

Article Abstract

Title:	A price based automatic generation control using unscheduled interchange price signals in Indian electricity system
Author(s):	Saurabh Chanana*, Ashwani Kumar
Address(es):	Department of Electrical Engineering, National Institute of Technology Kurukshetra, INDIA *Corresponding Author: e-mail: saurabh@nitkkr.ac.in, Tel +91-1744-233401, Fax.+91-1744-238050
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Abstract:	The Availability Based Tariff (ABT) mechanism has been introduced in Indian system mainly to ensure grid security and to deal with grid indiscipline prevailing in the system prior to its introduction. Unscheduled Interchange (UI) charge - one of the components of ABT, acts a mechanism for regulating the grid frequency. At the same time, this mechanism offers opportunity to participants to exchange as and when available surplus energy at a price determined by prevailing frequency conditions. Although the underlying principle on which UI mechanism of ABT operates is quite different from the conventional load frequency control mechanism, it can still be viewed as a price based secondary generation control mechanism. Presently, the generators are responding to price signals manually. In this paper, a model for price based automatic generation control is presented. A modified control scheme is proposed which will prevent unintended unscheduled interchanges among the participants. The proposed scheme is verified by simulating it on a model of isolated area system having four generators. It has been shown here that such control mechanism, if adopted by all generating stations, can improve the control of frequency and bring down the UI obligation of participants.
Keywords:	Availability based tariff, generation control error, price based automatic generation control, unscheduled interchange price.

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