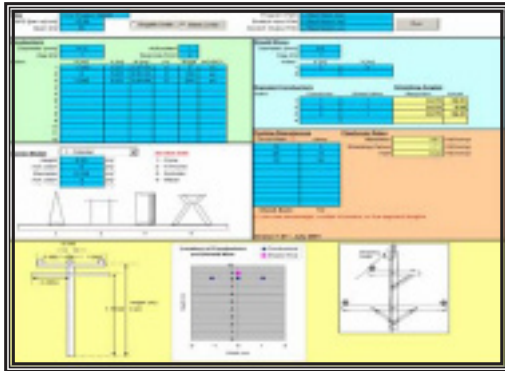


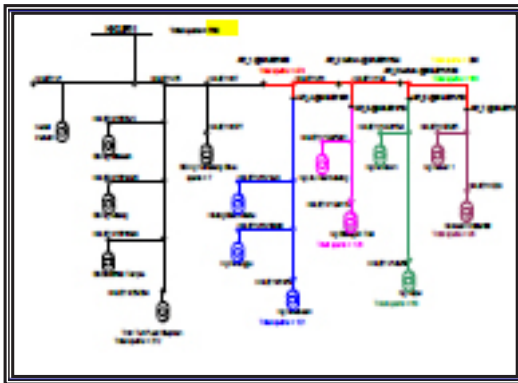


R&D Fund Project

Simulation Based Frequent Tripping Study On The 11kv SESB Network



Snap shot of the FLASH software used for Shield wire placement



Snap shot of the Autorecloser placement template based upon cost analysis

Project Overview

The 11kV tripping study project was initiated at the request of Sabah Electricity Sdn Bhd (SESB). This is because the SESB 11kV overhead network tripping statistics are considered to be excessive. These tripping form a great proportion of the SAIDI for the SESB Network at 70% of the 2134 minutes in 2004. The 11kV network is also contributing to 70% of the

number of outages. A research team consisting of UNITEN and TNBR personnel was sent to SESB to study three critical 11kV lines from each region of Kota Kinabalu, Sandakan and Tawau. Based upon the LGB net information on these lines, it can be seen that the most frequent cause of tripping for the 11kV network would be transient (Ubahtika) and vegetation.

Deliverables

- Vegetation Profiling Template
- Lightning performance template taking into account vegetation as a shielding factor
 - o FLASH (shield wire placement study)
 - o Direct and Induced Voltage Flashover
- Autoreclosures Placement Template based upon optimisation of economic cost to electricity cost consumers

Benefits

- Increased knowledge and experience in terms of overhead line tripping occurrences for the SESB network.
- An understanding on lightning simulation and its relation to vegetation management and placement of shield wires.
- Understanding on the impact of Autoreclosures (AR) and its placement towards the performance of the distribution network.
- Training sessions were conducted to SESB personnel on the findings and also templates produced out of this research.
- The SAIDI figures were reduced due to onset of vegetation management. It is expected to be reduced even further once AR is installed in these lines.