

What factors affect the vibration characteristics of a generator stator end?

Some more complex factors such as preload,damping,electromagnetic,temperature,frame,and rotorcan be added to the model,and the influence of multiple factors on the vibration characteristics of the generator stator end can be considered comprehensively.

How efficient is a hybrid generator compared to a wound excitation MS?

The stator copper losses are slightly greater (due to the length of the HESM stator), but the rotor copper losses are much lower, which shows the efficiency of the hybrid generator compared to the wound excitation MS. For a unit power factor, the efficiencies of the PMSM and HESM are comparable.

Should hybrid excitation synchronous generators be regulated?

In order to overcome these drawbacks,the hybrid excitation synchronous generator (HESG),an alternative to traditional generators,is presented in this study along with the suggestion to use robust regulatorsto regulate HESGs. This research begins with a thorough review of the literature on generators often seen in modern wind systems.

What is the effect of heating in a generator?

The heating produced in the generator influences its' electromagnetism performance and electrical insulation which may result in a short circuit between the wires and serious damages during long-term operation . Detailed and extensive research work on the stator temperature field in a generator has been done in .

What is the frequency of a turbo-generator and Exciter?

The frequency of the elliptical mode at the turbo-generator end was 81.5 Hz,and that at the exciter end was 77.2 Hz. The errors from the test average were 1.62% and 3.34%,respectively. The results showed that the FEM of the TG stator end reflects the vibration of the actual prototype precisely.

How does coolant flow affect power output of a turbine generator?

The power output rating of a turbine generator is affected directlyby efficient cooling,especially near the stator end-windings. However,modeling the coolant flow through the stator end-windings of a high-powered generator remains challenging because of the many parts with irregular geometries and the intricacy of the cooling flow paths.

Excitation Wind ing Temperature . ... temperature measurement of stator winding end was realized. ... Accurate and reliable information about the temperature of the synchronous generator ...

The end-winding provides safe electrical connections between bars and prevents insulation failure between the connection points. The dynamic response of stator end-winding bars resulting in vibration can be caused by ...

The permanent magnet synchronous generator (PMSG) used for wind systems should have low weight [1,2] and high efficiency [3,4]; therefore, the PMGS geometry has been modified to reduce the volume ...

1 INTRODUCTION. The turbine generator is one of the most important power generation equipment in China's power system, of which operational reliability is not only related to the safety and stability of the power ...

Download scientific diagram | Temperature of generator bearing against ambient temperature and generator power. from publication: Wind turbine condition monitoring: Technical and ...

Axis-flux wind generators are widely used in vertical axis wind turbines given their high generator diameter-to-length and power-to-weight ratios, flexible field and winding design, improved ...

required that the generator excitation system has the following technical characteristics: A. Excitation control for large pumped storage unit: Recent years due to the rapid development of ...

Research in [16] assessed the losses, output powers, and efficiency of a WECS employing a SCAG, a double power supply, and a PMSG depending on wind velocity. The data show that the asynchronous cage ...

SERG is commonly used with standalone wind turbine. However, it can be also utilized in grid-connected wind turbine system. When SERG is connected to an isolated load, a capacitor ...

Rotor winding inter-turn short circuit a common fault in hydro-generators. This fault would change the temperature, stress, and other thermal fields of a rotor and threaten the safe operation of ...

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