Impact of overcurrent protection coordination on the location of the distributed generation sources

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Abstract.
In presence of the Distributed Generation (DG) brought new challenges to the protection engineers since novel coordination scheme is no longer appropriate with the penetration of the DG. The extreme case is violation to the primary and backup relay selectivity constraint. This violation will have resulted to the degradation of the relay performance. Therefore, this paper proposes the best location of the DG penetration to decrease the effect of the DG presentation to the relay performance using the grey wolf optimization (GWO) algorithm. The impacts of the DG prior to the location of the insertion are implemented to the radial 7 bus test system. As a consequence, the best location of the DG penetration is then identified.

Keywords: Grey wolf optimization, distributed generation, protection coordination.