

عنوان مقاله:

Impact of PV, WT, GTG, and ESS on the Reliability of Distribution System

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خلاصه مقاله:

The addition of renewable energy sources to the traditional distribution network has transformed the centralized unidirectional power source into two-way and multiple power source system. This will improve overall system's reliability and also reduces the down time that are associated within the radial distribution system. This paper investigates the impact of distributed energy sources like PV, Wind, Electric Storage, and Gas Turbine Generator on the reliability of distribution system. The Monte Carlo simulation method is used to test bus- γ of IEEE RBTS distribution network. The distribution network has been customized to incorporate the WT, PV, ESS, and GTG distributed generation. The WT and PV stochastic models were employed to replicate the unpredictability of these sources since speed of wind and solar radiation are both unpredictable. This work shows that the integration of distributed generation enhances the distribution system's reliability.

کلمات کلیدی:

Reliability assessment, distributed generation, Customer interruption cost, Energy storage

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