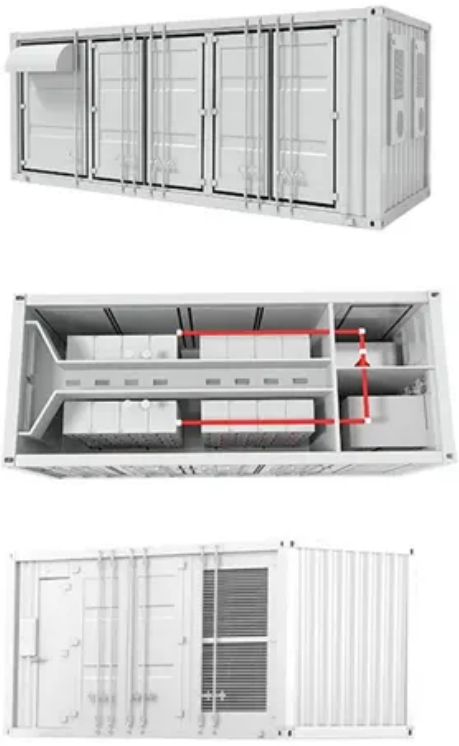
PIENAAR ENERGY (PTY) LTD

Why are the generator blades irregular



Overview

When a wind turbine is not properly aligned, it can cause uneven wear and tear on the blades, leading to damage or reduced efficiency over time. Planned outages for gas-turbine-based peaking, cogeneration, and combined-cycle plants are scheduled based on the inspection and maintenance needs of the gas turbine/ generator as prescribed by the OEM (original equipment manufacturer). Critical gas turbine rotating component, such as turbine blades, compressor disks, spacers and cooling fan blades are subjected to cyclic stresses during engine start-up, operation and shut-down. The lifetime of these components are usually established on the basis of probabilistic crack initiation. Unbalance of generator rotors is a major contributor to generator downtime, costing power producers hundreds of thousands of dollars in lost revenue each year. Proper attention to design detail, manufacturing tolerances and procedures, during initial manufacture or subsequent rewinds, can minimize. Among these, low-pressure turbine blades face some of the toughest challenges, operating in high-moisture environments that can lead to erosion and cracking over time. Proper alignment also ensures that the.

Why are the generator blades irregular

Why generators fail - Combined Cycle Journal

It is caused by a partial voltage breakdown within the generator coil insulation, in gaps between the coil and the stator core, or in the end turns when the coils are in close proximity.

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Blade/Generator Alignment

Misalignment of the blades can cause uneven wear and tear, leading to damage or reduced efficiency over time. This can be caused by several factors, including wind gusts, uneven ground settling, or ...

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Understanding Steam and Gas Turbine - Generator ...

Generator rotor fans/blowers are subject to both high steady and ...

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Design and Analysis of a Gas

Turbine Blade

Turbine blades are subjected to very strenuous environments inside a gas turbine. They face high temperatures, high stresses, and a potentially high vibration environment. All these factors can lead ...

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Improvements for Generator Rotor Unbalance

The first, generator rotor unbalance that can be corrected by balance moves, will be discussed in detail below. The second, rotor unbalance due to thermal sensitivity, will also be ...

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Failure analysis of generator rotor fan blades

The mechanical analysis capable of predicating stress and dynamic characteristics of turbo generator fan blades is needed to decrease blade failures. The experimental method and FEM ...

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Understanding Steam and Gas Turbine - Generator Fan Failures

Generator rotor fans/blowers are subject to both high steady and fatigue stresses during operation. The fan/blower blade itself is highly stressed. The highest stresses in an axial blower are developed in the ...

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Keeping in Tune with Turbine Blade Damage , ENTRUST Solutions ...

In this article, we'll explore the causes of turbine blade damage, its impact on performance, and the steps utilities can take to inspect, repair, and restore blades to keep their turbines running smoothly.

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A Study of Wind Generator Set Blades Dynamic Analysis

Wind generator set blades as a flexible structure, the load acting on has a cross and random variability, which is an inevitable occurrence of vibration, the vibration characteristics of their study is very ...

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Analysis of the cause of abnormal noise from generator

blades

If there is abnormal noise during the cutting process of the circular saw blade, most of the elements are caused by the unstable operation of the saw blade. How to avoid this

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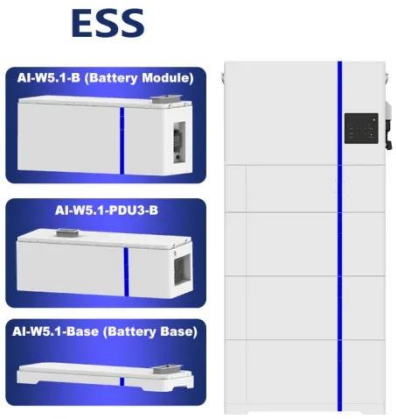

Fracture Analysis of Generator Fan Blades

Initial investigation pointed out that three blades were fractured and several others were cracked just about 11 hours after resuming operation following the last major overhaul, causing extensive damage ...

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