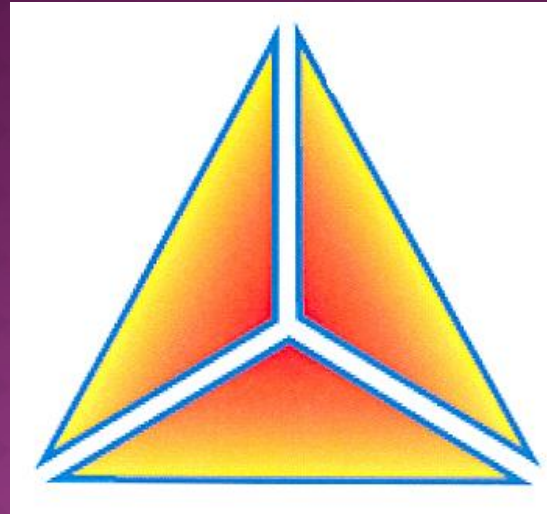


PREVENTION BETTER THAN CURE



MZEC 2011 FATAL INCIDENTS

MZEC 2011 INCIDENTS

- ❖ JBBA Incident 1-NOV-2011.
- ❖ Saih Al Ahmar Incident 12-May-2001.
- ❖ Barka Incident 10-SEP-2011.

JBBA INCIDENT

❑ Incident Detail

- ❖ Date of Incident : 1-NOV-2011
- ❖ Location : JBBA District – Saih AL-Ula.
- ❖ Actual Severity : 3 Fatalities.
- ❖ Deceased : 2 teenagers + 1 young man.

❑ Incident Description

On 1 November 2011, a severe death electrical shock accident occurred for three persons at JBBA District during rainy storm, when a boy 12 years old was walking near by HT poles which was surrounded by a pool of water, he received an electrical shock and died. Then, a teenager 16 years old (his brother) was trying to survive him, he also received electrical shock and fell down, as well as, for young man died while he tried to succor the victims.



Point Of Electrocution



Point of Electrical Leakage Current



Point Of electrical Flashover

❑ Accident Causation

✓ **Immediate Cause:**

- ❖ Electrocution by Low voltage leakage current through water pool.

✓ **Underlying cause:**

- ❖ Lack of understanding of the electrical hazards.
- ❖ Poor design of distribution networks.
- ❖ Weather condition.

MZEC CORRECTIVE ACTION PLAN

| Detail | Target Date |
|---|--------------------------|
| Convert all parts of LV overhead lines to underground cable which are connected to (11&33) kV overhead Lines, Lighting Arrester, ABS, Cables, Fuses,...etc) | April 2012 |
| Prohibit LV extensions to be connected along with (11&33) kV network for either new project or premises extensions. | Starting from 27/11/2011 |
| Earth value must be checked for all new service connection and projects before energization. | Starting from 27/11/2011 |

MZEC CORRECTIVE ACTION PLAN

| Detail | Target Date |
|--|--------------------------|
| Improve the earth resistance value for all existing network periodically. | starting from 27/11/2011 |
| Provide materials which help to improve the Earth Value. | starting from 27/11/2011 |
| Provide Earth Measuring Instrument for all concerned department. | starting from 27/11/2011 |
| Implementation of Maintenance Manual with documentation of inspections forms. | starting from 27/11/2011 |
| Study the protection of LV network from the fault that cause by Earth Leakage current. | starting from 27/11/2011 |

MZEC CORRECTIVE ACTION PLAN

| Detail | Target Date |
|--|-------------------------------|
| Update the design of ground mounted transformer and Mini feeder Pillar to be raised from the ground level to avoid the floods and pools during rain. | After approving the standards |
| Activate the Internal auditing for the distribution network. | starting from 27/11/2011 |
| Launch awareness programs for customers about electric hazards. | starting from 27/11/2011 |

ASSET VANDALISM FATAL ACCIDENT

SAIH AL AHMER INCIDENT

❑ Incident Detail

- ❖ Date of Incident : 12-MAY-2011.
- ❖ Location : Saih Al Ahmar (Bidbid) Sumail District- Saih Ahmer Pr. S/S.
- ❖ Actual Severity : Single Fatality.
- ❖ Contractor : 33 kV Maintenance and Emergency contractor.
- ❖ Deceased : An electrical helper.

□ Incident Description

One of the electrical helpers who was working with the 33 KV emergency & maintenance contractor had electrocuted by high voltage busbar.

The team was used to record 33 KV load of primary out door substations in Sumail district. After the task was completed, they decided to move for steeling (33 & 11) KV busbars tubes from Saih Al Ahmar primary substation gantry. While the helper moving down towards the ground, he failed to ensure safety clearance distance and immediately received a severe electric shock with burns, as well as, fall from height.

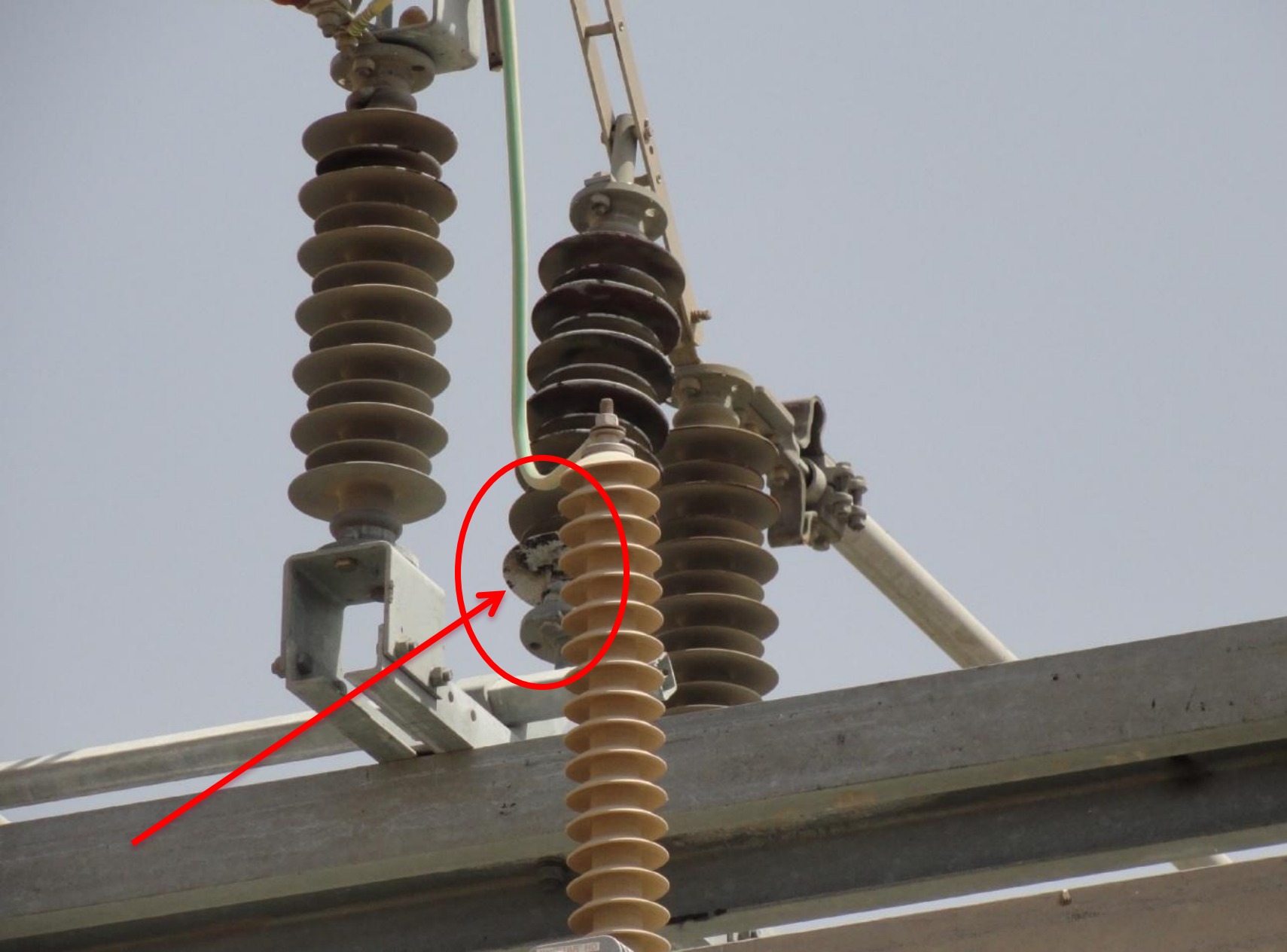
Accordingly, he died after 5 days in the hospital.



Substation Gantry



Dismantled 33 KV Busbars Tubes



Point Of Electrocution

❑ Accident Causation

✓ Immediate Cause:

- ❖ Direct contact with 33 kV Live parts.

✓ Underlying cause:

- ❖ Lack of electrical hazards understanding.
- ❖ Lack of supervision & training .
- ❖ Not wearing personal protective equipment (PPE).
- ❖ Removal of assets locks and guards.

BARKA INCIDENT

❑ Incident Detail

- ❖ Date of Incident : 10-SEP-2011.
- ❖ Location : Barka District.
- ❖ Actual Severity : Single Fatality.
- ❖ Deceased: An Omani young man.

❑ Incident Description

A severe death accident has occurred on Saturday dated on 10/09/2011 at Barka district for a young man. The underlying cause of the death is electrocution by high voltage cable. There were two men who tried to dismantle a short part from 11KV cable by using a metal hacksaw for purpose of cutting the cable.



Accident Location



Point Of Electrocution

❑ Accident causation

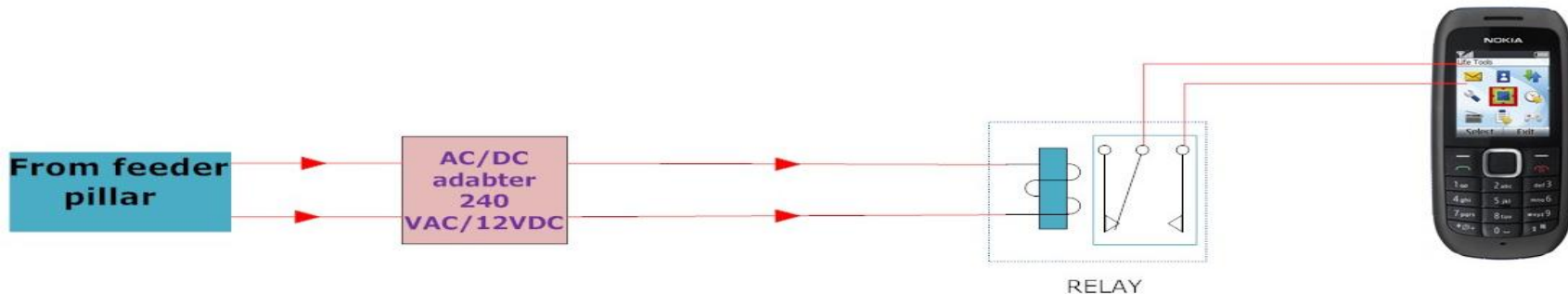
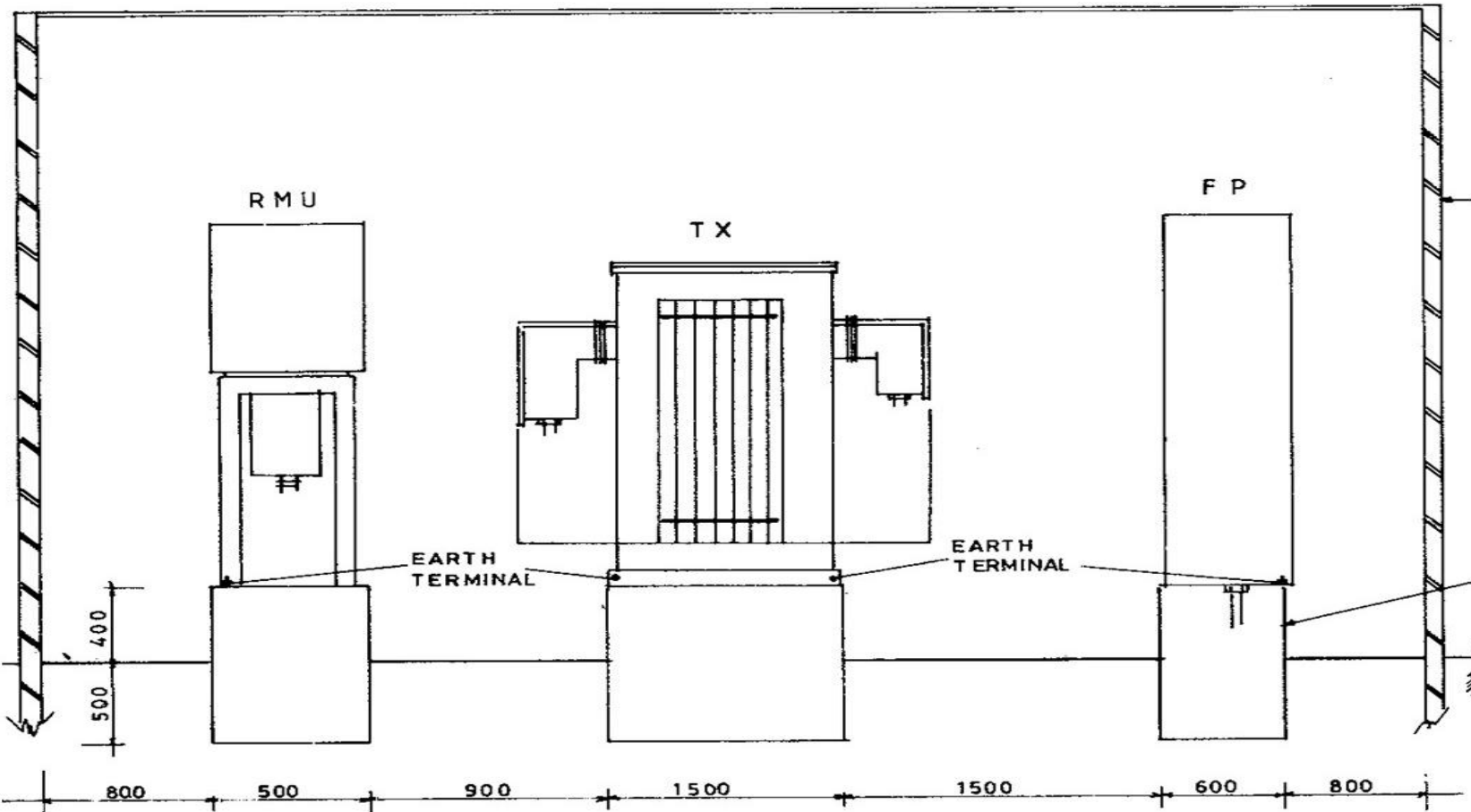
✓ Immediate Cause:

- ❖ Electrocution by high voltage (11 kV) energized cable.

✓ Underlying cause:

- ❖ Lack of understanding of electrical network connections.
- ❖ Lack of understanding of electrical Hazards.
- ❖ Using non-insulated material for cutting the cable.

MZEC ANTI-THEFT DEVICE



MZEC CORRECTIVE ACTION PLAN

| Detail | Target Date |
|--|-------------|
| Limit the admittance to primary substation for Authorized person only (contractor, MZEC, Visitor) | 2012 |
| Launch awareness programs for customers against electric asset theft consequences. | Immediately |
| Install security cameras at substations | Immediately |
| Fix security sensors at network assets | Immediately |

THANK YOU