

Refinery Eliminates Expensive Ongoing Failures with Fisher® Vee-Ball™ V300 Control Valve Upgrades

RESULTS

- Saved an estimated \$1,188,280 USD in materials alone over six years by upgrading to Fisher® control valves
- Reduced the effects of erosion by lining valve body with tungsten carbide coating, increasing valve lifespan
- Reduced control valve maintenance and plant outage costs by increasing valve and trim durability

APPLICATION

Valve control of slurry hydrocarbon process

CUSTOMER

Refinery in Louisiana, USA

CHALLENGE

The customer is a downstream energy company, with segment-leading refining and chemicals businesses. Their Louisiana refinery has a crude oil capacity of 247,000 barrels per day and processes mainly light, low-sulfur crude oil. The single-train plant's facilities include fluid catalytic cracking, alkylation, coking, hydrosulfurization units, a reformer, and aromatics units that enable it to produce a high percentage of transportation fuels, such as gasoline, diesel fuel, and jet fuel.

The refinery began experiencing an intolerable amount of erosion in eight of their rotary-style control valves. Used in a slurry hydrocarbon process, the valves were subjected to abrasive conditions that resulted in the deterioration of the body material. Maintenance personnel were forced to replace the valves every eight months for nearly six years, at a material cost of over \$160,000 USD per overhaul.

SOLUTION

Fisher engineers worked with Emerson's local business partner, John H. Carter, to find a way to prevent the erosion of the control valve material at the customer's plant. The existing valves were upgraded to Fisher Vee-Ball V300 control valves, complete with a tungsten carbide body lining and coated trim, and a life



Fisher® Vee-Ball™ V300 control valves provide non-clogging, high-capacity flow control of gas, steam, clean and dirty fluids, abrasive chemicals, and fibrous slurries.



expectancy of at least six years. These long-term valves provide high-capacity control of liquid, gas, steam, and fibrous slurries, and the constant wiping action of the seal across the ball's surface allows for smooth, non-clogging operation.

Because tungsten carbide is known as an extremely hard chemical compound—approximately three times stiffer than steel—Fisher has specifically designed tungsten carbide-based control valve lining and trim for harsh severe service applications. Using this material to reinforce the V300 control valve body can provide the necessary range of abrasion and chemical resistances to meet the needs of virtually any combination of erosive particulates.

Benefits of the reinforced Fisher V300 control valves and tungsten carbide trim were significant for the customer. By maximizing the lifespan of the Vee-Ball valves and eliminating the need for costly maintenance and replacement parts, plant personnel reported an estimated savings of \$1,188,280 USD in materials alone over six years. The refinery was also able to greatly reduce the annual downtime of their slurry hydrocarbon process, leading to a significant decrease in the unit's maintenance and outage expenses.



RESOURCES

Brochure on Fisher Vee-Ball Control Valves

<http://www.documentation.emersonprocess.com/groups/public/documents/brochures/d350004x012.pdf>

 <http://www.Facebook.com/FisherValves>

 <http://www.YouTube.com/user/FisherControlValve>

 <http://www.Twitter.com/FisherValves>

 <http://www.Linkedin.com/groups/Fisher-3941826>



*Scan the QR
Code to view
more Proven
Results*

© 2014 Fisher Controls International LLC. All rights reserved.

Fisher and Vee-Ball are marks owned by one of the companies in the Emerson Process Management business unit of Emerson Electric Co. Emerson Process Management, Emerson, and the Emerson logo are trademarks and service marks of Emerson Electric Co. All other marks are the property of their respective owners.

The contents of this publication are presented for informational purposes only, and while every effort has been made to ensure their accuracy, nothing herein is to be construed as a warranty or guarantee, express or implied, regarding the products or services described herein or their use, performance, merchantability or fitness for a particular purpose. Individual results may vary. All sales are governed by our terms and conditions, which are available upon request. We reserve the right to modify or improve the designs or specifications of our products at any time without notice. Responsibility for proper selection, use, and maintenance of any product or service remains solely with the purchaser and end user.

Emerson Process Management
Marshalltown, Iowa 50158 USA
Sorocaba, 18087 Brazil
Chatham, Kent ME4 4QZ UK
Dubai, United Arab Emirates
Singapore 128461 Singapore
www.Fisher.com

