

Confined space entry: Person overcome by fumes and rendered unconscious

Safety Flash Published on 28 January 2019 Generated on 23 January 2025 IMCA SF 01/19

Three crew members on a vessel were tasked with opening a sewage tank inspection hatch to check the condition of a faulty sensor.

IOGP Life Saving Rules:



Work authorisation



Confined space



What happened?

The hatch was subsequently removed to facilitate cleaning of the sensor, with one individual standing on a fixed rack to gain access.

During the task, that individual was overcome by a concentrated plume of Hydrogen Sulphide (H_2S) from the tank, causing him to become unconscious and fall to the deck.

He was unconscious for around 90 seconds and suffered minor cuts and bruises to his right hand.



Re-enactment of the incident

What went wrong?

Safe systems of work were not followed:

- There was a failure to identify potential hazardous gases as part of the risk assessment.
- There was non-adherence to the permit to work (PTW) procedure.
- There were inadequate working at height controls.
- There was an inadequate tool box talk.

The manufacturer's instructions for opening the inspection tank were not followed. In particular, there was no check for potentially hazardous gases.

The sewage treatment plant had not been operated and maintained in line with manufacturer's instructions, which led to the build-up of Hydrogen Sulphide.

Actions

- Ensure safe systems of work are followed for all maintenance activities including adherence to the PTW, task risk assessment, toolbox talk (TBT), working at height and associated procedures where applicable.
- Before using or maintaining equipment, ensure that all relevant personnel are familiar with the operation, required maintenance activities, associated risks and required safety controls as defined by the manufacturer's instructions.
- Ensure that workers tasked with the operation and maintenance of sewage treatment plant are made aware of the potential for H₂S, the risks associated, the required control measures including the requirement for breathing apparatus if there is potential for H₂S release.
- Re-iterate to all workers that they have a responsibility to **stop the job** if

during the work:

- circumstances change and present new additional risks
- they feel uncomfortable or unsafe or are unsure of the planned task.

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