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THE ELECTROMAGNETIC VIBRATION DISTURBING FORCES OF TURBOGENERATOR IN MANEUVERABLE OPERATING CONDITIONS

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Abstract

The paper considers laws of change of electromagnetic vibration disturbing forces of a turbogenerator (TG) of its active and reactive power in maneuverable operating conditions. Study for TG type TGV-200-2 by power 200 MW have been spent. The generated a mathematical model of electromagnetic field allows to simulate of signals of vibration sensor as time functions. The model allows to define optimal performance of TG with the least of vibration level. The analysis of V-curve for three values of power of TG is carried out. It is shown that in an overexcitated vibration disturbing forces insignificantly depend on of power of TG. In an underexcitated is inexpedient to reduce essentially the active load. Since, significant increase of

vibration on (35... 45)% is observed. In a condition of the synchronous compensator without active load the greatest of vibration level of TG is observed. References 12, figures 7, table 1.

Key words: mathematical model of electromagnetic field, vibration disturbing forces, active and reactive power, underexcited, load angle, phase diagram.

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