

Cargill Executes Vegetable Oil Refining Project Faster Using Emerson's PlantWeb® Digital Plant Architecture



RESULTS

- Software configuration and commissioning time cut in half
- Plant started at least 4 weeks early
- Wiring reduced by 50%



APPLICATION

A new vegetable oil refining plant built downstream of an existing crush plant in Newcastle, New South Wales, Australia, produces fine grade, higher value vegetable oils. Major process units in this plant, which was commissioned in June 2007, include bleaching through filtration and adsorption, as well as deodorizing.

CUSTOMER

Cargill Australia Limited is a diverse agribusiness employing more than 1,900 workers in Australia. Business operations include oilseed processing and further value adding, flour milling, grain and oilseed merchandising, bulk handling, cattle feedlotting and beef processing.

Cargill's state of the art refinery in Newcastle processes and distributes refined, bleached and deodorised canola oil, sunflower oil, soybean oil and cottonseed oil as well as imported palm olein and palm stearine.

“Using DeltaV with AMS Device Manager cut our software configuration and commissioning time in half compared to using conventional I/O. We were at least four weeks early in starting our plant, allowing us to secure valuable long-term contracts.”

**Warwick Bagnall
Projects Supervisor
Cargill Australia Limited**

For more information:
www.AP.EmersonProcess.com/PlantWeb
Enquiries@AP.EmersonProcess.com

CHALLENGE

The more critical loops in this batch process include temperature and vacuum control of the deodorizer. If these parameters are not carefully maintained within specification, the batch must be reworked.

A major process requirement is to track each batch to ensure there is no cross-contamination between batches. The ability of the control system to meet this need is a key success factor.

Another important consideration was the desire to reduce project risk by making a single vendor responsible for the automation system. In particular, the plant designers demanded strong supporting software.

Cargill engineers wanted a digital plant architecture capable of long-term operations and dependable maintenance based on intelligent device diagnostics accessed across digital buses. They also wanted a control system that could be installed and commissioned quickly with low risk, and would result in low maintenance costs. They were somewhat interested in reducing wiring.

SOLUTION

The technologies best suited to meet the Cargill needs were Emerson's PlantWeb architecture and the DeltaV™ digital automation system with integrated AMS® Suite: Intelligent Device Manager software based on Electronic Device Description Language (EDDL). PlantWeb with the FOUNDATION fieldbus™ technology, which is used for all instruments and control valves, was selected as the automation engine for the entire refinery. Ease of commissioning and access to diagnostics were key reasons for selecting these technologies.

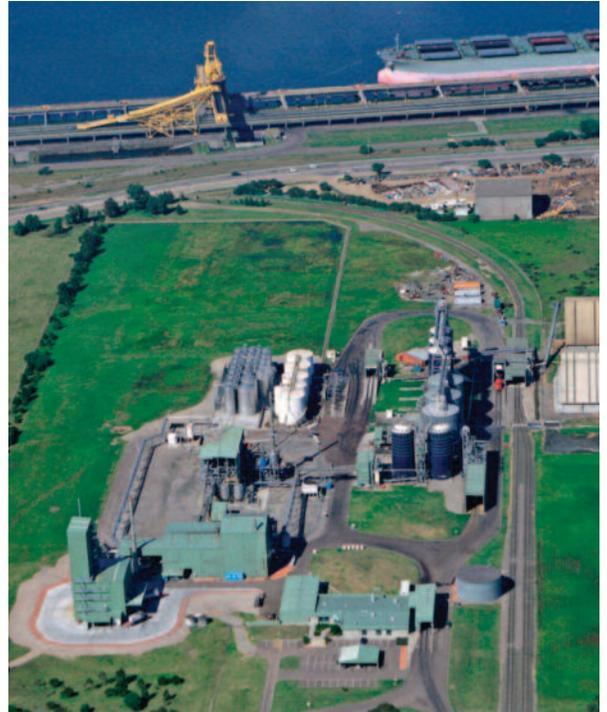


FOOD & BEVERAGE

In addition, Emerson was assigned single-source responsibility for building the system and panels, integrating software, configuring the system, installing devices, and utilizing FOUNDATION fieldbus hardware. The Main Instrument Vendor (MIV) approach eliminated the conflicts sometimes associated with multiple vendors.

The plant automation system digitally integrates more than 80 fieldbus devices, including Rosemount® 848T 8-channel temperature transmitters for most temperature points. By installing 8 to 16 devices per cable, the PlantWeb architecture reduced wiring by 50 percent. On/off solenoid banks as well as drives and electrical switchgear are connect through Profibus-DP.

The use of FOUNDATION fieldbus in conjunction with AMS Device Manager and DeltaV control system made it possible to complete this project a month sooner than would have been possible with a more conventional solution. This enabled Cargill to reduce costs, as personnel from other plants who came in to help were able to complete their tasks and leave earlier than planned. Product revenues were also generated sooner.



**Emerson Process Management
Asia Pacific Pte Ltd**
1 Pandan Crescent
Singapore 128461
T (65) 6777 8211
F (65) 6777 0947
Enquiries@AP.EmersonProcess.com
www.AP.EmersonProcess.com

The contents of this publication are presented for informational purposes only, and while every effort has been made to ensure their accuracy, they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described herein or their use or applicability.

PlantWeb, DeltaV, Rosemount, and AMS Suite are marks of one of the Emerson Process Management group of companies. All other marks are the property of their respective owners.

© 2009 Emerson Process Management Asia Pacific. All rights reserved. The Emerson logo is a trademark and service mark of Emerson Electric Co.

Typeset in Singapore.