Working in H_2S Areas

Training Briefing

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Introduction

Hydrogen Sulfide or *sour gas* (H_2S) is a flammable, colorless gas that is toxic at extremely low concentrations. It is heavier than air, and may accumulate in low-lying areas. Many areas where the gas is found have been identified, but pockets of the gas can occur anywhere.

Basic Properties of H_2S

- H_2S is a colourless gas with a powerful nauseating smell of rotten eggs.
- The odour of H_2S quickly deadens the sense of smell and subsequently, smell alone cannot be used to gauge worker exposure.

Occupational Exposure Limits

- 8 Hour Exposure Limit – 10 Parts per Million (ppm)
- Ceiling (cannot exceed at any point) – 15 ppm

Effects of H_2S

Concentration (ppm)	*Effects*
20 - 50	Exposure of up to one hour may cause inflammation of the cornea and the mucous membranes lining the eyes and the eyelid. Prolonged exposure at 50 ppm may result in severe irritation of the nose, throat and lungs and could even result in chronic bronchitis.
100	Worker's sense of smell can be deadened within 2 to 15 minutes of exposure.
250	Prolonged exposure to H_2S at this concentration may cause the lungs to swell and fill with fluid.
500	Loss of consciousness within 15 minutes.
700	Immediate unconsciousness. Causes seizures, loss of control of bowel and bladder. Breathing will stop and death will result.
1000	Prolonged exposure may lead to paralysis of the respiratory system and can then lead to coma, permanent brain damage or death.
10,000	Instant death.

H_2S Monitors

An H_2S monitor is recommended in all H_2S areas and may be required on some projects.

Gas Leak Warning Signs

- Sirens or alarms from nearby pipe stations.
- Strong initial smell of rotten eggs.
- Worker down in the field.

Gas Leak Emergency Response

- Immediately notify others in the area.
- Move uphill and away from the path of the wind that is carrying the released gas.
- Notify the gas company.
- Do not attempt to rescue workers that have succumbed to the gas leak.

Self Contained Breathing Apparatus

A Self Contained Breathing Apparatus (SCBA) is required to approach exposure areas and to rescue downed workers. This equipment requires significantly more training.