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MANAGEMENT OF MODES OF DISTRIBUTIVE ELECTRIC NETWORKS OF CITIES UNDER CONDITIONS OF WEAK CORRELATION OF GRAPHICS OF ACTIVE AND REACTIVE POWER

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Abstract

Settlement and experimental studies of the use of filter-compensating devices for use in lighting electrical networks and phase-switched booster transformers for controlling the flows of active and reactive powers are presented. The analysis of component capacities in the conditions of non-linearity of the characteristics of their consumers and low correlation of voltage and reactive power in urban distribution networks is carried out. References 9, figures 5.

Key words: phase-switched booster transformers, filter-compensating devices, reactive power, urban distribution networks, control, mode.

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References

1. Hovorov F.P., Hovorov V.F., Teroshyn O.V., Chetverykova Y.M. A comprehensive solution to voltage regulation and reactive power compensation in lighting electrical networks. *Tekhnichna elektrodynamika*. Tematycnyi vypusk “Sylova elektronika ta energoefektyvnist”. 2009. No1. Pp. 47-50. (Rus).
2. Kroherys A.F., Rashevyts K.K., Treimanys E P., Shynka Ya.K. AC power. Ryha: Fyziko-energeticheskii institute Latviiskoi akademii nauk, 1993. 294 p. (Rus).
3. Artemenko M.lu., Batrak L.M., Polishchuk S.I. Active current and apparent power of three-phase power systems. *Tekhnichna elektrodynamika*. 2018. No 6. Pp. 69-72. (Ukr). DOI: https://doi.org/10.15407/techned2018.06.069
4. Govorov P.P., Govorov V.P., Korol O.V. Reactive power compensation in electrical circuits whit discharge lamps. Proceeding *International Scientific Conference (UNITECH-14)*. Gabrovo, 21-22 November, 2014. Vol. 1. Pp. 59-65.
5. Shydlovskyi A.K., Novskyi V.O., Zharkin A.F. Stabilization of electrical parameters in three-phase systems by semiconductor corrective devices. Kyiv: Nash format, 2013. 378 p. (Ukr).
6. Lypkivskyi K.O., Mozharovskyi A.H. Features of realization of function of transformation of the transformer-key executive structure of the regulator-stabilizer of alternating current. *Tekhnic hna elektrodynamika*. 2017. No 2. Pp. 35-39. (Ukr). DOI: https://doi.org/10.15407/techned2017.02.035
7. Tirshu M., Kalinin L., Zaitsev D., Golub I., Spivak V., The model and characteristics of circular phase convertor. *10th International Conference and Exhibition on Electromechanical and Power Systems*. Culegere de articole (SIELMEN-2015). 6-8 octombrie. 2015. Pp.180-184.
8. Kalinin L., Zaitsev D., Tirshu M., Golub I. Modeling a cyclo-converter based on a phase shifter with circular conversion. *IV International Conference Intelligent Energy Systems* ESS’15. Kyiv, 9-12 June, 2015. Pp. 317-321. (Rus).
9. Kalinin L., Zaitsev D., Tirshu M., Golub I. Capabilities for improving the control strategy of direct frequency conversion by using the phase-shifting transformer with power electronic switching equipment. *International conference Energy of Moldova – 2016. Regional aspects of development*. Chisinau, Republic of Moldova, 29 September – 01 October, 2016. Pp.214-221.

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