Effective Microgrid Synchronization in Islanded Mode: Controlled Input/output PI-Fuzzy-PI Algorithm

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Abstract

This paper describes a feasible operation of micro grid. The micro grid is the combination of multiple distributed generators to solve global warming problems by reducing carbon dioxide emission in the electricity generation field, which has led to increasing interest in micro grids (MGs), particularly those containing renewable sources such as solar and wind generation, which are widely used in actual practice due to easy availability of renewable sources of energy. A Microgrid model, simulated on Matlab/Simulink software, is analyzed. Due to wide use of these in isolated micro grids. This paper describes the new method of micro grid controlling strategy introduced using Fuzzy-PI controller Algorithm. Using this technique the Islanded micro grid overcomes fluctuation problems. The controller aims to optimize the better operation of micro grid central controller during the Islanded mode i.e. maximize the performance of micro grid. The developed operational algorithms are applied to the micro grid similarly the controller increases the performance of active power, variable frequency, phase angle, better synchronization. The practical results are provided to validate the control scheme using PI-fuzzy-PI controller algorithm.

References


**Index Terms**

Computer Science

Electronics

**Keywords**

BESS  DG  Micro grid  MCC  IED/STS  EPS