ABB's technology to modernise Alunorf's cold rolling mill

Aluminium Norf GmbH chose ABB to modernise the automation and technical equipment at their KW5 cold rolling mill in Neuss, Germany

ABB has received two contracts from Aluminium Norf GmbH (Alunorf) for the modernisation of the KW5 cold-rolling mill with a total contract value of around €2 million. Both contracts represent the first part of a complete four-phase modernisation of the automation and technical equipment at KW5. In doing so, ABB is continuing its almost 20-year cooperation in the lifecycle support of the installation.

The first step includes an upgrade of the existing ABB 800xA process control system to version 5.1, as well as the implementation of an AC800 PEC controller as a master encoder and for drive control in an existing ABB system based on MP200 controllers from the mid-1990s. The AC800 PEC controller is specifically used for the demanding driveoriented control and regulation tasks in all types of rolling mills. At the same time, the application software has been updated to the latest technology and a current diagnostic system implemented.

In connection with this, a virtualised client/server architecture is used, promising significant savings in terms of the hardware deployed. The challenge here is a very short rebuild time during system downtime at the turn of the year 2016/2017.

Efficient control technology

As a second step, the technological control systems will be modernised in parallel. Here, the AC800 PEC controller can also be used for settings and thickness control, as well as replacing the existing MP200 controller. In the course of this

revamp, the latest control methods are also integrated, aiming to further increase efficiency while boosting quality and system availability. In addition, ABB is converting the mill stand cabling to a modern remote I/O technology (S800 I/O). Functionality tests using simulation software allow for short rebuild times and increase planning security. In this case, implementation activities started in spring 2016 and completion of the work is scheduled for April 2017. The rebuild will proceed during several short scheduled maintenance downtimes with the use of a shift-in strategy.

Partner for the whole lifecycle

With these contracts, ABB is continuing the lifecycle support of a system which has lasted for more than 20 years as well as ensuring the productivity of KW5, a high performance mill for production of primary materials for downstream production plants at Hydro Aluminium Rolled Products GmbH and Novelis Deutschland GmbH, which operate as equitable joint venture partners of AluNorf GmbH. For this reason, special requirements in terms of availability, minimal production interruption during the rebuild and quick ramp-up to nominal capacity after the rebuild are called for.

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