Annex A
(informative)

Distribution environmental *screening document (DESD)*
Reticulation Powerlines and Ancillary Services

Ratified and accepted by
Environmental Practitioner
Environmental Specialist
Head of Engineering Survey .....
(one signature please)

Accepted by Land Owner/s/Users .....
I have seen the completed document and accept the
recommendations made

Assessor/s

Form completed by: Thabelo Mugwedi ..... Signature: 

in consultation with: …… Signature: .....

CAPACITY (e.g. land owner, specialist): .....

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Instructions

1. Fill the report in as neatly and completely as possible.
2. Where the question / statement is not applicable mark N/A.
3. The form must be completed in consultation with someone who knows the area well and who can also predict if any future development is envisaged (e.g. a land owner, land user, specialist, etc.).
4. Indicate sensitive areas on a map and/or spanning plans.
5. When in doubt, consult the Environmental Practitioner in your region.

The purpose of this *DESD* is to:

1. Determine whether or not the project should be subject to R983, R984 or R985, published in terms of the National Environmental Management Act No. 107 of 1998.
2. Identify and mitigate the negative impact of Eskom's activities to a minimum in line with both Legislation and Eskom's Environmental Policies.
3. This report is a guide to Route Selection, Construction and Field Services.

NOTE Complete the report before the survey!!!

This is not an office exercise.

Extra sheets of paper may be added and referenced if insufficient space has been provided.

Annex A

(informative)

1 Project description

Project name/Survey: TF restringing project Area

Project number: File number .....

Rural scheme/
Feeder Tahiti - Fontein..... Voltage: 11kV

Supply from .....
(scheme name, pole numbers for tee-off)

Supply to .....
(Farm name, etc.)

Scope of work:

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2 Properties traversed

Farm name .....

Registration number and Division ..... Sub-division.....

Compilation number ..... Line length/Site area (m^2): 7104.12m.....

Farm name .....

Registration number and Division ..... Sub-division.....

Compilation number ..... Line length/Site area (m^2) 7104.12m.....

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3 Brief description of the surrounding area

The area is mostly undulating grasslands which are predominantly used for grazing

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Could the proposed project have an impact on or be constrained by any of the following environmental aspects?

Encircle the appropriate aspect, giving a description of the present state as well as an indication of the possible negative impact. **Note that mitigating measures for these impacts are to be included in the Environmental Management Programme.**

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4 Physical environment

4.1 Water: streams rivers dams wetlands springs floodplains OTHER ……..

Present condition: The existing power-line transverses streams and wetlands at various points along the route of the line. The line crosses a stream between poles TF 108-135-8 and TF 108-135-9 as well as between the poles 108-137 and TF 108-138. These streams are not permanently full and running, however, it can be expected that they would be running in full capacity during rainy season.

Potential impact (e.g. threat of pollution): The major potential impact here is erosion by vehicles especially when driving through wet soil which could leave deep track marks in the soil. Destruction or disturbance of already existing vegetation could also loosen the soil exposing it to further erosion. There is also a potential of pollution during the construction period in the form of waste, excess soil as well as possible oil spills that could end up in the water.
The commencement of the project also has a potential for a contravention of the water act as there will be construction activities taking place in water bodies. . .....

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Comments/mitigation measures: Applications in terms of the National Water Act as well as NEMA should be done before construction in order not to contravene environmental legislation. Machinery and all cars used during the construction should be checked for leaks and if any found they should be repaired before commencing with the construction. During construction, access to the site used should be away from waterbodies to reduce/ eliminate the potential for soil erosion.

4.2 Soil: sandy Rocky clayey OTHER Loam soil……

Present condition: The soil type in the area is predominantly loam soil with some areas, especially the wetland areas being mainly clay. The poles in some of these areas are leaning due to years of clay swelling and shrinking. The area used to access the power-line is mainly a gravel road of mixed sand, stones and import soil. . .....

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Potential impact: (e.g. of erosion): There is a potential of erosion and soil displacement especially if soil is disturbed by driving through it when wet. It's also important that the already established vegetation not be disturbed or removed so as to ensure the continued stability of the soil

Mitigation measures: Disturbance of soil should be kept to a minimum. There should not be any unnecessary soil removal during construction of the line. Multiple tracks should be avoided, stick to one access route to get to the areas of pole planting. .....

4.3 Topography: mountains ridges hills valleys ravines dongas OTHER …Undulating

terrain……

Present condition:

The area is mostly uneven in topography in that some with open grasslands. There are some areas where streams flow that are at a lower level than the surrounding topography.

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Potential impact (e.g. of erosion)**:** As the terrain is uneven, surface run off can lead to further erosion. Another potential impact is soil displacement especially by vehicles driving through areas that are wet. The animal burrows in the area also pose a potential for injury should people step in the area with a burrow accidentally.

Comments/mitigating measures:

Well established vegetation should remain undisturbed during construction. As the area can get wet especially after rains it's important that drivers drive carefully with suitable vehicles for the terrain ie 4×4 and avoid creating multiple tracks which can cause further damage. Care should be taken when working in areas where land owners have made ridges to channel surface run-off, these shouldn't be destroyed or disturbed without consultation with the owner. Care should also be taken with regards to checking the surface that one is walking on to ensure that no injuries occur from stepping in the animal burrows.

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5 Natural environment

5.1 Flora: indigenous protected exotic OTHER ..……

Brief description and conservation status (e.g. rare, etc., mention trees/bush/grass): The area along the line route is mostly open grasslands with a few shrubs and trees.

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Potential impact (e.g. permit applications): Soil erosion as a result of the removal of vegetation.

Comments/mitigation measures: Vegetation removal should be kept at a minimum and no vegetation cover should be removed for purposes other than pole planting. If the trees are trimmed/cut, only qualified personnel should handle the process. .....

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5.2 Fauna: mammals birds OTHER ……..

Brief description and conservation status:
(e.g. rare, protected, etc., mention giraffe, elephants, eagles, vultures, etc., mention migratory paths)

There was cow dung that was seen at certain points along the route of the line to indicate that there could be cattle along the route of the line.

Potential impact (e.g. threat of electrocution, collision, etc.): There is a threat of disturbance of the animals and also potential habitat destruction caused by movement of vehicles and other activities during the project's lifecycle. Threat of animal poaching, loss of livestock should gates not be closed.

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Comments/mitigating measures:

Animals present on the farms should be avoided and not be bothered in any way. Care must be taken for control of gates to be maintained to prevent loss of livestock. Gates must be left as they are found (gates to be left open when found open and closed when found closed) unless otherwise arranged with landowner. Boundary fences should however be closed.
It is of vital importance that arrangements are made with landowners before accessing their farms.
No poaching or hunting of animals is allowed.
Care must be taken when working in areas where there are burrows present as people can injure themselves should they trip due to them.

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6 Social environment

6.1 Restricted areas: nature/game reserves | hiking trails | tourism routes | parks | recreational areas

residential-areas | green belts | sacred/holy grounds | OTHER……..

Brief description

There is a farm house that was observed close to where the line is, however, this residence is not in close proximity to the line

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Potential impact e.g. threat of encroachment, etc.: Disturbance and noise with construction machinery. ...

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Comments/Mitigation measures: It is important that people that live in the areas surrounding the route of the power line are informed beforehand and care is taken to ensure that the construction does not create disturbance for residents to access their houses

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6.2 Visual aesthetics: easily seen | hidden | partially……..

Brief description: The line runs deep through farms and far from main roads so cannot be easily seen by passersby. .....

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Potential impact: This project does not have any potential impact on the current aesthetic properties as it will be following the route of the existing power line for the most part and deviations will be at a distance from the gravel road.

Comments/mitigation measures: N/A. .....

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6.3 Sensitive areas: historical sites | archaeological | monuments | natural heritage sites

graves | landmarks | ruins | OTHER……..

Present condition: There are marked graves that were observed along the line between the poles TF 108-165-1 and TF 108-165-2.

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Potential impact: The project poses a risk of damage to the graves during the construction phase of the project. .....

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Comments/mitigating measures: It is important that SAHRA notification is done on this project and feedback from SAHRA would need to be incorporated as part of the mitigation measures for this project. Additionally, it is important to ensure that during construction as well as preparation for construction, the grave site is sealed off with danger tape to ensure that no driving, walking or any other associated activities happen within this site .....

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7 Economic environment

7.1 Land use: crops | orchards | grazing | crop spraying | game farming | forestry areas | mining | OTHER …….

Brief description: The majority of the line route is mostly open grazing lands.
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Potential impact: Livestock should not be bothered (communicate with farmer to let him know of construction dates so can be prepared to move livestock if necessary) .....
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Comments/ mitigation measures: Disturbance of farming land to be kept at a minimum. .....

7.1.1 Commercial: factories | shops | OTHER ……

Brief description: N/A .....
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Potential impact: N/A.....
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.....

7.1.2 Infrastructure: roads | railways | communications | power lines | air fields | *pipelines* | *sewage* | OTHER …

Brief description: The line mainly runs parallel to a gravel road that drives to different farms and farm houses.
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Potential impact: There is potential of disturbance to traffic flow but the gravel roads are not busy so there is less risk of traffic flow disturbance.
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Comments/mitigating measures:

There is potential of disturbance to traffic flow but the gravel roads are not busy so there is less risk of traffic flow disturbance

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7.1.3 Impact

What impact will this project have on elements 4 to 7?

1. Physical

No impact (0) Medium impact (2) High impact (4)

2. Natural

No impact (0) Medium impact (2) High impact (4)

3. Social

No impact (0) Medium impact (2) High impact (4)

Overall impact:

This section addresses the overall environmental impact of the project. The impacts as assessed in the above three spheres (physical, natural and social) need to be considered to determine the overall impact

0	2	4
No impact	Medium impact	High impact

If the overall impact is between 2 and 4, contact the Environmental Practitioner or specialist.

Alternatives

Have alternative routes been discussed with the relevant land owner/s or users?

Yes ____X____ as part of the survey process
No _____

Detailed study

Is an *environmental scoping* required in terms of regulation 544?

Yes _____

No____X_____

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Environmental Management Plan

1 General conditions

1.1 The Eskom project manager or co-ordinator shall be responsible for ensuring that the land owners have been informed before any work is carried out on site. Contractors shall find out if the land owners have been informed before moving onto site.

1.2 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.

1.3 Use of private roads shall be arranged in advance. Any damage to private roads shall be repaired at the contractor's expense and to the satisfaction of the land owner. This shall be the responsibility of the project manager or co-ordinator.

1.4 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 except while stringing is taking place. Open gates shall be guarded to prevent animals straying and unauthorized persons and vehicles entering into adjacent camps or properties.

1.5 Permission shall be obtained from land owners before any water is used.

1.6 No fires shall be lit on private property. If fires are lit on Eskom's property or in the construction camp, provision shall be made that no accidental fires are started. No fire wood shall be collected in the veld.

1.7 If activities that can cause a fire are carried out, fire extinguishers shall be available on site and in the construction camp.

1.8 No property may be accessed after normal working hours except with the permission of the land owner. Privacy shall be respected at all times.

1.9 Eskom, Eskom's contractors and their employees shall at all times be courteous towards land owners, tenants and the local community.

1.10 Eskom, Eskom's contractors and their employees shall not cause damage to property, crops or animals. Activities that may cause conflict with land owners, 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.

1.11 Vehicles shall be driven at a moderate speed on private roads and stay within the statutory speed limit on public roads.

1.12 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. Special care shall be taken to prevent excess damage during wet weather.

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1.13 If any vehicle should get stuck, the damage shall be repaired immediately so that no deep ruts remain.

1.14 Any damage to private property shall immediately be reported to Eskom and the owner. The damage shall be rectified immediately if possible and/or appropriate compensation shall be paid to the owner at the discretion of the project manager/coordinator in consultation with the property owner. A record of damages and rectifying action shall be kept. The land owner's satisfaction with the outcome of rectifying action shall be obtained in writing.

1.15 A proper system of waste management shall be instituted in the construction camp. This entails that sufficient waste bins are available on site and in the construction camp. The waste shall be dumped at an approved waste disposal site. No containers, scrap metal, conductor etc. shall be left on site.

All scrap shall be removed and taken to an appropriate disposal site. No oil, diesel or other chemicals shall be spilled or discarded anywhere. If an accidental spill occurs, it shall be reported immediately and cleaned to the satisfaction of Eskom and the land owner. No waste shall be left in the veld or on the line route.

1.16 Washing and toilet facilities shall be provided on site and in the construction camp. The facilities shall comply with Eskom standards and shall have the approval of the land owner.

1.17 No human excrement shall be left in the veld. If no toilet facilities are available such waste shall be buried *immediately*.

1.18 Herbicides shall only be applied with Eskom's permission and in accordance with the Eskom Policy on Herbicides ESKPBAAD4.

1.19 Camp and office sites shall be dismantled and removed after completion of the construction phase of the project. The site shall be rehabilitated to as close as possible to its original condition to the satisfaction of the land owner which shall be in writing.

1.20 All excavations shall be enclosed to prevent animals or people from accidentally falling into excavations.

1.21 No trees shall be cut or removed without prior permission from the landowner. Permits shall be obtained for the cutting and removal protected trees (protected trees shall be dealt with in 2, **Special conditions**).

2 Special conditions

(Specific issues identified during the scoping as needing attention i.e. erosion berms, bird flappers, protected trees. etc.).

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TYPICAL MITIGATION MEASURES

ENVIRONMENTAL CONCERNS	MITIGATION MEASURES
AGRICULTURE	
Loss of standing crop due to access road and tower work site.	- Limit width of access and size of tower site. - Avoidance of crop areas. - Monetary compensation for crop loss. - Time construction to avoid growing season.
Soil Compaction	- Scheduling activities to times of the year when soils are least susceptible to compaction. - Stop activities when ground conditions are poor. - Use of equipment with low bearing capacity. - Chisel ploughing.
Construction of new lines	- Locate access roads along existing traffic routes.
Topsoil – subsoil mixing/soil rutting	- Scheduling activities. - Stop activity when ground conditions are poor. - Use of equipment with low bearing capacity. - Use of gravel roads. - Addition of manures to offset fertility loss. - Compensation for reduced soil productivity. - Removal of spoil and/or bentonite from foundation operations. - Segregation of topsoil and subsoil.
Disturbance to farm operations	- Maintain contact with landowner/tenant regarding preferences.
Loss of livestock	- Employ noise control measures near sensitive livestock. - Construction of farm gates. - Securing farm gates. - Clean-up construction materials which could be ingested. - Compensation for lost, injured livestock.
SOCIAL IMPACTS	
Noise and Vibration	- Limit this type of work to daylight hours. - Observe protocol or applicable municipal by-laws. - Use of appropriate methods where available.
Mud and Dust	- Wetting down dry soils. - Chemical control of dust. - Cleaning roads to remove mud. - Temporary planting of grasses.
Aesthetics	- Screen with natural of planted vegetation restoration. - Avoid linear access down the right-of-way.

	- Addition of topsoil to gravel access roads. - Hoarding construction sites. - Installation of landscaping in advance of site completion.
Inconvenience	- Select route and method of installation to suit landowners' conditions. - select timing of activity.
Heritage resources	- Avoidance/isolation. - Design measures to make facility less obtrusive. - Screening. - Alternate methods of equipment. - Protection by use of enclosures, barrier fencing, covering. - Salvage in conjunction with SAHRA. - Relocation in conjunction with SAHRA.
Tourism and recreation resources	- Design measures to make facility less obtrusive of disruptive. - Screening and restoration. - Minimize noise and dust. - Safety precautions to protect the public. - Scheduling to avoid peak use periods.
WATER QUALITY	
Sedimentation of streams due to erosion from the right-of way.	- Minimize use of slopes adjacent to streams during soils testing, construction and maintenance. - Maintain a cover crop. - Retain buffers.
Stream bank erosion.	- Mechanical erosion control. - Retain shrubby stream bank vegetation and selectively cut or prune trees during line clearing/maintenance. - Selective spraying of herbicides. - Mechanical erosion control.
Impedance of natural flow streams/others surface waters.	- Use and maintenance of appropriate stream crossing device.
Ponding or channelization of surface waters due to rutting.	- Timing activities to stable ground conditions. - Use of gravel roads.
Contamination of surface or ground waters through spills or leaks of toxic substances.	- Spill control material and procedures readily available. - Site selection where possible.
Soil compaction/topsoil-subsoil mixing.	- Avoidance of rutting by vehicles where possible. - Construction timing. - Use of gravel roads. - Use of vehicles with low bearing pressures. - Stop activities when ground conditions are poor.
Wind/water erosion.	- Avoidance of areas with high erosion potential. - Timing activities to the most stable ground

	conditions. - Slope stabilization. - Mechanical erosion control. - Vegetation erosion control. - Re-compaction of trenches. - Avoid trenching parallel to the fall of a slope.
Contamination by petrochemicals.	- Spill control material and procedures made readily available. - Restoration methods investigated.