What are the effects of a broken generator blade

Overview

The potential failure of generator rotor fan vanes and blower blades has been identified as an area for detailed risk assessment in the electric power generation industry. Liberation of fan component has caused catastrophic damage to both the rotor and stator components on a. 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. 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).

What are the effects of a broken generator blade

Failure analysis of gas turbine generator cooling fan for 14

Abstract in coils (copper conductors) and generator electric circuits at the end sides of its rotor. In some cases, fracture of blades causes short circuit betwe n rotor and stator and conse-quently generator ...

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Failure analysis of generator rotor fan blades , Request PDF

Occasionally, damage also occurs at the trailing edge of the blade. The work of the blade (containing a notch formed as a result of a collision with a hard object) under resonance conditions

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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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Failure analysis of gas and wind

turbine blades: A review

Several cases relating the damage mechanisms associated with blades failures, e.g., corrosion-erosion, carbides precipitation, oxidation, coating degradation, high and low cycle fatigue, ...

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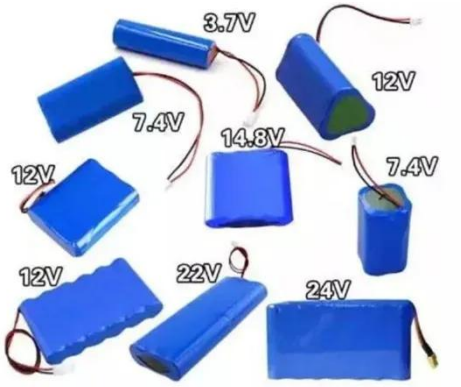

Failure analysis of gas turbine generator cooling fan blades

Fractures in gas turbine cooling fan blades occurred within the first 100 hours of operation. Analysis revealed high cycle fatigue as the primary cause of blade fractures. Resonance conditions can lead ...

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Why generators fail - Combined Cycle Journal

Problem: Many generator components are susceptible to fatigue stresses that can initiate cracking. To illustrate: Low-cycle fatigue cracking caused by cyclic operation can occur in rotor-forging tooth tops ...

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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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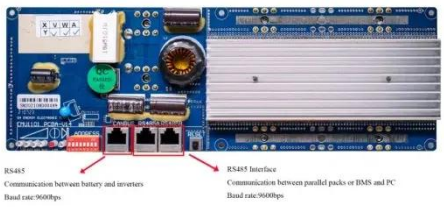

Fracture Analysis of Generator Fan Blades

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 ...

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Failure analysis of gas turbine generator cooling fan blades

In some cases, fracture of blades causes short circuit between rotor and stator and consequently generator explosion and huge financial loss.Since fracture in

cooling fan blades has ...

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