

Improvement on Power Transformer Protection using MATLAB Simulink and Fuzzy Logic

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Abstract –Harmonics are a topic of growing interest due to the many and varied effects they cause in electrical distribution networks especially in power transformer. Harmonics also cause imbalance between power generation and load to be served, interference with measurement, protection, control and which further generate magnetising transient current (sometime known as inrush current) in power transfer equipment like power transformer. Since there are many protection methods used for the transformer against inrush current now a days. But In this paper, a brand new algorithmic rule supported fuzzy set is proposed. This algorithmic rule consists of considering the magnitude relation and therefore the distinction phase angle of the second harmonic to the basic element of differential currents beneath varied conditions. These 2 protection functions are computed and therefore the protecting system operates in less than one cycle subjected to the prevalence of disturbance. A brand new relaying algorithmic rule is employed to reinforce the fault detection sensitivities of typical techniques by employing a formal logic approach.

Keywords –electrical power systems; fuzzy logic; harmonics; inrush currents.