ELECTROMECHANICAL COMPLEX WITH COMPENSATED ASYNCHRONOUS MACHINES

Chuenko Roman, Makarevich Svitlana, Gavriluk Viacheslav

The construction of autonomous electromechanics complex with compensated asynchronous machines is offered.

Key words: Autonomous electromechanical complex, compensated induction motor, compensated induction generator

Important for practice, but the heavy enough mode for electric machines is joint work in the off-line system of comparable powers of generator and motor. Especially difficult for both machines in such system the process of starting and acceleration of asynchronous engine flows with the short-circuit rotor from an alternator. A large starting current of engine is at a small starting moment, that depends on at a limit power of generator possibilities of satisfactory start of induction motor are diminished the square of tension of feed, decline of this tension in the off-line system. Forcing of excitation of synchronous generator supports the level of tension at load that provides a start and normal work of induction motor power to 70%.

Use of asynchronous generator with the fall-off of tension at load rising, with the necessity of reactive high-powered for indemnification of her in loading and for excitation of generator, complication of adjusting and support of stability of tension is practically eliminated in the off-line systems of power supply with loading as an asynchronous engine of commensurable with power generator.

Internal capacity indemnification of reactive-power improves properties and promotes possibilities of joint work of both compensated asynchronous machines in the such adopted autonomous electromechanics complex.

So the level of tension and degree of inflexibility of external descriptions rise in the compensated asynchronous generator, the terms of proof work get better at the increase of current of loading, possible forcing of excitation for support of level of tension at накиді loading; in an engine a starting moment grows and goes down

starting current. All of it allows asynchronous to the generator and engine to work together in the single off-line system. At a generator and engine during their joint work in composition of autonomous electromechanics complex general are working tension and current . A generator must provide the level of tension, necessary to the engine for creation of moment of rotation, that satisfies the condition of starting, acceleration and withstand mode of operations of engine with set.

The most favorable terms for joint work in the off-line system are created, where both machines are characteristics of an increase efficiency during the generalized capacity indemnification of reactive-power.

Satisfactory, at the certain parameters of the generalized capacity indemnification, maybe and work of the compensated generator on the serial asynchronous motor of comparative power. If starting and acceleration of asynchronous engine in this variant will give possible results, then for other the variants of work of the compensated generator with the compensated engines they will be usually that the best.

An autonomous electromechanics complex in composition is compensated asynchronous generator - compensated an asynchronous engine has higher power indexes by comparison to a complex in composition an asynchronous generator - asynchronous engine is compensated at equal from the side of generator terms