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Ultra Petroleum 2013 Case Study

Study

In August 2013, Ultra Petroleum's Jonah Field Supervisor, Ralph Trotter, purchased three Aegis 400s to provide continuous remote emissions monitoring inside the natural gas dehydrators located at its Boulder 7-19 location. There were several details that defined the context of Ultra's request:

1. Previous field incidences indicated that ambient emission levels were higher than previously thought;
2. Workers coming onsite were situationally at-risk by not knowing emission levels prior to entering Class I Div 1 confined spaces;
3. Emission levels were unknown until workers carried their personal monitors inside the confined space;
4. Environmental cold-weather conditions limited the capability of personal monitors to rapidly detect gases;
5. Finally, previous incidents of high-ambient gas levels had led to lost production equipment.

The Context
Situational risk by unknown ambient emission levels inside a confined space in a remote gas production field.

The Challenge
Increase both worker safety and the protection of gas production equipment in a remote, low-power, cold-weather environment.

The Solution
Implementation of the Aegis 400 with sensors located in Class I Div 1 space.

The Results
Increased awareness of ambient levels and autonomous remote response at critical levels

The challenge was therefore to place a multiple-gas continuous remote emissions monitoring system that would alert workers onsite and in the office of critical emissions defined by both high-levels and duration of event (*i.e. 50% LEL for 4 hours*). This system needed to be a low-power device due to reliance on solar panels in the Jonah Field, capable of working with the existing SCADA system used by Ultra and able to continuously monitor despite typical low-temperatures of the Wyoming mesa.

The solution was the onsite installation of the Aegis 400. Installation was easily accomplished in several hours by a reputable service company, Infinity Power & Controls, whom Ultra had an existing Master Service Agreement (MSA) with. The Aegis CPU was placed 50' outside of the Class I Div 1 region in a Class I Div 2 zone following Ultra's standard-operating-procedures. Three sensors (CH_4, H_2S, and O_2) in a Class I Div 1 housing were then placed inside the dehydrator and connected by a hard-wire back to the Aegis CPU. Once the SCADA operator had programmed and tagged the Aegis into Ultra's network real-time monitoring was available to both the operators and supervisors. Both the real-time monitoring and the visual and audible alarm provided instantaneous warning to workers coming onsite if conditions within the dehydrators met the alarm criteria as defined by Ultra's field supervisor.

The results were quickly apparent as operators immediately knew whether conditions within the confined space required special attention or not. Continuous monitoring initially revealed that ambient levels inside the confined space were higher than originally thought permitting operators to detect and repair leaks and valves. Further, worker safety was increased as operators were aware of site actualities prior to entering restricted zones and confined spaces.

If there are further questions specific to this summary, please contact:

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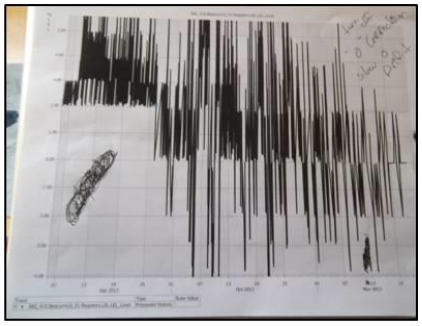
Site Photos

Ultra Petroleum location for case study


Alert Plus Services servicing unit


Aegis 400 placed in Class I Div 2 zone, 50' from Class I Div 1 monitoring site


Real-time, continuous data-logging


Sensors (CH_4, H_2S, O_2) located in Class I Div 1 confined space


A 2015 Jonah Field Dehy Explosion


Aegis 400 in service in the field