

	Specification	Kusile Power Station
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Title: **Kusile Power Station Auxiliary
Cooling System Chemical Contract
User Requirement Specification**

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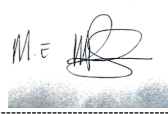

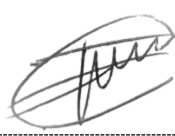
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1. Introduction

Kusile Power Station utilizes two open cycle induced draft-cooling systems and two closed cycle cooling systems, namely West and East cooling plants. The closed circuit cooling system consists of conditioned demineralised water, which serves as a cooling medium to various auxiliary components in the power plant, whilst the open cycle cooling system uses filtered water as a cooling medium to the closed circuit cooling system. The West cooling plants serve units 1-3 and a common plant system and the East cooling plant serve units 4-6 and common plant system respectively. Potable water supply is provided as a stand-by (emergency) to the filtered water make-up. Each water type is supplied via different storage tanks and pumping systems.

2. Supporting Clauses

2.1 Scope

2.1.1 Purpose

This document aims at specifying Kusile power station chemistry function requirements for the proper running of Auxiliary Open Cycle Cooling System, in order to achieve excellent chemical control during the life time of the station.

2.1.2 Applicability

This document is applicable to:

- a) Kusile power station Chemical Services Department, Contractor and Subcontractors.
- b) Kusile Auxiliary Open Cycle Cooling System

2.1.3 Effective date

This document shall be effective from the date of authorisation.

2.2 Normative/Informative References

N/A

2.2.1 Normative

- [1] ISO 9001 Quality Management Systems
- [2] Occupational Health and Safety Act 85 of 1993

2.2.2 Informative

- [3] Chemistry Manual for Auxiliary and Ancillary cooling water systems - 240-1061921
- [4] Matimba Chemical Supply for Auxiliary Cooling and Water Treatment Plant Systems Contract (2010/05/13 – 2013/04/25)
- [5] Safety health and environment Specifications for Contractors - GVLIR 0007

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- [6] Eskom Generation Asset Management Policy - GGPP 0975 Rev 0
- [7] Eskom Generation Asset Management Directive - GGD 1447 Rev 0
- [8] Power Station Classification Guideline - GGG 1099 Rev 0
- [9] Construction, Safety, Health and Environment Management in Eskom - 32/136 Rev 0 –
- [10] Eskom Generation Plant Safety Regulations - GGR 0992 Rev 2
- [11] Eskom Operating Regulations for High Voltage Systems - ESKPVAEY6
- [12] Eskom Information Security Policy - 32-85 Rev 0
- [13] Eskom Vehicle and Driver Safety Management Procedure - 32-93 Rev 0
- [14] 3 Integrated Business improvement – prevention and improvement Standard - 6-366 Rev 0
- [15] Smoking policy - 32-36 Rev 0
- [16] Lifting Machine procedure - 32-255 Rev 0
- [17] Mandatory SHE requirements for the Eskom procurement and supply chain management process - 32-726 Rev 0
- [18] Application of KKS plant coding (for new builds) - NMP47-7 Rev 1
- [19] Generation Leading Metrics manual - GGM 1539 Rev 0
- [20] Routine Work Management manual - GGM1490 Rev 0

2.3 Definitions

Contractor: Service provider contracted for supplying specific service to Eskom, Kusile Power Station.

Employer: Eskom, or Eskom Kusile Power Station

2.4 Abbreviation

Abbreviation	Explanation
BOM	Bill of Material
FI	Financial
KKS	Kraftwerk-Kenzeichnungs System
LAR	Limited Access Register.
LOPP	Life of Plant Plan
MM	Materials Management
NCR	Non-Conformance Report
PM	Preventive Maintenance
PPB	Parts per Billion
PPM	Part per Million
RT&D	Research, Testing and Development
SAP PM	System Application Products Plant Maintenance

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Abbreviation	Explanation
SMP	Standard Maintenance Procedure

2.5 Roles and Responsibilities

2.5.1 Contract Manager

- a) Ensures that financial monitoring and control of the contract stays within the allocated budget.
- b) Ensuring Health, Safety, Environmental and Quality compliance is maintained and the Company's procedures and objectives are achieved.
- c) Shall ensure that all actions listed in this scope of work are undertaken (follow up, advice, consultation).
- d) Ensures procurement and reconciliation of materials is carried out in accordance with Company procedures to best value and to prevent delays.
- e) Liaises with all relevant stakeholders for any input.
- f) The requirements as stated in this procedure are fulfilled accordingly.

2.5.2 Contract Supervisor

- a) Shall implement this scope of work, perform random reviews and audits for adherence and provide assurance that any deviations will be corrected.

2.5.3. Senior Chemist

- a) Shall provide advices and technical support when necessary.

2.6 Process for Monitoring

The system specification is stipulated in Table 1 for the Open system. The specification of the make-up water is specified in Table 2; the make-up source for the Open system can change in future, should this happen, this URS needs to be reviewed and the Contract Supervisor shall notify the contractor of such changes, However it is the responsibilities of the contractor to verify the qualities.

Table 1: Details of the Open Recirculation Cooling System

Cells	8
Delta T	6°C
Fill	Splash pack fill
Materials of construction	Mildsteel, Concrete, 304SS, Polypropelene, PVC
Max shell temperature	34°C
Supply temperature	28°C
Total Recirculation rate	1168 l/s per cell
Type	Induced draft open cooling

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2.7 Related/Supporting Documents

N/A

3. Contract Requirements

3.1 Adherence to Eskom generic policies

The Contractor shall comply with Eskom's policies and site regulations, including but not limited to, use of cell phones in restricted areas, adherence to Eskom's life-saving rules, adherence to Generation Occurrence Management Procedure, no smoking policy, zero tolerance on alcohol usage, etc. These requirements will be detailed during the induction training process.

3.2 Contract Specifications

The following work will be the Contractor's responsibility for East and West Auxiliary open cooling systems for the duration of the contract:

- a) Biocide Oxidising– Supply, delivery, offloading, dosing, replacement, monitoring and control
- b) Biocide Non-oxidising - Supply, delivery, offloading, dosing, replacement, monitoring and control
- c) Bio-dispersant - Supply, delivery, offloading, dosing, monitoring, replacement and control.
- d) Scale/Corrosion inhibitor - Supply, delivery, offloading, dosing, replacement, monitoring and control
- e) Chemical dosing equipment – Weekly inspections and maintenance.
- f) Weekly cooling water analysis - Report compilation and submittal.
- g) Monthly cooling water microbiological analysis – Total aerobic/anaerobic bacteria and H₂S producers.
- h) Monthly corrosion rate analysis – Report compilation and submittal.
- i) Six monthly cooling water microbiological analysis – Report compilation and submittal.
- j) Quarterly Legionella Analysis - Report compilation and submittal.
- k) The contractor must supply and install corrosion coupon on the East cooling system only.
- l) The contractor must supply Chemical dosing equipment for East cooling system– erection, storage tanks, dosing pumps and piping. West cooling system chemical dosing equipment has already been installed.

The contractor must supply the chemicals, determine the dosing rate & time interval and monitor the chemical conditions (weekly) of both East and West Auxiliary open cooling systems to meet the specifications in table 2.

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Table 2: Filtered make up water, required cooling water specification and frequency of analysis

Chemical parameter	Units	Specification	Frequency Eskom	For	Frequency Contractor
M-Alkalinity	mg/l CaCO ₃	60 to 150	D		W
Calcium	mg/l Ca	<200 to 400	W		W
Chloride	mg/l Cl	<400	W		W
Elect Conductivity	uS/m [25°C]	<3500	D		W
Iron	mg/l Fe	<500	W		W
Magnesium	mg/l Mg		W		W
Magnesium (Mg x SiO ₂)		<25000	W		W
pH	pH units [25°C]	8.3 to 8.9	D		W
Potassium	mg/l K	<500	W		W
Silica	mg/l Si	<150	W		W
Sodium	mg/l Na	<500	W		W
Sulphate	mg/l SO ₄	<1000	W		W
Turbidity	NTU	<15	D		W
Oil & grease	mg/l	<5	W		W
Total Hardness as CaCO ₃	mg/l	<500	D		W
Calcium carbonate precipitation Using Stasoft 4	mg/l	<30 with scale control program < 5 Without scale control program	W		W
Concentration Cycles		< 10	W		W

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Total aerobic bacteria	CFUs.cm ³	<10000	6M	M
Total anaerobic bacteria	CFUs.cm ³	<1000	6M	M
Legionella	CFUs.cm ³	<100	Q	Q
H ₂ S producers	CFUs.cm ³	<10	6M	M
Mild steel corrosion rate	Mils/year	<5	6M	M

3.2.2 Supply of Chemicals

The contractor shall ensure that chemicals are ordered and delivered in time. The minimum amount of chemicals shall be 40% before topping up in order to ensure chemicals availability at all time. Chemicals supplied by the contractor are tested and approved by RT&D. The approval will be handed over to the employer for acceptance before chemicals are dosed into the plant. Delivery of chemicals will be notified to the Employer's representative 48 hours before delivery to the site can be made. Ignorance of this could result in chemicals being sent back at contractors own cost.

Off Loading of Chemicals: Offloading and filling of dosing tanks and removal of empty containers from site will be the Contractor's responsibility. The contractor must ensure that the off loaders are trained and declared competent. Competency certificates should be shared with the employer prior to the commencement of the contract

3.2.1 Chemical Dosing Monitoring

The contractor must supply the dosing equipment for East cooling system as required including dosing lines to the dosing points with stroke adjusters, pot test equipment, timers and containers with suitable volume, to contain sufficient chemicals until the next delivery date. (West cooling system dosing equipment installed). The contractor must supply any additional online monitoring equipment required to effectively monitor and control any chemical addition, corrosion / scaling potential and microbiological fouling potential on both East and West cooling. The employer will supply online conductivity and pH meter.

- A. Maintenance: The contractor will stay responsible for the maintenance of his equipment at his cost. No maintenance or repairs must be done without consulting the employers representative. The maintenance of equipment will be of such a nature that no failure would occur that will jeopardise the dosing of the plant.
- B. Electrical Supply Points for Pumps: The employer will provide the electrical supply points for the pumps. This supply points consists of 220V normal household three point plug.

3.2.2 Chemicals used and monitoring

The Contractor must determine the type and amount of chemicals used within the specified contract specifications and monitor the condition on a weekly basis to ensure they meet Eskom Auxiliary

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cooling standards 240-1061921. The contractor shall keep records of all analyses done (as per table 2), and a report to be handed over on the last Friday (and or not later than the last working day) of each month, for the duration of the contract to the Employer's representative. This report should include everything done by the Contractor during the month for chemicals usage, explain variance in chemical consumption, monitoring, pumps settings, maintenance and pot test results. Formal site meetings shall be held quarterly between the contractor and the employer, to discuss the reports and other contract related matters.

3.2.3 Cooling Water Treatment

The contractor must establish the cooling water treatment that will prevent the following:

- A. Corrosion on heat exchangers.
- B. Precipitation of scale on heat exchanger surfaces and on the cooling tower packing.
- C. Fouling of pipe-work heat exchanger surfaces, cooling water packing and prevent micro biologically induced corrosion.
- D. Formation of algae, fungi, bacteria and other micro-organisms that can create a corrosive environment or impair heat transfer process.
- E. Foaming due to the addition of chemicals used.

The cooling water treatment system must allow sufficiently high cycles of concentration in order to obtain "Zero Liquid Effluent Discharge" without compromising other important aspects such as corrosion and scale formation. Treatment programs must strive to reduce the amount of Sulphuric acid used.

The contractor must check the pump settings and dosage weekly. The Contractor shall check and replace the corrosion coupons at least once in two months. The Contractor shall check bacteria count once monthly as stipulated in Table 2. The Contractor shall check legionella count at least once in six months. Legionella testing must be done using an accredited laboratory using the most probable number method (MPN).

The contractor must establish a disinfection program to be followed when Legionella or Bacteria counts exceed limits, the program must also cater for periodic preventative disinfection to be done, and the frequency of such a program shall be determined by the contractor based on the results obtained.

3.2.4 Key Performance Indicators

Performance of the Contractor shall be based on the Key performance criteria identified below by the employer. The employer together with the contractor shall verify and compare results on a monthly basis. Falsification or reporting of incorrect data to meet KPI's will lead to an NCR or termination of contract within a period determined by the employer. KPI's comprises of the following aspects:

KPI 1: Late submission of reports to the employer

KPI 2: Non-compliance to safety regulations

KPI 3: Out of specification results

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3.3 Quality Management

The Contractor must provide a complete Quality Assurance plan in accordance with the requirements of ISO 9001 2018 to the Employer for approval. This plan must ensure an integrated quality service as part of the contract. Execution of all quality related activities, including inspection and test plans compilation and execution, stores material quality inspections and all quality-related record keeping is part of the Contractor's scope of work.

3.4 Safety Management

3.4.1 Health and safety regulations

The Eskom document Safety Specifications for Contractors 32-136 is of primary importance in the management of safety on site. The Contractor shall comply with the Kusile Health and Safety Policy. It is expected that the contractor attend Kusile Monthly Safety meeting and Tool Box Talks, Project manager shall send the meeting appointments.

3.4.2 Permit to work system

No work shall be carried out without a "PERMIT TO WORK". The Contractor must ensure compliance to all requirements as per the Plant Safety Regulations and Operating Regulations for High-voltage Systems. The Contractor's Responsible Person must ensure that all sources of possible danger are isolated. Details of the Permit to Work system can be found in the Plant Safety Regulations (PSR) GGR 0992 and Operating Regulations for High Voltage Systems (ORHVS) ESKVAEY6.

Contract Supervisor shall ensure that the Contractor sign limited access register at Water Treatment Plant before accessing the plant. It is the responsibilities of the Contractor to ensure compliance to limited access register procedure. The following activities under limited access register procedure must satisfy the following criteria:

- There is no risk of trip
- There is no personal danger
- No plant isolation is required
- Activity duration is less than 12 hours
- Activity must be performed by a skilled person.

3.4.3 Authorisation

All Contractors must ensure they have responsible persons (in terms of PSR and ORHVS) for any work performed on the plant. This will require individuals to successfully complete a written and oral examination for the relevant regulation based on the Plant Safety Regulations and Operating Regulations for High Voltage Systems. All maintenance technically qualified (above semi-skilled) Contractors will be trained and authorised (in terms of PSR and ORHVS) within 3 months of contract award date. Training will be supplied by the Employer

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3.4.4 Plant Operation

Only Eskom appointed personnel should operate plant.

3.4.5 Task Risk Assessments

The Employer and Contractor shall jointly conduct and document task risk assessments before work is performed. (According to procedure 32-520)

3.4.6 Safety induction course

A list of contractor employees requiring safety induction must be submitted at least 7 days in advance of arrival to site with the date and time of arrival so that the safety induction can be arranged prior. All the employees of the Contractor must attend a safety induction course before they are granted a site access permit. The induction-training program will cover safety rules and information essential to personnel employed on site, including Integrated Business Improvement (IBI) concepts. Site access permits remains the property of Eskom. Lost or damaged cards will be for the cost of the Contractor. The Contractor shall have no claim against the Employer in respect of delay at the security main gate.

3.4.7 Local safety procedures

The Contractor shall adhere to all local procedures. A list of local procedures is available on request from the Employer.

3.4.8 Incidents/accidents

All incidents and accidents must be reported to the Employer within 24 hours preferably during the same shift that the incident/accident occurred and the incident must be investigated within 7 days and corrective actions as well as recommendations should be put in place to prevent re-occurrences. An incident investigation report must be filed and closed-out with the Employers Risk management department. First aid and medical services will be available at the Kusile medical centre.

3.4.9 Fire prevention

Fire prevention and protection requirements to which Contractors must comply with will be detailed in the local procedures.

3.4.10 Statutory appointments

The Contractor shall comply with all statutory appointments required in terms of the Occupational Health and Safety Act of (No 85 of 1993) OHSA. All Contractors are expected to be conversant with and comply with all relevant requirements of the OHS Act.

3.4.11 Safety Documentation

The Contractor is responsible to have the following documentation available on site in accordance with the local procedures and with reference to the Eskom procedure 32- 726:

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- A. A copy of the OHS-Act.
- B. Safety organisation and appointments
- C. Copies of all site accident report forms as required by the OHS-Act.
- D. Copies of minutes of health and safety meetings held on site.
- E. Copies of inspection reports produced by the accident prevention officer.
- F. Task Risk Assessments that have been conducted jointly by the Employer and Contractor.

3.5 Environmental Management

3.5.1 Environmental Policy and Waste Handling

Kusile Environmental Policy must be adhered to.

3.5.2 Disposal of Waste

Waste shall be removed promptly to the designated disposal areas. No stockpiling will be permitted. The Contractor is to split the waste that can be recycled according to their classifications e.g. paper, glass,

3.5.3 Hazardous Waste Disposal and Handling

Hazardous/toxic waste includes all waste that contains elements or compounds listed as hazardous substances in terms of the Hazardous Substances Act No. 15 of 1973. The Contractor is responsible for the safe removal of their hazardous waste to Kusile's Hazardous Waste Storage Area. Other requirements for hazardous waste will be detailed in the local procedures. The Employer will be responsible for the safe removal of such waste to a registered Class I site by a waste removal and disposal Contractor (who will be required to produce a certificate of safe disposal in accordance with the local procedures). The Contractor must ensure that persons handling hazardous waste have undergone suitable training and are acquainted with cleaning methods in case of a spillage. The philosophy around spillages is whoever spills pays. Permission must be sought from the Employers Risk Management group prior to any hazardous materials being brought onto site.

3.6 Plant Spares and Material

3.6.1 Consumables

The Contractor is responsible to procure any consumables required in the execution of this scope of work.

3.7 Site Services Provided by the Employer

3.7.1 General

Use of services provided by the Employer where the benefit to be gained is not for Eskom Kusile Power Station, need to be formally approved by Kusile Power Station General Manager.

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3.7.2 Supply of Electricity

Kusile Power Station supplies electricity needed for the execution of the Contractor's scope of work. All points of supply requested by the Contractor are provided in terms of quantity and location at the discretion of the Employer. Under no circumstances is the Contractor or Contractor's employees allowed connecting up to any electrical supply without the prior permission of the Employer. All electrical installations or portable electrical equipment used on Kusile site shall comply with all relevant statutory regulations and requirements. For Contractor owned electrical equipment not tracked on SAP PM, an asset register shall be kept containing as a minimum requirement, the maintenance strategy for each item in service. Inspections shall be completed and signed off based on the required frequency in the register stating reference numbers of supporting documents, date and persons' name responsible for the inspection.

Failure to comply with the safety requirements shall lead to immediate disconnection and an NCR shall be raised against the Contractor. No guarantees of power supply quality are given and power supply breaks of some duration may occur without warning and it shall not be grounds for additional time or compensation.

3.7.3 Water

Kusile Power Station supplies water needed for the execution of the Contractor's scope of work. Under no circumstances is the Contractor or Contractor's employees allowed to connect to any piped services without the permission of the Employer. The Employer makes available free of charge, potable water as required for the purpose of this Contract. The Employer does not guarantee continuity of supply and in such cases the Contractor makes provision for standby supplies to maintain continuity.

The Employer makes available, free of charge, demineralised water as required for the works. (Demineralised water and water for fire systems may not be consumed by human beings).

The variation of pressure in the water supply, or breakdown in the supply, is not considered grounds for additional time or compensation.

The Employer supplies a water connection point at the Contractors off-terrace allocated site area. The Contractor provides, at his own cost, all connection fittings, pipe work, temporary plumbing and pumps necessary to lead the water from the Employer's points of supply to the various points where it is required. The Contractor is responsible to maintain these facilities and to remove it at completion of the contracted work.

3.7.4 Compressed Air

Kusile Power Station supplies compressed air needed for the execution of the Contractor's scope of work. Under no circumstances is the Contractor or Contractor's employees allowed to connect to any piped services without the permission of the Employer. This supply is available for normal maintenance activities, and does not include for periods of extensive air consumption, e.g. during plant overhaul. The variation of pressure in the air supply, or breakdown in the supply, is not considered grounds for additional time or compensation.

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3.7.5 First Aid Centre

Medical, ambulance and first aid facilities are provided on site by the Employer.

3.7.6 Training

The Employer will supply training on all Eskom specific and other special initiatives at direct cost rates.

3.8 Site Services Provided by the Contractor

3.8.1 Electrical Equipment / Appliances, Lighting and Power

Any electrical equipment or appliances used by the Contractor must comply with all relevant safety regulations and requirements, and be maintained in safe and proper working condition.

Asset register to be maintained with corresponding history records (e.g. statutory inspections, repair reports)

3.8.2 Water connection to workshop/office facility external to main station building

The Contractor provides at his own cost, all connection fittings, pipe-work, temporary plumbing, and pumps necessary to lead the water from the point of supply to the various points where it is required, and maintain same in good condition. Excessive usage/consumption must be guarded against.

3.8.3 Compressed Air supply

The Contractor provides at own cost, all connection fittings and pipe-work necessary to lead the compressed air from the point of supply to the various points where it is required, maintain same and remove on completion of contract. Excessive usage/consumption must be guarded against.

3.8.4 Housekeeping and security

Each Contractor is responsible for the housekeeping of their workshop, office, work area, to a standard that is in line with Kusile PS management requirements. The Contractor is responsible for security of own facilities and equipment, as well as the equipment and facilities provided to the Contractor by the Employer.

3.8.5 Working Hours

A power station is a 24 hour/day, 7days/week, and 365-days/year business. Contractors will therefore have to ensure that staff is available to work extended shifts during times of plant emergency or high maintenance demand. The Employer must approve all overtime prior to any planned work.

3.8.6 Standby Services

The Contractor will ensure that staff with adequate expertise is available to manage plant issues on a 24-hour standby service. Response time to these standby services is 45 minutes.

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3.8.7 Accommodation and travelling

The Contractor is responsible for staff accommodation, transportation and travelling cost.

3.8.8 Sub-contracting

All Sub-contractors are to be Employer approved Contractors / vendors / suppliers. If the Contractor is uncertain of the approval status of the Contractors / vendors / suppliers the Contractor formally requests from the Employer confirmation of the status. The Contractor does not procure the services of Contractors / vendors / suppliers without the prior approval of the Employer.

3.9 Common Site Services and Conditions

3.9.1 Roads and vehicles

All traffic is limited to using existing roads.

All vehicles used on site, by the Contractor will be road worthy.

All road signs and traffic laws / regulations on site will be adhered to.

Damage caused to underground services, structures, etc., as a result of the Contractor not using the prescribed routes will be recovered from the Contractor.

All Contractors shall comply with Eskom Vehicle and Driver Procedure 32 – 93 and Construction Site Vehicles requirements.

3.9.2 Sanitary Facilities

The Employer will clean and maintain all toilet and shower/change room facilities on site.

3.9.3 Clean-up after work

The Contractor is responsible for cleaning up the work area. After completion of every works, the contract supervisor shall be called to inspect the site and ensure that it is in a presentable state. The Employer will perform ad-hoc inspections on the Contractor's work site.

3.10 Security

3.10.1 Site access and departure

All vehicles and persons entering or leaving site will be subjected to Security checks and or search. This includes, but is not limited to briefcases and toolboxes. Personal tools need to be listed and acknowledged by Security when brought on site. This list will be used for verification when the tools are removed from site.

3.10.2 Equipment and material removal from site

The Contractor is not allowed to remove any equipment or materials from site without producing the relevant forms or the equipment lists. If the equipment or material is to be removed the same day on

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which they were brought on to site, then the form will need to be produced at the gate when leaving the site. If the equipment or material is removed after this time then a Non-Returnable Gate

Release will be provided by the Employer's representative, on receipt of the original form with which the Contractor brought the equipment on site.

3.10.3 Plant Access

The Contractor and all contract employees will have to comply with all access requirements when working in areas designated as "limited access" areas e.g. equipment rooms, Transformer bays, switchgear rooms, etc. Entrance to these areas will be controlled using biometric control system (thumb print reader or any system that the Employer deems necessary), and will be monitored by Closed Circuit Television cameras.

3.11 Site Establishment and Occupation

3.11.1 Application for Site Establishment

The Employer allocates office and workshop sites and facilities. The location of the site or area is agreed upon during the site or area take-over inspection.

3.11.2 Site Occupation

The Contractor does not occupy any site, facility or area other than that allocated to him.

3.12 Termination of Occupancy

The site shall be vacated on completion or termination of contract within a reasonable time agreed with the Employer.

3.13 Records

None

3.14 Annexes

None

4. Acceptance

This document has been seen and accepted by:

Name	Designation
Joseph Ngqendesha	Engineering Group Manager (Acting)
Charlotte Tsumaki	Chemical Services Manager
Mohau Skhosana	Senior Technician Chemistry
Sithabile Ndlovu	Senior Technician Chemistry

CONTROLLED DISCLOSURE

Name	Designation
Galeboe Kgarimetsa	Senior Supervisor Tech Chemistry
Evans Ramabina	Senior Chemist
Mpho Mokwena	Senior Supervisor Tech Chemistry
Bongani Ndala	Senior Supervisor Tech Chemistry

5. Revisions

Date	Rev.	Compiler	Remarks
September 2021	2	BK Manganyi	Review
January 2020	1	SP Ndlovu	New Contract Document

6. Development Team

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

- Sithabile Ndlovu
- Mohau Skhosana

7. Acknowledgements

The Development Team

CONTROLLED DISCLOSURE