



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

Report:	Aghorn Operating Waterflood Station Hydrogen Sulfide Release
Recommendation Number:	2020-01-I-TX-R9
Date Issued:	May 21, 2021
Recipient:	The Railroad Commission of Texas
New Status:	Closed – Acceptable Action
Date of Status Change:	April 10, 2023

Recommendation Text:

Develop and send a Notice to Operators to all oil and gas operators that fall under the jurisdiction of the Railroad Commission of Texas that describes the safety issues described in this report, including:

- 1. Nonuse of Personal H2S Detector*
- 2. Nonperformance of Lockout/Tagout*
- 3. Confinement of H2S Inside Pump House*
- 4. Lack of Safety Management Program*
- 5. Nonfunctioning H2S Detection and Alarm System*
- 6. Deficient Site Security*

Board Status Change Decision:

A. Rationale for Recommendation

On October 26, 2019, an Aghorn Operating Inc. (Aghorn) employee responded to a pump oil level alarm at Aghorn's Foster D waterflood station in Odessa, Texas. In response to the alarm the employee worked to isolate the pump. He closed the pump's discharge valve but only partially closed the pump's suction valve. At some point in the night of the incident, the pump automatically turned on and water containing hydrogen sulfide (H₂S), a toxic gas, was discharged from the pump. The employee was fatally injured from his exposure to the H₂S. Subsequently, the spouse of the employee gained access to the waterflood station and searched for her husband. During her search efforts, she was also exposed to the released H₂S and was fatally injured.

The U.S. Chemical Safety and Hazard Investigation Board (CSB) investigated the incident and found that the employee was not wearing his personal H₂S detection device upon entering the waterflood station on the night of the incident, and there was no evidence that Aghorn management required the use of these devices. The CSB also found that at the time of the incident, Aghorn did not have any written Lockout/Tagout policies or procedures. As a result of these findings and the fact that the Railroad Commission of Texas (RRC) is the applicable state regulator, the CSB issued one recommendation to the RRC.

B. Response to the Recommendation

On February 6, 2023, RRC distributed a Notice to Operators,¹ which references the CSB's recommendation to RRC and includes the recommendation language and lists and describes the six safety issues included in the recommendation:

1. Nonuse of Personal H2S Detector:
2. Nonperformance of Lockout/Tagout
3. Confinement of H2S Inside Pump House
4. Lack of Safety Management Program
5. Nonfunctioning H2S Detection and Alarm System
6. Deficient Site Security

The notice reminds operators operating in H2S designated fields that they are required to follow 16 Texas Administrative Code (TAC) § 3.36 Oil, Gas, or Geothermal Resource Operation in Hydrogen Sulfide Areas. Requirements include, but are not limited to:

- Training on the hazards and characterizations of hydrogen sulfide, safety precautions, and operation of safety equipment and life support system as described in § 3.36(c)(13).
- Installation and maintaining safety devices in operable condition or establish safety procedures designed to prevent the undetected continuing escape of H2S as described in § 3.36(c)(8); and
- Fencing or security measures for fixed surface facilities or tank batteries located within ¼ mile of a populated area as described in § 3.36(c)(6)(B) and § 3.36(c)(5)(C).

C. Board Analysis and Decision

As the RRC developed and distributed a Notice to Operators that summarized CSB findings in its Aghorn investigation, the Board voted to change the status of CSB Recommendation No. 2020-01-I-TX-R9 to: "Closed – Acceptable Action."

¹ A copy of the notice is available at https://rrc.texas.gov/media/kycavdof/nto_csb-2019-aghorn-h2s-incident-report_2-6-2023.pdf (accessed March 7, 2023).