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SPECIAL FEATURES OF ENERGY CONSUMPTION AND QUALITY OF ELECTRICITY IN LOW-VOLTAGE NETWORKS OF INDUSTRIAL AND UTILITY ENTERPRISES

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Abstract

Special features of the processes of energy consumption and conversion in low-voltage electric networks 0.4 kV are researched for conditions of different relative value and types of load. The ranges of variation of the nonlinear distortion coefficient. A sufficient set of informative parameters for assessment of the degree of particular consumers influence on the quality of electricity is substantiated. It includes the coefficient of nonlinear distortions, separate spectral components of instantaneous power signal and coefficients, characterizing energy conversion special features, calculated according to p-q-r-theory of instantaneous power. The ways of application of the obtained results to assessment of power efficiency of operation of particular consumers as a part of a system of electricity technical record in low-voltage networks are

considered. References 6, figures 4, table 1.

Key words: low-voltage network, asymmetry, nonlinear distortions, instantaneous power, p-q-r theory.

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