عنوان مقاله:

SOFC Power plant Effect with MPC Control on Stability of Micro grid

محل انتشار:

هفتمین کنفرانس بین المللی پژوهش های کاربردی در علوم و مهندسی (سال: 1402)

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خلاصه مقاله:

Distributed generation plays an important role in energy demand and supply. Existing power generation systems, which are used in distributed generation, are gas turbines, photovoltaic systems, fuel cells, wind energy systems, etc. In this article, SOFC fuel cells and their operating principles are examined. Because the output voltage provided by fuel cells is relatively low, the increasing development of power electronic converters technology has caused them to be used as an output voltage booster in fuel cell systems. AC to DC converter is required to connect the DC link to the power grid. Therefore, in this paper, the inverter for this purpose is utilized. Power control and reducing inverter and converter distortion are critical topics that have been studied. For this purpose, MPC (model predictive control) for system control has been used in this study. Also in this paper, a set of gas turbines are connected to microgrids is investigated. In the event of a fault in the off-grid mode, a set of fuel cell generators replaces the gas power plant. It can be seen that the fuel cell power plant controlled by the MPC control system affects the stability of the whole .system

کلمات کلیدی:

.mpc, micro grid stability, renewable energy, fuel cell