

عنوان مقاله:

Inrush Current Reduction by a Point-on-wave Energization Strategy and Sequential Phase Shifting in Three-Phase Transformer

محل انتشار:

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خلاصه مقاله:

The main goal of this work is the mitigation of inrush current in a three-phase transformer. This inrush current appears when energizing a no-load or lightly loaded transformer. It can reach very high values and can cause failures in the electrical system. The control strategy is achieved by considering the value of the residual flux when the transformer is de-energized as well as by respecting the phase shifting between the three phases. To measure the inrush current, an experimental configuration with a data acquisition system using dSPACE ۱۱۰۴ card was developed and is presented in this paper. A technique to control the circuit breaker for energizing a ۲ kVA three-phase transformer without the appearance of inrush current was also tested and applied in the experimental setup. The specific contribution of this work is that this technique is applied in the measurements with a thorough investigation of the residual flux. The proposed technique achieved complete elimination of the inrush current.

کلمات کلیدی:

Sequential energization, control switching, three-phase Transformer, Inrush Current, dSPACE

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