Abstract

This paper presents the Load frequency control (LFC) of a multi-source power system with Redox flow batteries (RFB). The power system comprises non-reheat thermal, hydro and gas generating units. RFB is integrated to the LFC system to improve the dynamic responses. The proportional plus integral (PI) controller is designed using the PSO technique. Dynamic responses are obtained by giving 1% step load perturbation (SLP) in the area. Further, to show the robustness of the controller, the dynamic responses are obtained by varying the SLP from 1% to 3%. Dynamic responses obtained in all the cases, satisfy the LFC requirements. PSO technique gives good convergence characteristics and promising computational results.

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Index Terms
Keywords
Controller  Particle swarm Optimization  Load Frequency Control