

Development of the System of Initial Excitation of the Autonomous Induction Generator

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Abstract. The article defines the conditions of self-excitation of an inductive generator with capacitor excitation as part of an autonomous power source. Recommendations for the design of an autonomous power source based on an asynchronous machine in terms of the implementation of self-excitation conditions and optimal operating modes are formulated. A simulation model of an autonomous inductive generator and a solar battery for the analysis of transient, static and dynamic modes of operation has been developed. The conducted theoretical studies of capacitive self-excitation of inductive machines have created a good basis for solving problems related to the practical use of autonomous sources based on an inductive generator.

Keywords: induction generator, self-excitation process, regression analysis

Introduction

Despite numerous works on theoretical and practical studies of autonomous energy source (AES) with inductive generator [1–5], a number of technical issues

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