

# Insulation measurement of wind turbine generator

How is partial discharge measured for operating turbine generator?

The online partial discharge measurements for operating turbine generator were carried out by the IRES equipment [14,15,16]. The test equipment detects and record voltage magnitude, phase angle and number of partial discharge pulses at each EMC. Then PD data viewed immediately by PDViwe and stored for a subsequent analysis.

What are the common faults of a wind turbine generator?

Common faults of wind turbine generator. Generator electrical faults are mainly stator eccentricity, rotor eccentricity, broken rotor bars, and looseness. The main manifestations of generator stator faults are overheating of stator windings, insulation damage, and grounding.

How many MW is a wind turbine?

TABLE 1. The technical route and main products of the world's main wind turbine manufacturers are above 3 MW. 2 Onshore 3. X platform with a power of 3.4 MW and rotor diameters of 132 m and 145 m, respectively; Onshore 4. X platform with a power of 5.0 MW and rotor diameters of 132 m and 145 m, respectively; Onshore 5.

What is a wind turbine generator failure analysis & fault diagnosis?

In this article, a comprehensive and up-to-date review of wind turbine generators failure analysis and fault diagnosis are presented. First, the electrical and mechanical failures of various WTG components, including stator, rotor, air gap, and bearings, are analyzed. Then, the fault characteristics and root causes of WTG are studied.

How to identify wind turbine faults?

Literature proposed a strategy containing wavelet transform, feature analysis, judgment, and back propagation neural network (BPNN) classification (WT-FA-JD-BP) to identify the wind turbine systems' faults. As shown in Figure 16. First, the original voltage signals under different faults are collected.

What is a stator winding in a turbine generator?

The stator winding of the turbine generator per phase consists of several parallel paths and each path of each phase consists of series connected bars. When the TG is under operating an electromagnetic field (EMF) is induced in each bar in slot part of the stator winding.

This paper reviews the state-of-the-art in fields of fault detection (FD) and condition monitoring (CM) of PMSGs for wind turbine applications. Stator insulation failures are found as the most critical ones ...

3. Wind turbines generator types. The electrical generator in the wind turbine converts the mechanical energy

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from the turbine rotor into electrical energy which is supplied to the grid. In conventional power systems where ...

The stator insulation of wind turbine generator (WTG) would be subject to the repeated pulse voltage, thermal, mechanical and other environmental stresses. In this paper, the methods of ...

Standard PMSG drives include current and voltage transducers for measurements of generator phase currents and DC link voltage, respectively. ... Karlis, A.D.; Danikas, M.G.; Lloyd, B. A Short Review on the ...

Table 1 Ratings of Steam turbine generator Generator Rated capacity (MVA) Rated current (A) Number of revolutions (RPM) Insulation class Manufactured year Manufacturer Steam turbine ...

The purpose of this paper is to review work undertaken on partial discharges and their influence on the insulation of wind turbines. No matter whether partial discharges can be considered as the main cause of deterioration of the ...

This paper presents technical design and evaluation experience on wind turbine generator insulation under conditions of the turbine operation conditions. ... online or ...

The authors in comprehensively review the state-of-the-art model-based fault detection and fault-tolerant control schemes for wind turbine generation, focusing on their advantages, capabilities, and limitations, to ...

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