

Analyzing Current Transformers Saturation Characteristics for Different Connected Burden Using LabVIEW Data Acquisition Tool

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Abstract : Current transformers are an integral part of power system because it provides a proportional safe amount of current for protection and measurement applications. However when the power system experiences an abnormal situation leading to huge current flow, then this huge current is proportionally injected to the protection and metering circuit. Since the protection and metering equipment's are designed to withstand only certain amount of current with respect to time, these high currents pose a risk to man and equipment. Therefore during such instances, the CT saturation characteristics have a huge influence on the safety of both man and equipment and also on the reliability of the protection and metering system. This paper shows the effect of burden on the Accuracy Limiting factor/ Instrument security factor of current transformers and also the change in saturation characteristics of the CT's. The response of the CT to varying levels of overcurrent at different connected burden will be captured using the data acquisition software LabVIEW. Analysis is done on the real time data gathered using LabVIEW. Variation of current transformer saturation characteristics with changes in burden will be discussed.

Keywords : accuracy limiting factor, burden, current transformer, instrument security factor, saturation characteristics

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