



# SAFETY ALERT!

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## Hydrogen Sulphide (H<sub>2</sub>S) in Water Deluge Pipework

### WHAT HAPPENED?

Whilst using an angle grinder with a cutting wheel to cut through steel water deluge piping, a small flame was observed originating from inside the steel pipe.

The sparks produced by cutting the steel pipe with the grinder ignited a gas that was present inside the redundant pipe work.

A Hot Works permit and JRA were in place for the pipe removal work. Checks were done for the presence of water in the pipes prior to cutting.



### IMMEDIATE ACTION TAKEN

- Work was stopped.
- Investigation using a gas detector found that the gas was H<sub>2</sub>S.
- Following investigation, work practices were reviewed and the risk of gas presence in pipework added to the JRA.

### ROOT CAUSE

- The pipe work that was cut had been out of service for over 10 years and was still connected to the deluge system located inside the redundant power station turbine hall.
- This system held stagnant water containing moss and algae. It is suspected that the decomposition of these organics caused the production of H<sub>2</sub>S, which became trapped within the pipework.

### LEARNINGS

- H<sub>2</sub>S can occur when organic material in stagnant water decomposes in the absence of oxygen.
- H<sub>2</sub>S generated from biodegradation is a risk, not only in services but in low lying areas.
- All redundant services (pipes etc.) must be tested for presence of gas prior to hot work taking place.

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