

Computer vision technology improved safety of workers by ensuring no personnel were present in the geo-fenced exclusion zones during hydraulic fracturing pumping operations

United Safety used AI computer vision (CV) technology to integrate and automatically shut off the hydraulic fracturing pumps if workers were detected in the exclusion zones during pumping operations.

Challenge

To reduce risk of potential injuries during hydraulic fracking operations especially during pumping

Solution

A combination of computer vision and real-time geo-fencing technology was deployed

Results

Developed a new technology-based solution that improves safety on completions operations



Objectives

- Deploy AI computer vision cameras to establish a baseline of personnel detection accuracy
- Train the AI computer vision on true positive, false positives, true negatives and false negatives to improve accuracy
- Once 95% accuracy was achieved, integrate with hydraulic fracturing company's API for an automated control to shut off pumps

Project Scope

To meet the client's safety deliverables of reducing risk of potential injuries during hydraulic fracturing operations, United Safety deployed (3) wireless cameras with AI computer vision Technology on the client's completions operations. Once the AI computer vision cameras were deployed, United Safety would create a digital geofence that would set the boundaries of the exclusion zone that would then be able to determine and detect workers present in the exclusion zone during pumping operations to generate a signal to be integrated into the hydraulic fracturing company's data van for an automated pump shutoff.

Results

- Achieved over 98% accuracy to avoid NPT or false shutdowns
- Achieved the solution to avoid 30-second/60-second rule of entering exclusion zone during pumping operations
- Developed a new technology based solution that improves the safety on completions operations
- We were able to connect our technology to client's vision of a safe completions site.