

The gap of the generator air duct is unqualified

What is an air gap in a hydroelectric generator?

An air gap is the distance between the rotor and stator of a large-scale hydroelectric generator. This gap is a very small distance in relation to the size of the rotor. Its measurement to tight tolerances is critical to prevent damage to and maintain efficiency of the generator.

Do rotor and stator boundary conditions affect a generator air gap?

The effect of the mass flow boundary conditions in the rotor and/or stator side was included in their study. They concluded that the flow in a typical generator air gap will most likely be undeveloped and have an average tangential velocity at about half the rotor tip speed. Recent studies use more realistic representations of generator geometries.

Does a generator air gap have a tangential velocity?

They concluded that the flow in a typical generator air gap will most likely be undeveloped and have an average tangential velocity at about half the rotor tip speed. Recent studies use more realistic representations of generator geometries. Pickering et al. summarized the results of research that validated CFD for large salient pole machines.

What is the composite diagnosis of turbine-generator air-gap eccentric fault?

Composite Diagnosis Method of Turbine-Generator Air-Gap Eccentric Fault The characteristics of generator stator and rotor radial vibration and the characteristics of stator winding parallel branches circulating current on the air-gap eccentric fault are respectively analyzed.

Can a generator cooling system be openly ventilated?

Generator cooling systems can be openly ventilated or totally enclosed with a water air cooler. In an openly ventilated system, the heated air is exhausted to the surrounding and the cold air intake is from the same surroundings. Ducting may be provided to reduce or eliminate recirculation of the heated exhaust air.

What is the difference between AC and DC air gap?

According to The Electro-mechanical Authority (EASA), in AC machines, the air gap is the air space between the rotor cores and the stator. On the other hand, it is said to be the space between the inter-poles and the armature for a DC machine. What is the working principle of the air gap?

Hribernik et al. [4] carried out an investigation into the malfunction of a 10 MW hydro-generator's air-cooling system. Mayle et al. [5] studied about rotating flow in an air gap with axial flow. Han et al. [6] carried out numerical studies on flow characteristics in air-gap and stator of large air-cooled turbo-generator.

In this study, a fault diagnosis model based on magnetic density is proposed to analyse the current



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characteristics of synchronous generator rotor inter-turn short circuit and air gap...

generator can last up to 20 days or more if the rotor is removed. The outage can be considerably reduced by using the ABB Air Gap Inspector to perform the inspection with the rotor in place. ...

The air gap length of the designed axial flux wound rotor (AFWR) synchronous generator is determined properly according to the design parameters. One of the distinct advantages of an ...

Study with Quizlet and memorize flashcards containing terms like Return air inlets should be placed a. always near the ceiling b. always along the floor c. the minimum distance from the supply duct outlets d. the maximum distance from the supply duct outlets, Negative pressure in a building _____. a. enhances the efficiency of exhaust fans b. helps keep out airborne pollen ...

With the capacities of large-scale turbine generators increase, higher electrical and thermal loads may cause higher risk of thermal faults. Especially, for those air cooling machines with single channel ventilation system, the comparatively poor thermal conductivity of air makes the air-gap become a critical part in thermal transmission network. Thus, the heat ...

Totally enclosed air to air cooled (TEAAC) generator with IC6A1A6 (as per IEC 60034-6) cooling is a widely accepted generator cooling solution for squirrel cage induction generators (SCIG) used in ...

which are restricted to turbo/hydro generators with very large air gaps, ABB Air Gap Inspector can be used on all synchronous motors and generators with an air gap of 10 mm or more. Hardware and methodology The in-situ robotic visual inspection equipment comprises: 1. ABB Air Gap Inspector, robotic crawler including track modules 2.

Based on this structure, global two-dimensional electromagnetic field models of 150MW air-cooled turbo-generator with different stator teeth internal ventilation structures are established to ...

Refer to the OEM manual for your specific generator. > What is the pressure drop calculation for the loss in air pressure during > Generator air tightness test and what is ...

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fan. The air flows radially through ducts in the rotor, into the rotor-stator air gap and then through the stator channels. The usage of one or the other ventilation system depends mainly on the rotor type, the size, and the power rating of the generator. Generators convert the rotational mechanical power of the prime mover into

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electric power.

An AF generator's performance might be controlled by adjusting its air gap. The designed generator has a small-scale capacity that has 1 kW, 380 V, and 50 Hz. The windings are laid into slots made from laminated core. The slots are carved in the face of the stator and rotors. The generator has a single-double-sided slotted wound stator sandwiched

Most of the magnetic path reluctance comes from the air-gap. Therefore the larger the air-gap, the more H field and therefore length of magnetic material you need to establish the field, so the more expensive the motor is to make. The size and weight also go up as the amount of magnetic material. Some motors seem to have quite a large air-gap.

Request PDF | Heat transfer coefficient distribution in inner surface of stator ventilation duct for large capacity air-cooled turbine generator | The stator ventilation duct is the main path for ...

This study is dedicated to a numerical investigation of convective heat transfer on the rotor surfaces of a rotor-stator configuration that is typically found in large hydro-generators. The computational fluid dynamics calculations with two turbulence modelling approaches are used to predict the flow structure and heat transfer in the air gap of the rotor-stator configuration. ...

PT# 026-00531 Air Discharge Duct-Rear Description: Ducts cooling air to the rear of the generator. Kit Includes: Air discharge duct and mounting hardware. Installation Notes: Designed to discharge air towards the rear of the generator. ...

The fluid-structure interaction analysis of the stator air duct model is carried out by using three-dimensional finite element analysis software. The temperature distribution of the iron core and air gap in the air duct is obtained by calculation. The results show that the design of air duct can effectively reduce the temperature rise of the motor.

The furnace of steam generators may be subjected to either "natural draft" or "positive draft" or "negative/balanced draft." Ducts are used to supply air to the furnace and to evacuate ...

The Bureau of Mines found sulfur hexafluoride (SF₆), released from a lecture bottle, to be an ideal gaseous tracer for studying mine ventilation systems.

may be mounted directly onto the duct, or remotely with connected steam hoses and distributor. Figure 2 - Condair RH Humidifier Duct and Remote Installations. Principle of Operation. The Condair HumiLife RH is an atmospheric steam generator that uses heat generated by an electrical current flowing between submerged electrodes to generate ...

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MMF required for air-gap = 3846 AT. 2.2. A 15 KW, 230 V, 4- pole dc machine has the following data: armature diameter = 0.25 m, armature core length = 0.125 m, length of air gap at pole center = 2.5 mm, flux per pole = 11.7×10^{-3} Wb, (pole arc/pole pitch) = 0.66. Calculate the mmf required for air gap(i) if the armature surface is

ULC Technologies developed the Air Gap Inspector for ABB, a leading engineering company, to provide inspection services for large motors and generators around the globe. With our client's expertise in engineering, constructing, deploying, and servicing motors and generators and ULC's expertise in robotic systems development, the robotic ...

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