



For *Severe Service* Control Solutions, Turn to Fisher Technology & Innovation

Control Valve Case History

Industry: Oil Sands
 Application: Bitumen Feed to Coker Furnace

Overview:

An Oil Sands producer in Alberta was experiencing erosion problems on Coker Furnace Charge valves. The original valves selected were Fisher V500 with special trim. Due to the nature of the feed stock in the process, the trim was being eroded at rates higher than initially expected. This excessive trim erosion would cause reduced controllability of the process. The customer asked Spartan Controls for a solution which would increase the trim life and minimize frequency of maintenance intervals.

Process Conditions:

Fluid	Diluted Bitumen			
Flow	117	234	281	USGPM
P1	426	425	421.5	PSIG
P2	163.7	320.3	409.3	PSIG
Temp	600	634	700	Deg F
SG	0.836	Viscosity = 2.84 cP		Pv = 32.6 psia

Solution:

A full review of the process conditions, and application was conducted. Existing valve sizes and types had to be maintained due to piping constraints. Several alternative valve constructions were considered. Field trials have verified the best construction combination of trim material, tough overlays, and part shape design.

Customer Benefits:

The valve service life has been extended from its original time to almost 1 year between maintenance intervals. Ongoing product development options continue, with the latest alternative potentially extending maintenance intervals even longer. The process conditions in some of the oil sands applications are very severe. Spartan Controls, working together with customers is continually improving valve alternatives to reduce maintenance and improve process uptime. The latest construction of this valve has been adopted as the standard for this application in future plant expansions.

