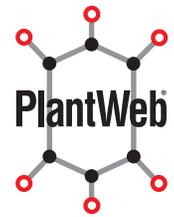


INEOS Chlor makes Commissioning of Hydrochloric Acid Plant Fast and Safe using Emerson's AMS[®] Suite



RESULTS

- Instrument commissioning completed two weeks earlier than planned enabling project to be de-manned sooner
- Earlier plant start-up saved 6 man / weeks in commissioning manpower



APPLICATION

DCS and SIS burner sequence on Hydrochloric Acid Plant.

CUSTOMER

INEOS Chlor is one of the largest Chlor-Alkali producer in Europe and a global leader in chlorine derivatives. The Runcorn site, in the UK, is INEOS Chlor's largest site.

CHALLENGE

INEOS Chlor has recently invested significant capital into the replacement of one of its chlorine production plants. These plants need high quality Hydrochloric Acid (HCL) as a feedstock. To achieve full rates and maximum efficiency two 'state-of-the-art' HCL burners were installed and commissioned alongside the new plant. Quick and safe commissioning of these assets was critical to INEOS Chlor achieving the full potential of the new chlorine plant and reducing production costs at a time when raw material costs were rising dramatically on the back of oil prices.

The start-up and trip logic on the HCL burners is very complex. Over 40 inputs are controlled through a complex sequence within the DCS to start-up and operate each burner. This in turn is monitored by an equally complex trip logic, sitting within the SIS. To ensure safe start-up and operation, the DCS control system must bring the plant up on-line whilst ensuring that the trip constraints are avoided at all points. Before any physical commissioning with hazardous chemicals (Hydrogen and Chlorine) could be carried out, the functionality of both the DCS sequence and trip logic in the SIS had to be proven.

“As the complexity of DCS and SIS systems increases, so does the need to have the best tools for commissioning. Commissioning this plant safely and quickly was only possible because we had AMS Suite and an integrated plant architecture – Emerson's PlantWeb.”

Paul Young
Automation Manager



For more information:
www.assetweb.com



As the complexity of DCS and SIS systems increases to meet higher safety and environmental standards then testing by conventional methods becomes slower and increasingly painstaking.

Conventional methods require the simulation of several process variables at the same time, and require close co-ordination and communication between the field, instrument rack room and control room. In addition, the commissioning of such complex systems can be underestimated causing the project plan to over run considerably.

SOLUTION

The plant automation strategy had been designed and developed around Emerson's PlantWeb® digital plant architecture, with Emerson's DeltaV™ digital automation system at its heart. The field instruments were predominantly manufactured by Emerson. The instruments used for process control communicate with the automation system via FOUNDATION™ fieldbus digital communications technology and the devices used on the safety systems communicate via HART®.

The HART devices were multiplexed back to AMS® Suite to enable the predictive diagnostics to be accessed. Using AMS Suite to simulate process variables, the commissioning team could test the sequences and logic from the control room. Standard procedures would normally require a technician in the field to drive the inputs, communicating with a technician in the control room via radio.

Once formal injection testing of the shutdown inputs was complete, sequence testing could be completed by driving the inputs from the central control room. This significantly reduced the amount of interaction in the field and enabled the commissioning team to work alongside the operators whilst simulating start-up and trips.

This different approach not only reduced the manpower required to commission by six man weeks, but significantly reduced the overall time to get the plant handed over in a fully operational state. Past experience with commissioning and start-ups on complex control schemes has seen some of them over-run by many months. The increased availability of diagnostic information has been a significant factor in the reduction in commissioning time and the successful start-up of this plant.

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AMS Suite: Intelligent Device Manager powers PlantWeb through predictive and proactive maintenance of intelligent field devices to improve availability and performance.



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