

852 – Differential system malfunction

Authors: Mohammed Balhaddad (SABIC-AN), Islam Ahmed (SABIC-AN), AbdulElah Maoloud (SABIC-AN)

Abstract: Differential protection is one of the most popular applications used for protection. Differential protection works on the theory of Kirchhoff's current law, where the magnitude of the current flowing into the line should be equal to the current flowing out of the line.

For differential protection, the zone of protection is defined by the location of current transformers (CTs) monitoring the currents on either end of the protected equipment. It is crucial for the protective relays on both ends to communicate with each other when a fault condition is established and issue a trip signal for the in-zone fault. The configuration of the protective relays is very important to ensure in-zone protection which can be only detected by stability test.

In this Paper, we will present study case where to show the importance of the proper configuration for the polarity of the protective relays and the developed method for stability test for all the protected equipments (Line, Transformer and neutral) while the upstream supply available without impacting the the other loads.