

Discrimination Between Inrush Current from Interturn Fault Current in Transformers based on the Non-Saturation Zone

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Abstract: *When we give a supply to a transformer, the occurrence of magnetizing inrush current occurs. The magnitude of inrush current as high as ten times or more times of rated current which may lead to malfunction of the differential relay causing the problem of unnecessary disconnection of the transformer from the supply mains. So, for safe running of a transformer, it is necessary to discriminate inrush current from fault current in order to avoid malfunction of the differential relay and for the proper operation of the transformer. The second harmonic restraint relay is used usually but as size of power system network is becoming so huge & more and more convoluted and some drawbacks of usual system are slowly recognized. So, to shield the evolving power system and its important components like a transformer, we need fast-stable & dependable protection system. Current transformer saturation and large inrush current are the most notified cause of the discrimination algorithms malfunction. This paper deal with structured way to discriminate internal faults from switching conditions in the power transformers which can solve these problems Therefore, the ongoing research is now concentrated on evolving new algorithms for proper discrimination between inrush current and internal fault current which increases the efficiency in Electrical Power system.*

Keywords: Transformer, Internal Fault, Inrush Current, Differential Protection, etc.

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