

News Release

Springfields cuts commissioning times for major crane installation

Overview

Springfields, near Preston, has provided nuclear fuel fabrication services since the mid 1940's. The site is run and operated by Springfields Fuels Limited who provides nuclear fuel, chemical and mechanical fabrication for AGR and Magnox fuel, and conversion services for uranium hexafluoride.

Fuel for nuclear reactors is made from uranium ore. The fuel is used in nuclear reactors to generate electricity. Uranium arrives at Springfields as Uranium Trioxide (UO₃). It passes through a number of chemical processes that change it to Uranium Tetrafluoride (UF₄) and then follows different processes depending on the type of fuel Springfields are making.

Bob Harvey, Improvement project manager at Springfields, tells us how specialist software from AutoLogic Systems helped cut their commissioning times in a recent equipment upgrade by Macdonald Humfrey.

Problem and Solution

An automated crane system is used at Springfields to move drums of Uranium Dioxide powder between a warehouse and various load/unload stations for processing. When a recent upgrade needed to be completed within a very short commissioning time, Macdonald Humfrey brought in specialist controls testing software from AutoLogic Systems Ltd.

Demo3D™ rapidly defines accurate and realistic demonstration models based around real physics for materials handling and manufacturing systems.

Bob Harvey comments: "We only had a two week window in which the upgrade had to take place. To cut down on the commissioning time we linked the Demo3D™ software to our PLC (Programmable Logic Controller) so we could test the full installation virtually before the upgrade was carried out.

Some of the pre-commissioning could also be done from the Macdonald Humfrey offices which eliminated the travel time and costs of their engineers visiting our plant.

“The software allowed us to flag up issues we would not have found until the upgrade was fully installed. This would have added extra days to the installation process which we just didn’t have. It also allowed us to test ‘what if’ scenarios such as if the plc software would allow drums to be deposited at warehouse locations which are reserved for monitoring equipment. We could then programme new settings into the PLC to avoid this happening in real time. I could also drive the cranes manually with the software which as well as being great fun, meant we could enter speed and stopping limitations into the PLC to make manual handling of the crane as accurate as possible for the operators.”

As part of the upgrade, Springfields wanted cameras fixed to the cranes so operation could be monitored remotely. “One major unforeseen advantage was that Demo3D™ enabled us to test the positioning of cameras on the cranes and how many we required to get the best views possible.

“With the help of Demo3D™ and Macdonald Humfrey, we cut our commissioning time to just five days and completed the installation within the specified two weeks.

“We are already talking with Macdonald Humfrey and AutoLogic Systems about obtaining a version of Demo3D™ that we can use to train new and existing operators on recovery procedures without requiring a plant shutdown.”

John O’Brien of Macdonald Humfrey adds: “Using the emulation for the crane upgrade at Springfields enabled much of the PLC programming to be tested before going to site. Although not all on site commissioning could be avoided, much of the sequence of operations and behaviour of the crane could be tested. This saved time on site as we were confident of the operation of the system and could concentrate on drive setup, measuring device setup etc which could only be configured on the live system.

“We were able to rig up a PLC, HMI and the emulation at our offices and invite Springfields to get a feel for how the crane was going to react when instructions were given from the HMI. The factory acceptance testing could easily be undertaken at our offices on an essentially live system. The customer was also able give us his suggestions on any requirements and improvements needed before the equipment was installed on site.

“We have used emulation packages before but Demo3D gave us a sense of realism not experienced previously.”

For more information on Demo3D™ please visit www.autologic-systems.co.uk.

ENDS

Media Contact

Jo Love

LoveCommunication

Phone : +44 (0)7887 775271

Email: jo@lovecommunication.co.uk

About AutoLogic Systems Ltd

AutoLogic Systems Ltd was founded in 1993 and quickly established itself as a leading provider of simulation products and services to industry. The company has continued to grow its expertise, services and products and today offers a unique range of specialist software for eliminating waste and improving efficiency. These products are grouped into three core business areas. The Facility Modeling and Controls Testing area for materials handling simulation, presentation and control system emulation/testing. The Package Design and Load Optimisation area for optimising pack, case, pallet, vehicle and container fill and the area of Vehicle Scheduling and Tracking for automating the route planning and scheduling of vehicles together with web-based tracking and reporting.

www.autologic-systems.co.uk

About Macdonald Humfrey

MacDonald Humfrey (Automation) Ltd (established in 1988) is a provider of Automated Control Systems to Airports, the Process industry, the Automotive Industry, Logistics Industries and Commercial Markets. They provide customised solutions, products and services tailored around the customer needs and specialise in Management Information and Automated Systems utilising PC's, PLC's and Embedded PC Technologies.

www.mhald.co.uk



