Annex B - Distribution Environmental Screening Document (DESD)

(Informative)

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 .....Signature: .....

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

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

DATE COMPLETED: .....

Instructions

1. Fill the report in as neatly and completely as possible.
2. Where the question / statement is not applicable mark N/A.
3. Indicate sensitive areas on a map and/or spanning plans.
4. When in doubt, consult the Environmental Practitioner in your region.

The purpose of this *DESD* is to:

- Determine whether or not the project should be subject to R543-7, published in terms of the National Environmental management Act 107 of 1998.
- Identify and mitigate the negative impact of Eskom's activities to a minimum in line with both Legislation and Eskom's Environmental Policies.
- 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.

ESKOM COPYRIGHT PROTECTED

When downloaded from the IAEE, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version in place at [illegible]

Annex B
(continued)

1 Project description

Project name/Survey Request: 22kVa power line on the farm 172 and 174
Area: Portions of the farm 172 and the farm 174, Barkley West, Dikgatlong Local Municipality
Project number: .....
File number: .....
Rural scheme/ Feeder: .....
Voltage: 22kVa
Supply from (scheme name, pole numbers for tee-off): Eskom conductor line
Supply to (Farm name, etc.): Farm 172 and 174, Barkley West, Dikgatlong Local Municipality, Northern Cape

2 Properties traversed

Farm name: Farm 172, Barkley West, Dikgatlong Local Municipality, Northern Cape
Registration number and Division: ..... Sub-division: .....
Compilation number: ..... Line length (m): 82m
Farm name: Farm 174, Barkley West, Dikgatlong Local Municipality, Northern Cape
Registration number and Division: ..... Sub-division: .....
Compilation number: ..... Line length/Site area (m^2): 853m

3 Brief description of the surrounding area

The area proposed for the distribution line of approximately 935m is located within the Schmidtsdrif Thornveld vegetation type.
The area topography can be defined as undulating plains. The distribution line proposed will be located on a flat area.
The surface water course applicable is the Harts River which occurs under the proposed line connected between P9 and P10.
The poles P9 and P10 will, however, be placed more than 32m from the river and the lines will run well above the river.
No residential areas are located within the vicinity of the project.
There are no trees or significant vegetation cover present in the line alignment.
There is sparse ground vegetation present, mostly patches of grasses.

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.**

ESKOM COPYRIGHT PROTECTED

When downloaded from the VMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the VMS.

Annex B
(continued)

4 Physical environment

4.1 Water: streams **[rivers]** dams wetlands springs floodplains OTHER .....

Present condition: flowing

Potential impact (e.g. threat of pollution): The surface water applicable is the Harts River which occurs between the poles P9 and P10. The poles P9 and P10 will, however, be placed further than 32m away from the river and the electricity lines well above the river. Therefore, there will be no threats of pollution by the proposed development on the Harts River.

4.2 Soil: **[sandy]** rocky clayey OTHER .....

Present condition: The proposed site is patchy with open patches of soils and some of grasses and shrubby thornveld.

Potential impact (e.g. of erosion) No impact is foreseen on soil conditions

4.3 Topography mountains ridges hills valleys ravines dongas **[OTHER]** Plain

Present condition: The area is represented by plains, where a Mispah soil form is present. The proposed site is patchy with open patches of soils and some of grasses and and shrubby thornveld.

Potential impact (e.g. of erosion) The alignment is fairly flat and there are no foreseen impacts.

Comments/mitigating measures:
If necessary, selective clearance must be implemented to avoid possibility of soil erosion.

ESKOM COPYRIGHT PROTECTED

When downloaded from the WEB, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the WEB.

Annex B
(continued)

5 Natural environment

5.1 Flora: [indigenous] [protected] exotic OTHER .....

Brief description and conservation status (e.g. rare, etc., mention trees/bush/grass) .....
The vegetation type is Schmidtsdrift Thornveld. This includes Black Thorn trees, Hak-en-Steek and Witgat. None, however, on site.

Potential impact (e.g. permit applications .....Vegetation type is considered least threatened. No protected species on alignment site.
Should any Witgat trees be identified and need to be removed, permit application through DEFF is required.

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)
Small mammals can be expected in the area, including terrestrial rodents and shrews.
Larger mammals may also be present.

Potential impact (e.g. threat of electrocution, collision, etc).....
No significant impacts are foreseen, the proposed line is relatively short.

Comments/mitigating measures:
No specific mitigation measures are requires. It is however recommended that vegetation clearance be kept to a minimum.

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] None		

Brief description No residential areas are located within the vicinity of the project.

ESKOM COPYRIGHT PROTECTED

Annex B
(continued)

Potential impact e.g. threat of encroachment, etc. None

6.2 Visual aesthetics: easily seen hidden partially

Brief description The proposed site is a far distance from any residential area and is isolated.

Potential impact No visual impacts for anybody except the farmers is foreseen.

6.3 Natural heritage: cultural significance, archaeological objects, monuments, palaeontological objects, graves, meteorites, ruins, OTHER None

Note: Should any natural heritage resource as listed above, or as defined in the National Heritage Resource Act, No 25 of 1999 be identified, the requirements of Act 25 of 1999 shall be followed by notifying the SAHRA. **If line or access road length exceeds 300m SAHRA shall be notified.**

Potential impact None foreseen due to the small size of the proposed line and the surrounding pivot systems.

Comments/mitigating measures

The surrounding area is cultivated, there are existing pivot systems surrounding the proposed site.

7 Economic environment

7.1 Land use: crops, orchards, grazing, crop spraying, game farming, forestry areas, mining, OTHER Natural

Brief description The area does not present a specific land use. Just adjacent are agricultural crops which needs the electricity to power a single pivot.

ESKOM COPYRIGHT PROTECTED

When downloaded from the WEB, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the WEB.

Annex B
(continued)

Potential impact No significant impacts are foreseen, the proposed line is relatively short.

7.1.1 Commercial: factories shops OTHER None

Brief description No business land uses are applicable except localized crop watering
Potential impact None foreseen

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

Brief description: There is no infrastructure along the line route. There are only informal farm access roads/tracks.

Potential impact None foreseen

Comments/mitigating measures:
None

ESKOM COPYRIGHT PROTECTED

When downloaded from the WEB, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the WEB.

Annex B
(continued)

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 Management Officer or the Environmental Senior Superintendent.

Alternatives

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

Yes _____
No X

Detailed study

Is an *environmental assessment* required in terms of Regulation R543?

Yes _____
No X

Should a permit application be made to DWA?

Yes _____
No X

Should the SAHRA be notified?

Yes _____
No X Note that an environmental screening assessment was done and submitted to SAHRIS

ESKOM COPYRIGHT PROTECTED

When downloaded from the WEB, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authority and version in the WEB

Annex C - Environmental Management Plan

(Normative)

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 landowners 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 landowner. 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 unauthorised persons and vehicles entering into adjacent camps or properties.

1.5 Permission shall be obtained from landowners 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 firewood 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 landowner. Privacy shall be respected at all times.

1.9 Eskom, Eskom's contractors and their employees shall at all times be courteous towards landowners, 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 landowners, tenants, the local work force or the local community shall be avoided. Should conflict arise it shall be immediately reported to the Eskom project manager or co-ordiator.

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.

ESKOM COPYRIGHT PROTECTED

When downloaded from the WEF, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the WEF.

Annex C
(continued)

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/co-ordinator in consultation with the property owner. A record of damages and rectifying action shall be kept. The landowner'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 landowner. 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 landowner.

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 landowner, 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**).

1.22 Should any natural heritage object be found, or exposed during excavations, all work shall be terminated immediately and the finding reported to the Project Manager who shall inform the Eskom Environmental Practitioner and the SAHRA.

ESKOM COPYRIGHT PROTECTED

When downloaded from the WEB, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the WEB.

Annex C
(continued)

2 Special conditions

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

.....
.....
.....
.....

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 routs.
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 pEAuctivity. - 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	
Mud and Dust	- wetting down dry soils. - chemical control of dust. - cleaning roads to remove mud. - temporary planting of grasses.

ESKOM COPYRIGHT PROTECTED

When downloaded from the WEB, this document is uncontrolled and the responsibility rest with the user to ensure it is in line with the authorised version on the WEB.

Annex C
(continued)

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. - minimise 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.	- minimise 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 stabilisation. - mechanical erosion control. - vegetation erosion control. - recompaction of trenches. - avoid trenching parallel to the fall of a slope.

ESKOM COPYRIGHT PROTECTED

When downloaded from the WEB, this document is uncontrolled and the responsibility rests with the user to ensure that it is in line with the authorised issue in the DMS.

Annex C
(continued)

Contamination by petrochemicals.	- spill control material and procedures made readily available. - restoration methods investigated.
FAUNA & FLORA	
Loss of habitat, breeding and/or food source for terrestrial wildlife.	- environmental mapping to identify sensitive areas. - avoidance of areas containing rare/endangered species. - construction and maintenance activities to be timed where possible to avoid peak breeding periods. - the creation of "edge" (may be considered a positive impact.) - promotion of wildlife habitat through vegetation control. - avoid the filling of small wetlands. - use design with low risk to wildlife electrocution or collision - fit bird flight divertors to powerlines in bird migration areas.
Changes in composition of vegetation as a result of disturbance.	- construction timing to minimise soil disturbance. - restoration of soils to a stable condition.
Removal or burial of stream bottom habitat and increased turbidity due to sedimentation.	- minimise erosion from the right-of-way by maintaining a cover crop. - mechanical erosion control. - minimise stream bank erosion by retaining shrubby bank vegetation and selective cutting, pruning of trees near watercourses. - installation of sediment traps when necessary.
Possible loss of wildlife/fish migration/travel routes.	- avoid filling small wetlands servings as staging areas for waterfowl migration. - Installation and maintenance of a proper stream crossing device. - time construction activities to avoid disturbance to migrating fish and wildlife or during breeding. - Follow Eskom standards for the application of herbicides near watercourses. - Preserve and/or augment existing natural corridor crossings; investigate tower placement to optimise clearances to preserve existing vegetation.
IntEAuction of exotic plant species resulting from vegetative erosion control.	- use of native species for erosion control.
Vegetation stress due to nutrient loss as a result of soil deterioration.	- erosion control measures.
Changes in vegetation due to soil disturbance (topsoil-subsoil mixing).	- time construction/clearing to take advantage of stable soil conditions.

ESKOM COPYRIGHT PROTECTED

When downloaded from the WEB, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the WEB.