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SIMULATION OF THE NORMAL AND EMERGENCY OPERATION OF INTERCONNECTED POWER SYSTEM OF UKRAINE FOR FREQUENCY STABILITY STUDY

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Authors

O.V. Kyrylenko¹, V.V. Pavlovsky¹, A.O. Steliuk¹, O.V. Lenga¹, M.V. Vyshnevskiy²

¹ – Institute of Electrodynamics National Academy of Sciences of Ukraine,
pr. Peremohy, 56, Kyiv, 03057, Ukraine,
e-mail: astelyuk@gmail.com

² – National power company “Ukrenergo”,
S. Petliury str., 25, Kyiv, 01032, Ukraine

Abstract

Integration of interconnected power system (IPS) of Ukraine to the European Network Transmission System Operators for Electricity (ENTSO-E) requires an improvement of Ukrainian frequency automatic emergency control and harmonization with load-frequency control according to requirements of ENTSO-E. In order to investigate processes of frequency and active power control, it is necessary to develop the detailed simulation model including models of automatic under frequency load shedding (UFLS) relays, special protection automatics (SPA) of the nuclear power plants, automatic generation control (AGC) as well as

750-220 kV transmission networks of IPS of Ukraine. The frequency stability phenomena have been studied by time domain simulation using the detailed model realized in DlgSILENT PowerFactory software. The simulation results for different disturbances are presented. References 12, figures 5.

Key words: frequency stability, automatic under frequency load shedding, special protection automatics, power flow, primary and secondary control, automatic generation control, interconnected power system.

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