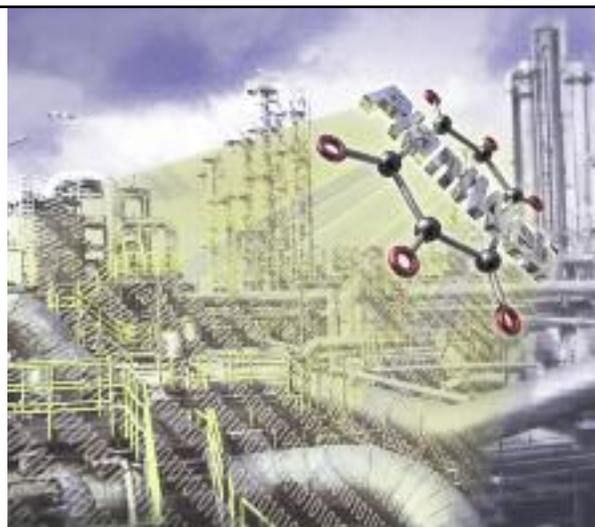


Vishnu Chemicals produces High Quality Products using Emerson's PlantWeb Digital Architecture with FOUNDATION fieldbus Technology



RESULTS

- 40% Reduction in control room size
- 70% savings in loop check time for control valves
- 55% overall savings in cost by using 848T Multi-Input Temperature Transmitter
- Remote troubleshooting using AMS Device Manager during start up for toxic and corrosive areas
- Efficient engineering and tighter integration using multiple digital buses technology



APPLICATION

Manufacturer of Sodium Di-chromate used in leather tanning applications.

CUSTOMER

Vishnu Chemicals are the pioneers in manufacturing Chrome chemicals like Sodium Dichromate, Potassium Dichromate, Basic Chromium Sulphate and Yellow Sodium Sulphate at its Plants in Medak District, Andhra Pradesh state and Bhilai, Chattisgarh state in India.

CHALLENGE

Vishnu Chemicals is setting up a new plant in Vishakhapatnam in India to produce sodium-dichromate, first of this kind to be automated which will be the world's largest production. To remain competitive, Vishnu Chemicals needs to produce high quality products and at the same time, reduced operations and maintenance cost for this plant.

"We have used majority of the FOUNDATION fieldbus products from Emerson Process Management along with DeltaV system and AMS device manager software for this critical project. The FOUNDATION fieldbus technology is simply fantastic. The plant is under commissioning and we are looking forward to full realization of the benefits of FOUNDATION fieldbus technology."

CPC Kamalakar Rao
Vice President

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SOLUTION

To meet this challenge, Vishnu Chemicals trusted Emerson's Plantweb Digital Architecture with FOUNDATION Fieldbus technology which leverages the maximum benefits of latest technologies, including intelligent field devices and Asset Management Software. The system uses a combination of FOUNDATION Fieldbus, Profibus DP, and Redundant Serial interfaces. The project included:

- DeltaV Process Automation System
- Rosemount Pressure transmitters (3051 series), Temperature transmitters (644), Magnetic Flow meters (8742C), Radar level transmitters (5400 series) and Micro Motion Coriolis Flow meters (2700 Series) - All FOUNDATION Fieldbus type
- 848T Multi-Input Temperature Transmitters
- Rosemount Analytical Conductivity Transmitters (XMT-C)
- Fisher Valves with FOUNDATION Fieldbus Digital Valve Controllers (DVC6000 Series)
- AMS Suite Software with Valve-link Snap On
- DeltaV Web-Server Connectivity
- Profibus DP Interface to the VFD's and Redundant Serial Interface with PLCs



The main concern for Vishnu Chemicals was the control room size which occupied a huge amount of space initially with the conventional approach. As a result of adopting Emerson's PlantWeb Architecture with FOUNDATION fieldbus technology, Vishnu Chemicals was able to reduce the control room size substantially. The control room footprint came out much smaller with fewer cabinets compared to using conventional I/Os. This gave a reduction in control room size by 40%. In addition, installation work was made faster with less no. of cables, cable trays, junction boxes and terminations.

Traditionally, calibration of control valves has been a very time consuming work. However, DVC6000f digital valve positioner eases calibration using 'methods' in the AMS software. Vishnu Chemicals has seen as much as 70% time savings for 62 DVCs that can be translated to reduction in loop check and pre-start up check up time.

Vishnu Chemicals achieved big savings using 33 no's 848T Temperature Transmitter which accepts eight independently configurable inputs. This reduced the number of cables, JB terminations and less I/O cards and attributed to an overall savings of 55% in installation and commissioning costs over the traditional direct temperature sensor wired approach.

AMS Device Manager presents a single environment for predictive and proactive diagnostics, documentation, and calibration management for the FOUNDATION fieldbus devices. Its remote diagnostics capability enables the operators to have a closer watch on each and every instrument during the plant startup especially in toxic and corrosive areas without going to the field.

Vishnu Chemicals have adopted FOUNDATION fieldbus technology for process control, Profibus DP technology for interfacing with Schneider VFDs and redundant serial modbus interface with Schneider Quantum PLC. By adhering to a combination of different bus technologies, Vishnu Chemicals was able to achieve efficient engineering in DeltaV and provide tighter integration between field devices and other electrical equipments.

Overall Vishnu Chemicals is able to achieve their target of making high quality products by using latest technologies from Emerson Process Management's PlantWeb digital architecture. They also achieved other benefits such as overall cost savings and smoother start up.



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