

Case Study

Interface Level Control Solution

1 Searching for a Solution

An oil and gas producer in Wyoming was seeking a reliable level controller that is correctly configured for interface control that can overcome various issues.

2 Identifying the Challenges

The competitor's level controller would not operate at the oil/water interface level on 3-phase separator skid. The competitor tested several different ideas, but could not provide a consistent solution. This led to several issues in the separation process, including water in the oil storage tank, level safety systems shutting down production, safety relief valves popping off, liquids in the natural gas stream, and constant monitoring by the production operator.

3 New Level Controllers Deliver Value

The customer needed a reliable level controller configured correctly for interface control, and after consulting with their local production skid manufacturer, the recommendation was to contact Norriseal WellMark for their expertise in providing a solution using the Norriseal Series 1001A force balanced level controller. There were three issues to overcome: 1. Elevated process temperature, 2. Small difference between the specific gravities of oil and water, and 3. Flanged nozzle projection dimension. The elevated process temperature required a special displacer material, and the flanged connection required an extra-long arm length to meet the nozzle projection dimension. Using the Norriseal level sizing program and inputting the fixed parameters of displacer material and arm length, a larger displacer was quickly calculated for the small difference in the two specific gravities. This interface solution was presented to the customer, and to confirm, Norriseal WellMark provided the customer with a properly configured field test unit installed at their most problematic application. After three months of testing with no issues or failures, the customer approved the Norriseal Series 1001A level controller to replace existing competitor's level controllers and for all future installations. Additionally, the Norriseal Series 1001A level controller was approved for their oil or top-level control applications to maintain same level controller brand for consistency and familiarity throughout their field operations. Product training on installation, calibration, and adjustments was provided.



Series 1001A Level Controller

4 Results: Fewer Irregularities & More Savings

- **Reliability:** Norriseal level controller consistently operates with top level and interface control.
- **Fewer Losses:** Norriseal level controller reduces production loss due to level safety shutdowns.
- **Accuracy:** Norriseal level controller uses level sizing programs to provide the correct initial solution.
- **More Savings:** Norriseal level controller reduces labor cost with less site visits by operators.