

عنوان مقاله:

Optimal Placement and Tuning of SVC, TCSC Controller and PID Stabilizers in Multi Machine Using Multi Objective IABC

محل انتشار:

بیست و هشتمین کنفرانس بین المللی برق (سال: 1392)

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خلاصه مقاله:

This study aims to simultaneous select the optimal location and tuning parameters of Static Var Compensator (SVC), Proportional-Integral-Derivative (PID) stabilizer with low pass filter and Thyristor Controlled Series Compensator (TCSC) controllers using multi objective Interactive Artificial Bee Colony (IABC) to damp small signal oscillations in a multi machine power system. Though classical controller associated with generators are obligatory necessities for damping of oscillations in the multi machine power system, its efficiency still gets affected by changes in network models, load deviations, etc. For this reason, installations of Flexible AC Transmission (FACT) devices have been introduced in this study to achieve noticeable damping of small signal oscillations. Nevertheless, the performance of FACT devices highly depends upon its parameters and suitable position in the power network. In this study the multi objective IABC is used to consider this problem in order to improve the low frequency oscillation. To demonstrate the validity of the proposed scheme, simulations are carried out in 16-machine 68-bus as a large scale power system. The results of simulation have been represented employing eigenvalue as well as time domain response. It has been seen that the coordinated design is more effective than the uncoordinated of TCSC or SVC POD controller or PID stabilizers even during higher loading in mitigating the small signal stability problem

کلمات کلیدی:

Multi objective, IABC, FACTs devices, PID, Small signal stability

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