

	Environmental Management Programme	Transmission
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Project Details

Site Name: Various Substation

Project Title: Removal and Replacement of Asbestos Material

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1. Introduction

The initiation of this project is motivated based on National Transmission Company South Africa (NTCSA) commitment to the compliance of legal and other requirements and to ensure that occupational health and safety risks to NTCSA employees and contractors are eliminated or reduced.

In compliance to the requirements of the Occupational Health and Safety Act (Act 85 of 1993), Asbestos Regulations GNR, 155 of 10 February 2002, asbestos containing material at Substations in the North East Grid (NEG) were identified. Asbestos containing material were found to be in the form of trench covers, fascia boards, gutters, roof, ceilings, walls, downpipes, tanks and sleeve pipes.

The Project will ensure safe processing, handling, storing, disposal and phase-out of asbestos material. A national asbestos phase out initiative was created to ensure that all asbestos and asbestos containing material are phased out by the end of 2033 within the entire Eskom business unit.

2. Supporting Clauses

2.1 Scope of the EMPr

NB: This EMPr document only caters for the scope of work contained in it. Any activities outside the given scope of work will need to be addressed through the correct process (i.e., method statements).

2.1.1 Purpose

This EMPr has been compiled to address the potential environmental impact that might occur during the project. This document serves as the environmental specification to NTCSA personnel and Contractors with regards to addressing the environmental issues identified prior to and during the construction phase. It is the responsibility of the Project Manager (PM), Contractors and the Environmental Practitioners to ensure compliance with all the environmental specifications in this document, Environmental Requirements for Contractors and/or Suppliers as well as the relevant compliance obligations.

This EMPr should also ensure the sustainable management of the environment whilst replacement works are undertaken. This EMPr must be viewed as a contract document to which all NTCSA personnel and contractors involved should adhere to.

2.1.2 Applicability

This document shall apply to Power Delivery (PD) and Contractors contracted to work on the Removal and Replacement of Asbestos Containing Material Project.

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2.1.3 Effective date

N/A

2.2 Normative/Informative References

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

2.2.1 Normative

- [1] ISO 9001 Quality Management Systems
- [2] ISO 14001 Environmental Management System
- [3] 240-180100134 Environmental Requirements for Contractors and /or Suppliers

These documents are indispensable for the application of this document, i.e., documents to be used together with this document.

2.2.2 Informative

- [4] National Environmental Management Act, 1998 (NEMA) (Act No 107 of 1998), and all amendments and supplementary listings and/or regulations.
- [5] Environment Conservation Act, 1989 (ECA) (No 73 of 1989) and amendments.
- [6] National Environmental Management: Waste Act, 2008 (NEMWA, Act 59 of 2008).
- [7] National Environmental Management: Biodiversity Act, 2004 (NEM:BA) (Act No. 10 of 2004) and amendments.
- [8] National Forest Act, 1998 (NFA) (No 84 of 1998).
- [9] National Veld and Forest Fire Act, 1998 (Act No. 101 of 1998).
- [10] Conservation of Agricultural Resources Act, 1983 (CARA) (Act No. 43 of 1983) and amendments.
- [11] National Heritage Resources Act, 1999 (Act 25 of 1999).
- [12] National Water Act, 1998 (Act 36 of 1998).
- [13] The Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).
- [14] The National Fencing Act, 1963 (Act No 31 of 1963) as amended by Act 108 of 1991.
- [15] The National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) and its Regulations.
- [16] The National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004).
- [17] South African National Standard (SANS) 10228 – The identification and classification of dangerous goods.

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2.3 Definitions

Include all definitions applicable to this document, in alphabetical order. Explain all terms used, including documents, titles and departmental references that may cause confusion if not explained.

Definition	Explanation
Construction work	The erection, maintenance, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure
	The installation, erection, dismantling or maintenance of a fixed plant where such work includes the risk of a person falling
	The construction, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system or any similar civil engineering structure
Contractor	The Contractor has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract, are in line with the Environmental Management Programme and that Method Statements are implemented as described
Works	The works to be executed in terms of the Contract

2.4 Abbreviations

Provide explanations of terms and abbreviations including documents, titles and departmental references that may cause confusion if not explained, and that are used in this document.

Abbreviation	Explanation
CEO	Contractor Environmental Officer
EMPr	Environmental Management Programme
HCS	Hazardous Chemical Substance
IAP	Interested and Affected Parties
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NTCSA	National Transmission Company South Africa
PD	Power Delivery

2.5 Roles and Responsibilities

FUNCTION	ROLES AND RESPONSIBILITIES
PD Environmental Practitioner	To ensure that the Environmental Management Programme (EMPr) for the project is compiled and approved. To ensure that all conditions stipulated in the EMPr are met.

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	To conduct audit, monitor or provide assurance before, during and post construction.
PD Project Manager/ Site Manager	<p>Ensure that implementation of EMPr is executed as planned.</p> <p>Ensure that all stipulations within the EMPr are communicated and adhered to by the Contractor.</p> <p>Ensure that conditions in this EMPr are fulfilled before the contractor occupies the site, during and post construction.</p>
Contractor Environmental Officer (CEO)	<p>Ensures that all Sub-contractors (if any) working under the Principal Contractor abide by the requirements of the EMPr.</p> <p>Be on site throughout the duration of the project and be dedicated to the project.</p> <p>Ensure all staff are aware of the environmental requirements, conditions, and constraints with respect to all of their activities on site.</p> <p>Implementing the environmental conditions, guidelines and requirements as stipulated within the EMPr and Method Statements</p> <p>Attend and provide performance status at the project progress and Environmental site meetings.</p> <p>Facilitate and undertake corrective actions where non-compliances are registered within the stipulated timeframes.</p> <p>Assist the PD Environmental Practitioner in maintaining all the site documentation.</p> <p>Prepare site inspection reports and corrective action reports for submission to PD.</p>
Contractor Project Manager/ Site Manager	<p>To provide all necessary supervision during the execution of the project. He/ She should be available on site all the time.</p> <p>To appoint a suitably qualified and competent Environmental Officer to monitor and report to the Project Manager on the daily activities during the construction phase.</p> <p>To ensure that implementation is conducted in an environmentally acceptable manner.</p> <p>To fulfil all obligations as per the agreed contract.</p>

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	To inform and educate all employees about the environmental risks associated with the different activities that should be avoided during the construction process and lessen significant impacts to the environment.
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2.6 Process for Monitoring

All documents shall be kept on site and be available for monitoring purposes. Site inspections by an Environmental Audit Team may require access to this documentation for auditing purposes. The documentation shall be signed by all parties to ensure that such documents are legal. Regular monitoring of site works by the CEO is imperative to ensure that all problems encountered are solved punctually and amicably. When the CEO is not available, the Site Supervisor shall keep abreast of all works to ensure no problems arise.

The following documentation shall be kept on site:

- 10.1. Site Diary
- 10.2. Complaints Register
- 10.3. Incidents and Non-Conformance Registers
- 10.4. Records of all remediation / rehabilitation activities
- 10.5. Copy of this Environmental Management Programme
- 10.6. Photographic record (before, during and post construction/ refurbishment)
- 10.7. Project specific Method Statements / Procedures
- 10.8. Inspections and Audit (monitoring and evaluation) Records
- 10.9. Waste Records

2.7 Related/Supporting Documents

ALPH24P15-SE-E82 Scope of Work for the Removal and Replacement of Asbestos Material in the North East Grid Customer Line Network

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3. Document Content

3.1 Geographical Site Location and Environmental Condition

Prairie Substation is a fully developed 275/132 kV customer Substation. The 33kV primary plant is in the Substation's 132kV yard. The Substation was developed to supply uninterrupted power to African Rainbow Mineral Ferrochrome mine (formerly Assmang Ferrochrome mine) in Machadodorp, Ekangala district.

3.2 Public Involvement/ Participation Process

The potential environmental impacts associated with the proposed project are required to be considered in compliance with the Environmental Impact Assessment (EIA) Regulations of 2014 (As amended) published in Government Notice R982 to R985 on, in terms of Chapter 5 of the National Environmental Management Act, 1998 (Act 107 of 1998) (as amended). The above scope of work was assessed against the Listing Notices of the EIA Regulations 2014 and the following is noted:

- That the Project does not trigger EIA process as per the above-mentioned regulations.
- The public may be involved if project/ activity triggers the requirements for any related permits/ agreements e.g., water use licenses or heritage permits.

All the required replacement works will be done directly on the existing substation footprint; therefore, the project would not trigger the EIA listed activities.

3.3 Project Specific Scope of Work and Design

The scope of work entails the full development of the Project to enable execution of the following high-level scope of work at the identified North East Grid (NEG) Substations:

Contractor rendering the below services shall be registered with the Department of Employment and Labour as an asbestos Contractor.

- The contractor shall test for asbestos material on all items, items tested negative shall not be removed but finished as per the specifications.
- Before commencement of any works, equipment in Control Rooms, Battery Rooms and Carrier Rooms must be protected from asbestos dust particles. The protection system must be structurally sound to handle any debris that may fall from the ceiling.
- The protection system must provide adequate lighting and the temperature inside must be controlled to be 22°C.
- Before the removal of ceilings, the dust layer above must be vacuumed.

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- Clean out and safely remove all asbestos containing material in the form of trench covers, fascia boards, gutters, roofs, ceilings, interior and exterior walls, tanks, down pipes and sleeve pipes.
- Correct handling of asbestos containing materials should be always adhered to.
- All asbestos waste shall be transported according to SABS 0228 and SABS 0229 standards and specifications.
- Disposal shall be done through the appointment of accredited waste management service providers.
- During the removal of asbestos material, the contractor must be responsible for the protection of the surrounding.
- All material must be disposed of at licenced hazardous waste sites.
- Containers or vehicles in which asbestos containing material is to be transported must be clearly identified classified and packed in accordance with SABS 0228 and SABS 0229.

Transport documentation must be handled in line with the National Environmental Management Waste Act 59 of 2008 before the contract for disposal is approved.

IDENTIFIED SUBSTATIONS			
Barberton	Simplon	Sol	Vulcan
Gumeni	Alpha	Tutuka	Kruispunt
Komatipoort	Camden	Zeus	Duvha
Marathon	Majuba	Hentrina	Komati
Prairie	Normandie	Rockdale	

4. Acceptance

This document has been seen and accepted by:

Name	Designation
Payoyo Bukhosini	Project Manager

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5. Revisions

Note: Start with the latest Revision History in the first row and go backwards.

Date	Rev.	Compiler	Remarks
April 2025	1	Nombulelo Mabena	New document

6. Development Team

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

- Nombulelo Mabena

7. Acknowledgements

N/A

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Table 1: Project Specific Environmental Controls

This section specifies standard mitigation measures to be followed by the parties responsible for environmental management during the construction of the project.

Note: An activity may have multiple aspects that might need to be looked at

No.	Activity	Aspect	Impact	Management Objective	Mitigation Measure	Measurable Targets	Frequency of Action	Responsible Party
1.	Project Contract and programme	Tender Issuing/ Enquiry	Non-compliance to legal requirements and non-conformance to other requirements and conditions set out in the EMPr.	Contingencies for minimising negative impacts anticipated to occur during the construction/ refurbishment phase. Ensure environmental awareness and formalize environmental responsibilities and implementation.	The EMPr must be included as part of the tender documentation thereby making it part of the enquiry document to make the recommendations and constraints, as set out in this document, enforceable under the general conditions of contract. A contractor shall acknowledge or complete Declaration on Environmental Requirements Pro-forma before commencement of the works.	Contract records signed Declaration on Environmental Requirements Pro-forma.	During tender stage	Project Manager/ Buyer/ Environmental Practitioner Project Manager

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					A copy of this EMPr must be always available at the works site. The Contractor shall ensure that all the personnel on site, sub-contractors and their teams, suppliers, etc. are familiar with and understand the specifications contained in this EMPr.		During construction/ refurbishment	CEO
2.	Method Statements	Compilation of Project documents	Non-compliance to legal requirements and non-conformance to other requirements and conditions set out in the EMPr.	Contingencies for minimising negative impacts anticipated to occur during the construction/ refurbishment phase.	<ul style="list-style-type: none"> All activities which require method statements may only commence once the method statements have been approved by the PM and NTCSA Environmental Practitioner. Where applicable, the contractor shall provide job-specific training on an ad hoc basis when workers are engaged in activities, which require Method Statements. It must be ensured that NTCSA Policies, Guidelines and Standards are consulted to ensure that Method Statements meet requirements as set out in those documents. 	Approved Method Statements and relevant documents. Training records	Before commencement of activities As and when required	Contractor Contractor
3.	Site demarcation and development	Allocation/ demarcation of site	Legal contravention, and damage to the environment	Contingencies for minimising negative impacts anticipated to occur during the construction/ refurbishment phase.	<ul style="list-style-type: none"> The Substation team shall be consulted before site demarcations and development, including the camp site. 	Activities to take place within the demarcated area.	Before commencement of construction/ refurbishment activities on site	Contractor

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					<ul style="list-style-type: none"> All conditions contained in this EMPr must be adhered to and considered when site demarcation and development takes place. No activities will be allowed outside the demarcated area. 		As and when required	
4.	Environmental Awareness Training	Conducting Environmental Awareness Training	<p>Lack of understanding by workforce of the responsibilities in terms of this EMPr</p> <p>Legal contravention, damage to the environment and private property</p>	Environmental training and awareness of construction/ refurbishment staff contribute to minimisation of the occurrence of environmental impact to the work area.	<ul style="list-style-type: none"> All staff should receive environmental awareness/ training. All new staff coming onto site shall receive environmental awareness/training. Refresher environmental awareness/training shall be available as and when required. All staff shall be made aware of the conditions and controls linked to the EMPr. All staff are made aware of their individual roles and responsibilities in achieving compliance with the EMPr. The Contractor shall erect and maintain information posters at key locations on site. 	Environmental impact because of construction/ refurbishment activities is minimised through the development of effective environmental awareness training material and execution of environmental awareness training for all staff.	<p>On commencement of construction/ refurbishment activities.</p> <p>As and when required</p>	CEO
					Wastewater management procedures.			

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				<ul style="list-style-type: none">• Water usage and conservation.• Solid waste management procedures.• Sanitation procedures.• Fire prevention; and• Disease prevention. <p>-A record of all environmental awareness undertaken as part of the EMPr must be available.</p> <p>-Educate workers on the dangers of open and/or unattended fires.</p> <p>Environmental awareness/training should include as a minimum the following:</p> <ul style="list-style-type: none">• Description of significant environmental impacts, actual or potential, related to their work activities.• Mitigation measures to be implemented when carrying out specific activities.• Emergency preparedness and response procedures.• Procedures to be followed when working near or within sensitive areas.• Wastewater management procedures.			
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					<ul style="list-style-type: none"> • Water usage and conservation. • Solid waste management procedures. • Sanitation procedures. • Fire prevention; and • Disease prevention. <p>-A record of all environmental awareness undertaken as part of the EMPr must be available.</p> <p>-Educate workers on the dangers of open and/or unattended fires</p> <p>-A staff attendance registers of all staff to have received environmental awareness training must be available</p> <p>-Course material must be available and presented in appropriate languages that all staff can understand</p>			
5.	Site Establishment	Construction of a site camp	<p>Damage to the environment by unnecessary clearing the surface/ ground.</p> <p>Land pollution/ contamination.</p> <p>Chemical pollution caused by vehicle</p>	Ensure that environmental issues are taken into consideration in the planning and construction of site establishment.	<ul style="list-style-type: none"> • A site establishment method statement shall be provided by the contractor prior to any onsite activity that includes the layout of the construction camp in the form of a plan showing the location of key infrastructure and services (where applicable), including but not limited to offices, vehicle parking areas, stores, the workshop, stockpile and lay 	Impact to the environment during site establishment is minimised and the development footprint are kept to demarcated development area.	When the project commences	Contractor

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			oils, grease or solvents		<p>down areas, hazardous materials storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas, ablution facilities, waste and wastewater management;</p> <ul style="list-style-type: none"> Location of construction camps must be carefully considered and approved by the Substation/ Grid Team and Tx. Projects Delivery to ensure that the site does not impact on sensitive areas. Sites should be located where possible on previously disturbed areas. The construction camp shall be fenced where necessary. 			
6	Environmental emergencies	Response to all types of environmental emergencies.	<p>Land, water pollution/ contamination.</p> <p>Chemical pollution caused by vehicle oils, grease or solvents</p>	Emergency procedures are in place to enable a rapid and effective response to all types of environmental emergencies.	<ul style="list-style-type: none"> Compile an Emergency Response Plan prior to the commencement of the proposed project. The Emergency Plan must deal among other things with accidents harsh weather conditions, disasters, wildlife interactions, potential spillages and fires in line with relevant legislation. All staff shall be made aware of emergency 	<p>All emergency situations are managed in accordance with the emergency procedures.</p> <p>Rapid and effective response to all types of environmental emergencies.</p>	<p>On commencement</p> <p>As and when required</p>	Contractor/ CEO

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					<p>procedures as part of environmental awareness training.</p> <ul style="list-style-type: none"> The relevant local authority shall be made aware of a fire as soon as it starts. In the event of emergency necessary mitigation measures to contain the spill or leak shall be implemented. 			
7.	Hazardous Chemical Substances (incl. oil)	Storage, handling, use and disposal of hazardous substances, including asbestos containing material	Chemical, land and water pollution/contamination. Damage to the environment.	Prevention of pollution of the environment. Minimise chances of transgression of the acts controlling pollution.	<ul style="list-style-type: none"> The contractor must provide method statements for the "handling & storage of hazardous chemical substances", "fire", and "emergency spills procedures". The substances must be confined to specific and secured areas within the contractor's site, and in a way that does not pose a danger of pollution even during times of high rainfall. These areas must be imperviously bunded with adequate containment (at least 1.5 times the volume of the fuel) for potential spills or leaks Drip trays (minimum of 10cm deep) must be placed under all vehicles, including plant and equipment that stand for more than 24 hours. Vehicles suspected of 	<p>No pollution of the environment.</p> <p>No litigation due to transgression of pollution control Acts.</p> <p>No complaints from Interested & Affected Parties (I & APs).</p> <p>Method statements</p>	Daily	Site Supervisor/ CEO/ SHE Representative

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					<p>leaking must not be left unattended, drip trays must be utilised.</p> <ul style="list-style-type: none">• The surface area of the drip trays will be dependent on the vehicle and must be large enough to catch any hydrocarbons that may leak from the vehicle/plant while stationary.• All spilled hazardous substances must be contained in impermeable containers for removal to a licensed hazardous waste management facility/ site, (this includes contaminated soils, and drenched spill kit material).• Safety Data Sheets (SDS) must be prepared for all hazardous substances on site and supplied by the supplier where relevant. SDS's must be updated as required.• Containers must be clearly marked to indicate contents, quantities and safety requirements.• Materials such as fuel, oil, paint, herbicide and insecticides must be sealed and stored in bunded areas or under lock and key, as appropriate, in well-ventilated areas.			
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					<input type="checkbox"/> All employees working with HCS must be trained in the safe use of the substance and according to the safety data sheet. <input type="checkbox"/> No smoking must be allowed within the vicinity of the hazardous storage areas. <input type="checkbox"/> Adequate fire-fighting equipment must be made available at all hazardous storage area. <input type="checkbox"/> An appropriate number of spill kits must be available and must be located in all areas where activities are being undertaken.			
8.	Eating Area	Management of eating areas	Incorrect handling and management of waste. Littering of waste.	Control potential influx of vermin and flies. Neat workplace and hygienic environment.	<ul style="list-style-type: none"> The Contractor shall, in conjunction with the NTCSA Environmental Practitioner or PM designate restricted eating areas for eating during normal working hours. Adequate closed refuse bins must be provided and cleaned daily. Litter (even if originating outside the camp) and concrete bags etc. must be picked up daily and put into suitably closed bins. 	No visual sign of vermin and flies. No complaints from I & AP's.	Daily	Contractor
9.	Waste Management	Handling and management of waste	Inappropriate storing, handling and unsafe	To avoid, manage and mitigate potential impacts to	<ul style="list-style-type: none"> All measures regarding waste management shall be undertaken using an 	Solid waste management is undertaken in	Daily	Contractor

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			disposal of at a unrecognised/ unregistered waste facility.	the environment caused by the incorrect storage, handling and disposal of general and hazardous solid waste.	integrated waste management approach. <ul style="list-style-type: none"> • Sufficient, covered waste collection bins (scavenger and weatherproof) shall be provided. • A suitably positioned and clearly demarcated waste collection site shall be identified and provided. • The waste collection site shall be maintained in a clean and orderly fashion. • Waste shall be segregated into separate bins and clearly marked for each waste type. • Staff shall be trained in waste segregation. • Recycling of waste types shall be maximised. • Bins shall be emptied regularly. • General waste shall be disposed of at recognised and registered waste disposal sites/ recycling company. • Hazardous waste shall be disposed of at a registered waste disposal site. • Certificates of disposal for general, hazardous, and recycled waste shall be maintained. 	accordance with relevant national and provincial legislation and local by-laws.		
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					Under no circumstances shall any waste be disposed of, burned, or buried on site.			
10.	Sanitation	Management of ablution facilities	Risk of diseases and contamination/pollution to the environment.	An abundant supply of suitably located clean and well-maintained toilet facilities are available to all staff to minimise the risk of disease and impact to the environment.	<ul style="list-style-type: none"> Mobile chemical toilets shall be made available onsite if no other ablution facilities are available. Ablution facilities and or mobile toilets shall be always used and no indiscriminate use of the veld for the purposes of ablutions shall be permitted under any circumstances. Ablution facilities shall be located within 100 m of any workplace and shall be numerous enough to accommodate the workforce (minimum requirement of 1:15 workers on site). <p>Where mobile chemical toilets are required, the following shall be ensured:</p> <ol style="list-style-type: none"> Toilets are located no closer than 100 m to any watercourse or water body. Toilets are secured to the ground to prevent them from toppling due to wind or any other cause. No spillage occurs when the toilets are cleaned or emptied, and the contents are managed in accordance with the EMPr. 	No pollution or disease arises on-site because of sanitation facilities or lack thereof.	Daily	Contractor

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					<p>d) Toilets have an external closing mechanism and are closed and secured from the outside when not in use to prevent toilet paper from being blown out.</p> <p>e) Toilets are emptied before long weekends and workers holidays and shall be locked after working hours.</p> <p>f) Toilets are serviced regularly, and a copy of the waste disposal certificates shall be maintained.</p>			
11.	Dust Management	Management of dust emission	Generation of dust emissions.	To reduce dust emissions during construction activities.	<ul style="list-style-type: none"> Take all reasonable measures to minimise the generation of dust as a result of construction. Removal of vegetation shall be avoided until such time as soil stripping is required and similarly exposed surfaces shall be re-vegetated or stabilised as soon as is practically possible. Excavation, handling and transport of erodible materials shall be avoided under high wind conditions or when a visible dust plume is present. During high wind conditions, the responsible person will evaluate the situation and make 	Minimal occurrence of dust due the adherence of EMPr requirements.	Daily	Contractor

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					<p>recommendations as to whether dust-damping measures are adequate, or whether working will cease altogether until the wind speed drops to an acceptable level.</p> <ul style="list-style-type: none"> Where possible, soil stockpiles shall be in sheltered areas where they are not exposed to the erosive effects of the wind. Where erosion of stockpiles becomes a problem, erosion control measures shall be implemented at the discretion of the responsible person. 			
12.	Noise Management	Management of noise levels	Unnecessary high noise levels	To prevent unnecessary noise to the environment by ensuring that noise from construction activity is mitigated	<ul style="list-style-type: none"> All construction vehicles must be in a good working order to reduce possible noise pollution. Noise reduction is essential, and Contractors shall endeavour to limit unnecessary noise, especially loud talking, shouting or whistling, radios, sirens or hooters, motor revving, etc. The use of silent compressors is a specific requirement. Noisy activities shall take place only during normal working hours. <p>The surrounding NTCSA management and landowners must be</p>	<p>Noise management is undertaken in accordance with SANS 10103 and requirements of the EMP.</p> <p>No complaints from surrounding landowners.</p>	Daily	Contractor

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					informed in writing within 24 hours prior to any planned activities that will be unusually noisy or any other activities that could reasonably have an impact on the adjacent sites. These activities could include, but are not limited to, blasting, piling, use of pneumatic jackhammers and compressors.			
13.	Water Management	Stormwater and wastewater management	Pollution and contamination of the watercourse environment and or estuary	To avoid, manage and mitigate potential impacts to the environment caused by wastewater discharge during construction.	<ul style="list-style-type: none"> Appropriate pollution control facilities necessary to prevent discharge of water containing polluting matter or visible suspended materials into watercourses or water bodies shall be designed and implemented. All watercourses must be protected from direct or indirect spills of pollutants such as solid waste, sewage, cement, oils, fuels, chemicals, aggregate tailings, wash and contaminated water or organic material resulting from the Contractor's activities. In the event of a spill, prompt action must be taken to clear the polluted or affected areas. <input type="checkbox"/> There must not be any impact on the long-term 	Wastewater management is undertaken in accordance with relevant national and provincial legislation and local by-laws.	Daily	

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					<p>morphological dynamics of watercourses or estuaries.</p> <p><input type="checkbox"/> When working in or near any watercourse or estuary, the following environmental controls and consideration must be taken:</p> <p>a) Water levels during the period of construction.</p> <p>No altering of the bed, banks, course or characteristics of a watercourse</p> <p>b) During the execution of the works, appropriate measures to prevent pollution and contamination of the riparian environment must be implemented e.g., including ensuring that construction equipment is well maintained.</p> <p>c) Where earthwork is being undertaken in close proximity to any watercourse, slopes must be stabilised using suitable materials, i.e., sandbags or geotextile fabric, to prevent sand and rock from entering the channel; and</p> <p>d) Appropriate rehabilitation and re-vegetation measures for the watercourse banks must be implemented timeously. In this regard, the banks should be appropriately and</p>			
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					incrementally stabilised as soon as development allows.			
14.	Dismantling of old equipment	Storing and handling of old equipment	<p>Damage to the environment</p> <p>Chemical Pollution/contamination</p> <p>Improper disposal of the equipment</p>	Impact to the environment to be minimised during the dismantling, storage, and disposal of old equipment commissioning.	<ul style="list-style-type: none"> All old equipment removed during the project must be stored in such a way as to prevent pollution of the environment. Oil containing equipment must be stored to prevent leaking or be stored on drip trays. All scrap steel must be stacked neatly, and any disused and broken equipment/material must be stored in containers. Once material has been scrapped and the contract has been placed for removal, the disposal Contractor must ensure that any equipment containing pollution causing substances is dismantled and transported in such a way as to prevent spillage and pollution of the environment. The Contractor must also be equipped to contain and clean up any pollution causing spills. Disposal of unusable material must be at a registered waste disposal site and a certificate of safe disposal must be obtained. 	All scrap material to be disposed of accordingly.	When dismantling takes place	Contractor

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15.	Workshop, equipment maintenance and storage (If applicable)	Management of workshop and storage area	Damage to the environment Chemical Pollution/contamination	The control operation, maintenance and storage of equipment prevents soil, surface water and groundwater contamination.	<ul style="list-style-type: none"> Where possible and practical all maintenance of vehicles and equipment must take place in the workshop area. During servicing of vehicles or equipment, especially where emergency repairs are affected outside the workshop area, a suitable drip tray must be used to prevent spills onto the soil. Leaking equipment must be repaired immediately or be removed from site to facilitate repair. Workshop areas must be monitored for oil and fuel spills and such spills. Appropriately sized spill kit kept on site relevant to the scale of the activity taking place shall be available. The responsible operator of equipment must have the required training to make use of the spill kit in emergency situations. The workshop area shall have a bunded concrete slab that is sloped to facilitate runoff into a collection sump or suitable oil / water separator where maintenance work on 	Soil, surface water and groundwater contamination are prevented as due to adherence of EMP requirements.	Daily	Contractor
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					vehicles and equipment can be performed.			
16.	Heritage Resources Management (If applicable)	Heritage Resources Management	Destruction of the heritage resources	<p>Limit the destruction of the country's heritage resources.</p> <p>The preservation and appropriate management of new archaeological finds should these be discovered during construction.</p>	<ul style="list-style-type: none"> In terms of the National Heritage Act, 1999 (Act No. 25 of 1999), construction personnel must be alert and must inform the local authorities should they come across any findings of heritage resources within 24 hours if the area has been removed. Should any archaeological artefacts be exposed during construction activities, work on the area where the artefacts were found shall cease immediately and the South African Heritage Resources Agency shall be notified within 24 hours. Under no circumstances shall archaeological artefacts be removed, destroyed, or interfered. Any archaeological sites exposed during construction activities must not be disturbed prior to authorisation by the South African Heritage Resources Agency or the appropriate provincial heritage resource agency. No building, structure or fitting on the site older than 60 years shall be removed or 	No destruction of or damage to known archaeological sites.	Daily	Contractor

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					demolished without the appropriate license from SAHRA. <input type="checkbox"/> Identify, demarcate and prevent impact to all known sensitive heritage features on site.			
17.	Access Roads	Management and maintenance of access roads	Damage to the environment through the unplanned and unrestricted movement of vehicles on site	Minimise loss of topsoil and enhancement of erosion. Minimise fauna and flora displacement by destruction of natural habitats.	<ul style="list-style-type: none"> Existing roads and services within the Substation and/ or servitude must be utilised as far as possible. No unauthorised access is permitted. Any damage or degradation will be investigated, and fines issued, the affected areas must be immediately rehabilitated. No driving off from the marked roads is permitted and designated parking areas must be identified and demarcated with applicable signage. Maximum use of both existing servitudes and existing roads must be made to minimize further disturbance through the development of new roads. 	<p>No erosion on access roads after completion of construction/ refurbishment works.</p> <p>No loss of topsoil due to runoff water on access roads.</p>	Daily	Contractor
18.	Fauna/Animal Management	Fauna/Animal Management	Disturbance to fauna	Minimise disturbance to animals.	<ul style="list-style-type: none"> Focus on animals such as snakes and other reptiles that often generate fear by telling the labour force how to move safely away and to 	No measurable or visible signs of habitat destruction.	Daily	Contractor

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				<p>Minimise interruption of breeding patterns of birds.</p> <p>Minimise destruction of habitat,</p>	<p>whom they report the sighting of such animals.</p> <ul style="list-style-type: none"> The labour force should also be informed where snakes most often hide so that they can be vigilant when lifting stones etc. Employees must be trained on how to deal with fauna species as intentional killing will not be tolerated as well as not to disturb wildlife within the working area precinct. 			
19	Flora/ Vegetation Management	Maintenance and management of vegetation	Damage to protected or endangered species	Minimal disturbance to vegetation where such vegetation does not interfere with construction/ refurbishment in terms of approvals from the relevant authority.	<p><input type="checkbox"/> Protected or endangered species may occur on or near the development site. Special care should be taken not to damage such species.</p> <ul style="list-style-type: none"> The contractor must rehabilitate the construction camp and any other disturbed areas once construction/ refurbishment activities have terminated. Compacted areas will be ripped and mulched to ensure recovery of the natural vegetation cover. Once construction/ refurbishment is complete, rehabilitation of un-built areas must be undertaken to restore the aesthetic & ecological value of the area. Active re-vegetation must take place with 	<p>The footprint has not exceeded the agreed boundaries.</p> <p>All damaged areas successfully rehabilitated.</p>	<p>As and when required.</p> <p>On completion of the project construction activities.</p>	Contractor

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					indigenous vegetation and as prescribed by the client and/or property owner.			
20.	Fire Management	Management of fires	Spread of uncontrolled/unattended fires	To minimise the risk of fire during construction.	<ul style="list-style-type: none"> Designate smoking areas where the fire hazard could be regarded as insignificant. Educate workers on the dangers of open and/or unattended fires. No open fires shall be allowed on site under any circumstances. Firefighting equipment shall be available on vehicles located on site. Contact numbers for the Fire Prevention Agency (FPA) and emergency services must be communicated in environmental awareness training and displayed at a central location on site. 	<p>Fire prevention measures are carried out in accordance with the National Veld and Forest Fire Act, 101 of 1998.</p> <p>Emergency Preparedness and Response Plan.</p>	<p>Throughout the construction/refurbishment phase</p> <p>When necessary</p>	Contractor
21.	Installation of Equipment	Storage, installation, and handling of equipment	Improper installation, handling and storage	Impact to the environment to be minimised during the installation of equipment.	<ul style="list-style-type: none"> Management of dust shall be conducted in accordance with Dust management section. Management of equipment used for installation shall be conducted in accordance with Workshop equipment maintenance and storage section. 	Impact to the environment is minimised through adherence to EMP requirements.	Daily	Contractor

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					<ul style="list-style-type: none"> Management hazardous substances and any associated spills shall be conducted in accordance with Hazardous substances section. 			
22.	Rehabilitation	Rehabilitation of the construction site	<p>Failure to rehabilitate disturbed areas.</p> <p>Improper/ inadequate rehabilitation.</p> <p>Incorrect use of rehabilitation techniques.</p>	Areas disturbed during construction/ refurbishment are returned to a state that approximates the state which they were before disruption.	<ul style="list-style-type: none"> All areas disturbed by construction/ refurbishment activities shall be subject to landscaping and rehabilitation. Where new access roads have crossed cultivated farmlands, that lands must be rehabilitated by ripping. Indigenous species must be used for with species and/grasses to where it compliments or approximates the original condition. <p>Where required, re-vegetation including hydro-seeding can be enhanced using a vegetation seed mixture as described below. A mixture of seed can be used provided the mixture is carefully selected to ensure the following:</p> <ol style="list-style-type: none"> Annual and perennial plants are chosen; Pioneer species are included; Species chosen must be indigenous to the area with 	<p>Landscaping and rehabilitation are undertaken in accordance with the approved rehabilitation plan/ specification.</p> <p>Areas disturbed during the development phase are returned to a state that approximates the original condition.</p>	<p>On completion of construction/ refurbishment</p> <p>During rehabilitation phase</p>	Contractor

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					the seeds used coming from the area; d) Root systems must have a binding effect on the soil; e) The final product must not cause an ecological imbalance in the area.			
23	Prevention of Disease	Health and wellness of the workforce	Spread of diseases	Prevent litigation due to infestation of livestock/ game.	<ul style="list-style-type: none"> The Contractor shall take all the necessary precautions against the spreading of disease, especially under livestock/ game. The workforce shall also be sensitised to the effects of sexually transmitted diseases, especially HIV AIDS. The Contractor must ensure that information posters on AIDS are displayed in the Contractor Camp area. Information and education relating to sexually transmitted diseases to be made available to both construction workers and local community, where applicable. Medical support must be made available. Provide access to Voluntary HIV Testing and Counselling Services. 	No complaints from Stakeholders/ IAP.	Daily As and when required	Contractor

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