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OPERATION AND MAINTENANCE**

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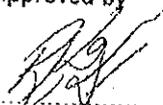


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1. Introduction

The EMP Procedure aims at addressing generic environmental aspects and impacts associated with Distribution business activities. It further serves as a guiding document for addressing possible environmental impacts.

In terms of Section 28 of the National Environmental Management Act "Every person who causes 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.

2. Supporting clauses

2.1 Scope

2.1.1 Purpose

This generic Environmental Management Programme proposes to be a master plan for all power lines and substations to which specific environmental requirements may be added and environmental management program can be adapted according to regional requirements, needs and specifications.

An Environmental Management Programme (EMP) can be defined as a plan of action which sets out a desired environmental end state and sets out how activities, that could have a negative impact on the environment, will be managed and monitored and impacted areas rehabilitated.

It provides general guidelines to assist Zones in their compliance with Eskom environmental standards for the operation and maintenance of all existing Distribution power lines and substations. Section 3 of the procedure specifically deals with impacts associated with power lines and section 4 deals with impacts associated with substations and CNC sites. The power line environmental management program checklist has been provided in Annexure B and the substation environmental management program checklist in annexure C, whereas a CNC environmental management program guide is provided in annexure D.

The purpose of an Environmental Management Programme (EMP) is to ensure that:

- There is a process to identify existing negative environmental impacts or to predict potential environmental impacts.
- Monitoring schedule is established to identify potential negative environmental impacts associated with the site (bird and animal electrocutions, soil erosion, vegetation control, oil pollution, herbicide sterilisation, storm water, visual impact, solid waste management etc.)
- Objectives and targets are set to ensure negative impacts are mitigated and existing impacts rehabilitated. Mitigate mean to implement practical measures to reduce adverse impacts or enhance beneficial impacts of an action.
- Resources and responsibilities are allocated to each target.
- Plans of action (mitigation measures) are implemented to avoid or minimise the identified negative environmental impacts (construction of storm water berms and rehabilitation of eroded areas, weed eradication – mechanical/chemical, bioremediation of oil spills, vegetation species switching, planting of vegetation or construction of perimeter walls for screening etc) as well as to enhance the positive impact on the environment.

Monitoring programme or schedule is developed to track the plans of action that have been implemented to avoid or minimise the environmental impacts so as to ensure the effectiveness of the plan.

2.1.2 Applicability

This document shall apply throughout Eskom Holdings Limited Dx Division, to all distribution employees and contractors/ suppliers.

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2.2 Normative/informative references

Parties using this document shall apply the most recent edition of the documents listed below:

2.2.1 Normative

- [1] ISO 9001 Quality Management Systems.
- [2] EPL 32-727 SHEQ Policy
- [3] EPL 32-736 Land and Biodiversity Management Policy
- [4] ESTD 32-815 Land and Biodiversity Standard
- [5] EPC 32-245 Environmental Procedure: Waste procedure
- [6] DST_34-132 - Fire Risk Management
- [7] DST_34-315 - Emergency Preparedness
- [8] EPC_32-247 Procedure for Vegetation Clearance Maintenance within Overhead Powerline Servitudes and on Eskom owned land
- [9] EPC 32-95: Procedure for effective management of Safety, Health and Environmental Incidents

2.2.2 Informative

- [10] Constitution of South Africa Act, No 108 of 1996
- [11] National Environmental Management Act of South Africa (Act 107 of 1998)
- [12] National Forest Act (Act 84 of 1998)
- [13] SANS 0290: 2008: Mineral oils – management and handling of PCB
- [14] DPC_34-926 - Procedure for Environmental Assessment of Reticulation and Sub-transmission Projects

2.3 Definitions

2.3.1 General

Definition	Description
Environment	The surroundings within which humans exist and that are made up of <ul style="list-style-type: none"> • the land, water and atmosphere of the earth; • micro-organisms, plant and animal life; • any part or combination of a) and b) and the interrelationships among and between them and; the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing. (National Environmental Management Act 107 of 1998)
Environmental Aspect	Elements of an organisation's activities, products and services which can interact with the environment. (SABS ISO 14001)
Environmental Impact	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's activities, products and services. (SABS ISO 14001).

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Definition	Description
Significant Environmental Aspect	An environmental Aspect that has or can have a significant environmental impact.
Environmental Management Programme	A program that seeks to achieve a required end state of the environment and describes how activities that could have a negative impact will be managed and monitored and how impacted areas will be rehabilitated.
Eskom Land	Any land and / or servitude registered in the Deeds Office in Eskom's name.
Mitigate	The implementation of practical measures to reduce adverse impacts or enhance beneficial impacts of an action.
Monitor	An activity that ensures to reduce adverse impacts or enhance beneficial impacts of an action.
Pollution	The direct and indirect alteration of the physical, chemical or biological properties of a natural resource that results in it being less fit for any beneficial purpose for which it may reasonably be expected to be used.
Waste	An undesirable or superfluous by-product, emission or residue of any process or activity that has been discarded, accumulated or been stored for the purpose of discarding or processing. It may be gaseous, liquid or solid or any combination thereof and may originate from a residential, commercial or industrial area. This definition includes industrial waste, water, sewage, radioactive substances, mining, metallurgical and power generation waste (GN 227, GG20978, 17 March 2000, White Paper on Integrated Pollution and Waste Management for South Africa)

2.3.2 Disclosure classification

Controlled disclosure: controlled disclosure to external parties (either enforced by law, or discretionary).

2.4 Abbreviations

Abbreviation	Description
EMP	Environmental Management Program
PCB	The term PCB is a generic name for a group of fire resistant dielectric fluids and synthetic insulating liquids composed of polychlorinated biphenyls, sometimes with the addition of polychlorinated benzenes. PCB is commonly known by various brand names. These include Askarel, Chlorectol, Elemex, Inerteen and Pyranol
DEA	Department of Environmental Affairs
DAFF	Department Agriculture, Forestry and Fisheries
EO	Environmental Officer
EA	Environmental Advisor
O&M	Operation and Maintenance

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Abbreviation	Description
OU	Operational Unit

2.5 Roles and responsibilities

Line Managers must ensure that the relevant information in this procedure is communicated to all Eskom employees, contractors (where necessary) and temporary employment service providers and any other person involved in Eskom's activities to which this procedure applies.

2.6 Process for monitoring

The Distribution Division OU Environmental Managers will commission regular audits and inspections to be performed, to verify conformance to this procedure.

2.7 Related/supporting documents

This document supersedes DPC003

3. General Environmental Aspects to be addressed in the Environmental Management Programme for Power Lines

3.1 Physical Environment

3.1.1 Air quality: Dust and Fire Breaks

Burning of waste material such as vegetation and materials resulting from maintenance activities at the site is strictly prohibited.

Where fire breaks are necessary, they should be planned in conjunction with relevant landowners and performed in accordance with the conditions of the fire management plans of the region. Erosion in fire breaks should be prevented.

No fires are to be made on private property or within the line servitude.

3.1.2 Erosion

Naturally occurring erosion on the servitude should be repaired and further erosion prevented. Erosion outside the servitude that was not caused by operation or maintenance activities is the responsibility of the landowner. If, however, operation and maintenance activities have caused erosion outside the servitude, it is the responsibility of Eskom to repair it and prevent further erosion damage.

3.1.3 Littering

No littering shall take place on the servitude. Burning of waste material such as vegetation and old cleaning materials resulting from maintenance activities at the site is strictly prohibited.

3.1.4 Maintenance of Access roads

All conditions that the landowner may have shall be noted and adhered to. All vehicle movement shall be along existing roads and access tracks. Vehicles should be driven at moderate speeds and special care should be taken especially in wet weather to avoid eroding tracks. Multiple tracks are to be avoided at all times

If Eskom is the only user of these access roads, then the maintenance of the access road shall be the sole responsibility of Eskom. Damage to access roads due to the movement of vehicles must be reported to Eskom and the landowner. All repairs must be done immediately and to the satisfaction of the landowner. Written proof of satisfaction must be obtained.

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No fences or gates are to be lowered, cut removed or damaged in any way. Leave private gates, as they are found open or closed

3.1.5 Access & Damage to Properties

All damage done to property must be reported to Eskom and the landowner. Repairs to the damage must be done immediately.

Do not interfere with stock, crops or activities on the property. No wandering around properties whatsoever.

3.1.6 Maintenance of Vehicles

Servicing of vehicles in the veld is strictly prohibited. Only emergency repairs shall be allowed in the line servitude. In the event of a breakdown in the veld, any oil spills shall be cleaned up immediately.

The following shall apply:

- a) All contaminated soil shall be removed and placed in containers. Contaminated soil can be taken to one central point where bio-remediation can be done by a registered Bio-Remedial Company..
- b) Bigger spills can be treated on site.

3.1.6 Oil spills

All oil spills from pole-mounted transformers should be treated as PCB contaminated spills, unless the oil status is known and or laboratory results prove otherwise. The necessary precautions as specified in the Eskom Procedure for waste Management (EPC 32-245) should be considered..

The term PCB is a generic name for a group of fire resistant dielectric fluids and synthetic insulating liquids composed of polychlorinated biphenyls, sometimes with the addition of polychlorinated benzenes. PCB is commonly known by various brand names. These include Askarel, Chlorectol, Elemex, Inerteen and Pyranol. PCB may cause certain skin conditions and liver damage. Furthermore PCB is not biologically degradable and therefore tends to be passed on through the food chain, creating major environmental pollution and health hazards. PCB produces hazardous by-products under combustion.

In the event of an oil spill, the spill must be reported to the Department of Water Affairs only when there is contamination of surface or ground water. The incident must be reported to according to the Procedure for the Effective Management of Safety, Health and Environmental related Incidents (EPC 32-95) within a period of 24 hours.

3.1.7 Water Quality

In accordance with the requirements of the Water Act, surface and ground water shall not be polluted or contaminated (oil, petrol, herbicides, ash, dust etc.) under any circumstances. Storm water shall be managed to ensure that it does not become polluted.

All *hazardous substances* at the site shall be adequately stored and accurately identified, recorded and labelled (ex. Polychlorinated Biphenyl's – PCB/Askarel) EPC 32-245)). All hazardous waste shall be disposed of at a licensed, Class H, disposal site. This applies to the oil in pole-mounted transformers that can leak and pose an environmental risk. All water contaminated by oil spills is to be reported to the Department of Water Affairs and Forestry if applicable. The incident must be reported according to the Procedure for the Effective Management of Safety, Health and Environmental related Incidents (EPC 32-95) within a period of 24 hours.

3.1.8 Wet Areas

Rivers: No roads shall cut through river- and stream banks as this may lead to erosion causing situation of streams and downstream dams. Existing drifts and bridges may be used with the consent of the landowner. Such structures shall then be thoroughly examined for strength and durability before they are used. New drifts and bridges or roads shall only be constructed with the approval of Eskom and the landowner and at the discretion of the Farmer Liaison Officer.

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Permanently wet areas (Vlei, pan etc.): These areas will be shown on the profiles. No vehicular traffic shall be allowed in such areas. Only existing roads through such areas may be used with the approval of Eskom and the landowner. No equipment that can cause irreparable damage to wet areas shall be used.

Storm water run-off must be managed effectively in areas where it may negatively impact on the structures of power lines as well as to avoid storm water damage and erosion to adjacent properties. Drainage systems also need to be kept clean from debris at all times.

Measures should be implemented to ensure that run-off water on the servitude does not run into dongas and cause an erosion hazard

3.2 Biological Environment

3.2.1 Fauna

Birds: Interactions of birds with power lines should be prevented by the application of for example bird flight diverters in sensitive areas. All bird-power line interactions must be reported, recorded and investigated. After action has been implemented to solve the problem, it must be followed-up to assess the effectiveness of the remedial measures taken.

Other: Protected or endangered animal species occurring on Eskom servitudes must be identified and protected from Eskom's operation and maintenance activities. No animals may be killed on private property.

In areas where giraffes occur, the height of power lines should be adjusted accordingly. Rock packs could also be put around the poles to prevent Rhino and Elephant from pushing the poles over. It will be advisable to only implement these mitigation measures in areas where the animals occur.

3.2.2 Flora

Indigenous trees: Protected or endangered tree species occurring on Eskom servitudes must be identified. Permits must be obtained from the relevant Department of Environmental Affairs (DEA) or Department of Agriculture, Forestry and Fisheries (DAFF for the felling of protected trees.

Bush clearing: The objective of bush clearing is to trim, cut or clear the minimum number of trees and bush necessary for the safe electrical operation of the power line. Bush clearing shall be done in accordance with the Eskom Procedure for vegetation clearance and maintenance within overhead powerline servitudes and on Eskom owned land (EPC 32-247). All trees and bush cleared from the servitude shall be cut into manageable lengths (1m), and neatly stacked at regular intervals along the line. This wood is available to the landowner and/or local community for their personal use.

No bush clearing shall be allowed on river-and stream banks. No bulldozer shall be allowed for bush clearing.

Economically valuable trees: The removal of any economically valuable trees or bush shall be negotiated with the landowner before such plants are removed.

Herbicide usage: Only Eskom approved chemicals must be used in the control of weeds and pests. The application shall be according to set specifications, the manufacturer conditions must not be deviated from. Herbicides may only be applied by a qualified Herbicide Applicator who is in possession of a Herbicide Applicators' Licence. The possibility of leaching into the surrounding environment shall be properly investigated and only environmentally friendly herbicides shall be used.

A register shall be kept of all herbicides and pesticides that are administered. If ever there is any doubt as to the use of a specific chemical, an expert should be consulted.

Qualified registered personnel must do application only – under the conditions as set in the Eskom guide lines.

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3.3 Social Environment

3.3.1 Interaction with Landowners

The success of any operation depends largely on good relations with the landowners. All negotiations for any reason shall be between Eskom and the landowner. No verbal agreements shall be made and all agreements shall be recorded properly. All parties shall co-sign the agreement.

The landowners shall be informed of any changes in operation and maintenance programmes, should it affect them. The Eskom contact numbers shall be made available to the landowner to ensure open channels of communication and prompt response to any queries or claims

Property owners and local residents must be treated with respect and courtesy at all times. The culture and lifestyle of the community living in close proximity to the site and work site must be respected. The rights of the landowners shall be respected at all times and all staff shall be sensitised to the effect that they are working on private property.

Environmental clauses must be included in contract documents for all contractors. All complaints must be reported, recorded and investigated.

All the conditions that the landowner may have should be noted and adhered to. Access will only be allowed to Eskom personnel with gate keys.

Fences or gates of landowners shall not be damaged when gaining access to the servitude. The condition of Eskom gates and locks shall be regularly monitored to ensure that they are secure (i.e. to prevent livestock getting in or out as well to prevent unauthorised access). Gates shall be kept as found i.e. either open or closed.

Agricultural goods: Pilfering (removal) of agricultural goods (crops, livestock, firewood etc.) and poaching is prohibited. Receipts shall be given for any merchandise purchased or received from landowners.

All damage done to property must be reported to Eskom and the landowner. Repairs to the damage must be done immediately. Damaged ground surfaces, due to vehicle movement, must be repaired to the satisfaction of the landowner, written proof must be obtained.

Do not interfere with stock, crops or activities on the property. No wandering around properties whatsoever.

Cultural Environment (Archaeology)

Graves, archaeological sites and sites of historical interest in close proximity to an Eskom site or other work site must be protected and treated with respect. These areas shall be avoided during operation and maintenance activities. No artefacts shall be removed under any circumstances.

3.3.2 Graveyards

Graveyards may not be intruded and or disturbed during operation and maintenance activities.

3.3.3 Monuments

Sites of historical interest in close proximity to the Eskom servitude shall be protected and treated with respect (National Heritage Resources Act 25 of 1999)

3.3.4 Farmhouses and other buildings

Eskom personnel shall not intrude upon the private property of landowners. If and where the line crosses an inhabited area, the necessary precautions shall be taken to safeguard the lives and property of the inhabitants during operation and maintenance activities.

3.3.5 Infrastructure

The integrity of existing structures shall be protected during operation and maintenance activities.

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4. General Environmental Aspects to be addressed in the Environmental Management Programme for Substations and CNC sites.

4.1 Physical Environment

4.1.1 Access & Damage to Properties

All vehicle movement must be along existing roads and access tracks. Vehicles should be driven at moderate speeds and special care should be taken to avoid eroding tracks especially in wet weather. In circumstances where access is limited to the servitude, a single track/road is to be used. Multiple tracks are to be avoided at all times.

No fences or gates that provide access to the substation and CNC yard, is to be lowered cut removed or damaged in any way. Leave private gates, as they are found open or closed. Investigate any irregularities concerning Eskom fences and gates for example an open gate or lowered fence. Eskom locks and gates must be regularly checked to ensure that they are still in working order.

Damaged ground surfaces, due to vehicle movement, must be repaired to the satisfaction of the landowner written proof must be obtained.

All damage done to property must be reported to Eskom and the landowner. Repairs to the damage must be done immediately.

Do not interfere with stock, crops or activities on the property. No wandering around properties whatsoever.

The landscaping of the site is important. There should be looked at the aesthetics of the site, screening of the site using embankments, walls and/or vegetation and rehabilitation.

4.2 Water

Under no circumstances must surface or ground water be polluted or contaminated by oil, petrol, cleaning material, herbicides etc. Adequate oil containment must be used, for example bund walls, oil catchment areas, oil drainage systems, holding dams and oil plinths.

All storm water runoff must be managed efficiently so as to avoid storm water damage and erosion to adjacent properties. Drainage systems also need to be kept clean from debris at all times.

In the event of an oil spill, the spill must be reported to the Department of Water Affairs if applicable, only when there is contamination of water resources.

The incident must be reported to the zone/ Sector Manager and local EMS representative and or Environmental Officer within a period of 24 hours (According to 32-95-Procedure).

4.3 Air quality: Dust and Fire Breaks

Burning of waste material such as vegetation, domestic waste and old cleaning materials resulting from operation and maintenance activities at the site is strictly prohibited

Fire breaks where necessary must be planned in conjunction with relevant landowners and performed in accordance with the conditions of the surrounding veld. Erosion and firebreaks must be guarded against and precautions taken. Tall weeds and grass in and around the CNC's, substations and along the stone fire walk need to be removed. No fires to be made in private property or within the substation area.

4.4 Waste Management

Littering or illegal dumping of any waste material is prohibited, no waste landfills are to be established on the site without government authorisation. Provision must be made for the collection, separation and temporary storage of all waste materials, requirements of 32-245 Waste Standard must be adhered to. All collected waste must be disposed of at a registered waste disposal site for example municipal dumps or facilities,

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All recyclable material should, where economically viable, be re-used, returned to the store or sold as scrap.

Proper toilet facilities must be provided at substations for field staff,

All hazardous substances at the site must be adequately stored and accurately identified, classified and labelled (MSDS) e.g. PCB's, Paints, Silica Gels etc.

Ensure that all waste hazardous substances are disposed of at a licensed Class H:H disposal site. This must also be adhered to when dealing with contractors.

4.5 Herbicides and Pesticides

Herbicide usage: Only Eskom approved chemicals must be used in the control of weeds and pests. The application shall be according to set specifications, the manufacturer conditions must not be deviated from. Herbicides may only be applied by a qualified Herbicide Applicator who is in possession of a Herbicide Applicators' Licence. The possibility of leaching into the surrounding environment shall be properly investigated and only environmentally friendly herbicides shall be used. A register shall be kept of all herbicides and pesticides that are administered. If ever there is any doubt as to the use of a specific chemical, an expert should be consulted. Qualified registered personnel must do application only – under the conditions as set in the Eskom guide lines

4.6 Biological Environment

4.6.1 Plant and Animal Species

Protected or endangered plant and animal species occurring on Eskom sites and servitude must be identified and protected from Eskom's activities or plant.

Permits must be obtained from the relevant Departments, for example Department of Environmental Affairs (DEA) and Department of Agriculture, Forestry and Fisheries (DAFF) for the felling, disturbance or cutting of protected trees.

Identify all animal fatalities due to the site infrastructure such as bird collisions and mammal electrocutions (such as Giraffes, Elephant, Rhinos etc and implement immediate action to minimise or avoid the problem. Wildlife interactions must be reported, recorded and investigated and, after action is implemented to solve the problem, be followed-up to assess the effectiveness of the remedial measures taken.

4.7 Social Environment

4.7.1 Social Aspects

A list of the neighbouring properties, property owners' names, addresses and telephone numbers and land use should be drawn up where possible.

A plan of action should be concluded with the neighbouring property owners and the relevant authorities in the case of an emergency (veld fire, oil spill, water contamination etc.) An Eskom contact numbers must be clearly indicated on a board placed that it is visible.

Property owners and local residents must be treated with respect and courtesy at all times. The culture and lifestyle of the community living in close proximity to the site and work site must be respected.

Removal of agricultural products (sugar cane, fruit, vegetables, stock firewood) is prohibited. Receipts must be obtained for any merchandise purchased or received from landowners.

Environmental clauses must be included in contract documents for all contractors.

Graves, archaeological sites and sites of historical interest in close proximity to an Eskom site or other work site must be protected and treated with respect.

All complaints must be reported, recorded and investigated.

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Eskom sites should be evaluated in terms of their contributions to noise pollution and actions implemented to ensure conformance to legal requirements and taking into consideration the views of adjacent land users / owners.

5. Authorization

This document has been seen and accepted by:

Name and surname	Designation
P Moyo	Power Delivery Engineering GM
M Seabi	Land Development and Environment SC Chairperson
Rudi Kruger	Distribution Division Business Partner
Rhulani Matshidze	GM: Limpopo Operating Unit
Des Govender	GM: Mpumalanga Operating Unit
Peter Sebola	GM: Gauteng Operating Unit
Sifiso Mazibuko	GM: Kwazulu Natal Operating
Alwie Lester	GM: Western Operating Unit
Phil Khumalo	GM: North West Operating Unit
Thys Moller	GM Eastern Cape Operating Unit
Hugh McGibbon	GM Northern Cape Operating Unit
Lindi Mthombeni	GM Free State Operating Unit

6. Revisions

Date	Rev.	Compiler	Remarks
Sept 2006		Louise Human	Original issue as DPC0039.
Nov 2013	Draft 0.1	MC Rapudi	<ul style="list-style-type: none"> • Business Transformation and Legislation changes. • Document number changed to the new 240-..... • Included comments from John Geeringh • Included the EMP templates • Changed headings for Annex B & C • Amended the Annexure E table • Made general amendments to ensure alignment to legal updates.

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7. Development team

Distribution Environmental Advisory Committee

Louise Human

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8. Acknowledgements

I would like to acknowledge the contribution of Ms Louise Human, the original writer of the Environmental Management Programme Procedure.

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Annex A – Impact assessment
(Normative – for Eskom internal use only)

1 Guidelines

All comments must be completed.

Motivate why items are not applicable (n/a).

Indicate actions to be taken, persons or organizations responsible for actions and deadline for action.

Change control committees to discuss the impact assessment and, if necessary, give feedback to the compiler regarding any omissions or errors.

2 Critical points

2.1 Importance of this document, e.g. is implementation required due to safety deficiencies, statutory requirements, technology changes, document revisions, improved service quality, improved service performance, optimized costs.

Comment:

2.2 If the document to be released impacts on statutory or legal compliance, this needs to be very clearly stated and so highlighted.

Comment:

2.3 Impact on stock holding and depletion of existing stock prior to switch over.

Comment:

2.4 When will new stock be available?

Comment:

2.5 Has the interchangeability of the product or item been verified, i.e. when it fails, is a straight swap possible with a competitor's product?

Comment:

2.6 Identify and provide details of other critical (items required for the successful implementation of this document) points to be considered in the implementation of this document.

Comment:

2.7 Provide details of any comments made by the Regions regarding the implementation of this document.

Comment: (n/a during commenting phase).

3 Implementation time frame

3.1 Time period for implementation of requirements.

Comment:

3.2 Deadline for changeover to new item and personnel to be informed of DX wide changeover.

Comment:

4 Buyer's guide and power office

4.1 Does the Buyer's Guide or Buyer's List need updating?

Comment:

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4.2 What Buyer's Guides or items have been created?

Comment:

4.3 List all assembly drawing changes that have been revised in conjunction with this document.

Comment:

4.4 If the implementation of this document requires assessment by CAP, provide details under 0.

4.5 Which Power Office packages have been created, modified or removed?

Comment:

5 CAP/LAP pre-qualification process-related impacts

5.1 Is an ad hoc re-evaluation of all currently accepted suppliers required as a result of implementation of this document?

Comment:

5.2 If NO, provide motivation for issuing this specification before Acceptance Cycle Expiry date.

Comment:

5.3 Are ALL suppliers (currently accepted per LAP) aware of the nature of changes contained in this document?

Comment:

5.4 Is implementation of the provisions of this document required during the current supplier qualification period?

Comment:

5.5 If Yes to 0, what date has been set for all currently accepted suppliers to comply fully?

Comment:

5.6 If Yes to 0, have all currently accepted suppliers been sent a prior formal notification informing them of Eskom's expectations, including the implementation date deadline?

Comment:

5.7 Can the changes made, potentially impact upon the purchase price of the material/equipment?

Comment:

5.8 Material group(s) affected by specification (refer to Pre-qualification invitation schedule for list of material groups).

Comment:

6 Training or communication

6.1 Is training required?

Comment: (If NO, then 0 to 0 will be n/a.)

6.2 State the level of training required to implement this document (e.g. awareness training, practical/on job, module).

Comment:

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6.3 State designations of personnel that will require training.

Comment:

6.4 Is the training material available? Identify person responsible for the development of training material.

Comment:

6.5 If applicable, provide details of training that will take place (e.g. sponsor, costs, trainer, schedule of training, course material availability, training in erection/use of new equipment, maintenance training).

Comment:

6.6 Was Technical Training Section consulted regarding module development process?

Comment:

6.7 State communications channels to be used to inform target audience.

Comment:

7 Special tools, equipment, software

7.1 What special tools, equipment, software, etc. will need to be purchased by the Region to effectively implement?

Comment:

7.2 Are stock numbers available for the new equipment?

Comment:

7.3 What will be the cost of these special tools, equipment, software?

Comment:

8 Finances

8.1 What total costs would the Regions be required to incur in implementing this document? Identify all cost activities associated with implementation, e.g. labour, training, tooling, stock, obsolescence.

Comment:

Impact assessment completed by:

Name: _____

Designation: _____

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Annex B – Power line Inspection Checklist

Model checklist for identification of environmental aspects (issues) and impacts on power line routes

Site (power line) name:

Responsible Person:

Assessor's name: Unique No:

Assessment date:

From tower No. To tower No:

(Environmental issues identified shall be marked-up on a sketch or map of the power line)

Environmental issue:		Pole No.	Description of problem	Impact			
				N/A	High	Med	Low
Access roads	Centre line						
	Other						
Bird interactions	Collisions						
	Electrocutions						
	Pollution						
	Nests						
Storm water drainage	Need for remedial action						
	Natural						
	Berms						
	Channels						
Soil erosion	Pipes						
	Tower						
	Access road						
	River crossing						
Eskom gates	Other						
	General conditions						
	Closed and locked						
Social activities under power-line	Locks						
	Houses						
	Farming						
	Structures						
	Mining						
	Airfields						
Bush encroachment	Power lines						
	Telephone lines						
	Other						
	Clearance						

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Environmental issue:	Pole No.	Description of problem	Impact			
			N/A	High	Med	Low
		Fire risk				
<u>Construction material</u>		Concrete				
		Steel work				
		Insulators				
		Conductor				
		General				
<u>Visual impact</u>						
<u>Alien/invader vegetation</u>		Access				
		Fire risk				
		Clearance				
		Spread				
<u>Soil type</u>		Sandy				
		Clay				
		Rocks				
<u>Protection of natural vegetation</u>		Protected Trees (e.g. marula, baobab etc)				
		Alien / weeds Vegetation				
<u>Fence crossings</u>		General conditions				
<u>Lightning</u>						
<u>Archaeological/historical/natural heritage/cultural sites</u>						
<u>River crossings</u>						
<u>Complaints/requests from land owners</u>						
<u>Radio/TV interference</u>						

Annex B1: Powerline Environmental Management Programme (EMP) Template

Environmental Aspect	Impact (Yes/No)	Significance (H/M/L)	Action to be taken	Responsible Team or Person	Due Date	Progress

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Annex C – Substation Inspection Checklist

Model checklist for identification of environmental aspects (issues) and impacts at Eskom substations

Site (Substation) name:

Responsible Person:

Assessor's name: Unique No:

Assessment date:

Environmental issue:	Description	Impact			
		N/A	High	Med	Low
<u>Erosion</u>	HV Yard				
	Security Fences				
	Access Road				
	Storm Water				
<u>Vegetation Control</u>	HV yard				
	Security fences				
	Outside fence area				
	Fire break				
	Protected Trees				
	Alien / weeds Vegetation				
	Other				
<u>Storm water</u>	Outlet				
	HV yard				
	Terraces				
<u>Leaching of herbicides</u>	Security fences				
	Outside Eskom property				
<u>Oil spills</u>	HV yard				
	Oil dam				
	Oil traps				
<u>Littering</u>	General				
	Maintenance				
	Construction				
<u>Waste disposal</u>	Waste separation				
	Bins				
	Disposal Problems.				
	Contract for disposal				

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Environmental issue:	Description	Impact			
		N/A	High	Med	Low
<u>Water</u>	Municipal				
	Storm collection water				
	Boreholes				
<u>Sewerage</u>	Municipal				
	Septic tank				
	French drain				
<u>Hazardous material store</u>	Register				
	Ventilation				
<u>Security of oil dam</u>	Security fence				
	Shade netting/cover				
<u>Animal interactions</u>	Security fence				
	HV Yard (pollution/nests)				
	Oil dam				
<u>PCB labelling</u>					
<u>Fire break</u>					
<u>Oil trap</u>					
<u>Landscaping</u>					
<u>Visual impact</u>					
<u>Complaints and requests by landowners</u>					
<u>Noise pollution and complaints</u>					
<u>Eskom fences and gates</u>	General condition				
	Locks				
	Closed and locked				

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Annex D – CNC's Environmental Management Programme Guide

Aspect	Impacts	Action required	Reference	Resp. Person	Due date for actions
A	Wildlife Management				
1	Wildlife fatalities or injuries (collisions and electrocutions)	Report incidents (within 24hrs) to Environmental Management on a Flash report.	Procedure for the Effective Management of Safety, Health and Environmental related Incidents (EPC 32-95).	CNC Supervisor	Within 24 hrs
		Endangered Wildlife Trust will investigate the incident on behalf of Eskom and make recommendations. All recommendations must be implemented within a 4-month period.		EWT	Within 4 month period
2	Nests birds For example crows, weavers	Birds' nests (e.g. crows, sociable weavers) that do not interfere with the quality of supply should not be disturbed or removed unless a possibility exists that a flashover can occur. Trees can be trimmed, without damage to the nest.	EPC 32-247	CNC Supervisor	
	Raptor nests	Raptors are protected bird species. Raptor (birds of prey for example, vultures) nests should not be interfered with, without first notifying the EWT (on 0860 111 535), for professional assistance.		CNC Supervisor	
3	Pollution streamers)	Installation of jumpers or other mitigatory measures may need to be employed to control or prevent pollution due to bird streamers.	EWT (on 0860 111 535) EO	CNC Supervisor	
B	Vegetation Management				
1	Weeds present	Keep servitude of the power line and access road clear of weeds and alien vegetation. Monitor during the routine inspection of substations and power lines. Bush Clearing must be done in accordance with the Eskom Procedure for vegetation clearance and maintenance within overhead power line servitudes and on Eskom owned land (EPC 32-247) Large trees should be pruned according to 32-247. Remembers to seek advice from environmental sections since some of these trees require permit. Permits must be obtained from the Department of Agriculture, Forestry and Fisheries (DAFF)/or Nature Conservation for the cutting or removing of protected trees and shrubs.	EWT Environmental Officer/ Advisor	CNC Supervisor	As per works order
			Checklists for routine substation and power line inspections (Annexure A&B)	CNC Supervisor	As per works order
			EPC 32-247	CNC Supervisor	As per work order
			32-247	CNC Supervisor	
			Environmental Officer/ Advisor	CNC Supervisor	

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Aspect	Impacts	Action required	Reference	Resp. Person	Due date for actions
		<p>The following actions can assist with the identification of protected trees:</p> <ul style="list-style-type: none"> The relevant Department of Water Affairs or Nature Conservation Department can be contacted to assist with the identification of protected trees. The landowner should be contacted for information before cutting and trimming trees on his/her property The latest list of protected species, as well as alien vegetation, is available from Environmental Management Environmental Management will make available educational information on protected trees as part of the environmental awareness and training program 	Environmental Officer/ Advisor/ Relevant Department of Agriculture, Forestry and Fisheries / Relevant Nature Conservation Department	CNC Supervisor	Prior to cutting or trimming
C. Herbicide management		<p>Herbicide leaching/spills/damage to property must be reported in a flash report to the Environmental Officer. This check is also included as part of the routine inspection for substations and power lines.</p> <p>Only Eskom approved herbicides should be used for the treatment of weeds. The manufacturer's specification must not be deviated from.</p> <p>Application of herbicides must be done by qualified/registered Pest Control Operator registered or trained persons working under the supervision of a registered Pest Control Operator</p> <p>All herbicide application work must be carried out according to Eskom's guidelines and the standard for the safe use of pesticides and herbicides.</p> <p>Material Safety Data Sheets should be available for all chemicals on stored and or used on site.</p> <p>A register of applications, stating where, when, who and how the chemical was applied, 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.</p>	<p>Seek advice from Environmental officer of the area.</p> <p>Herbicide Management Guide</p> <p>Herbicide Management Guide / EPC -32-247</p> <p>Standard/ Guide for the Safe Use of Pesticides and Herbicides.</p> <p>OHS Act</p> <p>Standard/ Guide for the Safe Use of Pesticides and Herbicides</p>	<p>Supervisor</p> <p>Supervisor /PTO or appointed herbicide contractor</p> <p>Supervisor /PTO or appointed herbicide contractor</p> <p>Supervisor /PTO or appointed herbicide contractor</p> <p>Supervisor</p> <p>Supervisor /PTO or appointed herbicide</p>	<p>Within 24 hours</p> <p>As per work order request & herbicide contract</p>

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Aspect	Impacts	Action required	Reference	Resp. Person	Due date for actions
D Oil spills		<p>Report incident on a flash report within 24 hours of the spill.</p> <p>The procedure for Waste management must be followed in the event of oil spill waste.</p> <p>In the event of an oil spill, the first priority is to contain the spill. The emergency programme for oil spills, as developed for the CNC, must then be followed. Oil spill cleanup chemicals and the mobile oil clean-up kits must be available for accidental spills. The mobile kit should be available on any vehicle transporting leaking transformers or oil. A stock of at least 50 L of oil remediation chemical (for example Chemcap) should be kept at the CNC in the event of an oil spill. Contact Environmental Management for Oil Clean-Up Suppliers.</p> <p>Oil contaminated soil must be treated as hazardous. It is preferred that spillages and contaminated areas are treated on site. However, circumstances may necessitate the removal of contaminated soil to the CNC for treatment – this area must be clearly demarcated and cordoned off.</p> <p>All oil spills should be treated as PCB contaminated unless an inventory of PCB equipment / oil exists or if the vessel from which the oil leaked is marked as PCB free</p> <p>Oil samples should be taken and forwarded to the laboratory in Brackenfell for PCB testing where necessary and records must be kept of PCB testing</p> <p>To prevent and minimise oil spills, the following apply:</p> <ul style="list-style-type: none"> ◆ Build Catchment area/ oil plinths where such chemicals are stored or where oil leaking equipment's are stored. ◆ Oil catchment areas must be kept clear of all stones, free of debris and water. ◆ Oil taps should be closed to prevent drainage of oil from equipment. Oil must be pumped out regularly from the catchment dams. ◆ Damaged transformers that may leak should be stored in a suitable banded area / oil plinth. 	EPC 32-95 Waste Management Procedure (EPC 32-245)	contractor Supervisor Supervisor Supervisor emergency clean up team if required Supervisor	Within 24 hours Within 24 hours Oil spill actioned clean-up initiated within 1 month (KPI) As per the incident As per incident As per works order request

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Aspect	Impacts	Action required	Reference	Resp. Person	Due date for actions
5	Waste management Litter (general construction and maintenance waste)	<p>Waste should be minimised, recycled and re-used where possible.</p> <p>Littering is prohibited at all times. All waste to be kept in suitable bins.</p> <p>Excess construction material must be removed by approved contractors, and taken to a suitable and legal dumping site upon completion of any work performed.</p> <p>Litter and general waste should only be disposed of at a registered municipal disposal or hazardous facility.</p> <p>The latest list of waste sites in the region is available from the Department of Water Affairs.</p> <p>Under no circumstances is waste, including cleared vegetation, is to be burnt.</p> <p>Lack of toilet facilities may lead to soil contamination. Where this has been identified, toilets should be hired or a motivation made for capital to purchase toilet facilities</p> <p>General and hazardous waste must be stored in separate bins.</p>	EPC 32-247 / Regional Waste management plans	All staff All staff Supervisor Supervisor Supervisor Supervisor	
6	Hazardous waste and hazardous substances	<p>Hazardous waste includes</p> <ul style="list-style-type: none"> ◆ Oil contaminated soil and materials (e.g. oil rags), ◆ PCB contaminated waste, ◆ Herbicide and solvent 	Bio-Remedial Contractors / suppliers must be used to do this function.	Supervisor Supervisor	As per works order request

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Aspect	Impacts	Action required	Reference	Resp. Person	Due date for actions
<ul style="list-style-type: none"> ◆ contaminated empty containers, ◆ Mercury containing fluorescent lamp tubes, ◆ Asbestos waste; and ◆ Sulphur Hexafluoride (SF6) solid waste ◆ Solvents. 					
		<p>PCB / PCB equipment must be labelled, managed and disposed of according to legal requirements. Special precautionary measures must be taken when handling PCB oil or equipment (e.g. from transformers). If the PCB status of a transformer is unknown, a sample (taken by a suitably qualified person) should be sent to the TSI Oil Lab in Johannesburg for analysis.</p>	<p>Waste Management Procedure 32-245</p> <p>Send samples to Laboratory where necessary.</p>	Supervisor	

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