FIELD STUDY

T-BODY HIGH PRESSURE CONTROL VALVE

MARCELLUS/UTICA

INTRODUCTION

The T-Body High Pressure Control Valve was created to help oil and gas producers extend production time through flowback and in erosive applications. It does this by utilizing a hardened D2 steel replaceable wear plug, which better withstands erosion and can be replaced without removing the valve body from the pipeline.

This plug reduces the amount of contact high-velocity, erosive production has with the valve's body, limiting the potential for valve body damage.

In this field study, we'll show how the valve performed at a site in Marcellus-Utica.

PROBLEM

A producer in Pennsylvania was experiencing fires in their Gas Production Units (GPU). Upon analysis, they discovered that the erosive production fluid was boring a hole through their valve bodies. As a result, gas was released from a hole in the compromised valve, and the burner on the GPU was causing the flammable gasses to ignite and fire to spread throughout the unit.

On top of the equipment damage, the compromised control valves caused a loss of production and environmental issues due to production fluid leaking out from the valve. The GPUs cost more than $100,000 each to replace, so the producer was very motivated to find a solution.

PRODUCTION DETAILS

- Production Type: Natural Gas Production
- Production Volume: 80-100mmscfd
- Solids in Fluid: High
- Corrosiveness: Low to none
- H2S: 0 PPM
- Upstream Pressure: 1000-1200 psig on the pad. Up to 3000 psig on the wellhead.
- Downstream Pressure: Atmospheric pressure
- Vessel: Gas Production Unit (GPU). A GPU, which is a combination of a line heater and horizontal separator, is used to remove liquids from the gas. The producer utilizes 5-6 GPUs per well pad.

SOLUTION

The Kimray team in Indiana, PA, supplied the customer with a prototype of the T-Body High Pressure Control Valve to address the issue.

Date of Installation: April 2019
Summary of Installation: The T-Body was installed on the liquid dump line in the GPU and controlled by a level controller.

"The T-Body has been CRUCIAL to our operations"

– Production Engineer, Pennsylvania

RESULTS

The T-Body's wear plug gave the producer the ability to inspect the valve for erosion and replace the wear plug as needed rather than the valve body washing out. The plug is threaded in the bottom port of the valve and positioned exactly where the previous valve body was being compromised.

The T-Body withstood erosion to the customer's satisfaction. They have now standardized the Kimray T-Body on all new Gas Production Units.

CUSTOMER QUOTE

"Our valves were continuing to wash out, causing hazards in the work place due to environmental spills and loss of production. Because it withstands wear and also provides an easy inspection port, the T-Body valve has been CRUCIAL to our operations."

– Production Engineer, Pennsylvania

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