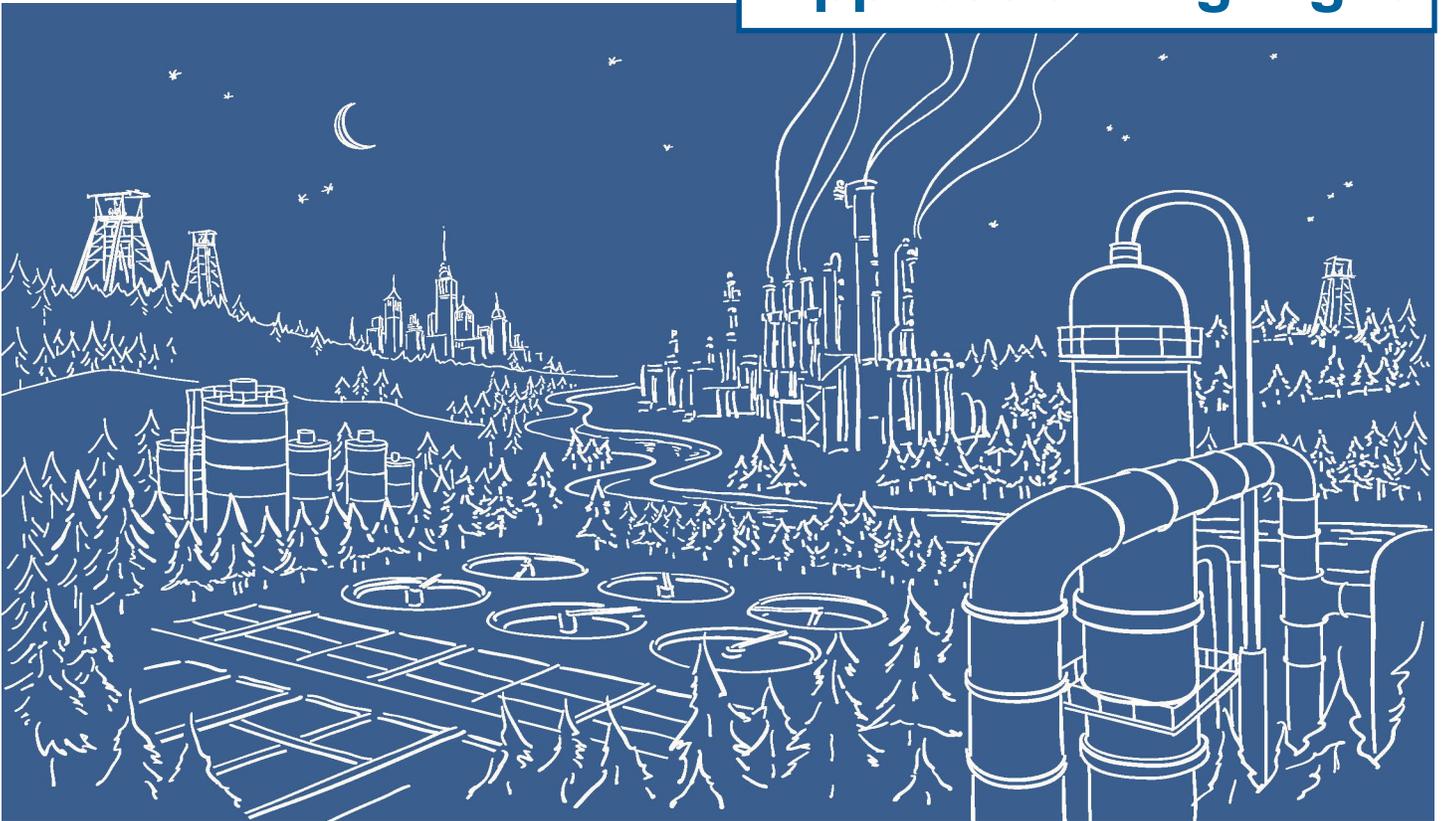


Application Highlight



2500 Series® Programmable Automation Control System

UK-based Coal Products, Ltd Migrates Process Control/HMI Systems from WonderWare® and TI/Simatic® CVU10000 to CTI 2500 Series®/zenon Solution

A UK-based manufacturer of solid fuel briquettes recently migrated its process control/HMI system to a CTI 2500 Series®/zenon HMI/SCADA solution.

Coal Products Limited produces various smokeless, high-performance alternatives to house coal that are designed for use in domestic appliances, open fires and stoves. The process involves the blending and then briquetting of coals and biomass using a variety of binders to produce specific fuel performance. Their optimized combustion products are cleaner and more efficient than traditional house coal and have a significantly reduced environmental impact.

Overview

Faced with obsolete and increasingly difficult-to-maintain HMI hardware and software, Coal Products, Ltd. sought out a modern control and supervisory solution that would ensure long-term reliable operation of its plant with maximum efficiency. The manufacturer was also looking for a solution that would be economical to implement with minimal downtime.

CTI's international distribution partner NAPA International France implemented a turnkey migration solution using CTI's 2500 Series® processors, zenon supervisory systems, the manufacturer's existing process control programs and much of the existing PLC system, thereby reducing migration risk and minimizing cost and downtime.

- Existing PLC system left largely intact
- No rewiring or rewriting existing PLC programs
- Downtime measured in MINUTES
- Low cost and low migration risk



The Coal Products site located in Immingham (United Kingdom) had two lines running obsolete control and HMI systems composed of Simatic® 505 PLCs and CVU 10000. The two lines produce over 300,000 tons of solid fuel briquettes per year.

For several decades, each line used two old Texas Instruments®/Simatic® CVU10000 systems for process monitoring and control. Facing difficulties in maintaining HMI hardware and software (running under MS-DOS), Coal Products started looking for a modern control and supervisory solution which would ensure reliable and efficient long-term operation of the plant. Coal Products chose to implement a turnkey solution based on a CTI 2500 Series®/zenon system, implemented by NAPA International France, CTI's international distribution partner.

The company migrated the first line in 2014. After its successful implementation, it migrated the second line with the same CTI/zenon system in 2015.

The two zenon supervisory systems operate from two inexpensive standard PCs running Windows® 8.10 and communicate with the CTI 2500-C200 PLC over an Ethernet network. Access to CTI's CPU diagnosis tools is just one mouse click away from the supervision system.



Each PC running zenon has three 22" LCD screens attached to allow the operator to simultaneously display several process screens or alarm lists or trend views.



Extraction tools automate migration and reduce engineering and conversion risk

NAPA International France engineers have mastered how to effectively and efficiently migrate customers from mature Texas Instruments/Siemens HMI/SCADA systems that are connected to SIMATIC® 505 PLCs to the new CTI 2500 Series®/zenon solution and have developed various tools to extract configuration data from the existing HMI/SCADA systems in order to semi-automate zenon engineering.

Customers often request that their new system have a look and feel that is similar to their old system in order to keep operator training to a minimum. Thanks to a full configuration-oriented approach, it is very easy to achieve this goal with zenon and to re-use objects already developed in previous migration projects, such as CVU10000 Alarm and Loop Summaries, Groups and Tune details.

Configuration of the zenon system is both faster and less expensive for the customer compared to other alternatives. For the Coal Products plant, the old views of the CVU10000 HMI were used as a background to design new zenon views, and the list of variables, along with their description and PLC memory address, was generated from the text file exported from the CVU10000 system database, converted to xml for zenon import. This process not only minimized the time spent making the migration, but more importantly, it minimized the risk of human error during engineering.



Because the CTI/zenon solution requires no replacement of the PLC system or rewriting of the existing PLC programs, it is very economical compared to alternate approaches. There is also much lower risk in the migration since the PLC process control program is untouched. And very importantly, there is no extended downtime required to recommission the system.

The CTI 2500 Series[®]/zenon system provides the most economical and lowest-risk solution for revamping CVU10000 and other discontinued supervisory systems such as TISTAR[®], SIMATIC[®] PCS OSx or SIMATIC[®] PCS7/505 DBA.

In this project, downtime was limited to only the few minutes required to replace the Simatic[®] 505 PLC with its CTI 2500 Series[®] equivalent. On the first production line, revamped in 2014, Coal Products ran both systems (CVU10000 and zenon) in parallel for 1 month so that their operators felt even more secure. After 1 month, and without production stop, the old CVU10000 was completely removed.

The second line was revamped in 2015. It also included the migration of a CVU10000 to zenon and the replacement of a Simatic[®] 505 CPU to the CTI 2500 Series[®] equivalent. Additionally, it included the migration of an old WonderWare[®] system for the CCU control of 128



motors into the same zenon interface. The 3 systems ran in parallel for 3 months before zenon completely took over.

Karl Dixon, Maintenance Electrical Engineer at Coal Products:

“...We were dreading the process of migrating to a new control system, but with the help of NAPA and the versatility of the new zenon system, we were able to do so without downtime or system errors...”

All in all, it was a relatively fast, simple, cost-effective HMI/SCADA migration that allowed the manufacturer to modernize and update its plant supervisory and control systems without completely replacing its existing process control system, requiring extensive downtime, reprogramming or significant conversion risk. That's what we at CTI call Smart Modernization[™].

If you have Texas Instruments[®], Simatic[®] 505 or CTI 2500 Series[®] PLCs in your plant and are thinking about modernizing your PLC or HMI/SCADA installations, do not hesitate to contact us to discuss your requirements and obtain a detailed demonstration of our solutions.

