GENERATOR CIRCUIT-BREAKERS

ABB to secure Switzerland renewable sources

Clean energy production in Nant de Drance

Six generator circuit-breakers (GCBs) and transformers from ABB are facilitating a safe and energy-efficient operation in Nant de Drance, one of the largest pumped storage power plants in Switzerland.

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Nant de Drance, view of the upper reservoir

Project background

Nant de Drance is located at the Swiss-French border between Martigny and Chamonix and it has an installed capacity of 900 megawatt (MW). With its production of 2,500 million kilowatt hours per year, it significantly contributes to secure country's electricity supply.

Within a few minutes it can feed peaking power into the grid to compensate for the unpredictable power generation from renewable energy sources. The plant stores excess energy in the form of water and uses the difference provided by the 425 metres vertical shafts between the two reservoirs to generate power.

Advantages of ABB system

- A unique solution that integrates key functionalities for pumped storage application by a single manufacturer.
- A customized system that adapts to customer requirements (chambers interchangeability) and to altitude constrictions (1,800 m).

ABB technology and solution

ABB's GCB HECPS-3S system is specifically designed for pumped storage power plants and it has a proven track record in preventing severe damages to the generator and transformer.

The HECPS-3S rated for a short-circuit breaking current up to 100 kA consists of three modules: the GCB, the 5-pole disconnector and the braking switch with HECS-100R.

GCB solution is integrated with GMS600 monitoring system to provide full control of GCB operational data.

Project		
Power Plant		**Nant de Drance**
Customer		**Nant de Drance SA**
Country		**Switzerland**
Type of GCB		HECPS-3S
Maximum operating voltage	kV	17.3
Nominal operating current	A	7,500
Rated frequency	Hz	50
Short-circuit current	kA	100
Year of installation		2015 - 2019

Nant de Drance pumped storage power plant, Switzerland

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