

Abstract

Ten years ago numerical relays started to replace electromagnetic and static relays in Bule Nile grid . That was a revolution in protective equipment in oldest grid in sudan .The purpose of this research is documentation the development of distance protection relays in Bule Nile grid which used electromagnetic YTG31 in phase one and static Quadramho in second phase and numerical Micom P442 in phase three for benefit of new engineers and researchers. The research review and focuses in distant protection on power transmission lines between Kilo-x and Rosires.

The research shows the relays setting calculations and advantages of numerical protection relays over electromagnetic and static in distant protection.