

عنوان مقاله:

Energy Optimization using a Self-Healing Method based on Multi-SOP Coordination in Active Distribution Networks

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خلاصه مقاله:

The main task of a network-connected SOP is to improve power quality in an active distribution network. In the references, two control modes are created for SOP operation using back-to-back voltage source converters. Using these two modes depends on the distribution network conditions in which the SOP is located. The independent control of real and reactive power provides power control at first mode. The second mode is source restoration which with a voltage controller makes it possible to feed isolated loads due to network faults. In this research, an optimal method is presented based on the several SOPs' performance for active distribution networks and with the help of it, it is presented using self-healing capability based on energy optimization that is presented. Compared to conventional switches, the coordination of multiple SOPs is capable of providing voltage support and effectively raising the source restoration range so as to enhance the load restoration level. Surveys and simulations in the standard IEEE ۳۳-bus network in various scenarios show that if network reconfiguration are used with SOPs, loads in the power outage area are completely restored, which effectively improves the flexibility of distribution networks.

کلمات کلیدی:

Energy optimization, Self-healing, Multi-Sop Coordination, Active distribution

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