

## TECHNICAL NOTE

### POWER LINE MAINTENANCE: FIRE & FIRE MANAGEMENT

#### 1. Introduction

A number of stakeholders have raised concerns about the management of servitudes, fire management and fire fighting (lightning issues also raised are discussed in the next section). Additionally, there appears to be different understanding between Eskom and landowners regarding maintenance responsibilities and a lack of awareness that fighting fires under power lines is dangerous. This section looks into the different aspects in more detail and the potential environmental impacts are reviewed.

#### 2. Maintenance

Eskom undertakes ongoing research into vegetation management. International best practice is regularly reviewed and adapted where appropriate for the South African environment. Eskom Transmission has a "Transmission Vegetation Management Guideline" (ref TRMAGAAZ7, last update May 2003) that is distributed and accepted by all the Regional Line and Servitude Managers.

The definition of a servitude is given as "the right to use someone else's land for a specified purpose". In the case of an overhead power line this right includes the erection, operation and maintenance of the power line, and the right of access to carry out these activities. The servitude also allows Eskom the right to prevent or limit activities that may affect the operation of the line (eg no buildings or tall trees within the servitude). It is also relevant that the Ownership of the land in the servitude is not transferred to Eskom, but remains with the original landowner. **This implies that the landowner retains overall responsibility for the land.** This is significant in terms of the National Veld and Forest Fire Act of 1998, where it is stated that a landowner is presumed negligent if a fire starts or spreads from his/her land.

The primary objective for the establishment of the servitude is the protection of the electricity supply. However, the "Transmission Vegetation Management Guideline" clearly sets out to integrate the maintenance and operational functions of the line and servitude with the local environment, including the landowners activities. Initiatives include:

- Preparation and operation of an Environmental Management Plan (EMP) for the servitude,
- Identification of the appropriate degree of vegetation management depending on botanical content and landuse (Note: it is not automatic that all trees are cleared),
- Vegetation management for fire control. While, the maintenance emphasis is on protecting power supply, the guideline promotes integration with landowner fire management practices where possible. This would include using the servitude as a firebreak where mutually agreed. The guideline states "the landowner should at all times be consulted and be made part of the process".

The guideline promotes minimal removal of vegetation from the servitude unless it is either alien or presents a fire hazard to the line. Vegetation removal includes chemical, manual, mechanical and fire methods, though the latter is recommended only at appropriate locations and under strictly controlled conditions. It is understood that vegetation management by fire is now seldom undertaken.

Disposal of cut material is also noted to be a potential problem (including added fire risk to the line) and various disposal methods are put forward for consideration. However again, this should be done in conjunction with the landowner.

Lack of landowner liaison appears to be the main cause of the dissatisfaction raised on this project. Communication with the landowners would seem to have been very limited in the past, resulting in differing expectations including a) Eskom owns the land and therefore b) Eskom is responsible for undertaking fire break and fire fighting responsibilities as a result.

Eskom does not have veld fire fighting capabilities. The guideline makes reference to working with local Fire Fighting Associations in this respect. It would appear that Eskom should initiate such a relationship with local Farmers Associations. (*This approach should apply to all other aspects of servitude maintenance.*)

### **3. Responsibility for fires generated within the servitude**

Potential causes for fires generated by electrical infrastructure in the servitude include (lightning issues are discussed below):

- Flashovers between the conductor and vegetation (or mechanical harvesters) that grow too close.
- Falling trees
- Poor line maintenance and the pylon falls over (such a case has been reported in this study, and involved a gum-pole distribution line).

Other sources of fire originating from the servitude may include cooking fires made by the maintenance contractors or cigarette butts. However, these are normally prohibited on site.

Flashovers with the ground due to excessive heat from veld fires may also occur and apart from being a threat to the power supply, they are also particularly dangerous to fire fighters.

It is understood that in circumstances where any of the above may have occurred, Eskom will assume responsibility for damages arising. Landowners will have the right to claim for damages. However, Eskom will investigate such claims to ascertain proof of negligence. It is understood the landowner should be given a copy of the investigation report.

Concerns have also been raised by landowners regarding the dumping of cut material in the servitude as this may also constitute a fire hazard. Eskom does not have the right to remove cut material from within the servitude as this belongs to the landowner. However, Eskom should liaise with the landowner and agree on what to do with the material. It is understood that cut material should not be left in the servitude without the landowner's agreement.

**Eskom will not accept responsibility for veld fires passing underneath a line.** Eskom's vegetation management in the servitude does not consider this unless there is specific

agreement with the landowner. Therefore it is seen to be the landowner's responsibility to manage veld fire on his/her farm where there are overhead electricity lines.

Eskom will not accept responsibility for 'Acts of God' – for example pylon collapse in a hurricane.

#### **4. Eskom's early warning system**

Veld, forest and bush fires have a severe effect on the operation of power lines and the quality of supply. In recent years Eskom has acquired the use of two satellites to identify and track fires near their lines. An early warning system alerts managers to fires within 5km of power lines. The facility also has a fire weather forecasting system. It is understood this information is available to municipalities and Fire Protection Agencies/Fire Fighting Associations, and interested parties are given access to the website.

It is suggested that, as much of the study area is seen to be a high fire risk area, the early warning system information be made available to the local fire fighting units operated by the Besters and Ladysmith Farmers Association. Indeed, it is Eskom Transmission's policy, according to their 'Fire Protection Association Guideline' (TRMAGABD9, dated March 2004), that Eskom Transmission seeks to participate in the activities of local Fire Protection Associations (FPAs) where possible.

#### **5. Fire impacts arising from poor servitude management**

It can be simply stated that poor servitude vegetation management could result in high environmental impacts arising from veld fires. These environmental impacts include damage to property, crops, livestock and even injury to people. However, it is apparent that there are dual responsibilities in the maintenance of the servitude; Eskom's and the landowners.

Incidents of fire damage apparently related to power lines, and reported during this study are now the subject of separate discussions between the landowners and the relevant sections of Eskom (local offices). However, it is clear from public consultation in different parts of the country that there is often a difference in understanding of responsibilities relating to land management in and around servitudes, and that this can lead to a lack of appropriate maintenance and therefore possible fire related damages. It is recommended therefore that Eskom undertakes to liaise with landowners directly to inform them of the respective responsibilities, and to refine the EMPs accordingly.

It is believed that the level of environmental impact significance associated with this issue can be reduced to an acceptable level (low) given that fires are a natural part of the environment and landuse in this area. To achieve this, however, Eskom's relationship with landowners in the study area needs to improve, and the efforts reported by Eskom Transmission and Distribution at the time of writing are encouraging and should be continued.

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