

Realistic Testing Procedure of Power Swing Blocking Function in Distance Relay

Authors : Farzad Razavi, Behrooz Taheri, Mohammad Parpaei, Mehdi Mohammadi Ghalesefidi, Siamak Zarei

Abstract : As one of the major problems in protecting large-dimension power systems, power swing and its effect on distance have caused a lot of damages to energy transfer systems in many parts of the world. Therefore, power swing has gained attentions of many researchers, which has led to invention of different methods for power swing detection. Power swing detection algorithm is highly important in distance relay, but protection relays should have general requirements such as correct fault detection, response rate, and minimization of disturbances in a power system. To ensure meeting the requirements, protection relays need different tests during development, setup, maintenance, configuration, and troubleshooting steps. This paper covers power swing scheme of the modern numerical relay protection, 7sa522 to address the effect of the different fault types on the function of the power swing blocking. In this study, it was shown that the different fault types during power swing cause different time for unblocking distance relay.

Keywords : power swing, distance relay, power system protection, relay test, transient in power system

Conference Title : ICEE 2018 : International Conference on Electrical Engineering

Conference Location : Montreal, Canada

Conference Dates : May 24-25, 2018