

Voltage Profile Enhancement in the Unbalanced Distribution Systems during Fault Conditions

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Abstract : Electric power systems are daily exposed to service interruption mainly due to faults and human accidental interference. Short circuit currents are responsible for several types of disturbances in power systems. The fault currents are high and the voltages are reduced at the time of fault. This paper presents two suitable methods, consideration of fault resistance and Distributed Generator are implemented and analyzed for the enhancement of voltage profile during fault conditions. Fault resistance is a critical parameter of electric power systems operation due to its stochastic nature. If not considered, this parameter may interfere in fault analysis studies and protection scheme efficiency. The effect of Distributed Generator is also considered. The proposed methods are tested on the IEEE 37 bus test systems and the results are compared.

Keywords : distributed generation, electrical distribution systems, fault resistance

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