




	Senakangwedi Substation Environmental Management Plan	Document Identifier	559-824510295	Rev	1
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INTERNAL ENVIRONMENTAL MANAGEMENT PROGRAMME

SENAKANGWEDI SUBSTATION PLC REFURBISHMENT

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INTRODUCTION

1.1 SCOPE OF THIS EMPR

This Environmental Management Programme (EMPr) has been compiled to address the potential environmental impact that might occur during the PLC refurbishment of the Senakangwedi Substation in the Northern Portfolio. 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 Practitioner to ensure compliance with all the environmental specifications in this document as well as the relevant legislation.

This EMPr should also ensure the sustainable management of the environment during the project. This EMPr must be viewed as a contract document to which all NTCSA employees and contractors involved should adhere to.

NB: This EMPr document will only cater 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).

1.2 ROLES AND RESPONSIBILITIES

Function	Roles and responsibilities
Contractor Environmental Officer (CEO) / Safety, Health and Environmental Officer (SHE)	The CEO / SHE ensures that all Sub-contractors working under the Principal Contractor abide by the requirements of the EMPr. The CEO / SHE's primary role is to coordinate the environmental management activities of the Contractor on site.

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	<ul style="list-style-type: none"> • Be on site throughout the duration of the project and be dedicated to the project. • Ensure all their staff are aware of the environmental requirements, conditions, and constraints with respect to all of their activities on site. • Implementing the environmental conditions, guidelines and requirements as stipulated within the EMPr and method statements. • Attend the site meetings. • Undertaking corrective actions where non-compliances are registered within the stipulated timeframes. • Report back formally on the completion of corrective actions. • Environmental monitoring as required by applicable legislation. • Assist the SEA in maintaining all the site documentation. • Prepare the site inspection reports and corrective action reports for submission to the SEA; and • Assist the SEA with the preparing of the monthly report.
Eskom Senior Environmental Advisor (SEA)	<ul style="list-style-type: none"> • To ensure that a practical environmental management programme (EMPr) for the construction phase of a project is compiled and approved. • To ensure that all conditions as stipulated in the EMPr are met; and • To conduct audits, monitor and / or provide assurance before, during and post construction.
Project Manager/Site Manager	<ul style="list-style-type: none"> • Represents and act on behalf of NTCSA regarding the administration of contracts. • In consultation with the Planning Engineer, determines the scope of work. • Provide scheduling, aspects of co-ordination and estimating. • Ensure implementation of the project plan within cost, time, and quality constraints. • Ensure that implementation of EMPr is executed as planned. • Keep the asset owner informed of progress made during the life cycle of the project and

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	<ul style="list-style-type: none"> Ensure that conditions in this EMPr are fulfilled before the contractor occupies the site.
Contractor	<ul style="list-style-type: none"> To provide all necessary supervision during the execution of the project. He/ She should be available on site all the time. To appoint a competent Environmental / Safety Health and Environment Officer. To implement the projects as per the approved project plan. To ensure that implementation is conducted in an environmentally acceptable manner. To fulfil all obligations as per the agreed contract; and 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.

1.3 LEGISLATIVE CONTEXT

The following environmental acts were considered in the compilation of this EMPr:

- National Environmental Management Act, 1998 (NEMA) (Act No 107 of 1998), and all amendments and supplementary listings and/or regulations.
- National Environmental Management: Waste Act, 2008 (NEMWA, Act 59 of 2008);
- National Environmental Management Act: Biodiversity, 2004 (NEM:BA) (Act No. 10 of 2004) and amendments.
- The National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) and its Regulations.
- The National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004).
- National Forest Act, 1998 (NFA) (No 84 of 1998).
- National Veld and Forest Fire Act, 1998 (Act No. 101 of 1998).
- National Heritage Resources Act, 1999 (Act 25 of 1999).

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- National Water Act, 1998 (Act 36 of 1998).
- The Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).
- The National Fencing Act, 1963 (Act No 31 of 1963) as amended by Act 108 of 1991.
- The Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983).
- South African National Standard (SANS) 10228 – The identification and classification of dangerous goods.

1.4 PUBLIC INVOLVEMENT

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 published in Government Notice R982 to R985 on 4 December 2014, 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:

All the required construction work will be done at an existing facility and the extension of the servitude by 10 metres has no impact on the environment, therefore, the project will not trigger any of the EIA listed activities.

The public participation process as prescribed in Chapter 6 of GNR No. R982 of December 2014 are also guided by relevant principles contained in Chapter 2 of NEMA and will not be required as the work does not trigger EIA activities.

DESCRIPTION OF THE PROJECT SITES

2 SITE LOCATION

Senakangwedi Substation

3 SCOPE OF WORK

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project consists of replacing 14 PLC links in the Northern Grid in 11 various substations Acornhoek, Foskor, Leseding, Marathon, Merensky, Pelly, Simplon, Senakangwedi, Spencer, Warmbad, Witkop. The current installed base consists of ETI 21/41, ETL- 41/81 and ETL-581/41

The ETL 41/81 have surpassed the manufactures recommended life span of 15 years by a further 7 years, the spares are not available and there are no skills to repair these PLC's. In addition, the harsh environmental conditions at the substations have further reduced the reliability of the electronic components. Due to the above, these PLC types need to be replaced

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3. MITIGATION MEASURES

This section specifies standard mitigation measures to be followed by the parties responsible for environmental management during the Senakangwedi Substation.

MITIGATION MEASURES	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
<p>4.1 Project contract and programme</p> <p>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.</p>	<p>Contingencies for minimising negative impacts anticipated to occur during the construction phase.</p>	<p>Contract records</p> <p>Signed declaration pro forma</p>	<p>During tender stage.</p>

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A copy of this EMPr must be available at all times at the relevant substation. 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.	Ensure environmental awareness and formalize environmental responsibilities and implementation.		During construction.
<p>4.2 Method statements</p> <p>All activities which require method statements may only commence once the method statements have been approved by the PM and SEA.</p> <p>Where applicable, the contractor shall provide job-specific training/awareness on</p>	Contingencies for minimising negative impacts anticipated to occur during the construction phase.	Approved method statements and relevant pro forma documents	As and when required.

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<p>an ad hoc basis when workers are engaged in activities, which require method statements.</p> <p>It must be ensured that Eskom policies, guidelines and standards are consulted to ensure that method statements meet requirements as set out in these documents.</p>		Training records	
<p>4.3 Site demarcation and development</p> <p>All conditions contained in this EMP must be adhered to and considered when site demarcation and development takes place.</p>	Contingencies for minimising negative	Demarcated areas	As and when required.

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No activities will be allowed outside the demarcated area.	impacts anticipated to occur during the construction phase.	Filled in section of this document	
<p>4.4 Environmental Awareness</p> <p>All staff should receive environmental awareness training.</p> <p>The Contractor shall allow for sufficient sessions to train all personnel with no more than 20 personnel attending each course.</p> <p>All new staff coming onto site shall receive environmental awareness training (Induction).</p>	<p>Environmental training and awareness of construction staff contribute to minimisation of the occurrence of environmental</p>	<p>Environmental impact as a result of construction activities is minimised through the development of effective environmental awareness training</p>	<p>First week of project commerce and as and when required.</p>

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<p>Refresher environmental awareness training is available as and when required.</p> <p>All staff are aware of the conditions and controls linked to the EMPr and any other organisational requirements.</p> <p>All staff are made aware of their individual roles and responsibilities in achieving compliance with the EMPr.</p> <p>The Contractor shall erect and maintain information posters at key locations on site.</p> <p>Environmental awareness training should include as a minimum the following:</p>	<p>impact to the work area.</p>	<p>material and execution of environmental awareness training for all staff.</p>	

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<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. • Emergency procedures. • Procedures to be followed when working near or within sensitive areas. • Wastewater management procedures. • Water usage and conservation. • Solid waste management procedures. • Sanitation procedures 			

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<ul style="list-style-type: none"> • Disease prevention; and • Chance finds procedure for archaeological/paleontological/historical sites unearthed during construction. <p>A record of all environmental awareness undertaken as part of the EMPr must be available and kept on site.</p> <p>A staff attendance registers of all staff to have received environmental awareness training must be kept and made available.</p>			
<p>4.5 Site demarcation and development</p> <p>A site establishment method statement shall be provided by the contractor prior to any onsite activity.</p> <p>Location of construction camps must be carefully considered and approved by</p>	Ensure that environmental issues	Impact to the environment during	Before construction activities commence.

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<p>NTCSA to ensure that the site does not impact on sensitive areas.</p> <p>Sites should be located where possible on previously disturbed areas.</p>	<p>are taken into consideration in the planning and construction of site establishment.</p>	<p>site establishment is minimised.</p>	
<p>4.6 Emergencies, non-compliance and communication</p> <p>Compile an Emergency Response Plan prior to the commencement of the proposed project.</p> <p>The Emergency Plan must deal with accidents, harsh weather conditions, disasters, wildlife interactions, potential</p>	<p>Emergency procedures are in place to enable a rapid and effective response to all types</p>	<p>All emergency situations are managed in accordance with the</p>	<p>As and when required.</p>

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<p>spillages, and fires in line with relevant legislation.</p> <p>All staff shall be made aware of emergency procedures as part of environmental awareness training.</p> <p>The relevant local authority shall be made aware of a fire as soon as it starts.</p> <p>In the event of an emergency, the necessary mitigation measures to contain the spill or leak shall be implemented.</p>	of environmental emergencies.	emergency procedures.	
<p>5.7 Hazardous Chemical Substances and Storage</p> <p>The contractor must provide method statements for the following:</p>			Daily

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<ul style="list-style-type: none"> • Handling & storage of hazardous chemical substances • Fire Management • Emergency spills <p>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.</p> <p>Drip trays (minimum of 10cm deep) must be placed under all vehicles that stand for more than 24 hours. Vehicles (including</p>	<p>Prevention of pollution of the environment.</p> <p>Minimise chances of transgression of the acts controlling pollution.</p> <p>To minimise the risk of impact to the environment through the safe storage, handling, use and disposal of</p>	<p>No pollution of the environment.</p> <p>No litigation due to transgression of pollution control acts.</p> <p>No complaints from Interested and Affected Parties.</p> <p>Method statements</p>	

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<p>plant and equipment) suspected of leaking must not be left unattended, drip trays must be utilised.</p> <p>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 stationery.</p> <p>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).</p> <p>Materials such as fuel, oil, paint, herbicide and insecticides must be sealed and stored</p>	<p>hazardous substances.</p>	<p>The management of hazardous substances is undertaken in accordance with the:</p> <ul style="list-style-type: none"> Hazardous Substances Act of 1973 (Act No. 15 of 1973) The Minimum Requirements for the Handling, Classification and Disposal of Hazardous 	

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<p>in beamed areas or under lock and key, as appropriate, in well-ventilated areas.</p> <p>Sufficient care must be taken when handling these materials to prevent pollution.</p> <p>In the case of pollution of any surface or groundwater, the Regional Representative of the Department of Water and Sanitation (DWS) must be informed immediately.</p> <p>Storage areas shall display the required safety signs and containers shall be clearly marked to indicate contents as well as safety requirements.</p> <p>Material Safety Data Sheets (MSDS) must be prepared for all hazardous substances on site and supplied by the supplier where</p>		<p>Waste (Department of Water Affairs and Forestry, 1998)</p> <ul style="list-style-type: none"> National Environmental Management : Waste Act of 2008. 	

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<p>relevant. MSDS's must be updated as required.</p> <p>Where Polycarbonate Biphenyls (PCBs) is required to be used it is imperative that Eskom policy document is consulted.</p> <p>The Occupational Health and Safety Act No 85 of 1993 to be complied with at all times.</p> <p>The use and storage of hazardous substances to be minimised and non-hazardous and non-toxic alternatives substituted where possible.</p> <p>All hazardous substances will be stored in suitable containers as defined in the Method Statement.</p>			

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<p>Containers will be clearly marked to indicate contents, quantities and safety requirements.</p> <p>All employees working with HCS will be trained in the safe use of the substance and according to the safety data sheet.</p> <p>Employees handling hazardous substances / materials must be aware of the potential impacts and follow appropriate safety measures. Appropriate personal protective equipment (PPE) must be made available.</p> <p>The floor of the bund shall be sloped, draining to an oil separator.</p>			

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<p>All empty externally dirty drums shall be stored on a drip tray or within a bunded area.</p> <p>No unauthorised access into the hazardous substance’s storage areas shall be permitted.</p> <p>No smoking shall be allowed within the vicinity of the hazardous storage areas.</p> <p>Adequate fire-fighting equipment shall be made available at all hazardous storage areas.</p>			

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