In a hexane oxidation plant belonging to Lanxess at the Krefeld-Uerdingen Chemical Park, Germany, the existing ESD (Emergency Shutdown) system has been upgraded in a minimum commissioning time.

Because Lanxess planned to shut down the plant for a very short period before commissioning, it decided to conduct a Factory Acceptance Test (FAT) using the expanded and modernised safety system. To this end, a concept was drawn up together with Lanxess and the system was replicated 1:1 at HIMA in Brühl. All of the functions were tested as part of the FAT in collaboration with staff from Lanxess, TÜV Süd Chemieservice and HIMA. This enabled the commissioning time to be reduced to a minimum.

Lanxess is a leading specialist chemical producer which generated a turnover of €6.58 billion in 2008 and currently employs around 14,800 people in 21 countries. The company runs 44 facilities worldwide. Its core business is the development, manufacture and sale of plastics, rubber, intermediates and specialist chemicals. They use the plant to produce KA oil, a primary product used to make thermoplastics. KA oil is a mixture of cyclohexanone and cyclohexanol and is produced by the oxidation of cyclohexane.

In the event of an accident, a process involved in producing KA oil may need to be shut down. The task of the ESD system is to deactivate the reaction in the event of danger, and relax the process. Among its most important tasks is the monitoring of limit values and control valves.

The safety system has been in reliable and fault-free operation at the plant since 1999. The new project involved adding two new module racks and I/Os, and extending the communication with the process control system. New central modules with larger memories have been incorporated. In addition, the ELOP II engineering tool was upgraded using the Ethernet protocol for its connection to the engineering PC. The link with the Siemens control system is a simple and efficient PROFIBUS-DP.

The new ESD system, consisting of an H51q safety controller with nine IOMRs (input/output module racks), is housed in two switchgear cabinets. 936 input and output signals are processed with respect to safety. Lanxess chose HIMA because of the concept offered, the quality of the products, the expertise of the staff and the excellent project preparation. The specialist chemical producer uses the Planar F, HIQuad and HIMatrix systems in its plants all over the world.

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SCHMIDT Technology GmbH
78112 St. Georgen/Germany
Telephone +49 (0) 77 24/8 99-0
info@schmidttechnology.com
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