

**ENVIRONMENTAL MANAGEMENT PROGRAM (EMP): MOORREESBURG-VYEVLEI 66 kV  
POWERLINE AND SUBSTATION**

<b>LINE GROUP RESPONSIBLE (During Construction):</b>	Appointed contractor
<b>RESPONSIBLE PERSON (During Construction):</b>	Egon Davids
<b>LINE GROUP RESPONSIBLE (After Construction):</b>	Malmesbury Technical Service Centre
<b>RESPONSIBLE PERSON (After Construction):</b>	Niel Hendricks (SS)

**1. A brief background about the proposed powerline and the substation**

The proposed development is in response to the customer application for point of supply as well as strengthening of power supply in the Moorreesburg-Vyevlei area. Malmesbury Farmers (F) 1 electricity usage peaked in July 2008 with 2.361 MVA. The calculated feeder growth is 3.1 % per annum. Malmesbury F1 is experiencing voltage problems with voltages on some parts of the feeder being below the 95 % limit. Several new power applications have been received on Malmesbury F1, however, there is no more spare capacity on Malmesbury F1 to accommodate these loads due to voltage constraints.

Eskom therefore, proposes to utilise the existing servitude and build

- a 66 kV powerline (approximately 24 km) from Moorreesburg substation towards Vyevlei substation;
- create a 66 kV feeder bay at Moorreesburg substation to cater for the Vyevlei substation;
- and build a Vyevlei 1 x 10 MVA 66/ 11 kV step-down substation consisting of 1 x 66 kV feeder bay and 2 x 11 kV feeder bays (Vyevlei F1 and F2);
- It further proposes to leave spatial requirements for a second 10MVA 66/11kV transformer bay and 1x11kV feeder bay for future development. (Please refer to the attached map).

The proposed powerline (**Alternative A**) runs from the Moorreesburg substation in a southerly direction thus, traversing agricultural land. At the Minor Road 405 it bends slightly in a south-easterly direction until Minor Road 411 where it bends and runs in a westerly direction. It further bends after passing Trunk Road 21/1 back into the southerly direction and connects to the preferred new substation site at co-ordinates, 33°21'34.3940" and 18°37'50.8927". The alternative

Route **(Alternative B)** runs in the same direction from the Moorreesburg substation, however, after passing Minor Road 410 it bends in a south-westerly direction and goes straight until it reaches the alternative new substation site at co-ordinates, 33°22'37.1204" and 18°38'12.3060" (please refer to the attached map on the Basic Assessment Report).

## **2. Purpose of the Environmental Management Program**

The main purpose of this EMP is to ensure the sustainable management (avoid and/or minimise environmental damage) of the environment whilst the powerline and the substation are being constructed. It further applies during operation and maintenance phase. This EMP must be viewed as a contract document to which all Eskom employees and outside contractors involved in the construction of the proposed powerline must be committed to.

Thus the aim of this EMP is to ensure that:

- the construction staff are familiar with the environmental procedures to be followed and comply with all the recommendations made within it;
- A list of environmental persons involved in the project are given to the construction staff;
- A monitoring schedule is maintained in which any potential negative environmental impacts are identified;
- The mitigation measures are implemented to avoid and/or minimise the identified negative environmental impacts and to enhance the positive impact of the project on the environment;
- A monitoring programme is in place that tracks the mitigation measures that have been implemented;
  - The importance of conformity with the Safety Health and Environmental (SHE) policy, procedures and with the requirements of the environmental management system (EMS); and
  - The significant environmental aspects and related actual or potential impact associated with their work, and the environmental benefits of improved personal performance.

## **3. Roles and Responsibilities**

According to the International Organisation of Standardization (ISO) 14001, which Eskom Holdings has adopted, the organisation shall ensure that any person/s working for it or on its behalf is/are aware of the following:

- The importance of conformity with the SHE policy, procedures and with the requirements of the environmental management system;
- The significant environmental aspects and related actual or potential impact associated with their work, and the environmental benefits of improved personal performance;
- Their roles and responsibilities in achieving conformity with the requirements of the environmental management systems; and
- The potential consequences of departure from specified procedures.

### **3.1. Project Co-ordinator (PC), Clerk of Works (COW) and Environmental Control Officer (ECO)**

#### **Environmental Control Officer (Nokhuthala Hlongwana):**

The ECO is the person who will take overall responsibility for the implementation of the EMP. The ECO has the authority to stop works if, in his / her opinion, there is a serious threat to, or impact on, the environment caused directly from the any activity taking place on the site during construction and operation. The ECO should work in close conjunction with both the PC and the COW.

The ECO shall:

- Assume overall responsibility for the effective implementation and administration of the EMP;
- Ensure that the EMP is included in the Contractors contract;
- Ensure that the Environmental Authorisation (EA) and EMP are given to the applicable Construction Supervisor and the contractors (if utilised); as well as the Senior Supervisor Technical Services Officer (SS);
- Undertake regular inspections of the Contractor's site as well as the construction works in order to check for compliance with the EMP in terms of the specifications outlined in this document. Site audits shall be conducted regularly and copies of the monitoring checklist will be kept on file (see **APPENDIX 1** for copy of the audit inspection protocol);
- Keep a register of all incidents (spills, injuries, complaints, legal transgressions, etc) and other documentation related to the EMP;

- Report to the PC of any problems related to conformance with this document to be solved in co-operation with the Contractor(s);
- Enforce Implementation of recommendations of possible audits;
- Ensure construction staff is trained in accordance with requirements of the EMP.

**Project Co-ordinator (Egon Davids):**

The Project Co-ordinator (PC) is the person who will take overall responsibility for the implementation of the EMP when the ECO is not on site. The PC has the authority to stop works if, in his / her opinion, there is a serious threat to, or impact on, the environment caused directly from the any activity taking place on the site during construction and operation. The PC should work in close conjunction with the ECO.

The PC shall:

- Assume overall responsibility for the effective implementation and administration of the EMP when the ECO is not on site;
- Ensure that the EMP is included in the Contractors contract;
- Ensure that the Environmental Authorisation (EA) and EMP are given to the applicable Construction Supervisor and the contractors (if utilised);
- In conjunction with the COW, undertake regular inspections of the Contractor's site as well as the construction works in order to check for compliance with the EMP in terms of the specifications outlined in this document. The audits are conducted in regular intervals when the ECO is not on site.
- Report to the ECO of any problems related to conformance with this document to be solved in co-operation with the Contractor(s);
- Enforce Implementation of recommendations of possible audits;
- Inform the ECO of the date of construction at least three weeks in advance, so that the Department of Environmental Affairs can be notified timeously; and
- Ensure construction staff is trained in accordance with requirements of the EMP.
- Clerk of Work (Gregory Jacobs or Derek Conlon):

The Clerk of Work (COW) is the person who will take overall responsibility for the implementation of the EMP when both the PC and the ECO are not on site. The COW has the authority to stop works if, in his / her opinion, there is a serious threat to, or impact on, the environment caused directly from the any activity taking place on the site during construction and operation. The COW should work in close conjunction with both the ECO and the PC.

The COW shall:

- Assume overall responsibility for the effective implementation and administration of the EMP when both the ECO and the PC are not on site;
- In conjunction with the PC, undertake regular inspections of the Contractor's site as well as the construction works in order to check for compliance with the EMP in terms of the specifications outlined in this document. The audits are conducted in regular intervals when the ECO is not on site.

### **3.2. Construction Contractor**

The Contractor shall:

- Ensure that the environmental specifications of this document (including any revisions, additions or amendments) are effectively implemented. This includes the on-site implementation of steps to mitigate environmental impacts;
  - Monitor environmental performance and conformance with the specifications contained in this document during site inspections;
  - Discuss implementation of and compliance with this document with staff at routine site meetings;
  - Report progress towards implementation of and any non-conformances with this document at site meetings with the PC;
  - Ensure that suitable records are kept and that the appropriate documentation is available to the PC;
  - Advise the PC of any incidents or emergencies on site, together with a record of action taken; and
  - Report and record all accidents and incidents resulting in injury or death.
- 3.3. Senior Supervisor: Technical Services Official (SS)

- The Technical Services Official shall:
- Ensure that the areas that are of specific environmental importance like the 'no-go' areas are conserved and kept as they are during the operational phase of the project.
- The EMP with specific conditions or aspects shall be made available to the SS by the Environmental Practitioner.
- All relevant conditions of the EMP shall be adhered to during the operational period.

#### **4. Special Mitigation Measures**

##### **4.1 Restriction of Working Areas**

It is important that activities are conducted within a limited area to facilitate control and to minimise impacts on the natural environment. For this reason the working areas and 'no-go' areas must be identified and clearly demarcated. Working areas are 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 area.

The working area for the proposed Moorreesburg\_Vyevlei 66 kV powerline and substation site will be defined as follows:

- 11 meters on either side of the centre of the 66 kV powerline.
- Proposed substation site.
- Care must be taken when working on private land owner's property - respect and consideration to these properties must be given high priority.
- In addition, farm roads and existing access roads can also be considered as working areas with the permission of the landowners. All areas outside the working area shall be considered as 'no go' areas.

#### **Objective**

- Minimise the impact of construction activities on the surrounding environment.

#### **Aspect**

- Construction activities.

## **Target**

- No disturbance to the areas outside the working areas; and
- Construction activities and materials, vehicles and staff to remain within the working areas.

## **Procedure**

- From the outset of construction the working area especially the substation must be well demarcated with danger tape or any other appropriate method where possible.
- All staff, vehicles and construction material are to be restricted to the working area.
- The working areas are as defined above.
- Vehicles, if parked on site, must have a clearly demarcated area. Accommodation must be made for oil leaks that may occur from the vehicle sumps. This can be achieved by providing a sump or a drip tray for each vehicle that is later removed to be disposed of at a licensed hazardous disposal site.
- Any machinery or stockpiles that may present a source of pollution during construction activities should be placed on an impermeable surface to prevent the run-off of the spillages into the water-courses.
- All hazardous material must be stored in a secured area that is fenced and has restricted entry.
- The stockpiling of materials needs to take place within the working area and not be allowed to spill over into vegetation.
- Campsites, should they be required, must be erected outside of the 66 kV substation site and if possible, campsites must be identified on the farm with the permission from the farmer.

## **4.2 Vegetation Management**

The proposed powerline and the substation will be on agricultural land and therefore, no sensitive vegetation has been envisaged, except wheat. However, should it be envisaged that any sensitive vegetation will be affected, advise should be sought from the ECO prior to any action being taken.

## **Objective**

- To minimise the impact on the surrounding environment and vegetation (wheat).

## **Aspect**

- Clearing of the route, substation site and construction activities;
- Planting of structures along the powerline route; and
- Maintenance activities

### **Target**

- Minimize disturbance to vegetation, i.e., wheat.
- No open fires are permitted on site as there is a major threat of fire occurring, especially in the summer months.

### **Procedure:**

- Contamination of the perennial crops due to dust pollution must be avoided at all times.
- When working in farming areas the farmers' land, animals, wheat, crops etc must be treated with respect.
- All staff, vehicles and construction material are to be restricted to the working area.
- In cases where vehicles travel through open veldt, pasturelands etc., the general rule of one track in and one track out must be applied.
- The stockpiling of materials needs to take place within the working area and not spill over into vegetation.
- Vegetation clearing, if required, must be done under the supervision of the Contractor.
- vegetation clearing on the route as well as on the substation site must be undertaken in accordance with Eskom's standard (Unique Identifier: 32-247).
- All bush cuttings, if of no use to the farmers must be removed from the site and disposed of at a licensed landfill site.
- Invasive plants must be controlled (invasive plants and weeds must be identified and controlled in such a manner that it is not introduced to the area and prevented from spreading).
- Small to medium sized alien plants should be hand-pulled. Loppers should be used to cut plants that cannot be pulled out by hand to below ground level. This needs to be done in order to prevent resprouting.



- Stump treatments (only a certified Pest Control Officer may be appointed) should be applied to larger sized trees where necessary.
- The use of herbicides must be done according to Eskom's Standard for the safe use of pesticides and herbicides (Unique Identifier: 32-329).
- Herbicide spraying of resprouting species should be undertaken immediately to minimize regrowth.
- Should any protected trees be affected by the proposed activity, a permit application must be submitted to the Department of Agriculture and Forestry prior to removing the trees.
- Once the powerline is constructed, routine maintenance of the powerline will be necessary. All the above mitigating actions will then have to remain enforced.

In cases where the vegetation interferes with the safe operation of the powerline or the height exceeds the requirements as set by the Electrical Machinery Regulations and in order to comply with the Occupational Health and Safety (OHS) Act, the vegetation must be trimmed in agreement with the farm owner.

#### **4.3 Watercourses**

The powerline is not in proximity to any watercourses except a few man-made dams that are a few kilometers away. However, the guidelines from the Department of Water Affairs should be adhered to.

##### **Objective**

- Minimise environmental impact on watercourses.
- Strict erosion control measures are to be taken during and after construction to ensure no erosion of the bed or banks of a watercourse takes place.

##### **Aspect**

- Construction activities

##### **Target**

- No pollution and detrimental environmental impact to watercourses.

##### **Procedure**

- All sections and regulations of the National Water Act, 1998 (Act No. 36 of 1998) regarding water use must be adhered to.
- In the case where a powerline crosses water resources and banks of watercourses are altered, then a license application needs to be done in terms of Section 40 of the National Water Act, 1998 (Act No. 36 of 1998) if the General Authorisation limits are exceeded in terms of Section 39.
- Water must not be used to suppress dust nuisance.
- Storm water management must be addressed both in terms of flooding and pollution potential.
- All relevant sections and regulations of the Environment Conservation Act, 1989, (Act No. 73 of 1998) regarding the disposal of solid waste must be adhered to.
- Fuels, oils, hydraulic fluids, cement etc. must be stored in properly contained areas so as to minimize accidental spillage. Special care should be taken near seasonal watercourses.
- No pollution in the form of effluent, chemicals, or waste products should be allowed to run into any seasonal streams/ vleis.
- No structures to be placed within 32 m from a riverbed, a floodplain, wetland or seasonal streams.
- Any water use activity that is not Schedule 1 water use must be registered and authorised by DWA.
- Authorisation for any development within 500m from any wetland must be obtained from DWA before it takes place.
- Storm water management plan must be put in place.
- No littering, waste disposal or other pollution of watercourses.
- No fishing or bathing in watercourses.
- No driving in the watercourses.

#### **4.4 Access**

##### **Objective**

- Maintain the access currently used, except at the substation site where an access road will have to be created. However, if additional access is required, it must be negotiated and agreed upon with the farm owner.
- Wheat must not be trampled by driving of construction vehicles.
- In areas where there are no evident roads, great care must be taken not to create more tracks than are absolutely necessary. The general rule is one track in and one track out.
- Ensure that property owners have unrestricted access to their properties.
- Eskom or contract workers are not to deviate from the demarcated 11m from the centre line of the powerline.

##### **Aspect**

- Construction and surveying activities.
- Vehicle access.

##### **Procedure**

- Use existing access roads/tracks, particularly in the wheat farm land.
- No driving through watercourses, sensitive vegetation, etc.
- Should additional access tracks be required, the access must be agreed upon with the relevant property owner in conjunction with the contractor. A written agreement must be in place, **prior** to any construction of the said access route.
- Adequate provision to prevent erosion by the installation of earth berms at regular intervals must be made where necessary.

#### **4.5 Oil Spill Management**

##### **Objective**

- Prevent potential oil spills during the construction of the proposed powerline and substation.

##### **Aspect**

- Construction activities.

### **Procedure**

- Fuels, oils, hydraulic fluids, cement etc. must be stored in properly contained areas so as to minimize accidental spillage.
- No hazardous or toxic chemicals or substances should be stored where there could be accidental leakage into subterranean water supplies.
- Fuel and oil storage area to be hardened and bunded in order to minimise pollution of the environment.
- Accommodation must be made for oil leaks that may occur from vehicle sumps. This can be achieved by providing a sump or drip tray for each vehicle that is later removed from site to be disposed of at a licensed hazardous disposal site.
- All spills must be reported to the environmental department within 24 hours of the spill via a flash report.
- The contractor should be in possession of a mobile oil spill kit and/ or a wheely bin should be available on site.
- A mobile kit can be acquired from Drizit at Tel. No. (021) 425 5187 (see the rest of oil spill emergency contractors on page 25 of this EMP).
- The Oil Spill Clean-up and Rehabilitation under the Waste Management Procedure (Ref.No: 32-245) needs to be implemented (refer to **APPENDIX 2** for the Waste Management Procedure).

## **4.6 Fauna**

### **Objective**

- Prevent and minimise impact on fauna including birds.
- When working in farming areas the farmers' animals must be treated with respect.
- Any tortoises or other reptiles found should be relocated to places of safety and not harmed in any way. If work is done in summer, tortoises are very evident and can easily be caught and relocated elsewhere.
- All activities on site must comply with the regulations of the Animal Protection Act, 1962 (Act No. 71 of 1962).

- All construction workers must be informed that the intentional killing of any animal is not permitted as faunal species are a benefit to society. Poaching is illegal and it must be a condition of employment that any employee caught poaching will be dismissed. Employees must be trained on how to deal with fauna species as intentional killing will not be tolerated. In the case of a problem animal e.g. a large snake a specialist must be called in to safely relocate the animal if the ECO is not able to.
- Environmental induction training and awareness must include aspects dealing in safety with wild animals on site. Focus on animals such as snakes and other reptiles that often generate fear by telling workers how to move safely away and to whom to report the sighting. Workers should also be informed where snakes most often hide so that they can be vigilant when lifting stones etc.
- Employees and contractors alike should be sensitised to the fact that they are working on private farms and ALL fauna and flora must be treated with respect.

### **Aspect**

- Construction activities.

### **Target**

- Prevent injury and harm to birds and animals (including farm animals).

### **Procedure**

- There have been no historic incidents of bird electrocution or collision along the study area. However, Endangered Wildlife Trust (EWT) will be used during the operational phase of the project to mitigate electrocution and collision of any bird species and provide guidance on applicable minimum setback near the different sensitive areas.
- Bird flappers and/ or diverters to mitigate bird collisions will be put in place where the proposed powerline runs along the dams.
- Demarcate substation site where possible to prevent accidental injury and harm to animals.
- Notify landowners to move their cattle, sheep etc away from construction areas where relevant.
- There shall be no pilfering of domestic animals and birds.

## **4.7 Soil Erosion**

### **Objective**

- Prevent soil erosion.
- Strict erosion control measures are to be taken during and after construction to ensure no erosion of roads and the bed or banks of a watercourse takes place.
- In cases where vehicles travel through open veldt, pasturelands etc., the general rule of one track in and one track out must be applied

### **Aspect**

- Construction activities and vehicle movement.

### **Procedure**

- Vehicles to use the current access route and the one that will be created to access the proposed substation.
- If roads are damaged due to construction activities, it will be the responsibility of the responsible construction contractor to rehabilitate the roads to a state they were before construction.
- All construction activities to be undertaken within the working area.

## **4.8 Use of cement/ concrete**

The Contractor is advised that cement and concrete are regarded as highly hazardous to the natural environment on account of the very high pH of the material, and the chemicals contained therein.

### **Objective**

- Prevent ground pollution.

### **Procedure**

- Concrete shall be mixed on mortar boards, and not directly on the ground.
- The visible remains of the batch plant and concrete, either solid, or from washings, shall be physically removed immediately and disposed of as waste in a registered landfill site.

- Washing the visible signs into the ground is not acceptable.
- All aggregate and cement bags shall also be removed.

#### **4.9 Refuse and Waste Management**

Refuse and waste refers to all solid waste, including construction debris (wrapping materials, timber, cans etc), waste and surplus food, food-wrappers, etc.

##### **Objective**

- Limit the potential of site pollution and the accumulation of waste materials on site.

##### **Aspect**

- General construction activities.

##### **Target**

- No waste and/ or refuse are to be stored on site for longer than 2 months.
- All waste must be removed off site and dispose of at a licensed landfill site.

##### **Procedure**

- Solid waste must be managed in accordance with the requirements of the relevant legislation.
- The main contractor is responsible for cleaning-up at the end of construction.
- The Contractor shall not dispose of any waste and/ or construction debris by burning or burying.
- The use of waste bins, refuse bags and/or skips is recommended.
- The bins shall be provided with lids to prevent contents blowing out.
- The Contractor shall ensure that all waste is deposited in the waste bins for removal by the Contractor, or if Eskom is responsible for construction, remove it to an approved Municipal waste site.
- Bins shall not be used for any purposes other than waste collection and shall be emptied on a regular basis.
- Temporary ablution facilities (i.e. Chemical toilets) must be made available and used. A minimum of one chemical toilet must be provided per 15 persons.

- Abluting anywhere other than in the toilet facilities available shall not be permitted (i.e. no abluting in the veldt).
- Chemical toilets utilised during construction to be properly located such that they do not pose risk of water resource pollution and its contents must be disposed of at an authorised facility.
- Servicing and cleaning of vehicles is strictly prohibited in the access roads, working areas and in the veldt.
- All waste shall be disposed of off site at a licensed landfill site.

#### **4.10 Archaeological**

The study area has been vastly transformed through various forms of farming in the past until currently and it is therefore not envisaged that any Archaeological artefacts or remains are still present on the ground. However, great care must still be taken.

##### **Objective**

- To ensure that any archaeological findings during the construction process is managed accordingly.

##### **Procedure**

- If any archaeological material (e.g. fossils, bones, artefacts etc) is found during final pegging as well as during construction, the contractor shall stop work immediately.
- The ECO (Nokhuthala Hlongwana) shall inform Heritage Western Cape (HWC) and arrange for a palaeontologist/ archaeologist to inspect, and if necessary excavate, the material, subject to acquiring approval from HWC.
- The Contractor shall not recommence working in that area until written permission has been received from the ECO.

#### **4.11 Noise Pollution/Vibration**

##### **Objective**

- Avoid disturbing the local community.
- When near residential areas, consideration must be shown for the residents of those areas.



## **Aspects**

- Operation of construction equipment and vehicles.

## **Procedure**

- Where possible the contractor must use equipment which falls within the allowable noise/ vibration limits.
- All noise/ vibration generating activities must be scheduled between 7am – 7pm Mondays to Fridays and weekends as required and with the permission of the landowner.
- Any complaints pertaining to noise must be reported to the ECO and addressed.

### **4.12 Security Camp (if required)**

#### **Objective**

- Manage the impact the security camp has on the environment.

#### **Procedure**

- The security contractor is to obtain the permission from the landowner (if not on Eskom property) before the security camp is established on site.
- The security contractor shall provide water and/ or washing facilities at the camp for personnel.
- The security camp shall be kept neat and tidy and free of litter.
- The security contractor shall provide the necessary ablution facilities for all his personnel.
- Chemical toilets shall be used. The toilets shall be secured to prevent them from blowing over, and shall be provided with an external closing mechanism to prevent toilet paper from being blown out. Toilet paper shall be provided in all toilets. The security contractor shall ensure that chemicals and/ or waste from toilet-cleaning operations are not spilled on the ground at any time.
- Abluting anywhere other than in the toilets shall not be permitted.
- Closed fires or stoves shall only be permitted at a designated safe site to be determined by the PC.
- Fires shall not be permitted near any potential sources of combustion, such as near vehicles, fuel storage area, vegetation etc.

- Extreme care **MUST** be taken that no open cooking fires are made. The major fire threat is in summer. Much of the surrounding pasturelands and exotic stumps of trees will burn during the dry summer months.

#### **4.13 Site Rehabilitation**

##### **Objective**

- To restore any degradation caused by the construction activities.
- Rehabilitate the disturbed and degraded areas to sustain a bio-diverse ecosystem.

##### **Target**

- Site rehabilitation to be completed within three months of construction or by an alternative date stipulated by the ECO.

##### **Procedure**

- All recommendations made by an ECO must be adhered to.
- All construction equipment and excess aggregate, gravel, stone, concrete, bricks, temporary fencing and the like shall be removed from the site upon completion of the work.
- No discarded materials of any nature shall be buried on the site or on any other land within the site.

## **5. Environmental Legislation**

### **5.1 Introduction**

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

The list below was compiled to ensure that the person responsible for construction and maintenance of the substation and/or powerline is aware of their legal responsibilities and

liabilities. 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.

ACT NAME	ACT NO	NOTES/REMARKS
Animals Protection Act	71 of 1962	Provides for the protection of animals
Air Quality Act	39 of 2004	Control all forms of air pollution. <ul style="list-style-type: none"> <li>❖ <i>Smoke control zones</i></li> <li>❖ <i>Dust control during construction</i></li> <li>❖ <i>Fumes emitted by vehicles</i></li> <li>❖ <i>Air pollution from waste</i></li> </ul>
Conservation of Agricultural Resources Act	43 of 1983	Control of utilisation and protection of wetlands; soil conservation; control and prevention of veld fires; control of weeds and invader plants.
Waste Act	59 of 2008	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. <ul style="list-style-type: none"> <li>❖ <i>Waste management</i></li> </ul>

		<ul style="list-style-type: none"> <li>❖ Application of waste disposal permit</li> <li>❖ Noise control regulations</li> </ul>
Fencing Act	31 of 1963	<p>Prohibition of damage to a property owner's gates and fences</p> <ul style="list-style-type: none"> <li>❖ <i>Climbing or crawling over or through fences without permission</i></li> <li>❖ <i>Closing gates</i></li> </ul>
Forest Act	84 of 1998	<p>Control of veld, forest and mountain fires and the protection of biota and ecosystems.</p> <ul style="list-style-type: none"> <li>❖ <i>Protected trees</i></li> <li>❖ <i>Fire control areas</i></li> <li>❖ <i>Fire belts and maintenance</i></li> </ul>
Hazardous Substance Act	15 of 1973	<p>Sale of Group I,II,III and letting, use, operation, application and installation of Group III Hazardous substances.</p>
Game Theft Act	105 of 1991	<p>Regulates ownership of game, combat theft and unlawful hunting, catching and taking into possession of game.</p>
National Heritage Resources Act	25 of 1999	<p>All aspects relating to Archaeological or palaeontological site or any meteorite.</p>
National Monuments Act	28 of 1969	<p>Control for the protection of natural and historical monuments, relics and antiques.</p> <ul style="list-style-type: none"> <li>❖ <i>Notifying of authorities in discovering of above</i></li> </ul>
National Veldt and Forest Fires Act	101 of 1998	<p>Fire Protection Associations. Building of fire breaks</p>

National Water Act	36 of 1998	All aspects relating to pollution of surface and ground water.
Cape Nature Conservation Ordinance	19 of 1974	Endangered plants and wild animals. Protected fauna and flora
National Environmental Management Biodiversity Act	10 of 2004	With regards to the protected and indigenous Species
Occupational Health and Safety Act,	Act 85 of 1993	With regards to occupational health and safety measures.

## 6. Generic Conditions

In order to ensure compliance with Eskom's environmental policy as well as environmental legislation requirements, the following generic conditions are applicable:

### 6.1 Air Quality

- No burning of waste material, such as vegetation from any clearing operations is allowed;
- Drive at moderate speeds on the access road in order to minimise or avoid dust pollution.

### 6.2 Water Quality

- Under no circumstances must surface or ground water be polluted. Ground or surface water pollution could occur as a result of spillages or the incorrect usage of oil, petrol, cleaning materials, herbicides, etc.

### 6.3 Land Management

All fauna (including domestic livestock) within and around the substation and/ or powerline shall be protected. Birds and animals shall not be caught or killed by any means, including poisoning, trapping, shooting or setting of snares. Offenders may be prosecuted in terms of CNC Ordinance 19 of 1974;

- No fences or gates of property owners must be damaged. The condition of Eskom gates and locks must be regularly monitored to ensure they are secure (i.e. to prevent animals getting out or

access by unauthorised personnel). The access gates to the substation must always be closed and locked when daily construction activities are completed;

- Soil erosion must be prevented at all times along the access road, along the powerline route as well as in the substation sites;
- Bush clearing on the route or around the substation must be in accordance to Eskom's Bush Clearing Standard ( Reference – 32-247); and
- No bush clearing to be undertaken without the knowledge thereof by the property owner.

#### **6.4. Socio-Cultural Issues**

- A plan of action should be drawn up in the case of an emergency (veldt fire, damaged powerline, vegetation problems etc.). Eskom contact names and telephone numbers must be available on site;
- Property owners or occupiers must be treated with respect and courtesy at all times;
- The culture and lifestyles of the communities living in close proximity to the substation and the powerline must be respected;
- Removal (pilfering) of agricultural products is prohibited. Receipts must be obtained for any merchandise purchased or received from landowners;
- 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 rainy days to avoid damage to the access road;
- Environmental clauses (as referred to in this EMP) must be included into the contract documents for all contractors;
- Tribal graves, archaeological sites and sites of historical interest in close proximity to the substation and the powerline are to be treated with respect and protected.
- No firewood is to be collected except with the written consent of the landowner; and
- A register must be maintained of all complaints or queries received as well as action taken.

**7. ENVIRONMENTAL MANAGEMENT PROGRAMME (EMP) –Monitoring Structure**

<b>7.1 Person responsible for this substation is:</b>
Name:
Designation:

<b>7.2 Reporting of environmental performance, problems and priorities are as follows:</b>

<b>7.3 Environmental monitoring of the substation and the powerline is according to the following schedule:</b>

<b>7.4 The following negative environmental impacts have been identified at the substation and/ or on the powerline route:</b>
--

<b>Environmental Problem</b>	<b>Location</b>

**7.5 In order to solve (mitigate) the above identified negative environmental impacts, the following plan of action is to be implemented:**

<b>Problem</b>	<b>Solution</b>	<b>Date to be Completed</b>

**7.6 Monitoring (follow-up) plan of implemented remedial action:**

**7.6.1 Person responsible for environmental monitoring (follow-up) is:**

Name:

Designation:

Substation and/or Route Name:

Monitoring Date:

<b>Problem</b>	<b>Solution as implemented</b>	<b>Has the solution worked, if not, what actions are still to be taken?</b>



### **Eskom Holdings Limited Environmental Contact Persons**

Nokhuthala D Hlongwana	021 980 3105
Justine Wyngaardt	021 980 3112
Donald Matjuda	021 980 3364
Granny Makgeru	021 980 3186
Marshall Fellar	021 980 3493

### **Emergency Numbers**

Eskom Control	080-121-2433 / 915-2440
Fire department	028 713 2438/028 384 0111

### **Oil Spill Contact Numbers**

Enviroserv Waste Management 021 683 1858	021 951 8420	Enretech
Drizit	021 425 5187 / 083 281 1691	
Pineland Environmental Technology	021 531 3749	
24 Hour Spill Control	021 674 7277/076 6422 385	
Millennium Waste Management	021 951 8420	

**APPENDIX 1:**  
**CONSTRUCTION AUDIT CHECKLIST**

### CONSTRUCTION ENVIRONMENTAL AUDIT CHECKLIST

Name of Powerline / Substation: <u>66/ 11 kV Moorreesburg-Vyevlei</u>	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 Powerline Servitudes (32-247)				

	AUDIT QUESTION	YES	NO	ACTION	COMMENTS
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 of Pesticides and Herbicides (ESKASAALO)?				
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				

	AUDIT QUESTION	YES	NO	ACTION	COMMENTS
	occurring?				
10	Have oil spills been managed according to the Waste Management Procedure - 32-245?				
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?				
Topsoil Management					
14	Has all the topsoil been backfilled or levelled on site?				
Fire Management					

	AUDIT QUESTION	YES	NO	ACTION	COMMENTS
15	Are the emergency numbers available on site?				
16	Have any incidents of veld fires occurred?				
17	Is the 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, were construction activities stopped immediately and the Environmental Practitioner contacted?				
20	Was the South African Heritage Resources Agency contacted?				
Property Access					
21	Was permission obtained from property				

	AUDIT QUESTION	YES	NO	ACTION	COMMENTS
	owners before construction 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					

	AUDIT QUESTION	YES	NO	ACTION	COMMENTS
28	Were any public complaints registered and actioned?				
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 Environmental Authorisation (EA) as well as an Environmental Management Programme (EMP) available on site?				



**APPENDIX 2:**

**WASTE MANAGEMENT PROCEDURE: OIL MANAGEMENT**