Stable operation of DC microgrid

Therefore, several efforts have been made in the research community to further explore efficient control techniques for a reliable and stable DC microgrid.

This study investigates the voltage behavior and other critical parameters within a direct current (DC) microgrid to enhance system efficiency, stability, and reliability.

Abstract Direct current microgrids are widely regarded as a promising clean power system technique. However, the microgrid stability is challenged by routine operations and unplanned faults, especially ...

In turn, various practical tuning strategies are introduced to provide stable operations while facilitating near-optimal proportional current sharing. The effectiveness of the proposed control ...

This paper examines a secondary control strategy aimed at ensuring accurate power sharing and voltage restoration within an islanded DC microgrid supplying a constant power load.

To reduce this burden and conversion losses, a distributed generation-based DC microgrid system is favorable due to its flexibility and reliability. However, traditional control ...

Abstract: DC standalone microgrids are emerging as an effective solution for integrating renewable energy sources (RESs) and accommodating the widespread use of DC loads and energy ...

Methods: To address these issues, this paper proposes a comprehensive power coordinated control strategy for electrically-hydrogen coupled DC microgrids. First, a fuzzy logic algorithm is developed ...

To address the stochastic stability problem of DC microgrids caused by internal parameters or external stochastic perturbations, this study proposes a stochastic stability analysis ...

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