Generator excitation air inlet temperature

Why is inlet air temperature important in a gas turbine?

Abstract-- The inlet air temperature to the gas turbine mainly controls the power output and efficiency of the turbine.

What is the maximum temperature a generator can deliver?

The maximum temperature when the generator is delivering maximum output corresponding to continuous overload capacity for conditions rated above shall not exceed 125oCfor both stator and rotor winding respectively. Temperature rise shall be guaranteed in the tender and shall be measured on site in accordance with IEC 34 or relevant IS.

Why is inlet air cooling important?

During the months of summer,when the temperature of ambient air increases and in certain regions where significant demand for power and high electricity occur,the inlet air cooling techniques are very useful for reducing the inlet air temperature and thus improving power output and efficiency.

What is a generator overexcited capacity?

2. Generator Overexcited Capability overall MVA output(stator current) of the machine. The are being supplied from the machine. A plot of the generator capability curve is shown in Fig. 1. These curves show a case the cooler inlet air temperature.

Features such as recalibration of the limits based in inlet air temperature (air cooled machine), or hydrogen pressure for H2 cooled machines are available in today"s excitation controls During power system ...

For high-speed hybrid excitation synchronous generators, the stator includes armature windings and annular excitation windings, which makes heat dissipation difficult and requires the design of an efficient ...

Operate the alternator at rated speed, voltage, current and power factor. Record the speed, output volts, amps, kW and P.F. Also record the excitation volts and amps. Also record the temperatures of the ambient air, the ...

A generator typically needs 35-40% over-sizingof the incoming air based on the internal generator inlet air temperature being ambient +20 degrees Celsius. For typical 32 degrees Celsius water,there is no de-rate for ...

Let"s face it - generators aren"t exactly the life of the party in power plants. But when it comes to generator inlet air temperature, these machines turn into divas faster than a pop star in a heatwave. Every degree Celsius ...

11.1 Specifications Typical specifications of a large vertical peaking hydro generators (umbrella/semi umbrella) with static excitation system detailing the requirements of various components of ...

With the cooling of the turbine inlet air temperature, the increase in electrical active power generation was confirmed with 96.7% agreement.

The wall height was twice the enclosure height, and the offset was 914 mm (36"). The entire flow field around the generator was solved. A slice of the temperature distribution is shown in the figure, with most ...

Reasons for high generator air inlet temperature What factors affect a generator"s performance? The following factors play a significant role: The ambient temperature,or the temperature of the surrounding ...

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