

ELECTRICAL DISTRIBUTION ANALYSIS

PHASE 1

PROBLEMS, THREATS AND RISKS

1. MANUFACTURING RELAYS
2. FAULTY CABLES
3. NON FUNCTIONAL STORES
4. LABOUR SHORTAGE
5. AVAILABILITY OF VEHICLES
6. FALLING STREET LIGHT POLES
7. STREET LIGHTING
8. LACK OF SECURITY
9. WEED CROWTH
10. NEGLECTED MAINTENANCE AT SEWERAGE WORKS AND PUMPSTATIONS
11. INEFFECTIVENESS OF MECHANICAL WORKSHOP

MANUFACTURING RELAYS

1. Location:

All main incoming substations and all distribution substations.

2. People effected:

- 2.1 All consumers reliant on any particular supply circuit with malfunctioning relay.
- 2.2 Maintenance staff switching on circuit breakers with malfunctioning relay.

3. Magnitude:

All PBB relays.

4. Identification of the problems:

4.1 Causes:

- 4.1.1 Ageing, wear and tear
- 4.1.2 No replacement policy
- 4.1.3 Lack of funds
- 4.1.4 Obsolete no spares available

4.2 Trends:

General problem in all main incoming substations and distribution stations with the exception of Riebeeckstad Main Sub, Urania, CBC Main Sub and SS11 Distribution Sub.

4.3 Impact:

- 4.3.1 Hazardous for maintenance staff
- 4.3.2 Long stoppage periods. No fault identification
- 4.3.3 Dissatisfaction of consumers
- 4.3.4 Loss of income

4.4 Weakness:

- 4.4.1 Rehabilitation program not adhered to
- 4.4.2 Insufficient funds
- 4.4.3 Lack of Instrument Technician
- 4.4.4 New Technology Courses not available to staff

4.5 Resources available:

- 4.5.1 Equipment for calibration and testing
- 4.5.2 Willing staff

FAULTY CABLES

1. Location:

This problem occurs in all areas and systems in the whole of Matjhabeng.

2. People effected:

All consumers making use of any supply cable that develops a fault. This can be extensive when the cable feeds a network and no alternative supply is available.

3. Magnitude:

This problem occurs throughout Matjhabeng but especially in old reticulated areas.

4. Identification of the problems:

4.1 Causes:

- 4.1.1 Ageing of reticulating cables
- 4.1.2 Under design of system
- 4.1.3 Overloading of system
- 4.1.4 Acidity of soil
- 4.1.5 High water table
- 4.1.6 Faulty workmanship
- 4.1.7 Wrong specification of cable application

4.2 Trends:

- 4.2.1 High occurrences in winter due to overloading and after excessive rains, due to seepage into joints and cable.
- 4.2.2 Old reticulated areas.

4.3 Impact:

- 4.3.1 Loss of income
- 4.3.2 Inconvenience to consumers
- 4.3.3 Increase in crime

4.4 Weakness:

- 4.4.1 Infrastructure old
- 4.4.2 No working rehabilitation programme
- 4.4.3 Lack of capital for implementation of replacement policy on rehabilitation programme
- 4.4.4 Lack of labour for implementation
- 4.4.5 No mechanical machinery available to reduce labour intensive tasks.

4.5 Resources:

- 4.5.1 Limited labour
- 4.5.2 Qualified personnel for planning and monitoring

STREET LIGHTING

1. Location:

This problem occurs all over Matjhabeng.

2. People effected:

Residents in close proximity, pedestrians and vehicles making use of streets

3. Magnitude:

Poor visibility attributes to road accidents and high crime rate.

4. Identification of the problems:

4.1 Causes:

4.1.1 Lack of vehicles, aged to the point of scrapping. Not economical to repair

4.1.2 Street light attendants used for Revenue Protection Unit

4.1.3 Lamp component spares not readily available. Suppliers not been paid.

4.1.4 Replacement policy not in place due to funds

4.1.5 Aged lamp fitting spares non existence, to be replaced

4.2 Trends:

Fluorescent fittings have greater tendency to fail. Age and wind factor.

4.3 Impact:

4.3.1 Dangerous

4.3.2 Bad impression of Council

4.3.3 Encourages crime

4.4 Weakness:

4.4.1 Lack of capital to implement rehabilitation programme

4.4.2 Infrastructure old

4.4.3 Poor condition of vehicles and equipment

4.4.4 Insufficient skilled labour

4.4.5 Non existent Stores tender for purchase and no dedicated supplier

4.5 Resources available:

4.5.1 Limited staff and vehicles

4.5.2 Outsourcing

AVAILABILITY OF VEHICLES

1. Location:
Electrical Workshop
2. People effected:
All consumers and Electrical staff
3. Magnitude:
All electrical vehicles with the exception of two Venture Utility Vans
4. Identification of the problems:
 - 4.1 Causes:
 - 4.1.1 Age
 - 4.1.2 Spares not readily available
 - 4.1.3 Stolen and not replaced
 - 4.2 Trends:
Continuous and escalating
 - 4.3 Impact:
 - 4.3.1 No transport to and from Hostels
 - 4.3.2 Lock of crane cannot lift machinery
 - 4.3.3 Long delay when required to replace transformers
 - 4.3.4 Projecting a bad image to general public
 - 4.3.5 Loss of income due to long stoppages
 - 4.3.6 Lack of maintenance – street lighting
 - 4.4 Weakness:
 - 4.4.1 No vehicle replacement policy
 - 4.4.2 Lack of qualified staff – Mechanical Workshop
 - 4.4.3 Lack of funds outsourcing
 - 4.4.4 No new technology equipment
 - 4.4.5 No training courses offered
 - 4.5 Resources available:
 - 4.5.1 Spacial Mechanical Workshop
 - 4.5.2 Limited skilled labour
 - 4.5.3 Outsourcing

AVAILABILITY OF VEHICLES

1. Location:
This problem occurs throughout Matjhabeng
2. People effected:
General public
3. Magnitude:
Sporadic incidents have occurred
4. Identification of the problems:
 - 4.1 Causes:
 - 4.1.1 Aged reticulation system
 - 4.1.2 Excessive pavement watering
 - 4.1.3 No maintenance
 - 4.2 Trends:
 - 4.2.1 Increase in windy months
 - 4.3 Impact:
 - 4.3.1 Hazardous for public and vehicles
 - 4.3.2 Exposes electrical conductors danger to public
 - 4.4 Weakness:
 - 4.4.1 Infrastructure old and rusted
 - 4.4.2 Lack of monitoring
 - 4.4.3 Lack of capital for replacement program
 - 4.4.4 Lack of labour and vehicles
 - 4.5 Resources available:
 - 4.5.1 None

NON FUNCTIONAL STORES

1. Location:

Stores Department, Fourth Street

2. People effected:

Consumers, Suppliers and Electrical staff

3. Magnitude:

This problem is experienced by all staff purchasing or requiring spares and equipment

4. Identification of the problems:

4.1 Causes:

4.1.1 Lack of funds

4.1.2 Indolent Store staff

4.1.3 Lack of supervision

4.2 Trends:

4.2.1 Continuous and escalating

4.3 Impact:

4.3.1 Suppliers – non confidence in Council

4.3.2 Suppliers not been paid

4.3.3 Electrical staff – embarrassment by suppliers that are not willing to supply

4.3.4 Consumers unsatisfied, long stoppages

4.4 Weakness:

4.4.1 Lack of funds

4.4.2 No stock in store

4.4.3 No valid tender for purchases

4.4.4 Unmotivated staff

4.4.5 Non-existent supervision

4.5 Resources available:

4.5.1 Adequate floor space

LABOUR SHORTAGES

1. Location:
Electrical Workshop
2. People effected:
Consumers and existing staff
3. Magnitude:
Escalating by natural retirement, death and resignations
4. Identification of the problems:
 - 4.1 Causes:
 - 4.1.1 No replacements
 - 4.2 Trends:
 - 4.2.1 Escalating
 - 4.3 Impact:
 - 4.3.1 Overburdening existing staff
 - 4.3.2 Excessive time required to perform tasks
 - 4.3.3 Unsatisfied consumers
 - 4.4 Weakness:
 - 4.4.1 Frozen vacancies
 - 4.4.2 No replacement policy
 - 4.4.3 Bureaucratic red tape
 - 4.5 Resources available:
 - 4.5.1 Able Personnel Department
 - 4.5.2 Outsourcing

LACK OF SECURITY

1. Location:
All over Matjhabeng
2. People effected:
Consumers and staff
3. Magnitude:
Serious
4. Identification of the problems:
 - 4.1 Causes:
 - 4.1.1 No replacements
 - 4.2 Trends:
 - 4.2.1 Has reached crisis proportion
 - 4.3 Impact:
 - 4.3.1 Loss of valuable material, vehicles
 - 4.3.2 Damage to equipment
 - 4.3.3 Downtime and loss of income
 - 4.4 Weakness:
 - 4.4.1 Frozen vacancies
 - 4.4.2 No replacements
 - 4.4.3 Bureaucratic red tape
 - 4.5 Resources available:
 - 4.5.1 Able Personnel Department
 - 4.5.2 Outsourcing

WEED GROWTH

1. Location:
All substations with yards
2. People effected:
All residents in close proximity of substation
3. Magnitude:
All areas
4. Identification of the problems:
 - 4.1 Causes:
 - 4.1.1 Natural growth
 - 4.2 Trends:
 - 4.2.1 Greater in rainy seasons
 - 4.3 Impact:
 - 4.3.1 Rodents and pests
 - 4.3.2 Unsatisfied consumers in vicinity of substation
 - 4.4 Weakness:
 - 4.4.1 Lack of funds
 - 4.4.2 Labour shortage
 - 4.4.3 Vehicle shortage
 - 4.5 Resources available:
 - 4.5.1 Outsourcing

NEGLECTED MAINTENANCE AT SEWERAGE WORKS AND PUMPSTATIONS

1. Location:

All sewerage works and pump stations – especially Witpan

2. People effected:

All residents but especially those living adjacent or nearby and people using these pans for recreational purposes.

3. Magnitude:

Water pollution occur throughout Matjhabeng but the most serious occurrence are in the mining and industrial areas with the specific problems being sewerage – industrial and mine disposal into the pans.

4. Identification of the problems:

4.1 Causes:

- 4.1.1 Lack of personnel
- 4.1.2 Lack of funds
- 4.1.3 Theft of equipment

4.2 Trends:

This is a general tendency

4.3 Impact:

- 4.3.1 Health risk
- 4.3.2 Disturbance of a closed Eco-system
- 4.3.3 Becomes and eye sore
- 4.3.4 Can no longer be used for recreational purposes
- 4.3.5 Installations do not confirm to the Occupational Health and Safety Act any more and Council will face civil claims should any worker lost his life or become injured.

4.4 Weakness:

- 4.4.1 Lack of funds to replace and maintain infrastructure
- 4.4.2 Lack of law enforcement
- 4.4.3 Lack of alternative measures for disposal during a period of crisis
- 4.4.4 Lack of monitoring programmes
- 4.4.5 Infrastructure old and dilapidated

4.5 Resources available:

- 4.5.1 Personnel

INEFFECTIVENESS OF MECHANICAL WORKSHOP

1. Location:

Mechanical Workshop
2. People effected:
 - 2.1 All residents because service delivery is being delayed because of vehicles being in a sub-standard condition and long delays in repairs.
 - 2.2 Councillors and officials receiving unnecessary criticism.
3. Magnitude:

Service delivery is effected throughout Matjhabeng.
4. Identification of the problems:
 - 4.1 Causes:
 - 4.1.1 Workshop facilities not up to standard
 - 4.1.2 Human resources:
 - 4.1.2.1 No senior personnel left. The positions of Superintendent and Foreman has been vacant for 5 years
 - 4.1.2.2 Total staff structure is 60% under compliment for 5 years
 - 4.1.2.3 No personnel received any training for the last 10 years – Technical or Mechanical
 - 4.1.3 Vehicles compared to work to be done. Officials to do with vehicles left or available. Vehicles are in a very poor state and redundant.
 - 4.1.4 Strategic management cannot be implemented due to a lack of resources.
 - 4.1.5 The cash flow of the Council is very poor
 - 4.1.6 Red tape obstruct effectiveness
 - 4.1.7 Security of premises is basically non-existent
 - 4.2 Trends:

The position is deteriorating from day to day throughout Matjhabeng.
 - 4.3 Impact:
 - 4.3.1 All services of Council is deteriorating
 - 4.4 Weakness:
 - 4.4.1 Lack of funds
 - 4.4.2 Policy of non-appointment of personnel. The services of a Fleet Manager are urgently needed.
 - 4.4.3 Age of vehicle fleet average 16 years. (Vehicle replacement policy must be implemented)
 - 4.4.4 Lack of training
 - 4.5 Resources available:
 - 4.5.1 Building and premises
 - 4.5.2 Remaining loyal staff