Solenis Springvale Replaces Obsolete Legacy DCS with Modern DeltaV™ DCS

RESULTS

- Unsupported and unreliable legacy DCS removed
- Modern DeltaV™ DCS installed with no loss of production
- Remote access and current support added to site

APPLICATION
Batch process that produces specialty chemicals for the pulp and paper industry.

CUSTOMER
Solenis Springvale Manufacturing Site, Springvale, Melbourne, Victoria, Australia.

CHALLENGE
The client wanted to replace their legacy DCS with a current DCS, but they had to maintain their production schedule, which had only a two-week shutdown window. They also wanted the ability to be able to modify/update configuration, which they were largely unable to do with the existing legacy DCS. With that, they wanted to include redundancy in the DCS database server/batch executive to keep production up and running in case of server failure.

The legacy DCS needed to be replaced as it was obsolete, unsupported and at the end of its lifecycle, which was causing reliability issues with thirty-year-old workstation hardware/software. The necessary upgrade was constrained by available space limiting hardware options, and there was no room for new cabinets/terminations.

The facility runs a batch process that is automatic with little user intervention. This needed to be converted like for like using new DCS logic capabilities, which differed from the legacy DCS (not fully S88). Existing workstations only had 3.5" floppy drives which had both failed, meaning a backup of the system hadn't been made in years, and the regular method of taking a backup/export of the existing config (to be used in the conversion) was not possible.

SOLUTION
FEED was completed first to firm up the project scope. This added accuracy to the cost estimate and allowed several potential different replacement solutions to be explored. A site audit was completed in FEED to fully record the existing installation in detail. Once the site audit was complete, hardware options were analyzed, and recommendations were analyzed, and recommendations were defined.

> *"It is so satisfying to see this coming through, and now we have the ability to also make changes. The remote connection should help us with diagnosis and helping our operators."*
>
> **Norman Dang**
> Plant Manager
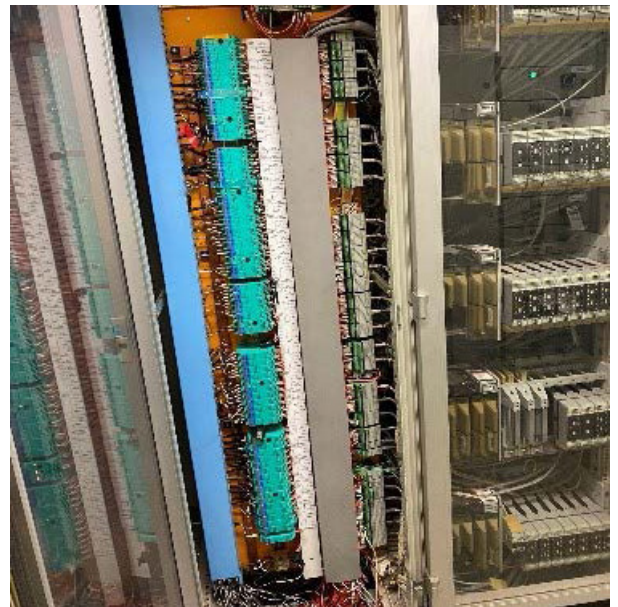
(Before) Limited space meant the most compact hardware solution was required to replace the Legacy DCS.

Hardware and Software Selection

PK Controllers c/w high-density M-Series Plus cards/mass connection solutions were selected to replace the legacy DCS (legacy I/A) FTA boards. DeltaV Batch software was used to replace the existing legacy Batch software to ensure they retained existing functionality. DeltaV Virtual Studio (virtualized environment) was used to solve the problem of server redundancy.

Cutover Strategy and Results

The cutover to the new DCS was decided to be a "cold" cutover, in which the existing DCS is shutdown, removed, and replaced with the new DCS and the plant then started up "cold" (i.e., not a progressive "hot" cutover where the plant is moved from one DCS to the other with the plant running). This was possible due to the plant being regularly offline at the completion of a batch.

The existing system was demolished and replaced with the new hardware in six days. Device function checks were completed in three days. On the tenth day of the cutover period a batch was run successfully. On Days 11-14, batches were run with an Emerson representative onsite to help with any issues, of which there were almost none. At the end of day 14, the client was confident to run the system by themselves, one day earlier than planned.

Remote access to the DCS was set up, allowing the plant engineer to be able to view the plant state and batch progress from their office rather than having to walk to the control room.

RESOURCES

Emerson Automation Solutions Industries
https://www.Emerson.com/Specialty-Chemical

DeltaV DCS Overview
https://www.Emerson.com/DeltaV-Control-System

Project Success Stories
https://www.Emerson.com/documents/automation/brochure-project-certainty-capital-project-success-ebook-emerson-en-6546586.pdf

(After) The replacement allows the flexibility to make changes and the enhancement of remote access helped the operators to diagnose the plant state more promptly.

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🌐 **www.emerson.com/contactus**

For more information:
www.emerson.com/DeltaV