

A hierarchical scheduling framework for resilience enhancement of decentralized renewable-based microgrids considering proactive actions and mobile units

S.A. Mansouri; E. Nematbakhsh; A. Ahmarinejad; A.R. Jordehi; M.S. Javadi; M. Marzband

Abstract-

Nowadays, decentralized network outages. Therefore, this paper presents a hierarchical model consisting of three stages to enhance the resilience of DC-MGs. In all stages, the network outage management is performed considering the reported data of MGs. In the first stage, proactive actions are performed with the aim of increasing the network readiness against the upcoming windstorm. In the second stage, generation scheduling, allocation of mobile units and distribution feeder reconfiguration (DFR) are operated by DSO to minimize operating costs. In the final stage, the repair crew is allocated to minimize the energy not served (ENS). Uncertainties of load demand, wind speed and solar radiation are considered, and the effectiveness of the proposed model is investigated by integrating to the 118-bus;

Index Terms- Decentralized microgrids; Renewable energy sources; Resilience enhancement; Distribution feeder reconfiguration; Mobile emergency units.

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