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INVESTIGATION OF IMPEDANCE - DIFFERENTIAL PROTECTIVE ALGORITHM FOR EXTERNAL FAULTS WITH CT SATURATION

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Authors

J. Herlender, K. Solak, J. Izhykowski

Wroclaw University of Science and Technology,
27 Wybrzezhe Wyspianskiego st., 50-370 Wroclaw, Poland,
e-mail: justyna.herlender@pwr.edu.pl

Abstract

In this paper, the analysis of impedance - differential protective algorithm dedicated for transmission line protection relay is presented. Measurements of current and voltage at both line ends enable to formulate a differential impedance which constitutes efficient criterion for protection purposes. Special attention is focused on algorithm operation in case of external faults appearance, which have to be distinguished properly due to security reasons in both situations - without and with CTs saturation. The sensitivity and the reliability of the presented protection algorithm were evaluated based on simulation carried out in ATP-EMTP simulation program. References 9, figures 3, table 1.

Key words: differential protection, transmission line, CT saturation, ATP-EMTP, simulation.

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