

Optimal Scheduling of Microgrid Distributed Energy Resources Considering Security and Islanding Constraints

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Abstract Since one of the most important island-based micro-grid approaches, planning for intentional or unintentional island operations should also be done. To do this, considering the uncertainty of the renewable resources of the production system, it can be considered in production planning to ensure greater network load and cost reduction along with network constraints and optimal load discharging. Therefore, in the absence of the above, the microchips There are many critical loads in them, they may not be able to respond to all customer demand. Therefore, an analytical algorithm is used to solve the problem of production scheduling in the grid, which includes distributed and renewable non-renewable resources, with the participation of the demand-side hourly response loads in the mode of intentional island operation and the state of connection to the upstream global network with respect to the uncertainties Assumed utilization in accordance with the conditions of the market for electricity and substation energy services. Of course, with the assumption that all dispersed energy sources, including diesel generators, renewable sources and energy storage, are owned by the main controller of the grid, while in the electricity market structure examined in this project, the grid storage of the grid in the mode of network operation The network is upstream and in intense island mode through the sources of the synchronous diesel generator available on the network. The uncertainties of using the micro-grid are compulsory exit the dispersed generation of wind turbines and photovoltaic turbines. Finally, the technical and economic results obtained the implementation of case studies show that the proposed analytical model can accurately program optimal micro-network under different conditions of energy market and reservation.

Keywords : Island performance,Optimal planning

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