

# Vortex Technology Reduces Maintenance Costs and Eliminates Unscheduled Shutdowns in Delayed Coker Applications

## RESULTS

- Eliminated unscheduled shutdowns
- Reduced maintenance costs
- Increased process reliability



## APPLICATION

Coker resid flow to the Fractionator tower

## CUSTOMER

A large global refinery in North America

## CHALLENGE

This refinery had been experiencing constant maintenance issues with high costs, process downtime, and inaccurate measurements in the delayed coker application process.

The coker resid is a by-product from the delayed coker application and is fed into the fractionator. Processing the coker resid is the final stage in optimizing the usable hydrocarbons from crude oil in the refining process. The Delayed Coker process generates coke which builds up and results in small particles called coke fines and larger coke chunks in some of the process streams.

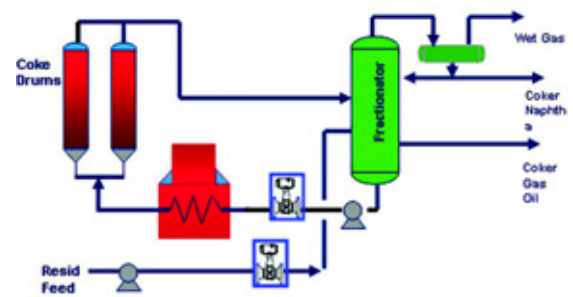
In addition, the feed stocks are generally thick tars and sludge from the vacuum tower, which makes measurement difficult due to the high viscosities of these fluids. To compensate, these applications are typically run at high temperatures. As a result, DP orifice flow systems with long runs of impulse piping have been the traditional flow technology used in these applications.

The DP orifice system that was installed experienced constant maintenance issues due to impulse plugging from the coke fines and orifice blockage from the coke chunks. This resulted in increased maintenance costs and process downtime while the impulse lines were cleared and the blockages removed.

## SOLUTION

This refinery had success with a vortex meter in a similar application, so the Rosemount 8800 series dual vortex meter was tested. Since installation in the fall of 2003, the vortex meter has not had any issues with plugging.

*Eliminating problematic impulse lines has led to increased process reliability, and eliminated unscheduled shutdowns.*



Typical Delayed Coker process diagram

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Due to the the all welded design and non-clog technology of the Rosemount 8800 Vortex Flowmeter, this company has experienced an increase in process availability and accurate measurements. In addition, by eliminating the unscheduled shutdowns caused by plugged impulse lines and blocked orifice plates, less time needed to be dedicated to flushing out the lines which helped to reduce maintenance costs.

### RESOURCES

#### 8800 Vortex Meter Product Data Sheet

<http://www.emersonprocess.com/rosemount/document/pds>

*Since installation in the fall of 2003, the Rosemount 8800 Vortex Meter has not had any issues with plugging.*

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#### Emerson Process Management

Rosemount Division  
8200 Market Boulevard  
Chanhassen, MN 55317 USA  
T (U.S.) 1-800-999-9307  
T (International) (952) 906-8888  
F (952) 949-7001  
[www.rosemount.com](http://www.rosemount.com)

#### Emerson Process Management Flow

Wiltonstraat 30  
3905KW Veenendaal  
The Netherlands  
Tel +31 (0) 318 495 555  
Fax +31(0) 318 495 556

#### Emerson Process Management

Emerson Process Management Asia Pacific  
Private Limited  
1 Pandan Crescent  
Singapore 128461  
T (65) 6777 8211  
F (65) 6777 0947  
[Enquiries@AP.EmersonProcess.com](mailto:Enquiries@AP.EmersonProcess.com)

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

  
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