PRESSURE REDUCING WITH OUTSIDE SUPPLY REGULATORS

KIMRAY INC.®
FIELD STUDY

NORTH DAKOTA

INTRODUCTION

The Pressure Reducing with Outside Supply Regulator (PROS) was created to help oil and gas producers maintain a gas pressure set point while providing the option-for zero emission operation.

It does this by accepting an outside source of pneumatic supply to the pilot rather than using process gas. In this field study, we'll show how the PROS performed at an oil and gas well site in North Dakota.

PROBLEM

A producer was operating a free-flowing oil and gas well in the Bakken. They were using a Pressure Reducing Regulator upstream of the sales gas condensate knockout to reduce the pressure 5 PSI from 85 down to 80. Their existing regulator in this application was releasing unwanted natural gas emissions.

PRODUCTION DETAILS

- Production Type: Free Flowing after Frac
- Oil Volume: 6000 BOPD
- Water Volume: 7500 BWPD
- Gas Volume: 7.5 MMSCFD
- Solids in fluid: (low/moderate/high) Gas Application No Solids
- Corrosiveness: (low/moderate/high) low
- H2S: (# PPM) None
- Upstream Pressure: (# PSI) 85
- Downstream Pressure: (# PSI) 80
- Vessel Type: pipeline (upstream of Gas Condensate Knockout)

Studio photo of final PROS configuration.

SOLUTION

The producer was using compressed air for some controllers on site and worked with the Kimray team in the area to upgrade the existing PR regulator to a PROS to take advantage of the compressed air option in order to reduce their natural gas emissions.

Summary of Installation: A 4" 150 Flanged PROS was installed on pipeline upstream of the producer's knockout and used an air compressor for supply.

Date of Installation: July 2022

RESULTS

After 6 months of operation, the producer reported the following results:

100% Decrease in Emissions Released

Whereas the producer had been venting gas in this application when the previous regulator actuated, the PROS provided a 100% reduction in emissions due to the use of compressed air for actuation.

Increased Valve Life

This solution also lengthened the life of the regulator before repair was needed because the compressed air was cleaner and drier than process gas used with the previous regulator.

The PROS was still in good working order and had required zero maintenance.

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