

Chemical Manufacturer Implements Pilot Batching System

A world leader in chemical manufacturing partnered with MAVERICK to automate a high-end pilot research and development (R&D) batching system.

Objective

A noted leader in the development and manufacture of cutting-edge chemicals needed a pilot-level batching system to develop high-tech inks. MAVERICK brought deep experience in batching, safety and related systems to the project.

Results

Using MAVERICK's Project Complete® methodology, development of the system proceeded smoothly. Close communication throughout the project, including several system demonstrations conducted via web conference assured satisfaction with the delivered product. The MAVERICK team adopted exacting customer standards and worked closely with both customer personnel and vendors to deliver for this customer. All systems were implemented and are currently operating with high functionality, reliability and safety.

Solution

The system consisted of two PLC subsystems, one for the basic process control system (BPCS) and the other for the safety instrumented system (SIS). Both systems were the latest Rockwell Automation® ControlLogix® platform, programmed using RSLogix 5000® software.

The BPCS programming included development of equipment modules (EM) for reactors, liquid and solid weighing as well as feeding subsystems and other auxiliaries critical to the process. MAVERICK utilized add-on instructions and other customer-provided code to develop control modules and device-level logic.

A basic recipe system was created to manage batch raw material quantities, mixing parameters and information needed by the operator for manual-add phases.

SIS programming integrated all system safety devices, including sensors, switches and emergency-stop devices. Critical safety output devices were tied to the SIS outputs. SIS programming functionality was also mirrored in the BPCS in a different programming language to provide redundancy in safety functions.



Also part of the delivered system was a FactoryTalk® View SE HMI. Standard objects were used to reduce development time and effort as well as to eliminate PLC and HMI tagging anomalies.

MAVERICK developed system screens according to the customer's existing standards and drawings. When the team discovered that actual field display resolution did not match that in the specification, MAVERICK found a quick and inexpensive solution to the problem.

All PLC programming objects were compatible with the Rockwell PlantPAx® standard to provide a system control and HMI product consistent with existing systems.

A process model was developed for the system using the MYNAH Technologies' (now Emerson®) MiMiC™ simulator. This system was used to run a factory acceptance test (FAT) and train operators on the use of the new control system.

MAVERICK fully supported all system deployment activities through system checkout, commissioning manual development and operator training.

The MAVERICK Difference

MAVERICK's ability to provide a one-stop shop for electrical and controls to our midstream customer minimized delays and errors that can occur with multiple firms executing complementary scopes of work. Our methodology ensures our projects are not only timely, but of the highest quality and completeness.



A Rockwell Automation Company

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