

# ESTIMATION OF STEADY-STATE STABILITY LIMIT OF THE ELECTRIC POWER SYSTEM CURRENT REGIME TO IMPROVE RELIABILITY OF POWER SUPPLY

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The task of providing reliable power supply for food industry must be specified according to the production purposes and fulfill the need to ensure stable power enterprises themselves, the reliability of power along with the economic efficiency and electricity quality, which is a major feature of electric power systems (EPS) operation, and sustainability that is one of the most important requirements in EPS operation.

The research resulted in the technique of monitoring the current limit of static stability in the EPS cross section based on the regime criterion of using synchronized measurements voltage phase in electrical network remote sites with visual weighting trajectory. The use of synchronized phase voltage angles, with the application of the proposed method, improves the accuracy of determining the value of the operational, and reserves steady-state stability power system in Ukraine, because the definition of the stability limit holds for the scheme-specific regime situation at the time (on the network topology, load and cover). Power in the cross section is a function, optimally selects mutual angles voltage vectors with high accuracy approximating this dependence, resulting in path weighting, and indicates the largest flow angles within a ten-minute interval between the sequential execution of state estimation and the visualization of the boot process section with almost continuous monitoring of the safety factor value. The proposed methodology and function approximation provide the standard deviation of the points, corresponding to measurements at 0,15-0,7% maximum power.

**KEY WORDS:** power system, steady-state stability, phase synchronized measurement