition to the general concrete repair requirements of Section 3.13:

- Joint spalling and joint seal failure
- Slab cracking
- Dowel bar corrosion
- Pumping or voiding beneath the slab

The *Contractor* selects the repair method appropriate to the defect identified from prior inspection:

- Joint resealing: removal of failed sealant and backing chord, joint cleaning, installation of new backing chord and a sealant compatible with the existing joint.

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- Concrete spall repair: saw-cutting the repair perimeter, removal of unsound concrete, application of a bonding agent, and reinstatement with an approved rapid-strength repair mortar or concrete.
- Full panel replacement: saw-cutting at the panel joints, removal of the full panel, installation of new dowel bars, and reinstatement with concrete meeting strength and durability requirements of the existing concrete.
- Dowel bar replacement: slot-cutting across the joint, placement of new dowel bars, and reinstatement with a non-shrinkage, rapid-strength grout.
- Slab jacking by grout injection where voids beneath the slab are identified by visual evidence of pumping.

4.9 Stormwater Drains and Culverts Cleaning – Access Roads

This section covers the routine cleaning of stormwater drainage infrastructure along access roads – side drains, mitre drains, catch pits, and culvert inlets/outlets.

The *Contractor* is required, as a minimum, to:

- Clear silt, debris and vegetation growth from open side drains and mitre drains along access roads.
- Clean and de-silt catch pits and stormwater inlets/outlets along access roads.
- Clear culvert inlets and outlets of debris, silt build-up and vegetation blockages to restore free flow.
- Where a piped culvert cannot be adequately cleared or inspected from the inlet/outlet due to length or blockage, arranges CCTV or other internal inspection where instructed by the Service Manager, and reports the condition and location of any blockage or structural defect found.
- Records and reports any structural defect observed during cleaning to the *Service Manager*.

Routine cleaning frequency is bi-annual (before and after the rainy season) as per Table 1, with additional cleaning as instructed following storm events or when blockage is reported.

4.10 Survey Work

The *Contractor* provides survey services as and when required by Task Order, in support of the maintenance, repair, and civil works described elsewhere in this Scope of Work. Survey work is not routine and is only carried out on specific instruction from the Service Manager.

Survey services that may be instructed include:

- Topographical surveys to support the design of drainage, road, or other civil repair and replacement works.
- As-built surveys of completed works, for record and close-out purposes.
- Setting-out surveys for new or replacement civil infrastructure.
- Invert level, gradient, and condition surveys of stormwater drainage systems and culverts, including CCTV survey of piped sections where instructed.

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Survey work is carried out by suitably qualified and experienced survey personnel. Survey data is supplied in an agreed digital format (e.g. AutoCAD or GIS-compatible) referenced to an agreed coordinate system and datum (e.g. Hartebeesthoek94/WGS84), together with a summary report where instructed.

4.11 Fencing, Gates and Security Infrastructure

The service includes inspection, maintenance, repair and replacement of perimeter security infrastructure and access control systems.

The Contractor is required to, as a minimum:

- Maintain site security throughout execution of the works.
- Install temporary barriers or protection where required.
- Verify the condition and alignment of mechanical components before motor replacement.
- Repair damaged fencing and posts.
- Repair damage lighting posts/mast.
- Replace damaged electric fence conductors and insulators.
- Replace damaged kiosks and associated components.
- Repair gate motors and automation systems.
- Repair remote control systems and access control systems.
- Test electrical protection, earthing and safety devices.
- Removal of redundant electrical power cables, energizers, insulators, electric fence conductors etc.
- Removal of damaged/redundant lighting posts/masts.
- Verify operation of safety beams, photocells, limit switches and release systems.
- Reinstate electric fence warning signage.
- Test and commission all systems before handover.
- Major redesign or replacement of security systems shall require a Task-specific design and approval process.

4.12 Fire Protection Infrastructure

The service includes inspection, servicing, maintenance and repair of local fire protection equipment and infrastructure forming part of building systems.

The *Contractor* ensures work is performed by competent and appropriately accredited fire protection service providers where required by legislation or applicable SANS requirements.

The *Contractor* maintains, as a minimum:

- Portable fire extinguishers
- Fire hose reels
- Fire doors

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- Door closers
- Panic hardware
- Emergency escape hardware
- Fire signage
- Emergency lighting
- Local fire detection devices
- Manual call points

The Contractor is required, as a minimum to:

- Inspect and service portable fire extinguishers.
- Recharge extinguishers when required.
- Replace defective extinguishers.
- Service and repair fire hose reels.
- Inspect and repair fire doors.
- Inspect emergency exit doors and panic hardware.
- Inspect local fire detection devices.
- Maintain service labels, seals and certification records.
- Update inspection tags and service records.
- Verify fire equipment remains suitable for the hazard classification of the protected area.
- Report all fire protection impairments immediately to the Service Manager.
- Implement temporary mitigation measures where systems are impaired.
- Restore fire protection systems to full serviceability as soon as reasonably practicable.
- Provide inspection certificates and service reports upon completion.

4.13 *Contractor's* Procurement of Plant and Materials

Where there are any materials and/or external services that were not initially anticipated in the contract, the *Contractor* provides the *Service Manager* with a quotation with the agreed markup percentage for all materials, parts, spares or specialised services required to perform repairs/ *works*.

The *Contractor* attaches the Vendor's invoice or proof of purchase together with the *Contractor's* quotation as supporting evidence. The warrantees from suppliers are to be in favour of the *Employer* and not just the *Contractor*.

Appendix A – Applicable Standards

Description	Reference
Occupational Health and Safety Act, Act 85 of 1993	
Asbestos Regulations, 2020 (under OHS Act)	
Steel bars for concrete reinforcement	SANS 920
Aggregates from natural sources - Aggregates for concrete	SANS 1083
Standardized specification for civil engineering construction	SANS 1200
The structural use of concrete Part 1: Design	SANS 10100- 1
The structural use of concrete Part 2: Materials and execution of work	SANS 10100- 2
Code of practice for use with standardized specifications for civil engineering construction and contract documents	SANS 10120
Basis of structural design and actions for buildings and industrial structures	SANS 10160 parts 1-8
The structural use of steel Part 1: Limit-states design of hot- rolled steelwork	SANS 10162 -1
The structural use of steel Part 2: Cold-formed steel structures	SANS 10162 -2
The application of the National Building Regulations	SANS 10400
Technical Recommendation for Highways	TRH series for roads
Technical Methods for Highways	THM series for roads
Urban Transport Guidelines	UTG series for roads
Standard Specification for Road and Bridge works for South African Road Authorities	COTO specification
Eskom Corporate ID	ESK AM AAA 1

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Eskom Architectural standard for structures and other buildings	240-56364535
Standard for Corrosion Protection of Coastal Gas Generation Plant and Equipment with Coatings	240-100945498

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