LOW IMPEDANCE

RESTRICTED EARTH FAULT ALGORITHMS

IN NUMERICAL RELAYS

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ABSTRACT

Low impedance restricted earth fault protection is one of the protection function to protect the transformer winding with earthed neutral point. The purpose of this study is to investigate low impedance restricted earth fault algorithm in numerical relays. Five restricted earth fault numerical algorithms from **ABB**, **AREVA T&D**, **SIEMENS**, **SCHNEIDER ELECTRIC** and **GENERAL ELECTRIC** are employed for restricted earth fault algorithms assessment.

This dissertation is to find out advantages and disadvantages of selected algorithms. Moreover, this dissertation is to compare each algorithm with the other algorithms. Also, magnetizing inrush current, over excitation and CT saturation impression on restricted earth fault operation is presented. After the algorithms assessment, two of them (Siemens and General Electric) are selected for simulation (MATLAB SIMULINK). These algorithms are compared and advantages and disadvantages of them are presented.

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