

Impact of Very Small Power Producers (VSPP) on Control and Protection System in Distribution Networks

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Abstract : Due to incentive policies to promote renewable energy and energy efficiency, high penetration levels of very small power producers (VSPP) located in distribution networks have imposed technical barriers and established new requirements for protection and control of the networks. Although VSPPs have economic and environmental benefit, they may introduce negative effects and cause several challenges on the issue of protection and control system. This paper presents comprehensive studies of possible impacts on control and protection systems based on real distribution systems located in a metropolitan area. A number of scenarios were examined primarily focusing on state of islanding, and un-disconnected VSPP during faults. It is shown that without proper measures to address the issues, the system would be unable to maintain its integrity of electricity power supply for disturbance incidents.

Keywords : control and protection systems, distributed generation, renewable energy, very small power producers

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