

Smart Monitoring and Control of Tap Changer Using Intelligent Electronic Device

Authors : K. N. Dinesh Babu, M. V. Gopalan, G. R. Manjunatha, R. Ramaprabha, V. Rajini

Abstract : In this paper, monitoring and control of tap changer mechanism of a transformer implementation in an intelligent electronic device (IED) is discussed. Its been a custom for decades to provide a separate panel for on load tap changer control for monitoring the tap position. However this facility cannot either record or transfer the information to remote control centers. As there is a technology shift towards the smart grid protection and control standards, the need for implementing remote control and monitoring has necessitated the implementation of this feature in numerical relays. This paper deals with the programming, settings and logic implementation which is applicable to both IEC 61850 compatible and non-compatible IEDs thereby eliminating the need for separate tap changer control equipment. The monitoring mechanism has been implemented in a 28MVA, 110 /6.9kV transformer with 16 tap position with GE make T60 IED at Ultratech cement limited Gulbarga, Karnataka and is in successful service.

Keywords : transformer protection, tap changer control, tap position monitoring, on load tap changer, intelligent electronic device (IED)

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