

SolarInvert Energy Solutions

Diversion tunnel for photovoltaic power station generator set



Overview

How many diversion tunnels are there?

Electricity is generated through four 16.67 km-long diversion tunnels, which cut the 150 km-long river bend. The project consists of 7 deep parallel tunnels, i.e. 4 diversion tunnels, 2 auxiliary tunnels, and 1 drainage tunnel. From south to north, there are auxiliary tunnels A and B, drainage tunnel, diversion tunnels #4, #3, #2 and #1.

How can diversion tunnels be used to generate electricity a year in advance?

At last, all the diversion tunnels were excavated by drilling and blasting method. These optimizations, which increase the direct investment of the project, play a very important role in ensuring the safety and progress of the project, making it possible to generate electricity a year in advance.

How are diversion tunnels constructed?

The diversion tunnels #2 and #4 constructed by drilling and blasting method use the bench method for excavation, trackless transportation for dregs, wet shotcrete for support, rig 353E for drilling anchor holes, and hydraulic steel trolley for lining construction.

Why are diversion tunnels so difficult?

The complex hydrogeological conditions, i.e. the high water pressure, stable water supply, and high in-situ stress over 70 MPa, made the tunnel construction and structure design difficult. The diversion tunnels at Jinping II hydropower station are the largest and the most complicated underground projects so far in the world.

How to excavate diversion tunnels?

At the first stage of construction, the drilling and blasting method was adopted to excavate the diversion tunnels. Then, TBM was used in combination with drilling and blasting method. At last, all the diversion tunnels were excavated

by drilling and blasting method.

What are the diversion tunnels at Jinping II Hydropower Station?

The diversion tunnels at Jinping II hydropower station are the largest and the most complicated underground projects so far in the world. The design scheme has been modified and optimized several times, and the construction method and layout have been revised during the tunnel excavation.

Diversion tunnel for photovoltaic power station generator set

Rock mechanical problems and optimization for the long ...



Dec 25, 2011 · Electricity is generated through four 16.67 km-long diversion tunnels, which cut the 150 km-long river bend. The project consists of 7 deep parallel tunnels, i.e. 4 diversion tunnels, ...

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CN108385627A

The present invention provides the power station diversion tunnel plugging construction methods based on karst landform, it includes the following steps: S1: It designs diversion tunnel and ...



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Left Diversion Tunnel of N-J Hydropower Project in Pakistan ...

Oct 25, 2016 · The diversion tunnel of N-J Hydropower Station will be 67 km long in accordance with the construction plan, a super long tunnel which can rarely be seen in the world.



- ☒ IP65/IP55 OUTDOOR CABINET
- ☒ OUTDOOR MODULE CABINET
- ☒ OUTDOOR 5G BASE STATION CABINET
- ☒ WATERPROOF

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A Technical Review of Hydro-Project Development in China

Sep 1, 2016 · This paper summarizes the development of hydro-projects in China, blended with an international perspective. It expounds major technical progress toward ensuring the safe ...



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Broadlands Hydro Power Project (35 MW)

Aug 4, 2025 · The main sites of the project are located near Kithulgala. The main components included in the projects are the main dam, diversion dam, main ...

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DIVERSION TUNNEL STRUCTURAL INSPECTION AND

...

Mar 30, 2020 · The diversion-generating system consists of 4 inlets, four high-pressure diversion tunnels, one underground powerhouse, one switch station, two tailrace surge chambers and ...

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A Review of the Transient Process and Control ...



The hydropower station contains the following subsystems: Upstream reservoir, headrace tunnel, surge tank, penstock, tailwater, hydro-turbine, unit (including ...

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Study on Structure Design of Generator of Flood ...

Jan 1, 2021 · Abstract Through the design of the Generator of the spillway tunnel, the safe operation efficiency of flood discharge tunnel with the level swirling ...

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Exhaust structure of water diversion system of hydropower station

A technology for water diversion system and hydropower station, which is applied in the direction of hydropower station, hydropower generation, water conservancy project, etc., can solve ...

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(PDF) Diversion Tunnel Structural Inspection and ...

PDF , On Sep 1, 2019, HAORAN WANG

and others published Diversion Tunnel Structural Inspection and Assessment Using a Robotic System , Find, read ...

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Key technologies and risk management of deep tunnel ...

Aug 1, 2016 · This hydropower station is a low-gate, long-tunnel, and large-capacity diversion-type power station with a total installed capacity of 4800 MW. The total excavation volume of the ...

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Power China signed the Bolivian Hydropower Station Diversion Tunnel

[Power China signed the Bolivian Hydropower Station Diversion Tunnel Project]On July 9, 2021, the 11th Bureau of Hydropower won the bid for the 2 package project of the diversion tunnel of ...

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Construction schedule simulation of a diversion

tunnel based ...



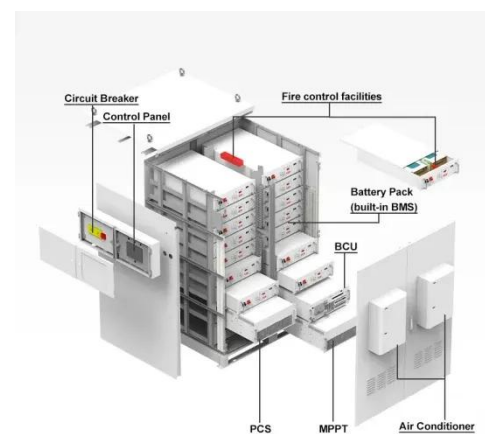
Jun 15, 2009 · The construction of a diversion tunnel in power stations is highly mechanized and complicated, requiring a series of working procedures such as drilling, blasting, loading slag, ...

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Key principles for hydropower tunnel design, construction ...

Hydropower tunnels continue to represent the highest risk and critical path component for most hydropower projects. The increasing focus on hydropower as a major source of renewable ...

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Diversion Tunnel of Hydropower Projects for ...

The use of diversion tunnel to deal with this problem is discussed in this paper with the help of a case study conducted at Central Water and Power Research ...

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CN204919504U

The utility model discloses a power station diversion tunnel cave line

arrangement structure belongs to hydraulic and hydroelectric engineering technical field, including river course, ...

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Mechanical characteristics of diversion and spillway ...

May 27, 2022 · Taking the diversion and spillway tunnel of a pumped storage power station under high in-situ stress as the research object, using finite difference method, the model of the ...

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Water diversion and power generation system of ...

Download scientific diagram , Water diversion and power generation system of hydropower station with upstream surge tank and sloping ceiling tailrace ...

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Photovoltaic generator model for power system dynamic studies



Nov 1, 2020 · This paper reviews the state-of-the-art PV generator dynamic modeling work, with a focus on the modeling principles of PV generator for the power system dynamic studies.

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Over 17,000 Metres of Diversion Tunnel Excavated for ...

Sep 22, 2023 · On September 12th, Chuosijia Hydroelectric Power Station, operated by Sichuan Power Generation Co., LTD under China Energy, achieved a breakthrough in the excavation ...



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Feasibility of Diversion Tunnel for Sediment Management in ...

Mar 2, 2025 · A diversion tunnel is also important in the case of hydropower projects in the Himalayan region, where reservoirs have a high suspended sediment load. If not addressed, ...

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DIVERSION TUNNEL STRUCTURAL INSPECTION AND ...

Mar 30, 2020 · Hydraulic tunnels are large-scale constructs used for water supply project, flood control project, and water diversion in the hydropower generation projects. It can be seen an ...

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Schematic diagram of layout of diversion power ...

The hydropower station diversion tunnel is long. When the upstream water level is low, the minimum upsurge of the surge chamber is likely to be lower than its ...

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Ambient Vibration Analysis of Diversion Pipeline in ...

Mar 12, 2024 · Vibrations within the vicinity of both the plant and the diversion pipeline are generated throughout the running phase of a pumped-storage power station due to its inherent ...

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Power Plant Components

The vertical diversion type structures are widely used in the small mountain

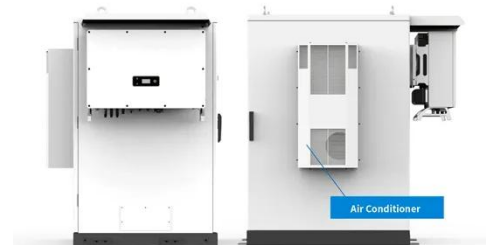


brooks and rills either to directly feed power stations or to collect water for reservoirs from neighbouring drainage ...

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Olmsted Hydroelectric Power Plant

The Olmsted Hydroelectric Power Plant located at the mouth of Provo Canyon in Utah County, Utah is one of the oldest hydro power generation facilities in the ...



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Calculation and analysis of diversion tunnel structure based ...

Based on ansys for simulation calculations, first we simulate the force of the diversion tunnel under different working conditions; then we analyze the stress distribution in the stress cloud ...

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Key problems in the design of diversion tunnel in Jinping II ...

The construction of 4 diversion tunnels in

Jinping II Hydropower Station is currently China's deepest underground engineering project. The general depth is 1500-2000 m, and the ...

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Short-term load distribution model for giant cascade serial diversion

Sep 1, 2024 · With the development of complex cascade serial diversion-type hydropower plants (CSDHP) in Southwest China, it has become imperative to study short-term scheduling ...

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Layout of the diversion tunnel in the Yangjiang pumped-storage power

Due to high water pressure in the concrete reinforced hydraulic tunnels, surrounding rocks are confronted with nonlinear seepage problem in the pumped storage power station. In this study, ...

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Key technologies and risk management of deep tunnel ...



Aug 1, 2016 · The four diversion tunnels at Jinping II hydropower station represent the deepest underground project yet conducted in China, with an overburden depth of 1500-2000 m and a ...

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