

ANALYSIS OF INDUCTION GENERATOR WITH EXCITATION CAPACITY USING CONSTANT VOLTAGE

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ABSTRACT

To be able to function as a generator the rotational speed of the rotor is made greater than the speed of the rotating field, a capacitive voltage is also needed which will induce a current. There are several causes that cause the output voltage of an induction generator to be unstable, namely the nature of the load. There are three types of loads, namely resistive, inductive and capacitive. Induction generators have different responses to these loads, especially in the form of different output voltages and ultimately affect the voltage across the load. In an electric power system, a constant voltage is needed, therefore it is necessary to regulate the voltage at the output voltage of the induction generator. In an electric power system, a constant voltage is needed, therefore it is necessary to regulate the voltage at the output voltage of the induction generator.

From the test, it was found that the value of the excitation capacitor affects the voltage and frequency produced by the generator. The higher the capacitance value of the excitation capacitor, the lower the frequency produced at a certain voltage. The higher the capacitance value, the higher the voltage generated at a certain frequency, but the voltage and frequency can also be influenced by the nature of the inductive load because the inductive load also absorbs reactive power and it can affect the resulting voltage and frequency. Using excitation capacitors can improve the generator output voltage and frequency by adjusting the prime mover speed.

Keywords : *Induction generator, Excitation capacitor, Voltage, Burden*