

## Moving fast in Berne

ABB has been awarded the contract for the modernization of four DC traction substations feeding the public transport system BernMobil of Switzerland's capital Berne.



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### The Need

In connection with the rehabilitation of the main train station in Berne, the traction substation "Bahnhof" is to be replaced. The existing traction substation is since more than thirty years in service and maintenance is becoming more and more difficult.

The local utility "Energie Wasser Bern" operating the traction power supply system for the public transport system in Bern is seeking a competent partner as general contractor to undertake the modernization of four DC traction substations in total.

### Project Details

The contract awarded to ABB involves the design, supply, installation and commissioning for the complete rehabili-

tation of the traction substations.

The traction substation "Bahnhof" shall be replaced in two tranches without disturbing the operation of the Trolleybus- and Tramlines serving the busy main train station. ABB is responsible to co-ordinate possessions, outages and handover to the operations part of the local utility.

Furthermore, the substation automation needs to be integrated in the existing network control. The available place for the electrical equipment is given by the dimensions of the existing technical rooms and cannot be adapted.

### Scope of Supply

The following main electrical equipment will be replaced:

Rectifier transformer groups, DC switchgear, AC disconnecting switches as well as respective control and protections.

The DC traction substation "Bahnhof" has been fully modernized and handed over to the operations part of "Energie Wasser Bern" in 2007.

The rehabilitation of the DC traction substations "Schosshalde", "Holenacker" and "Wankdorf" is planned to take place in between 2008 and 2010.



## Technical Data DC Switchgear

– Nominal voltage	650 V (750 V)
– Rated voltage	1000 V
– Rated short-circuit current	40 kA
– Rated current, busbar	5500 A
– Rated current, feeder	2500 A
– Power frequency withstand voltage	8.3 kV

## Technical Data Rectifier

– Cooling	AN
– Nominal power at 100 % load	1900 kW
– Nominal voltage	650 V
– Rated current	3072 A
– Duty class EN 50327 and EN 50328	VI
– Unit pulse number	12

## Substation Automation

The substation automation application based on the RTU560 consists of interfaces to protection and control equipment as well as metering devices and other automation products.



The integrated HMI allows a basic local control and monitoring.

Disturbance records and load profiles are easily stored in the RTU560 and transmitted on the communications network if required.