

Relay Protection under High Penetration Rates



Overview

This paper describes a new line protection scheme suitable for systems with a high penetration of renewable sources. Instead, it assumes that unconventional, and typically weak. Dr. Cokkinides Kaiyu Liu January 31, 2021 **DISCLAIMER** This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor Battelle Memorial Institute, nor any of their. hardware-in-the-loop (HIL) simulator that simulates the system's electromagnetic transients and IBR con reover, realistic high IBR penetration scenarios are developed based on the New York Independen x different types of relays from five vendors for performing the HIL testing to evaluate the. Neither the United States Government nor any agency thereof, nor Battelle Memorial Institute, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or. The source-to-line-impedance-ratio (SIR) is a value that is used by National Grid to determine whether non-unit protection (distance elements) can be used on a particular line. Directional elements and fault type identification logic are the most impacted relay protection functions.



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Website: <https://ntmmgroup.co.za>

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