SOLAR PRO.

Analysis of generator operation at high wind temperature

The purpose of this project is to develop thermal models for wind turbine generators, based on which a non-intrusive condition monitoring scheme, using thermal imaging, will be proposed.

The proper temperature distribution guarantees the desirable operation of the generator. This paper shows that it is feasible to design a 10-MW-class HTS synchronous generator from thermal analysis ...

In this paper, a cooling system combining external water cooling and internal air cooling is designed for a 12 MW permanent magnet wind generator, and the temperature characteristics are analyzed in ...

Manufacturer should take into account low/high temperature capability for generator elements like windings, bearings, structural steel, shaft, cooling motors, bearings lubrication systems, and ...

This paper focuses on the thermal analysis of a 2 MW wind turbine generator. The goal is to estimate the stator winding temperature with a model as straightforward as possible.

Subsequently, based on a lumped-winding thermal conduction equivalent model, a three-dimensional temperature field finite element analysis model for oil-cooled motors is established to investigate the ...

This paper presents the mathematical modeling of the thermal state of a 1000 W wind turbine generator (WTG) integrated into a vertical-axis wind turbine (VAWT) system, taking into ...

Since wind generator operates at high altitude, the working environment is relatively harsh and the maintenance cost is high, in order to balance the reliability and cooling effect of the cooling ...

A feasible design of a high-temperature superconducting wind turbine generator (HTSWTG) is based on the synchronous generator with a copper stator and a superconducting rotor.

A detailed generator reliability analysis was conducted to evaluate the impact of turbine technology, design, manufacturing, maintenance strategies, and operational regime on failure rates.

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