

Structural design of wind turbine generator rack

Can a wind farm blade rack be modular?

To avoid having to design a different blade rack for each wind farm project, the system had to be modular. Vuyk Engineering Rotterdam has been contracted for the design of the modular blade rack. The solution was found in upscaling the existing B81 blade rack (designed by Vuyk) and reusing most of the existing designs and available equipment.

How does a wind turbine rotor affect electrical generator design?

As a rotating piece machinery forming part of a bigger and more complex machine, electrical generators are subject to dynamic and external forces coming from the wind turbine rotor. The optimised steel design is looked at from a dynamic viewpoint.

How do Wind Turbine Generators (WTG's) work?

Each module carries three blades above each other. In a blade rack suitable for multiple WTG's the modules are coupled. Cadeler, a frontrunning Danish offshore wind contractor, is selected to transport and install the Wind Turbine Generators (WTG's) for the Hollandse Kust Zuid Offshore Windfarm.

What is a wind turbine?

S. O. Lind and H. Stiesdal, "Wind Turbine," Patent WO 2013/083386 A2, June 2013. Direct drive electrical generators are low speed high torque machines whose robust and stiff supporting structures are designed to withstand the significant loads present during the assembly (gravitational and attraction forces) and operation stages.

Can a radial flux direct drive generator be used for offshore wind turbines?

The analysis and optimisation of the mechanical and structural design of a radial flux direct drive generator rated between 0.75-3 MW for land based and fixed bottom offshore wind turbine applications were carried out in and .

Does a pure torque generator support a wind turbine?

For this investigation, it was assumed that a system such as Alstom's Pure Torque generator was utilised as the design of the generator supporting structure was carried out considering only the major internal loads present during the machine operation, in other words, isolating the generator from the rest of the wind turbine.

Cadeler, a frontrunning Danish offshore wind contractor, is selected to transport and install the Wind Turbine Generators (WTG's) for the Hollandse Kust Zuid Offshore Windfarm. The SGRE WTG's are of the SG 11.0-200DD type, which ...

The dominant structural configuration for onshore wind power generators is the tapered steel tower, but lattice

ones with the used of enhanced special cross-sections can be ...

In addition to power system analysis, the structural design and principles of wind power generators (WPGs) as well as the possible methods for improving their performance should also be studied.

A versatile tool has also been developed to help the engineers with the dynamic design of generator disc structures. Conical structures have been analysed and compared with the ...

Figure 64: Geometrical characteristics of wind turbine and door opening: (a) height to minimum diameter ratio of wind turbine; (b) height to maximum diameter ratio of wind turbine; (c) ...

A software tool named "T4T" (Tools for Turbomachinery) has been developed for the parametric design of turbomachinery and wind turbine blades. The complete design procedure is object-oriented and ...

reliable and quick fashion. Fig. 1(a) displays the typical generator rotor structures, which are still under investigation, while Fig. 1(b) shows a generator structure made of discs fully integrated ...

DOI: 10.1016/J.OCEANENG.2018.04.074 Corpus ID: 115666307; Dynamic structural design of offshore direct-drive wind turbine electrical generators @article{JaenSola2018DynamicSD, ...

The drive train, which represents the direct link between the rotor shaft and the electrical generator, is subject to high dynamic loads (wind loads, electrical load) [3,8,9].

essential part of the wind turbine design, once it defines the wind turbine efficiency and must be designed to resist to different loadings, responding for 30% of the wind turbine cost, ...

NIRAS is involved with design and engineering of steel foundations for large offshore wind farms including supports for wind turbine generators (WTG"s). Design works includes hydrodynamic, structural and installation design as well ...

The dominant structural configuration for onshore wind power generators is the tapered steel tower, but lattice towers using enhanced special cross-sections can be a rather promising ...

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