

Hydro Aluminium focuses on new safety technology from ESSER

Reconstruction of the CO2 extinguishing system in the world's largest aluminium fine strip rolling mill

At the Grevenbroich site in the Rhineland/Germany, Hydro Aluminium 500,000 tons of rolled products are produced annually and shipped all over the world shipped. Nearly 1,900 employees ensure a smooth process for production and distribution of beverage cans, components from the automotive industry or the shipbuilding, facade and ceiling cladding, offset printing plates for the daily newspaper and much more.

Conversion without loss of production

To ensure a safe production process was recently the focus of the aluminium foil rolling mill of the conversion of a CO2 multi-range extinguishing system. The production standstill should be as short as possible. 14 extinguishing areas had to be considered. The representation of all states of the extinguishing systems should be carried out on a higher-level hazard management system. To solve this problem the specialist installation company GST Gesellschaft für Sicherheitstechnik mbH from Mülheim an der Ruhr/Germany was contacted, since the foundation of the company more for more than ten years the products of the European market and technology leader in the field of fire detection technology. Since 2001, GST has been certified according to DIN ISO 9001 certified and has been January 2003 the recognition according to VdS 2129 and according to DIN 14675 GST is a specialist installer for fire alarm systems, extinguishing systems, burglar alarm systems and for access control and video surveillance systems.

Planning phase decides about success

A project like this restructuring the extinguishing areas at Hydro Aluminium requires a detailed planning phase. So already in an early stage with the persons responsible for the company worked out a strategy that allowed the restructuring without serious production influences. It was decided that from this reason to continue the work on the Easter days 2006, as the new technology to be used allows a quick installation swing without changes in the remaining pipeline installation of the CO2-low pressure system to have to put up with.

Conversion made easy

The existing cabling could easily into the new rack cabinet and placed on the new connection consoles.

These were already prematurely installation ducts on C-rails on the mounting wall of the stand cabinet has been fastened. Only after completion of the shunting and corresponding polarity measurements then the individual extinguishing agent control modules are connected to the connection consoles via pluggable connecting lines. One after the other these slide-in modules were then switched on and corresponding functional tests were carried out. A large advantage was the possibility to large advance programming and parameterization. In this way, valuable time could be saved during the rebuilding phase.



Graphic visualization enables optimal action

The simple assembly and the fast installation of the extinguishing panels enabled the conversion of the extinguishing system in two days. This reduced the loss of production to a minimum will be. All information of the entire extinguishing system is controlled via the WINMAG Management System and thus the plant fire brigade and security has 24/7 information about the entire system. This way ensures that in case of danger can be reacted to as quickly as possible, and one is well informed about the local conditions. All messages such as "Extinguishing agent control blocked", fading, shutdowns and pre-alarms are displayed to two workstations, on one hand at the fire department and on the other hand the plant security department. The plant fire department is able to access each of the networked fire alarm control panels

and extinguishing agent control devices, and is always informs if a fire or a malfunction occurs. In the entire redundant system, several fire alarm control panels are already networked from other construction phases:

1 x BMZ 8008
 1 x BMZ 8007
 2 x BMZ 8000 C
 4 x BMZ 8000 M
 5 x IQ8Control M

For optimum protection of employees and production facilities, a total of 44 extinguishing agent control devices of type 8010 are connected to the networked fire alarm control panels and form a uniform security concept. Only consistent preliminary planning and the professional competence of the installation company have made it possible to successively upgrade the security standard in this sensitive object to a modern and higher levels without the need to to cause a

Some key data on the entire System setup:

- CO2-extinguishing system with a 30-tonne low-pressure tank
- 14 extinguishing agent computers of the 8010 series 3 in 19-inch design in 2 upright cabinets with swivel frame
- The protected areas include besides 6 aluminium rolling stands also two exhaust ducts, three hydraulic cellars, two rolling oil tanks and a scrubber exhaust air treatment system. The extinguishing centers had to meet a number of boundary conditions, such as control possibility of 14 range valves with a flooding time of 120 seconds, of 8 tank valves with a Pre-warning time of 20 seconds, 14 blocking devices, 3 signalling groups per extinguishing area, 14 machine emergency stop switches, 14 equipment switch-offs, 16 panel controls (extinguishing system triggered), 20 monitored acoustic signal transmitters, 20 monitored flashing lights and 14 Feedback signals "Range valve controlled".

significant loss of production. This became possible among other things, because GST planned and calculated at an early stage with extinguishing panels in the space-saving 19-inch rack version.

