Eskom
Rotek Industries

SCOPE OF WORKS

Maintenance on Red Emergency Analog telephony Eskom Rosherville

The below tables the requires maintenance process on the Eskom Rosherville Industries Red Emergency telephones which are running on Cisco unified IP telephone network and on the Analog telephone wired network. Maintenance work to be carried out on both Cisco Switch E1 ports , on Analogue test a patch blocks and on the analogue cable infrastructure of the compass LAN.

Monthly Maintenance interval Process (maintenance steps to be carried out on site)

1. Identifying all DB (distribution boards) and TP (termination point) internally and externally within the Rosherville farm.

2.Telelphone lines to be tested from the test and patch blocks exchange to the user to ensure there is no static and the messages relayed will be clear.

3.Ensure that all multipair indoor, outdoor, underground and Aerial horizontal tie cables are tested and positioned within The TIA industry standard.

4.Cables that are identified of where oxidation is taking place on specific spares (legs) must be removed in its entirety and replaced.

5. Inter and cross cable (jumpers) are kept at color standard (black jumper wire for strictly Red emergency telephone analogue lines)

Telephone analogue network have multiple points of failure taking into account what is the minimum voltage to transport the actual analogue signal for the user to interpret the message without destruction.

Proper jointing kits to be applied when broken ug cables are found, joins can be done straight or by the use of scotch locks...industry standard resin will be applied upon completion of testing.

Red Telephone Hardware testing

The bellow analog telephone to be tested with checklist documents completes on each section and sub-sections of the campus LAN for voice transmission continuance.

1.Red Phone handset

2.Curly cord between headset and handset

3.Cradle

4.Rj11 connector v

5. Fly lead (patch cables)

6.Wall box

7.Dialing pad

8.Speaker

9.function keys disabled

Multiple pair experience a "dead short", in this case scenario, tech will have to physically trace to identify where the short is occurring-tech will apply the industry standard to carry out repairs the cables and run multiple tests accordingly.

If disconnect module is found to be frail, it will be replaced with a 10 way krone disconnect module.

Once the techs identifies all of the above, they then ensure a clean tone from the user point all the way to the demarcation and will tag specific port on the card (PBX side)

Note that 1 repair may have multiple faults on a line, the tech will isolate each one as he goes along on the pair through the pbx

Cable installation must follow TIA for different applications (outdoor, indoor, aerial, and armored)

Technicians will identify all telephone lines in the PBX room must be grounded with a KP10 as an industry standard, clean earth will be advisable. All power Surge protectors must have a clean earth not only for the purpose grounding equipment but for the wellbeing of the actual UG copper link.

under no circumstances may we reticulate any infrastructure near or on water pipes, as water is a much better conductor of an electrical signal, the signal may gravitate towards the water thus causing a destruction on the line if found? ...this must be mended immediately

The punch down tool to be used for the correct application (krone and quanta) tagging faulty circuits on the test and patch blocks are fundamentals when exercising our tasks

Laying of new cables must follow TIA industry standard at a minimum, all db and TP boxes must remain closed with control measures of who and when they work in there.

A round check on all cable manholes on the compass to be conducted to minimize water damages on cable infrastructure.

All Surge protectors on all DB boxes to be tested for continuity and be replaced after every lifespan interval.

Clean all DB boxes by using a dust blower to avoid flapping on cable pins.

EMERGENCY RED PHONE INSTRUCTIONS on the Board above all the RED Phones

1. Pick up the handset.
2. Wait for the phone to ring.
3. Control room operator will answer.
4. State your emergency and location.
5. Put back the handset properly.

Size of the Board above the all the RED phones

300 mm x 300 mm

Red wording on white ABS board

PHONE AND CABLE SPEC

1. **Hand set Type:**

   255447-VBA-NDL – Wall mounted; colour – red

2. **Cables Type:**

   Comm: Telephone; 20 pair; 0,5 mm,PE

   RTU D20 Config 11

3. **Earth Leakage lightning protector type:**

   esptn-bx-abb-furse-ip66-telephone-line-protector-cpc-ii-8zb20n14

CCT: Analogue Card; 20A

4. **Termination block type:**

IMOXA D20C KRONE D9653

PROJECT MANAGER	**SIGNATURE**	**DATE**
Nyakallo Tema		05 FEB 2024