Generator rotor inlet air temperature requirements

Can a gas turbine inlet air cooling system increase power generation capacity?
Mohanty et al. investigated the integration of a gas turbine inlet air cooling system for a 100 MW gas turbine in Bangkok. They showed that reducing the intake air temperature from ambient condition to 15 °C can raise the gas turbine power generation capacity by 8%-13%.

Does inlet air cool a gas turbine?
At temperatures below with such high relative humidity,icing of the com-pressor is probable. The exact increase in power available a particular gas turbine as a result of inlet air cool-ing depends upon the machine model and site altitude as well as ambient temperature and humidity.

Can a gas turbine inlet air cooling system be integrated?
This can be achieved with a refrigerant fluid or water (liquid or ice). Absorption chillers,for example,are a type of continuous cooling system that can be used in gas turbine installations. Mohanty et al. investigated the integrationof a gas turbine inlet air cooling system for a 100 MW gas turbine in Bangkok.

How many RPM can a generator rotor run?
varies considerably based on the type and configuration of the generator rotor and the manner in which it is operated. mechanical configurations,and a brief description of the electrical theory. (typically 1800 or 3600 rpm). Furthermore,to function in this manner for years without failure. The three design constraints that limit

What is a low pressure gas turbine rotor?
The low-pressure or power turbine rotor is mechani-cally separate from the high-pressure turbine and compressor rotor. The low pressure rotor is said to be aerodynamically coupled. This unique feature allows the power turbine to be operated at a range of speeds and makes two-shaft gas turbines ideally suited for variable-speed applications.

What is a Titan 130 gas turbine design cycle?
The Titan 130 gas turbine design cycle consists of a 16:1 pressure ratioat a maximum turbine rotor inlet temperature (TRIT) of 1149°C (2100°F) with a mass flow of 48 kg/s (106 lb/s) to achieve the design performance rating.

requirements for the Degree of Master of Science in Aeronautics and Astronautics ABSTRACT The effect of radial inlet temperature distortion on turbine rotor blade heat transfer was studied ...

rections. The inlet for compressed air used a pressure inlet with a total pressure of 0.13 MPa and a total temperature of 320 K, while the inlet for high-temperature exhaust gas from the piston ...

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The temperature characteristics of gap-pickup diagonal-flow turbo-generator rotor is obtained, and the suppression law of hydrogen temperature and pressure on rotor temperature is summarised. ... As the ...

net electrical output developed by the gas turbine when it is operated at the applicable site reference turbine control temperature [exhaust temperature, TIT (3.27) or RIT (3.20)] at site ...

The generator rotor represents an excellent combination of electrical, mechanical and manufacturing skills in which the field coils are well insulated, supported and ventilated in a compound structure rotating at very high speed (typically 1800 ...

This International Standard specifies the minimum technical and documentation requirements for the evaluation and procurement of gas turbine systems for electrical power generation. It ...

pressure ratio at a maximum turbine rotor inlet temperature (TRIT) of 1149°C (2100°F) with a mass flow of 48 kg/s (106 ... shell of the gas generator module consists of the radial air inlet, ...

In the ventilation design of a air-cooled turbo-generator rotor with air-inlet at the end arc section and air-compensation at the straight section, in order to investigate the effect ...

Generator temperature rise calculation with direct water cooling in the stator winding. ... o The air between the rotor poles; ... cooling air at the inlet of the active parts of the .

ect ofgas turbine intake air temperature regulating heat exchanger oncombined cycle... 10401 1 3 From above, it is noted that the current literature on the intake temperature regulator of gas ...

After merging, they are discharged through the air duct of the iron core and cooled by a cooler. The cooled air is then sent to the generator to be recycled by a fan to achieve the purpose of heat ...

In recent years, the extensive participation of turbine generator in deep peak regulation has caused significant damage to the rotor windings, which is rooted in the frequent ...

pressure ratio at a maximum turbine rotor inlet temperature (TRIT) of 1149°C (2100°F) with a mass flow of 48 kg/s (106 lb/s) to achieve the design performance rating. The predicted output ...

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