The Hungarian Martonvásár 400/220kV GIS Substation benefits from ABB’s Substation Automation Solutions

- The utility MVM Co. chose the SAS570 Substation Automation Solution and BCS595 Bay Control Solution to efficiently automate the 400 kV outdoor GIS with 1½-breaker configuration
- Maximum safety in control
- Enormous reduction in cabling through decentralized outdoor installation
- Short delivery, installation and commissioning with minimum outage time
The Martonvásár S/S is one of the most important nodes in the Hungarian 400kV grid. It is owned by MVM Co. and operated by its’ daughter company OVIT Co. The station is fed from the nearby power plant via two 220kV lines and 400/220kV transformers. For the retrofit of this substation, built in 1978 with outdoor GIS, the customer opted for numerical protection and a decentralized control concept comprising redundant station level systems and modern bay control.

The bay level
Control Upon thorough evaluation, the customer selected ABB’s BCS595 Bay Control Solution for the local control and monitoring of the switchgear. Special attention had to be given to the complex interlocking requirements to ensure correct operator control.

The BCS595 comprising three REC316*4 control terminals and BCM800 bay control mimics is assigned to a diameter. The in-/outputs are handled by nine RIO580 remote I/O units, which provide e.g. the information for bay interlocking to all control terminals.

The optical LON interbay bus connects the REC316*4 to the station level and supports peer-to-peer process data exchange between all bay controllers for station-wide interlocking.

The decentralized, diameter-oriented installation of the BCS595, i.e. in air-conditioned outdoor cubicles next to the switchgear, enormously reduced the amount of cabling required.

Protection The protection cubicles, comprising ABB RE.500series terminals as Main 1 and third party devices as Main 2, for the 400 kV and 220 kV lines as well as the 400/220 kV transformers, are placed inside the control building.

The station level
The SAS570 redundant station automation solution operates in hot-stand-by mode warranting optimal availability. The Micro-SCADA human-system-interfaces (HISs) support secure station operation and comprehensive monitoring. Hierarchically arranged menus present the operators with the process pictures, alarm/event lists, trends and reports. Event/alarm lists, protection settings as well as disturbance records and analysis tools support the protection engineers.

The customer’s elaborate operational rules, designed e.g. to avoid overvoltages, were implemented by special preprogrammed switching sequences. These are carried out automatically once selected by the operator and ensure error-free performance and maximum safety.

Substation Automation System SAS570

For more information please refer to the responsible ABB sales engineer for your country or to the address mentioned below.