



U. S. Chemical Safety and Hazard Investigation Board RECOMMENDATIONS STATUS CHANGE SUMMARY

Report:	Gas Well Blowout and Fire at Pryor Trust Well 1H-9
Recommendation Number:	2018-01-I-OK-R15
Date Issued:	June 12, 2019
Recipient:	Pason Systems Corp. (Pason)
New Status:	Closed – Acceptable Alternative Action
Date of Status Change:	January 29, 2020

Recommendation Text:

Design the Pason user interface to allow drilling contractors to pre-set different alarms for different operations (e.g., different alarm configurations for drilling, tripping, circulating, and surface operations in a “state-based” alarm system).

Board Status Change Decision:

A. Rationale for Recommendation

On January 22, 2018, a blowout and rig fire occurred at Pryor Trust 0718 gas well number 1H-9, located in Pittsburg County, Oklahoma. The fire killed five workers, who were inside the driller’s cabin on the rig floor. They died from thermal burn injuries and smoke and soot inhalation. The blowout occurred about three-and-a-half hours after removing drill pipe (“tripping”) out of the well. The cause of the blowout and rig fire was the failure of both the primary barrier (hydrostatic pressure produced by drilling mud) and the secondary barrier (human detection of influx and activation of the blowout preventer) which were intended to be in place to prevent a blowout.

As a part of its investigation, the U.S. Chemical Safety and Hazard Investigation Board (CSB) determined that Pason supplied the electronic drilling data system for the Pryor Trust well drilling rig, which had a monitor where the driller could adjust alarm set points, silence individual alarms, silence all alarms for all parameters by turning the alarm horn off, or completely deactivate the alarm system so that both the horn and visual indications of alarms would be disabled. A review of the data by the CSB showed the drillers turned off the entire alarm system. While it is unknown why both drillers might have elected to turn off the alarm system, a plausible reason to turn off an alarm system and to keep it off for tripping, circulating, and surface operations is that the alarms set for the drilling operation are perceived as irrelevant or a nuisance for other operations. The data indicates that had the alarm system been on, most of the alarms that would have activated from 6:45 pm on January 21 through the incident would have been irrelevant to detecting the well control event. Consequently, the CSB determined there is a need for alarm system providers to design the user interface to allow for easy navigation between the state-based alarm operations. The Board issued recommendations (e.g., 2018-01-I-OK-R15 and R17) to Pason and National Oilwell Varco, the two major suppliers of electronic drilling data systems, to redesign their user interfaces to preset different alarms for different operations. This status change summary addresses CSB Recommendation No. 2018-01-I-OK-R15.

B. Response to the Recommendation

In August 2019, Pason informed the CSB that it had a separate product, *PVT Smart Alarms*. When added to its electronic drilling data system it addressed the concerns listed in the CSB Recommendation. Pason subsequently provided the CSB with a demonstration and supplemental documentation to show how *PVT-Smart Alarms* is used to pre-set alarms for different operations.

C. Board Analysis and Decision

Although Pason did not change the design of its user interface, they developed and configured a separate product, *PVT-Smart Alarms*. It achieves the same purpose outlined in the CSB recommendation. As a result of the above information, the Board voted to change the status of **CSB Recommendation No. 2018-01-I-OK-R15** to: **“Closed—Acceptable Alternative Action.”**