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HIGH SPEED PROTECTION FOR SERIES COMPENSATED PARALLEL LINE

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This paper describes a novel idea for fast protection of parallel series-compensated transmission lines operating in various configurations. It is based on the logic diagram of flag signals, which are determined using only one-end phase currents measurements. The developed method has been tested and evaluated using signals obtained from computer simulations. The detailed models of considered transmission line including the SC&MOV banks as well as the measurement channels have been developed. Using these models, the reliable data for fault on a double-circuit series-compensated transmission line, as well as for faults outside the line, have been generated under variety of fault scenarios. The sample test-case results of algorithm operation, as well as statistical evaluation are presented and discussed. References 10, figures 5, table 1.

Key words: distance line protection, series compensation, fast line protection, double-circuit line, fault detection.

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