

# SRF Commissions Refrigerant Gas Plant Using Emerson's PlantWeb® Architecture with FOUNDATION™ Fieldbus Technology



## RESULTS

- 60% reduction in installation and loop check time
- Reduction in control room size by 15%
- Accurate flow control



## APPLICATION

Manufacture of Refrigerant Gases HFC 134a (commercially known as Floran 134a).

## CUSTOMER

SRF Limited, Fluorochemicals Business, Bhiwadi, Rajasthan, India. SRF is a leading manufacturer and supplier of Tyre Cord Fabric, Chloromethanes and Refrigerant Gases, Belting Fabrics and Packaging Films for India and other export markets.

## CHALLENGE

SRF was setting up a plant with in-house technology to produce ozone friendly HFC 134a to gradually substitute CFC 12 (commercially known as Floran 12) in the market. The product would be sold in India as well as exported to other countries. The project faced a very tight schedule in making the product commercially available.

*“Emerson Process Management was chosen for the automation because Emerson’s PlantWeb digital plant architecture comprises the latest host system technology powered by intelligent field instruments. We installed and loop checked in our earlier plants using conventional instrumentation and we were always behind schedule due to the contractor taking a long time. But, for the first time, with FOUNDATION fieldbus technology, we completed the work 20 days earlier and this was quite significant considering the tight project schedule.”*

**R. Rajasekaran**  
Associate Vice President, R&D, SRF Limited

For more information:  
[www.AP.EmersonProcess.com/PlantWeb](http://www.AP.EmersonProcess.com/PlantWeb)  
[Enquiries@AP.EmersonProcess.com](mailto:Enquiries@AP.EmersonProcess.com)

## SOLUTION

SRF chose Emerson's PlantWeb digital architecture with FOUNDATION fieldbus technology to gain the full benefits of the latest technologies, including intelligent field devices and asset management software. The project included:

- DeltaV™ process automation system
- Rosemount® pressure and temperature transmitters, magnetic and vortex flowmeters
- Rosemount® radar level transmitters (both FOUNDATION fieldbus and HART®)
- Micro Motion® Coriolis flowmeters
- Fisher® valves with FIELDVUE® Digital Valve Controllers (DVCs)
- AMS™ Suite with AMS ValveLink® SNAP-ON™

Installation was faster as there were less cables and terminations; the shorter loop check time resulting from auto detection and easier commissioning of devices enabled the plant to reduce 20 days of the time normally taken for completion. This translated to 60% savings in installation and loop check time. In addition, the control room size was reduced by 15% as fewer cabinets were required.

SRF had built the plant with in-house technology. The plant was commissioned with very low loading and individual unit operations were checked against design. The valves were required to operate at less than 3% opening in the initial start up. In their existing plants with electro pneumatic positioners, the threshold value was at least 5% and only when a signal step change of 3% was given to the positioner, the valve tended to change opening. However, with Fisher control valves and FIELDVUE DVCs in the new plant, the threshold is very low and the valve responds even to a signal of 0.1%, thereby precisely controlling the flow rates accurately. The plant load could be increased steadily



and this enabled verification of design parameters and provided data for scale up operation. SRF said that this was indeed a major benefit from using FOUNDATION fieldbus technology; and the system had walked the talk in giving tight control to the process.

Included in the project scope were Rosemount hook-ups. Since the plant is of an environmentally sensitive and corrosive nature, hook-ups would eliminate the leakages normally occurring at the flange and impulse line joints. According to SRF, considerable time was saved during installation. In addition, the plant was installed with Rosemount Conditioning Orifice Plates, which offered reduced straight run requirements for piping.

SRF chose Emerson Process Management because Emerson's PlantWeb digital plant architecture comprises the latest host system technology powered by intelligent field instruments. With Emerson solution, SRF completed its work 20 days earlier and this was significant considering the tight project schedule.

**Emerson Process Management  
Asia Pacific Pte Ltd**  
1 Pandan Crescent  
Singapore 128461  
T (65) 6777 8211  
F (65) 6777 0947  
[Enquiries@AP.EmersonProcess.com](mailto:Enquiries@AP.EmersonProcess.com)  
[www.AP.EmersonProcess.com](http://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. All sales are governed by our terms and conditions, which are available on request. We reserve the right to modify or improve the designs or specifications of our products at any time without notice.

PlantWeb, DeltaV, Rosemount, Fisher, FIELDVUE, ValveLink, SNAP-ON, Micro Motion 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.

© 2006 Emerson Process Management Asia Pacific. All rights reserved. The Emerson logo is a trademark and service mark of Emerson Electric Co.

Printed in Singapore.