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Abstract Format

Research on Operation Control Strategies of DC Micro-grid

Yangdong Zhao¹, Jingtao Zhao² and Qianshuang Wang³

² Manager, System Integration Department I, NARI Technology Development Co.,Ltd., Power Distribution & Rural Electrification Branch Company, Nanjing, P R China

³ Engineer, System Integration Department I, NARI Technology Development Co.,Ltd., Power Distribution & Rural Electrification Branch Company, Nanjing, P R China

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Abstract

This paper analyzes the network architecture, component and control principle of DC micro-grid, and gives a design example of DC micro-grid. According to the characteristics of DC micro-grid parallel operation and off-grid operation, and based on the theory of instantaneous power balance, this paper proposes the constant voltage control strategies of bidirectional AC-DC converter and bidirectional DC-DC converter in parallel operation and off-grid operation modes respectively. The simulation and experimental results verify the rightness and feasibility of the built DC micro-grid and the proposed control strategies, and realize the stable operation of parallel operation, off-grid operation and the switches between them.