# FIELD STUDY

# GEN 3 LIQUID LEVEL CONTROLLER
ANADARKO BASIN

## INTRODUCTION

The Gen 3 Liquid Level Controller was created to help oil and gas producers maintain accurate liquid level control and maintain performance even in harsh environments.

The Gen 3 features durable components, easy on-site adjustments, field-adjustability, and snap or throttle operating modes.

Paired with a pneumatic pressure control valve, it provides long-lasting, precise liquid level control in separation equipment to keep wells operating at optimal production levels.

In this field study, we'll show how the level controller performed at a well site in the Anadarko Basin.

## PROBLEM

A midstream company in Western Oklahoma needed to maintain accurate level control in the scrubber on their compressor skid. This application featured heavy vibration due to the operation of the compressor, which was causing their level controllers to fall apart and fail.

### APPLICATION & PRODUCT DETAILS

- Application: Scrubber on a Compressor Station with Vibration
- Production Type: Natural Gas Production
- Connection Size/Type: 2" NPT
- Mount Side: BM (Left)
- Pilot Mode: Snap
- Valve Mode: Direct
- Displacer: Standard
- Extension: Standard
- Displacer Orientation: Vertical
- Process Seal: 90A Viton O-Ring

## SOLUTION

The producer worked with the Kimray team in Oklahoma City to upgrade their level controller to a Gen 3 and paired it with control valve on the dump line.

**Date of Installation:** 1/5/22
**Summary of Installation:** The Gen 3 was installed on the scrubber to sense the liquid level inside the vessel and respond accordingly. When it reached the set point based on that level, it communicated pneumatically to the control valve, dumping the liquid to a holding tank for further processing.

"We are completely satisfied with the product."

– Compressor Mechanic, Anadarko Basin

## RESULTS

After 3 months of operation, the Gen 3 was holding steady. In the words of the customer:

"So far we haven't had any issues at all with the level controller. We haven't had to make a single adjustment and we haven't had a single shutdown on scrubber level. No problems maintaining the right level, no resetting. The level seems to be pretty consistent. We are completely satisfied with the product. So far, we are very impressed with the way it operates."

– Compressor Mechanic, Anadarko Basin

# FIELD STUDY

# GEN 3 LIQUID LEVEL CONTROLLER
GULF COAST

## INTRODUCTION

The Gen 3 Liquid Level Controller was created to help oil and gas producers maintain accurate liquid level control and maintain performance even in harsh environments.

The Gen 3 features durable components, easy on-site adjustments, field-adjustability, and snap or throttle operating modes.

In this field study, we'll show how the level controller performed at a well site in the Gulf Coast area in South Texas.

## PROBLEM

An energy producer was having difficulty holding interface levels with their existing liquid level controllers. The settings on the controller would have to be re-adjusted every few days to get the controller to actuate at the right levels. They had tried level controllers from 2 different manufacturers with no success in fixing the issue.

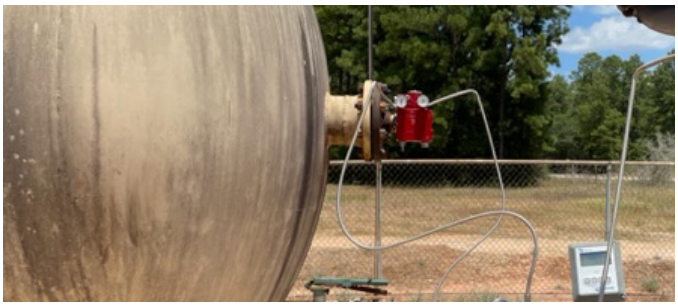
### APPLICATION DETAILS

- Production Dates: June 2023 - Present
- Wells on Property: 800
- Production Type: Primary Water Flood
- Vessel Types: 2-Phase and 3-Phase Separators, Test Separators
- Solids in Fluid: Some Sand
- Upstream Pressure: 80 psi
- Downstream Pressure: 30-40 psi
- Recent Oil Production: 50k BBLs per month
- Recent Gas Production: 56 MMCF per month

## SOLUTION

The producer worked with the Kimray team in Houston to replace one of their level controllers with a Gen 3.

**Product Installed:** LCR with 3x12" Displacer
**Date of Installation:** 6/1/23



"It's easy to set up and needed no adjustments after getting it set."

– Operator, South Texas

## RESULTS

The Gen 3 continues to hold interface with no adjustments needed. The Gen 3 has been in place for 3 months.

Based on this performance, the production foreman made the call to standardize the Gen 3 for all production moving forward. In the words of the customer:

"It's easy to set up and needed no adjustments after getting it set. We would normally have to adjust the other controllers multiple times a week to try and hold interface level."

– Operator, South Texas

# FIELD STUDY

# GEN 3 LIQUID LEVEL CONTROLLER
CENTRAL OKLAHOMA

## INTRODUCTION

The Gen 3 Liquid Level Controller was created to help oil and gas producers maintain accurate liquid level control on their separation equipment even in harsh environments, featuring durable components, easy on-site adjustments, and snap or throttle operating modes with one pilot.

Paired with a pneumatic dump valve, it provides long-lasting, precise liquid level control in separation equipment to keep wells operating at optimal production levels.

In this field study, we'll show how the level controller performed at a well site in Central Oklahoma.

## PROBLEM

An upstream producer in Central Oklahoma needed to maintain accurate level control in their 3-phase separators. They were using a competitor's level controllers, which were acting erratically, not holding the level consistently. The producer often had to adjust the level settings or change out the pilots to get them to work correctly.

In addition, these controllers bled continuously, allowing the compressed instrument air to escape and causing the compressors to start up more often, draining the compressor motor battery at a faster rate.

In the competitor's level controller design, vent gas bleeds into the case out of a small orifice, not a threaded port. While this was not an emissions issue in this application with compressed air supply, in other locations where this producer was using supply gas from the vessel, vent gas couldn't be captured to help reduce emissions.

### APPLICATION DETAILS

- Production Type: Gas Injection Artificial Lift
- Oil Volume: 600 Bbl/D
- Water Volume: 800 Bbl/D
- Gas Volume: 10 MMCFD
- Solids in Fluid: moderate in flowback phase, low in production phase
- Corrosiveness: low
- H2S: low
- Vessel Pressure: 300 PSI
- Vessel Type: 3-Phase Separator
- Level Controller Supply Pressure Type: Compressed Air

> When can we replace all of our (current level controllers) with Gen 3s?
>
> -Field Operator, Central Oklahoma

## SOLUTION

The producers installed a 2" NPT Gen 3 Liquid Level Controller on their separators.

With the Gen 3 installed, the producer no longer had to frequently adjust the level settings or change out the pilot to hold a consistent liquid level, and since the Gen 3 doesn't continuously vent, the compressor would start up less often.

**Date of Installation:** March 6, 2023

## RESULTS

After 7 months of operation, the producer reported that the Gen 3 has been reliable, simple to set, and easy for their field hands to learn to operate.

In the words of the field operator to his superintendent:

"When can we replace all of our (current level controllers) with Gen 3s?"

– Field Operator, Central Oklahoma

Based on these results, they have decided to standardize Gen 3s on all liquid level control applications, utilizing them on new installs and on replacing existing units as they fail or wear out.

# FIELD STUDY

## GEN 3
ALBERTA, CANADA

## PROBLEM

One of Canda's largest natural gas producers was experiencing ongoing vibration in their compressor packages, which was ruining their liquid level controllers.

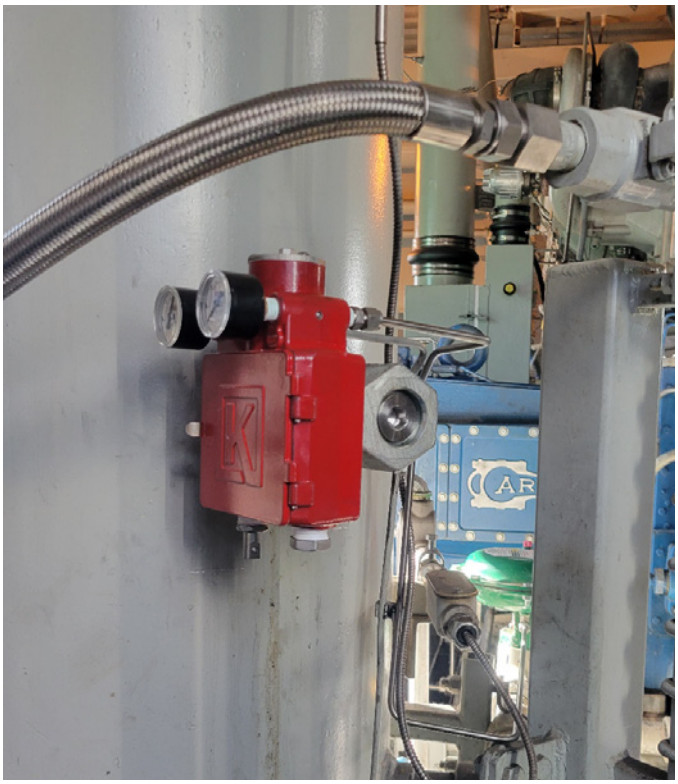
Due to this challenge, they began exploring other options to find a controller that could withstand the vibrations and not wear out prematurely.

## SOLUTION

In collaboration with Kimray distributor WIKA, they installed the Gen 3 Liquid Level Controller into this high vibration environment.

## RESULTS

The Gen 3 held up significantly better than their previous level controllers—after 8 months, they had not seen any signs of wear.



"We have not seen any signs of wear, and the controller is working very well in this compressor application. We are looking to upgrade other packages with this controller soon."

– Instrumentation Mechanic, Alberta, Canada

# FIELD STUDY

# GEN 3 LIQUID LEVEL CONTROLLER

*RABASA, MEXICO*

## CHALLENGE

The PEMEX separation battery in the Rabasa oil field is one of the most important facilities of the Cinco Presidentes Extraction Asset. It is also constantly changing.

One of the most recent changes was the incorporation of production from Litoral Tabasco, one of PEMEX's areas in the maritime sector.

This addition brought a series of challenges that technologies in operation could not handle. The most critical point to address in this new system was the elevated separator (SHEBP-1), which was at a height of approximately 30 m. The separator required an adjustment of the level control range to ensure continuity and operational reliability.

### PRODUCTION DETAILS

**Production Type:** Level Control
**Oil Volume:** 30,000 Bbd
**Gas Volume:** 30 Mmcfd
**Solids in fluid:** Low
**Corrosiveness:** Low
**Upstream Pressure:** 40 kg/cm2
**Downstream Pressure:** 4 kg/cm2
**Vessel Type:** Two-Phase Separator

## SOLUTION

Operators began to look for alternatives and decided on a complete replacement of the current system with a more modern and efficient one.

In April 2025, it was proposed to expand the level span to give a greater measurement range, placing a 4" level leg in conjunction with the Kimray Gen 3 Liquid Level Controller, which would include 2" blocking valves for later maintenance without having to take the entire separator out of operation.

The above, complemented with a level indicator and a transmitter, would make it possible to have a comprehensive system of control and visualization of the separator level, both locally and remotely, facilitating operations and reducing both operating time and risks associated with working at height that the level taking entailed.

**Date of Installation:** 29 April 2025

**Product installed:** Gen 3 Liquid Level Controller with 2" connection

## RESULTS

Local operations reported 5 ways the new solution improved their level measurement system:

1. **Increased Operational Safety**—Operators could now see the measurements and control the level through their automated system, eliminating the need to climb the 30 m separator to get a readout and increasing the safety of all personnel involved in this type of operation.

2. **Reduced Operating Times**—By reducing adjustment times to virtually zero, the solution significantly increased operator productivity.

3. **Better Decision Making**—With shorter operating times, the focus on critical issues increased, allowing for better decision-making.

4. **Process Modernization**—Having the most up-to-date technology gave the operator a fully automated system and efficient control, improving operations, environment, and safety.

5. **Self-Sustaining System**—The system uses the same gas as the process, making efficient use of existing resources.