

MIDVAAL LOCAL MUNICIPALITY

ELECTRICITY DEPARTMENT

ELECTRICITY POWER INTERRUPTIONS AND POWER OUTAGES ON OVERHEAD MEDIUM AND LOW VOLTAGE LINES

1. Power interruption Complaints

Due to the many complaints of power interruptions or power failures from urban and rural areas where bare overhead lines exist, we decided to supply some information to inform consumers how power interruptions and outages occur and what the possible causes may be.

2. Midvaal Supply Area

The Midvaal Rural areas with overhead lines consist of the following areas: Boltonwold, Rothdene, McKay Estates, Chrissiefontein, Ophir, Valley Settlements, Ohenimuri, Sicelo and Meyerton Farms. There are 22 line groups with a total length of 273 kilometres

3. Protection of Lines

Each overhead line is protected either by a circuit breaker and/or fuses. The aim of the protection equipment is to disconnect the line in the case where an over-current occurs due to a fault on the line or due to lightning as indicated below.

4. Possible faulty conditions

a) Lightning

In the summer months, lightning is the biggest cause of power failures. Although lines are protected with lightning protection equipment, it does not fully protect the line and equipment if the strike is direct on the line or very close to a line. Lightning strikes caused a number of transformer failures during the past year which needed immediate replacement. Many poles were damaged by lightning throughout the year and at one particular lightning strike eight poles had to be replaced on one line. A small number of insulators have been damaged by lightning. Damaged insulators are not easily detected and as soon as it rains or dew collects on the insulator it flashes through to earth and causes an outage.

b) Stealing of transformers

Stealing of transformers is becoming a national problem and the department regularly has to replace transformers that have been stolen. This has not only happened in the rural areas with overhead lines, but also in town. Not only do the thieves cause the line to trip, it also entails that the department has to keep the line disconnected until the transformers were replaced.

c) Stealing of cables

Stealing of cables is also becoming a serious problem. Cables, not only from the above areas, are being stolen on a regular basis. The thieves generally steal the cables between the transformer and the meter box or between two connected lines. Cables are cut off within minutes, leaving consumers without electricity and with frustration, sometimes for days.

d) Cutting of Transmission Poles

A new practice by thieves is to saw off the transmission poles that carries the transformer and then pull it over to fall on the ground. In the short period that it lays on the ground, the thieves will disconnect the transformer and steal all the copper from it.

e) Storms

Heavy windstorms are the cause of many power failures. This could be due to the conductors touching one another, which again causes a fault condition and disconnects the lines. In the past year some storms have broken poles which had to be replaced causing lengthy periods without electricity. Some storms were so heavy that they even dislodged the conductors from the insulators.

f) Trees

Trees growing into the electricity lines are a serious problem, particularly during heavy storms. Although the department regularly has trees trimmed, it will continue to be a problem, especially with some consumers that do not want the trees to be cut. The cost of cutting trees has risen over the years and for the 2010/2011 budget, an amount of R130 000.00 has been budgeted of which ± R93 000 has been used to date.

5. Personnel

The department has only 4 electricians to cover the entire area, of which only two are on standby after hours. If it happens that a storm has swept through the area and most lines are out, it is impossible to attend to all the lines at once, to the frustration of many consumers. Due to the problem of whose complaint to attend to first, the electrical staff have been instructed to attend to calls as and when they are received and not to give preference to one area above another.

Overhead lines are not the only part of the network where faults occur. It also sometimes happens that one of the standby electricians has to attend to faults in town, which leaves only one electrician to attend to a number of lines that might be off.

6. Complaints Desk

To attend to customer complaints, Council has a complaints desk that is manned 24 hours a day. During office hours and after hours people can phone the numbers indicated below, to have their complaint recorded. Phoning anyone else will not speed up a complainant's request, it might even delay the request. Some consumers either phone a Councillor, the Director: Electrical or the Electrical Superintendent hoping to get their complaint attended to before another which has followed the correct channels. Instructions to all electrical staff are to attend to all calls from the complaints desk in priority as it was reported to them.

The complaints desk numbers are:

During working hours	:	(016) 360 7486
		(016) 360 5807 or 5827
After hours	:	(016) 360 7500

7. Protection of owner Equipment

Due to the nature of the protection of the overhead lines, it could possible that the voltage on the low voltage overhead line is lower on one phase (called single phase) than on the other phase. This normally happens when a high-tension fuse blows due to a fault created by the conditions mentioned above. This condition could burn motors and could even damage other equipment in the house. To protect the equipment a voltage monitor with contactor should be installed on the main board to switch off the electricity in the case of any abnormality in the electricity supply.

8. Summary

It is important to understand what the possible causes of electricity failures are on overhead lines. As can be seen, overhead lines are more prone to environmental disturbances than underground cables.

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