



Steam turbine generator wind temperature gauge location





Overview

In gearless systems, where the nacelle of the wind turbine serves as a stator and the rotor is mounted directly on the rotor shaft, the temperature is monitored directly in the pole pieces of the rotor. Slot thermometers are inserted there for measurement. Supervisory instrument monitors indicate the condition and trend of rotating and stationary components, and can provide advance warning of deterioration or change in the turbine-generator condition. Any deviation in temperature can result in higher maintenance, increased risk of a shut-down, and a reduced lifetime. To avoid these issues, turbines use temperature sensors. In these designs, it is preferable to identify the thrust assemblies as generator end/turbine end (GE/TE) or drive end/non-drive end (DE/NDE), based on their locations. In addition to the actual rotor thrust bearing wear indication, embedded thermocouples in the thrust plates/shoes will indicate. Steam enters the main turbine at the high pressure turbine through the turbine stop (throttle) and control (governor) valves.



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[Temperature Measurement in Wind Turbine Generators](#)

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[Steam Turbine Monitoring, Inspection and Repair](#)

Three key pieces of such a program are monitoring and diagnostics, inspection and nondestructive evaluation (NDE), and turbine repair. This brief document summarizes the latest procedures and ...



AGN 027

Ideally, for detecting winding temperatures, the temperature sensor should be embedded within the windings in such a way that true winding temperatures are detected.

[How to install temperature sensors in wind turbines?](#)

Temperature sensors need to be hooked up at strategic places inside the wind turbine to reveal important components. For example, sensors may be located at the generator stator and rotor, ...



[Wind Turbine Pressure Sensors and Temperature Measurement](#)

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With the unit in this condition, feeler gauge measurements at top and bottom of the coupling should show a slightly larger reading at the bottom, the amount varying with the size and type of generator ...



[Thermal Analysis of a Wind Turbine Generator by Applying a ...](#)

In this paper a thermal model is presented that estimates the stator winding temperature of a 2 MW wind turbine generator. The model and the parameter determination are introduced.



[Turbine Supervisory Instrumentation System: Principles, ...](#)



In most large steam turbines, a rotor expansion detector (RXD) is found near the turbine-generator coupling, which is very far from the turbine thrust bearings.



Steam Turbine Temperature Sensor Calibration

To avoid these issues, turbines use temperature sensors to continually monitor the inlet steam. However, these sensors may drift over time, so regular calibration of them is required.



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