

# PDVSA Venezuela Implements DeltaV Control Strategies to Reduce Gas Emissions and Maximize Availability

## RESULTS

- Reduced plant shutdowns caused by dehydration system, from 6 to 0 in one year.
- Reduced 300 MMSCF/ year of wasted gas in venting operations.
- Reduced 40.000 bbl of differed crude oil production.
- Reduced drastically valve damage due to hydrate formations and flashing.
- 30% reduced triethylene glycol used in dehydration process.
- 42-65% increased performance in gas dehydration rate.



## APPLICATION

Natural gas dehydration by chemical absorption.

## CUSTOMER

Petróleos de Venezuela, S. A. (PDVSA) - Pigap II, Venezuela.

## CHALLENGE

To maximize production and accomplish environment regulations, PDVSA needed to optimize and maintain high availability on one of its natural gas compression plants. Due to inaccurate control strategies in the dehydration units and constant weather changes, whole plant was not running with the required throughput. As a result crude oil production was affected, natural gas was vented and equipment were damaged, increasing maintenance costs.

*“Using DeltaV to develop and integrate the temperature controls strategy, we reached optimum operation results from the natural gas dehydration system and increased the availability of the compression system, while reducing also the maintenance cost.”*

**Marcos López**  
Instrumentation Specialist



For more information:  
[www.EmersonProcess.com/DeltaV](http://www.EmersonProcess.com/DeltaV)



### SOLUTION

PDVSA used the DeltaV system to implement new control strategies on the natural gas inlet temperature control to automatically start and stop one-by-one the 24 fans in the temperature exchanger; this was done by adjusting the setpoint and also the temperature rate to respond to rapid temperature changes due to sudden cold rains.

Besides the changes needed to improve the input temperature control, a cascade/feed forward strategy was implemented to maintain a constant temperature difference between the gas and the glycol in the contactors towers. Emerson technologies provided as part of the Plantweb™ architecture included:

- DeltaV™ process automation system.
- Rosemount® pressure and temperature transmitters.

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