

ENVIRONMENTAL MANAGEMENT PROGRAMME (EMP)

Nama Garies Phase 4 & 5 (Overhead line rebuild phase 4 &5: 740D & 740E)

October 2012

Compiled for:
ESKOM DISTRIBUTION- WESTERN OPERATING UNIT



Table of Contents

1. Introduction	3
2. Aims of the EMP	3
3. Roles and Responsibilities	3
4. Project Description and Motivation	4
5. Site Descriptions	5
6. Method Statements	5
7. Special Mitigatory Measures	6
8. Environmental Legislation	13
9. Socio-Cultural Issues	17
10. Basic Rules of Condition	18
11. EMP Audit Checklist	19

1. Introduction

This EMP is intended as a legal binding document for in-house Eskom staff and outside contractors who work on construction or maintenance of Eskom infrastructure. The EMP is a working document that identifies potential environmental impacts and addresses how such environmental issues can be mitigated and/or avoided. Where amendment is required based on specifications of a site, such amendments must be made to meet environmental integrity. All deviations from this EMP must be approved with the Eskom Environmental Management Section prior to implementing the change.

2. Aims of the Environmental Management Programme (EMP):

The purpose of this Environmental Management Programme (EMP) is to ensure that correct measures are implemented on site to ensure sustainable management (avoid and/or minimise environmental damage) of the environment. The EMP must form part of the Contracts Document to which all employees and contractors involved in construction must be accountable.

The EMP must address inter alia the following:

- a) Ensure that the Contractor/s and their team are familiar with the environmental procedures to be followed and comply with all recommendations made.
- b) Environmental Awareness Training (EAT) must be provided to everyone who works on the site. Health and safety risks tips must be provided as part of the EAT and signed records must be kept on site for all staff who have completed the training.
- c) A list of relevant environmental personnel and Eskom stakeholders must be given to the Contractor/s.
- d) Eskom Environmental Staff must monitor the emergency sites during construction and/or rehabilitation to ensure that any potential negative environmental impacts are identified and mitigated. The implementation of the EMP must be monitored by Eskom Environmental Officials.
- e) All environmental issues that arise on site must be recorded and mitigation steps taken to resolve such issues provided.
- f) To ensure that the EMP complies with the environmental regulations.

3. Roles and Responsibilities

The responsibility of the Project co-ordinator (PC) is to ensure that Contractors comply with the environmental specifications in this document. If the project leads is anyone other than a PC (e.g. Senior Supervisor: Technical or the person in responsible charge from the field service environment, Cable Section etc.), shall take the role of the PC when the actual emergency work has to be undertaken on site.

More specifically the PC shall:

1. Assume overall responsibility for the effective implementation and administration of the EMP;
2. Ensure that all staff has been made aware of the EMP and its content in the form of environmental awareness.
3. Ensure that the EMP is communicated to the Contractors;

4. Ensure that the EMP is given to the applicable Construction Supervisor and the Contractors (if utilised);
5. Inform Environmental Management of any emergency work carried out within/ near watercourses as soon as such incidents occur (before any emergency work within/ near watercourse commences). If any associated rehabilitation work is needed subsequent to any emergency work, Eskom Environmental Management Section must be informed as soon as it becomes known, so that the necessary applications can be lodged with Department of Water Affairs and Department of Environmental Affairs.
6. Keep a register of environmental incidents and resolutions (oil spills, complaints, non-conformances, etc.) and other documentation related to the EMP (MOU and Method Statements);
7. Report to the Land Development (Environmental Officers (EO)) any problems related to conformance with this document to be solved in co-operation with the Contractor(s);

The Contractor shall:

1. Ensure that the environmental specifications of the document are effectively implemented. This includes the on-site implementation of steps to mitigate environmental impacts.
2. Monitor environmental performance and conformance with the specifications contained in this document during daily site inspections.
3. Discuss implementation of and compliance with this document with the staff at routine site meetings.
4. Report progress towards implementation and non-conformances with this document at site meetings with the PC/EO.
5. Ensure that suitable records are kept and that appropriate documentation is available to the PC/ EO.
6. Advise the PC/EO of any incidents or emergencies on site, together with the record of action taken.
7. Report and record all accidents and incidents resulting in environmental damage, injury or death.

4. PROJECT DESCRIPTION AND MOTIVATION

4.1 Scope of works

Rebuild existing backbone overhead line between Kamieskroon and Kharkams as Phase 4 of the parent project. The line must be built on a new route which should satisfy operational access requirements, optimise backbone electrical length and load centres, optimise re-connection of existing T-off lines. Optimisation of compensating and control equipment should be reviewed during the design phase and fusing philosophy implemented. Dismantling of the old line will be done under project 2263D.

Rebuild Phase 5 of existing Nama Garies 22kV backbone line between Koringhuis (Mesklip) and Nama Substation over an estimated distance of 30km. Hare conductor to be used and BIL down wires to be installed. It is essential that the new line route be accessible to field staff for line inspections, maintenance and repairs and such line route be approved by the local TSC. Similarly the electrical line length should be optimised to improve voltage regulation and reduce line losses ie it should follow the shortest route. The fusing philosophy should be revised and any changes included in this project.

4.2 Motivation

The network was designed and built by Northern Cape Region 26 years ago. Since then problems experienced on the network are inappropriate design, inaccessible route & structures, bad workmanship. The accumulative result is a rought network with excessive long outages and repair costs. A business case was presented to Management and it was decided to rebuild the backbone network in 5 phases: (Phase 1) Kharkams-Leliefontein, (Phase 2) Kharkams-Garies, (Phase 3) Kharkams-Kamieskroon, (Phase 4) Kamieskroon- Koringhuis, (Phase 5) Koringhuis-Nama. This project is for phase 4: Kamieskroon-Koringhuis section.

5. SITE DESCRIPTION

The powerline that will be constructed passes through an undulating and sensitive landscape. This portion of the line is situated in the Namaqua Uplands, which encompass the highlands of central Namaqualand in the Northern Cape Province. Some areas is located within the succulent Karoo biome and is characterised by incredible natural diversity and high species endemism. In addition to its diversity, the region contains large zones of transitional vegetation between succulent and fynbos habitats.

In addition to passing through ecologically in-tact pristine natural vegetation, the line also crosses several other special habitats, namely streams, wetlands and quartz patches. The activities associated with the construction of the powerline, must be executed in an environmentally sound and responsible manner. This EMP takes into account the biophysical environment and makes recommendations for the construction accordingly. A significant portion of the line traverses private properties (farms and erven) as well as municipal commonage, each with their own environmental features.

6. METHOD STATEMENTS

A method statement is a document that is compiled by the contractor on requested from Eskom. Method statements document can provide specific instructions on how to perform a specific work related task. Method statements should at minimum include the following:

- A detailed description of where the activity will be undertaken
- What the activity will entail
- What material and machinery to be used
- Timeframe of activity
- By whom the activity will be performed

The method statement must also detail which control measures will be implemented to ensure sound environmental management. The contractor must submit the method statement before any particular construction activity is due to start. Work may not commence until the method statement has been approved by the Eskom environmental officer.

The following method statements should be submitted to the Eskom environmental officer on request. The method statement must be submitted to the Eskom environmental officer for approval prior to the commencement of the specific activity.

- Site establishment
- Topsoil management
- Anti-erosion measures
- Waste management
- Refuelling and servicing of vehicles and equipment

- Rehabilitation of elements such as site camps, access routes, ablutions, storage areas (equipment, materials, diesel etc.), workshops, laydown areas and stockpile areas
- River crossings (road bridges)
- Rehabilitation plan
- Transportation, handling, use and storage of hazardous substances
- Protection of any environmentally sensitive areas (streams, rivers, pans, wetlands, dams, etc)

7. SPECIAL MITIGATORY MEASURES

7.1 RESTRICTION OF WORKING AREAS

- It is important that construction activities are concluded within a limited area to facilitate control and minimise impacts on the natural environment, for this reason no-go areas must be identified.
- Working areas is defined, as those areas required by the contractor to undertake construction.
- The contractor shall ensure that all plant, labour and materials remain within the boundaries of the working areas
- Only powerline servitudes should be considered as working areas
- In addition, farm roads and existing access roads can also be considered as working areas with permission of the land owners, all areas outside the working area shall be considered as “no-go” areas

7.2 VEGETATION MANAGEMENT

- No tree cutting/ clearance/ pruning may be done without identifying the type of tree, identifying whether it is a protected tree or not and/ or whether it is in a forest/ plantation area. A permit is required if Eskom needs to cut/ disturb any protected tree, champion tree, heritage value tree or any tree in a forest/ plantation area. Please contact the Environmental Management Department to provide this service.
- Minimal physical disturbance to the vegetation during construction phase is recommended and should be conveyed to the construction team.
- Any cleared vegetation should be removed and disposed at a registered waste site and such records kept on file.
- Access routes and the work area must be clearly demarcated and no-go areas marked to avoid unnecessary disturbance to the natural vegetation or private property.
- No fires are permitted on site as they may result in veld fires.
- Absolutely no driving within wetlands or through rivers with any vehicles.
- Weeds must not be allowed to spread. Monitoring of weed growth in the servitude should be conducted.
- Invasive plants must be controlled (both invasive plants and weeds must be identified and controlled in such a manner that it is prevented from spreading).
- Bush clearing in the servitude must be in accordance with current Eskom’s Standard and Procedures at that time.
- No bush clearing is to be undertaken without the knowledge of the property owner.

7.3 ACCESS

- No fences, gates or locks shall be damaged to obtain access onto a line route. Arrangements shall be made in advance to obtain permission for access with land owners.
- Use of private roads shall be arranged in advance with the landowners. Any damage to private roads shall be repaired at the Contractor's expense and to the satisfaction of the landowner. This shall be the responsibility of the project manager or coordinator. Where prior damage to roads are observed, photographic evidence should be captured and kept on file, to avoid false claims against Eskom.
- Gates shall be left as they are found, i.e. closed gates shall be kept closed and open gates shall be left open. Gates to adjacent properties or onto public roads shall be closed at all times. Any Eskom gates installed on the line route shall be kept closed and locked.
- Should emergency work take place after normal working hours the landowner must be notified and access routes must be cleared with the landowner. Privacy shall be respected at all times.
- Eskom, Eskom's contractors and their employees shall at all times be courteous towards landowners, tenants and the local community.
- Eskom, Eskom's contractors and their employees shall not cause damage to property, crops or animals. Activities that may cause conflict with landowners, tenants, the local work force or the local community shall be avoided. Should conflict arise it shall be immediately reported to the Eskom project manager or Coordinator.
- Vehicles shall be driven at a moderate speed on private roads and stay within the statutory speed limit on public roads.
- All movement of vehicles shall take place on the established Eskom servitude road or on private roads as agreed in advance. Keep to existing tracks. No movement shall take place through the veld.
- Should gates be too small for access, they may be removed with the permission of the property owner. Once construction is complete, these gates should be replaced.

7.4 DAMAGE TO PROPERTY

- In the event that private property is damaged it must be reported immediately to Eskom and the landowner. Damaged ground surfaces (due to vehicle movement or other activities) must be repaired to the satisfaction of the landowner (written proof of satisfaction must be obtained). If any prior damage to property or roads are observed, photographic evidence must be captured prior to Eskom working in that area, to avoid false damage to property claims against Eskom.
- Do not interfere with stock, crops or activities on the surrounding private property. Wandering around the properties is not permissible. Staff must remain within the demarcated work area and access roads.
- Use of private property (i.e. water and ablution facilities) is not permitted. Contractor must arrange sufficient potable water and clean ablution facilities for staff at all times. The hygiene of the said ablution facilities must be kept clean for health and safety of staff.

7.5 WASTE MANAGEMENT

- Littering is prohibited at all times. Bins must be provided on site and waste separated where applicable (papers, bottles and plastics). Bins must be pinned down and closed tightly to avoid being blown by strong winds and rummaged through by animals. Recycling and re-use (where possible) is to be encouraged.
- Bins to be provided in the eating area and staff to utilise the bins for all general waste and avoid littering.
- Under no circumstances is waste to be burnt.
- All excess material must be removed upon completion of any work performed and disposed of in a suitable manner.
- No electrical waste (bits of wire, cables, wood pole, etc.) may be discarded on site.
- All waste is to be collected and placed into the disposal system.
- All hazardous waste must be suitably enclosed, labelled and stored.
- Hazardous waste must be disposed of at a Class HH site.
- Asbestos procedure must strictly be adhered to when disposing of the Asbestos trench covers. The Project co-ordinator must arrange as per Eskom Asbestos standards and Procedures for disposal of Asbestos.
- All waste material and rubble must be removed from the site and suitably disposed of; no solid wastes shall be stored on site for longer than two months.
- Provision must be made (containers in vehicles) for the separation at source and collection of all waste materials (i.e. off-cut conductors, unused nuts and bolts, broken insulators, steel strapping, plastics etc.).
- During construction operations, surplus concrete may not be dumped indiscriminately on site, but shall be disposed of in designated areas. Concrete trucks or other equipment must not be washed on site. These activities will only be allowed in designated areas, and the water will only be disposed of on soil to be used as backfill.

7.6 EROSION

- The Contractor must take appropriate and active measures to prevent erosion resulting from his own construction activities and operations as well as storm water control measures to the satisfaction of the ECO. During construction the Contractor must protect areas susceptible to erosion by installing the entire necessary temporary and permanent drainage works as soon as possible (if applicable).
- All vehicles to remain within the designated vehicle tracks;
- Permission from the property owner must first be sought before any new vehicle tracks are made;
- Should it be necessary to plant a pole on a slope ensure that the necessary erosion prevention measures are put in place; and
- Minimum / no movement in areas already eroded.
- It is illegal to discharge water into a public stream if the quality does not conform to the required health or water standards. Other measures as may be necessary must be taken to prevent the surface water from being concentrated in streams and from scouring the slopes, banks or other areas. All potential hazardous fluids / materials must be protected from the rain to prevent them being washed

into storm water channels. All such measures must be discussed with and approved by the ECO.

- Soil erosion must be prevented at all times along servitudes and access roads.

7.7 TOP SOIL

- All topsoil must remain on site and protected from erosion by wind or runoff.
- Topsoil must not be compacted and should not be mixed with foreign soil/materials as it must be used for rehabilitation of the site.
- Storage of topsoil should not exceed 2m in height for safety.
- Unnecessary disturbance to rocky outcrops is not permitted.

7.8 NOISE POLLUTION

- Unnecessary noise pollution is not permitted - i.e. noise from radios and vehicle hooting.
- Any complaints pertaining to noise must be reported to the PC and addressed.
- Noisy activities may be restricted to normal working hours i.e. Monday to Friday 7am –5pm
- Where noise is anticipated due to emergency work after hours and particularly between 8pm to 6am, the landowner is to be informed as a courtesy and Eskom needs to limit noise making activities to the bare minimum.

7.9 AIR QUALITY

- No burning of waste material (vegetation, general waste) is permitted on site.
- Drive at moderate speeds on access roads to minimise or avoid dust pollution.

7.10 WATER QUALITY MANAGEMENT

- No new infrastructure may be placed with 100 meters of any watercourse (rivers, streams, dams) without the required approvals and permit. Where such cannot be avoided (in case of emergency for existing structures), consultation is needed with Department of Water Affairs to determine the extent to which emergency work can be permitted without prior authorisation. An application for a Water Use License (WULA) or General Authorisation and EIA approval must be obtained in cases where proposed remediation work triggers the these legislations.
- No new infrastructure may be placed within 500meters of any wetland (seasonal, permanent, natural or man-made). Where such structures are needed, consultation is needed with Department of Water Affairs and an application for a Water Use License (WULA) or General Authorisation must be submitted for approval. Please contact the Environmental Management Department to provide this service.
- No Infrastructure may be placed within 100meters of the high-water mark of the sea or estuary or any river with a saline component (particularly relevant to coastal towns) without an Environmental Authorisation (on completion of

EIA process). Please contact the Environmental Management Department to provide this service.

- Under no circumstances must surface or ground water be polluted (oil, petrol, cleaning materials, incorrect herbicides etc.).
- Oil, petrol, cleaning solvents, etc. must not contaminate any surface water, ground water and / or drainage systems. All water contaminated by oil spills must be reported to the Department of Water Affairs.
- No cleaning of vehicles or machinery is permitted on site.
- Mixing of cement must be done at a demarcated area on site and such area must be bunded/ adequately covered to avoid any leakage of cement or contaminated water.
- In the event of an oil spill - a Flash Report of the incident is to be submitted by the Field Service Centre Manager to the local Safety Representative within 24 hours. This flash report should also be submitted to Environmental Management within the same timeframe.
- Storm water run-off must be efficiently managed and must not cause erosion or damage to surrounding property.
- Drainage systems must be kept clean and clear of any debris at all times.
- No soil (for construction purposes) will be sourced from the river or riparian zones;
- No dumping of any excess building material or other wastes or litter should be allowed within any wetland areas;
- Excessive stormwater runoff should be managed to abate siltation of the adjacent wetland habitat.

7.11 OIL MANAGEMENT

- In the event of an oil spill a Flash Report of the incident is to be submitted by the Field Service Centre Manager to the local Safety Representative within 24 hours. A report should also be sent to the Environmental Management within the same timeframe, as per the Eskom Environmental Incidents Reporting procedure i.e. **32-249** (Eskom Western Region), **34-350** (Distribution Procedure).
- The Flash Report can be sent to Environmental / Risk Management via the GroupWise address: "**Western Region Incident/Accident**".
- Bund areas around transformers are a legal requirement. Bund walls should be secure from leaks and damage.
- Oil traps must be pumped out regularly and remain free of debris.
- Mobile oil clean-up kits must be available for accidental spills.

The following are details of the Oil Spill Management Contractors to be used during Major Oil Spillages:

1. Enviroserv Waste Management 021 951 8420,
2. Pineland Environmental Technology 021 531 3749
3. Drizit 021 425 5187
4. Millennium Waste Management 021 951 8420
5. 24 hour spill control 021 674 7277, 0766422385

According to Section 28: “Duty of Care and Remediation of Environmental Damage”; of the National Environmental Management Act 107 (Act 107 of 1998) (‘NEMA’) (1) *“Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment.”*

In consideration of the above, should an oil spill occur irrespective of the conditions which may have led to the spill, the respective TSC must ensure that the required protocol is implemented and the necessary remediation processes are followed.

7.12 FAUNA AND FLORA AND DOMESTIC ANIMALS

- Should any endangered and/or threatened flora and fauna be identified it should be reported to Environmental Management. Permits must be obtained from the appropriate authorities for the felling of protected trees and shrubs. Where such trees are located within the Public Open space or road reserves, written permission from the Municipality must be obtained in terms of the relevant By-Laws.
- Wildlife (birds, mammals etc.) interactions / incidents must be reported to Environmental Management or to the Endangered Wildlife Trust (EWT); Toll free number: 0860 111 535.
- As most wildlife interactions occur as a result of electrocutions and collisions with electrical infrastructure, migratory devices such as bird flappers and bird guards must be used. More information regarding this can be obtained from Environmental Management.
- Birds’ nests that do not interfere with the quality of supply must not be disturbed or removed.
- Interaction with domestic animals must be avoided and no harm to such animals must occur. Where incidents occur, such must be reported immediately in the form of 24 hours Flash Report and to the land owner.
- Protected or endangered plants and animal species occurring on Eskom servitudes must be identified and protected. Permits must be obtained from the relevant Department of Nature Conservation, for the cutting/removal of identified rare or endangered species.

7.13 FIRE HAZARDS

- Firebreaks need to be established between the substation and the neighbouring properties. Names and emergency contact numbers should be kept on site.
- No fires are to be made on private property or in the veld.

7.14 HERBICIDES AND PESTICIDES

- Only Eskom approved chemicals must be used in the control of pests and weeds. The manufacturer’s specification must not be deviated from.
- Application must be done by only qualified/registered personnel and under the conditions as set out in Eskom’s guidelines (*Waste Management Procedure EPC 32-245*). A register of applications must be kept.

- The leaching action, residual action, manner of application and the surrounding area (especially wetlands and crops) should be considered in the choice of chemical. This aspect must be carefully monitored when herbicides are applied as the slope of the ground together with the proximity of the stream to the substation site could cause leaching problems.

7.15 SITE REHABILITATION

- Topsoil from the site must be used for rehabilitation and the use of foreign soil/material must be avoided or minimised. No builder's rubble must be used for compaction.
- Any damage caused to the area by construction activities should be rehabilitated to the owner's satisfaction.
- All Refurbishment infrastructure, equipment, materials and wastes i.e. steel, domestic waste must be removed from the site upon completion of construction.
- Suitable indigenous vegetation must be used in areas where vegetation is required.
- Site rehabilitation to be completed within three months of Refurbishment or by an alternative date stipulated by the PC.

7.16 INFORMING PROPERTY OWNERS

- The relevant property owners must be informed by Project Management a week in advance, preferably by letter of the construction date. In case of emergencies, land owners must be informed within 24 hours of planned remediation work where applicable.
- The PC must inform Environmental Management one week prior to construction commencement. In case of emergency remediation work, the PC must inform Environmental Management as soon as incident is noted to acquire the telephonic permission from the DEADP and DWA.

7.17 AUDITS

- During the construction phase of the project, audits MUST be conducted by the Clerk of Works.
- These audits are necessary to assess whether the EMP is being adhered to and being implemented.

7.18 PENALTIES/FINES FOR NON-ADHERENCE TO THE EMP

The PC must ensure that the Contractor/s has a copy of the EMP on site during the entire phase of construction. If the Contractor infringes on specifications made in the EMP the PC must issue spot fines. The Contractor shall be advised in writing of the nature of the infringement and the amount of the spot fine. The Contractor shall determine how to recover the fine from the relevant employees. The Contractor shall also take the necessary steps to prevent a recurrence of the infringement.

The Contractor is also advised that the imposition of spot fines does not replace legal proceedings the authorities, landowners and or members of the public may institute against the Contractor. The decision on how much to impose will be made by the PC and will be final.

In addition, the Contractor shall make good any damage caused as a result of the infringement at his own expense.

Contraventions for which spot fines will be imposed, inter alia are as follows:

- Using areas outside the working areas without permission.
- Driving through watercourses and wetlands with all types of vehicles
- Clearing and /or levelling areas outside the working areas.
- Littering on site.
- Making fires on site.
- Using the veld for ablution.
- Picking or damaging plant material.
- Spillage of hazardous substances – oil, diesel, cement, herbicides etc.
- Damaging or killing wild or domestic animals/birds.

Receipts of fines shall be issued and the appropriate documentation retained by the project Co-ordinator. The PC may also order the Contractor to suspend part or all the works if the Contractor repeatedly causes damage to the environment by not adhering to the EMP. The suspension will be enforced until such time as the offending actions, procedure or equipment is correct. No extension of time will be granted for such delays and all costs will be borne by the Contractor.

Failure to report environmental incidents will lead to disciplinary and individuals may be held liable (criminally or monetary) if personal negligence is found, depending on the nature and scale of the damage as a result of negligence.

8. ENVIRONMENTAL LEGISLATION

A growing awareness of the environment and an increase in numbers of environmental laws and regulations, present company management with a task of monitoring, interpreting and implementing systems to produce a workable plan to comply with legal requirements.

The list that follows was compiled to ensure that line management responsible for maintenance of the powerline is aware of their legal responsibilities and liabilities. Refer to the legal register on the intranet: Environmental Website and refer to Eskom's commitment to deal with Environmental Issues in the Safety, Health and Environment (SHE) Policy (EPL 32-94). Complying with these laws and regulations will minimise the risks in terms of legal, financial (claims) and rehabilitation costs.

Non-compliance to environmental law is a criminal offence and if prosecuted, Eskom will be liable for any environmental damage incurred.

ACCESS
<ul style="list-style-type: none">• Fencing Act No. 31 of 1963<ul style="list-style-type: none">↔ Prohibition of damage to a property owner's gate and fence↔ Climbing or crawling over or through fences without permission↔ Closing of gates.• Conservation of Agricultural Resources Act No. 43 of 1983<ul style="list-style-type: none">↔ Soil conservation

DAMAGE TO PROPERTY

- **Fencing Act No. 31 of 1963**
 - ↔ Prohibition of damage to a property owner's gates and fence
 - ↔ Climbing or crawling over or through fences without permission
 - ↔ Closing gates
- **Game Theft Act No. 105 of 1991**
 - ↔ Regulates ownership of game
 - ↔ Combat theft and unlawful hunting, catching and taking into possession of game.

WATER

- **National Water Act No. 36 of 1998**
 - ↔ All aspects relating to pollution of surface and ground water.

FLORA & FAUNA

- **National Forest Act No. 84 of 1998**
 - ↔ Control of veld, forest and mountain fires
 - ↔ The protection of biota and ecosystems
 - ↔ Protected trees
 - ↔ Fire control areas.
- **Environment Conservation Act No. 73 of 1989**
 - ↔ Protected natural environment.
- **National Environmental Management Act No. 107 of 1998**
 - ↔ Duty of care & remediation of environmental damage.

WASTE MANAGEMENT

- **NEM: Waste Act 59 of 2008:**
 - ↔ regulating waste management activities and practices
 - ↔ new administrative procedures and penalties
- **National Water Act No. 36 of 1998**
 - ↔ All aspects relating to pollution of surface and ground water.
- **Advertising on Roads and Ribbon Development Act No. 21 of 1940**
 - ↔ Prohibition of depositing or leaving of certain articles or material near certain roads.
 - ↔ Waste near roads.
- **Environmental Conservation Act No. 73 of 1989**
 - ↔ Controls for the effective protection and utilisation of the environment
 - ↔ Littering, waste disposal, noise and various other activities which may have a detrimental effect on the environment.
- **Occupational Health and Safety Act No. 85 of 1993**
 - ↔ Exposure of workers to waste products.
 - ↔ Transportation and disposal of hazardous chemical substances.
- **Health Act No. 63 of 1977**
 - ↔ Control of health aspects of waste disposal and water treatment.

Eskom Procedure & Guidelines

- **Waste Management Procedure EPC 32-245 (Past revue date of May 2010)**
 - ↔ **Annex A:** Fluorescent tube and mercury-containing device management
 - ↔ **Annex B:** Disposal and safe handling of sulphur hexafluoride gas (SF₆) and By-products
 - ↔ **Annex C:** Polychlorinated biphenyl (PCB) management
 - ↔ **Annex D:** Oil management
 - ↔ **Annex E:** Asbestos management
 - ↔ **Annex F:** Health care risk waste
 - ↔ **Annex G:** Metals
 - ↔ **Annex H:** E-waste
 - ↔ **Annex I:** Solvents
 - ↔ **Annex J:** Ozone-depleting substances
 - ↔ **Annex K:** Waste-reporting requirements, contained in the Eskom Environmental Liaison Committee (ELC) Performance Indicator Reporting Procedure EPC 32-249

OIL SPILLS

- **Hazardous Substances Act No. 15 of 1973**
 - ↔ Sale of Group I, II and III
 - ↔ Letting, use, operation, application and installation of Group III hazardous substances.
- **Occupational Health and Safety Act No. 85 of 1993**
 - ↔ Exposure of workers to waste products.
 - ↔ Transportation and disposal of hazardous chemical substances.
- **National Water Act No. 36 of 1998**
 - ↔ All aspects relating to pollution of surface and ground water.
- **National Environmental Management Act No. 107 of 1998**
 - ↔ Duty of care & remediation of environmental damage.

Eskom Procedure & Guidelines

- **Waste Management Procedure EPC 32-245 (Past Revue Date of May 2010)**
 - ↔ **Annex D:** Oil management

FIRE HAZARDS

- **National Forest Act No. 84 of 1998**
 - ↔ Control of veld, forest and mountain fires
 - ↔ The protection of biota and ecosystems.
 - ↔ Protected trees.
 - ↔ Fire control areas.
- **National Veld and Forest Act No. 101 of 1998**
 - ↔ To prevent and combat veld, forest and mountain fires.
- **Conservation of Agricultural Resources Act No. 43 of 1983**
 - ↔ Soil conservation, control and prevention of veld fires.

HERBICIDES AND PESTICIDES

- **Conservation of Agricultural Resources Act No. 43 of 1983**
↔ Soil conservation, control and prevention of veld fires.
- **Agricultural Pests Act No. 36 of 1983**
↔ Control to prevent and combat agricultural pests.
- **Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act No. 36 of 1947**
↔ Control of aspects concerning the registration, sale, storage and use of pesticides and their active ingredients.
- **Hazardous Substances Act No. 15 of 1973**
↔ Sale of Group I, II and III
↔ Letting, use, operation, application and installation of Group III hazardous substances.
- **National Water Act No. 36 of 1998**
↔ All aspects relating to pollution of surface and ground water.

•

SOCIAL CONSTRAINTS

- **Constitution of the Republic of South Africa, Act No. 108 of 1996**
↔ Section 7 to 39 - Bill of Rights

AIR QUALITY

- **NEM: AIR QUALITY ACT 39 OF 2004**
↔ Control all forms of air pollution. Including licensing and transitional provisions
↔ Pollution becoming a nuisance.

↔ **GN 579:** Model Air Quality Management By-Laws for Adoption and Adaptation by Municipalities (2 July 2010) >>> NB dust control

↔ **GN 777:** National Policy on Thermal Treatment of General and Hazardous Waste (24 July 2009) >>> sets "interim" minimum emission standards for waste incineration, Alternative Fuels and Raw Materials Co-Processing and excludes certain wastes from co-processing, etc.

↔ **GN 141:** Proposed Regulations Providing for the Application Format for Atmospheric Emission Licences and Matters Pertaining to the Implementation of the AEL System (17 February 2010) >>> administrative requirements and formalities for AEL processes

↔ **Ambient air quality standards:**
In terms of section 63 of NEM: AQUA, until ambient air quality standards have been established the ambient air quality standards contained in Schedule 2 apply >>> these should be distinguishing from the "standards" developed through the SANS process

↔ **SANS 1929:2005 1.01 Ambient Air Quality - Limits for Common Pollutants:** Revision process underway (as at 9 March 2010, 2005

version still applicable)

↔ **GN 1210 (24 December 2009): National Ambient Air Quality**

Standards:

Sulphur Dioxide (SO₂)
Nitrogen Dioxide (NO₂)
Particulate Matter (PM₁₀)
Ozone (O₃)
Benzene (C₆H₆)
Lead (Pb)
Carbon Monoxide (CO)

ENVIRONMENTAL PENALTIES/FINES

• **National Environmental Laws Amendment Act 14 of 2009 (18 September 2009):**

↔ Drastic increase in penalties for key offences (potential first offence fines increased from R5000 to R5 000 000 / imprisonment from six months to 10 years)

▪ **Eskom Environmental Liaison Committee (ELC) Performance Indicator Reporting Procedure EPC 32-249**

↔ Proper reporting of Environmental Incidents

9. SOCIO-CULTURAL ISSUES

- A list of the Interested and Affected Parties (names, addresses and telephone numbers) must be established and kept updated. A plan of action should be drawn up with the property owner/s in the case of an emergency (veld fire, damaged structures, vegetation problems etc.). Eskom contact names and telephone numbers should always be available to the land owner/s.
- Property owners or occupiers must be treated with respect and courtesy at all times.
- Ensure that access to the power line and substation are along negotiated routes as required by landowners.
- The culture and lifestyles of the communities living in close proximity to the servitude and work sites must be respected.
- Removal (pilfering) of agricultural products (sugar cane, fruit, vegetables, stock, firewood, poaching etc.) is prohibited. Receipts must be obtained for any merchandise purchased or received from landowners (i.e. for meat, vegetables, wood).
- Vehicles must be driven carefully in hazardous road conditions (sharp bends, narrow roads, bad weather, children playing on or near the road, domestic animals on or near the road etc.). Vehicle movement should be kept to a minimum during rain to avoid damage to access and farm roads.
- Environmental clauses (as referred to in this EMP) must be included into contract documents for all contractors (contractors with proven track records of sound environmental performance should be used).
- Tribal graves, archaeological sites and sites of historical interest in close proximity to servitude's or work sites are to be treated with respect and protected.
- No firewood is to be collected except with the written consent of the landowner.

- A register must be maintained of all complaints or queries received as well as the action taken. Ensure that affected landowners are informed of planned Eskom activities on their land.
- Make use of helicopters for operational and maintenance work in areas Susceptible to disturbance of vegetation or soil (where economically viable).
- No off-road travelling is permitted in environmentally sensitive areas (Karoo, Fynbos, Coastal dunes, vleis and wetlands etc).

10 BASIC RULES OF CONDUCT

The following list represents the basic Do's and Don'ts towards environmental awareness, which all participants in this project must consider whilst carrying out their tasks. These are not exhaustive and serve as a quick reference aid.

DO:

1. Use the toilet facilities provided – report dirty or full facilities
2. Clear your work areas of litter and building rubbish at the end of each day – use the waste bins/bags provided and ensure that litter will not blow away.
3. Report all fuel or oil spills immediately & stop the spill continuing.
4. Only smoke in appropriately designated areas **OFF-SITE**. Dispose of cigarettes and matches carefully. (Littering is an offence.)
5. Confine work and storage of equipment to within the immediate work area.
6. Use all safety equipment and comply with all safety procedures.
7. Ensure a working fire extinguisher is immediately at hand if any “HOT WORK” is undertaken e.g. welding, grinding, gas cutting etc.
8. Prevent excessive dust and noise.
9. Try to minimise impact footprint by staying within working areas and limiting footprint required for driving. One track in, one track out rule shall apply.

DO NOT:

1. Make any open/unattended fires.
2. Enter any fenced off or marked area without permission.
3. Allow cement or cement bags to blow around.
4. Allow waste, litter, oils or foreign materials into the storm water channels
5. Litter or leave food laying around
6. Avoid creating new driving paths/ roads, stick to existing roads. One track in, one track out rule shall apply.
7. No smoking is allowed on site under any circumstances.

ENVIRONMENTAL MANAGEMENT PROGRAMME (EMP) – AUDIT CHECKLIST

Name of Power line / Substation:	Date:
Name of Auditor:	Construction Representative: _____

	AUDIT QUESTION	YES	NO	ACTION	COMMENTS
Vegetation Management					
1.	Are the relevant permits available for the cutting of protected trees and indigenous fynbos? i.e. fynbos				
2.	Have construction activities remained within the designated working areas?				
3.	Has bush clearing been done according to the Standard for Bush Clearance and maintenance within Overhead Power line Servitudes				
4.	Have all the bush cuttings been removed from the servitude and substation?				
5.	Have all herbicide spraying been undertaken under the supervision of a registered Pest Control Officer.				
6.	Was all herbicide usage undertaken according to Eskom's guidelines and the Standard for the Safe Use				

	AUDIT QUESTION	YES	NO	ACTION	COMMENTS
	of Pesticides and Herbicides				
7.	Has one access route been used?				
Oil Spills					
8.	Have any oil or diesel spills occurred on site?				
9.	Have oil spills been reported to the Environmental Specialist via a flash report within 24 hours of the spills occurring?				
10.	Have oil spills been managed according to the Standard for Oil Spill Clean-Up and Rehabilitation – ESKASABT0				
11.	Is there a stock of oil remediation chemicals on site?				
Erosion					
12.	Have any complaints been received from property owners regarding occurrence of erosion on their properties as a result of construction activities?				
13.	Were any signs of erosion visible during the audit.				

	AUDIT QUESTION	YES	NO	ACTION	COMMENTS
Topsoil Management					
14.	Has all the topsoil been backfilled or levelled on site?				
Fire Management					
15.	Are the emergency numbers available on site?				
16.	Have any incidents of veld fires occurred?				
17.	Is there sufficient fire fighting equipment on site?				
Disturbance to the Natural Heritage Resources					
18.	Were tribal graves or archaeological sites identified during the construction activities?				
19.	If yes, was a construction activity stopped immediately and the Environmental Practitioner contacted?				
20.	Was the South African Heritage Resources Agency contacted?				
Property Access					
21.	Was permission obtained from property owners before construction				

	AUDIT QUESTION	YES	NO	ACTION	COMMENTS
	commenced?				
22.	Were entrance gates, walls and paths rehabilitated to the property owner's satisfaction?				
Water Management					
23.	Had any incidents of water pollution occurred?				
24.	If yes, was a flash report issued within 24hrs to the Environmental Management Department?				
25.	Was the incident investigated and recommendations implemented?				
26.	Is there sufficient potable water available?				
27.	Are there sufficient portable toilets available?				
Social Issues					
28.	Were any public complaints registered and auctioned?				

	AUDIT QUESTION	YES	NO	ACTION	COMMENTS
Waste Management					
29.	Are there sufficient waste bins on site?				
30.	Was litter noted during site inspection?				
Use of cement and/or concrete					
31.	Was any excess cement of concrete noted during the site inspection?				
Environmental Records					
32.	Is a copy of the EMP available on site?				

Eskom Contact Persons – Environmental Management Team

1. Environmental Senior Supervisor– Justine Wyngaardt : 021 980 3112
2. Environmental Senior Supervisor – Donald Matjuda : 021 980 3364
3. Environmental Practitioner – Namhla Dondi : 021 980 3822
4. Environmental Practitioner – Granny Makgeru : 021 980 3186
5. Environmental Practitioner – Marshall Felaar : 021 980 3493
6. Environmental Practitioner - Madre Hendrikse : 021 980 3675

Emergency Numbers

Eskom Control 080-121-2433

EWT (Endangered Wildlife Trust)

Toll free number 0860 111 535