

Proposed Fault Detection Scheme on Low Voltage Distribution Feeders

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Abstract : The complex and radial structure of the low voltage distribution network (415V) makes it vulnerable to faults which are due to system and the environmental related factors. Besides these, the protective scheme employed on the low voltage network which is the fuse cannot be monitored remotely such that in the event of sustained fault, the utility will have to rely solely on the complaint brought by customers for loss of supply and this tends to increase the length of outages. A microcontroller based fault detection scheme is hereby developed to detect low voltage and high voltage fault conditions which are common faults on this network. Voltages below 198V and above 242V on the distribution feeders are classified and detected as low voltage and high voltages respectively. Results shows that the developed scheme produced a good response time in the detection of these faults.

Keywords : fault detection, low voltage distribution feeders, outage times, sustained faults

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