

## عنوان مقاله:

High Impedance Restricted Earth Fault Protection: Fundamental Concepts, Design and Performance

## محل انتشار:

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## خلاصه مقاله:

Power transformers are a critical and expensive component of the power system. The comprehensive transformer protection provided by combination of protection elements, with biased differential protection. Differential protection has excellent operation in most fault cases, but in the situations that a single phase to ground fault occurs near the neutral point in solidly grounded transformers, the faulted phase current increases slightly and causes differential protection not to detect the fault. For this reason, restricted earth fault (REF) relay can be used as a complementary of differential protection. REF protection uses the sufficient current that flows in this condition through the neutral conductor, for relay operation under phase to ground fault. The REF protection scheme is composed of two parts: a high impedance REF unit and a low impedance REF unit. The high impedance REF relay is defined as a relay circuit whose voltage setting is not less than its calculated maximum terminal voltage which corresponds to the maximum through fault current under transient condition. This REF protection scheme provides a high speed and absolutely stable means of protection when ground fault occurs near the windings neutral point in a solidly grounded transformer. This paper summarizes the operating principle of a high impedance protection unit, its relay sensitivity, related CT requirements, importance of a reliable protection, and the necessary setting consideration to be incorporated besides a transformer differential relay

## کلمات کلیدی:

Transformer Differential Protection, Restricted Earth Fault, REF, High Impedance Fault

## لینک ثابت مقاله در پایگاه سیویلیکا:

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