



Work Safety Alert **Flashover occurred at a Biodiesel Reaction Tank under Repair**

1. **Date of Accident :** October 2019

2. **Place of Accident :** A biodiesel factory

3. **Summary :**

In the course of repairing a biodiesel reaction tank, two workers sustained burnt injuries as a result of a flashover occurred at the tank while another worker was conducting arc welding work. The two injured workers were sent to hospital and one of them passed away two weeks later.

4. Work Safety Alert for Proprietors/ Employers :

To ensure the safety of workers/ employees engaged in repair and maintenance of metal tanks or other containers for flammable/ combustible substances where hot work such as arc welding is involved, the proprietors/ employers should provide and maintain a safe system of work which should include, but not limited to, the following:

- appointing a competent person to conduct task-specific risk assessments to identify all potential hazards associated with the work, in particular the fire and explosion hazard that may be caused by the high temperature of the electric arc used or the hot slag and sparks of molten metal produced in the process, taking into account possible presence of combustible/ flammable residue in the tank or container;

- formulating safe work methods and procedures for the work with due regard to the results of the risk assessments and following the requirements of safety legislation, relevant codes of practice and safety guidelines;



- ensuring not to carry out welding or other hot work on those tanks or containers containing combustible/ flammable substances as it poses high risk of fire or explosion, in particular if the tanks or containers are under pressure;
- obtaining all necessary information about the tanks or containers to ascertain whether they are containing or have been used to contain combustible/ flammable substance;
- ensuring that the combustible/ flammable substance in the tank or container is fully drained off;
- ventilating the tank or container for prolonged period or force ventilating it as appropriate to remove any combustible/ flammable residue;
- ensuring that before commencing any welding operation or other hot work, the tanks or containers are free from any residue that may emit flammable or toxic vapours upon heating. Preparation before the operation should include removing the residue by washing with suitable solvents and purging with inert gas, or by using hydraulic or hot water/ steam wash. Gas monitoring should be conducted whenever necessary;
- taking additional and appropriate safety measures if solvent wash or steam wash may give rise to other hazards associated with toxic or hot vapours;
- providing all workers/ employees involved with necessary safety information, instruction and training and ensuring that they are familiar with the safe working procedures and safety measures; and
- establishing and implementing an effective monitoring and control system to ensure that all safety measures are strictly followed.



5. Reference :

- [Safe Systems of Work](#)¹
- [Five Steps to Risk Assessment](#)¹
- [Five Steps to Information, Instruction and Training](#)¹
- [Code of Practice : Safety and Health at Work for Manual Electric Arc Welding](#)¹
- [《地盤意外個案簡析系列 — 風煤及電焊》](#)¹ (Chinese Version Only)

DISCLAIMER

This Work Safety Alert (“the Alert”) is issued at the earliest possible opportunity after a serious accident with a view to drawing the attention of interested parties to the general safety precautionary measures necessary to protect people engaging in similar work activities. The material contained in the Alert constitutes general guidance only. It does not reduce, limit, or replace, any legal obligations upon any person to comply with any statutory duties under relevant legislation. Users such as Managers and Supervisors should make their own evaluation of the information contained in the Alert to determine if it can be applied to their own situations and practices. The Labour Department does NOT accept any responsibilities for any loss or damage resulting from the use of or failure to use of the information on the Alert.

Note: The material contained in the Alert is not exhaustive, and will be supplemented/ adjusted where necessary if more relevant information comes to light.

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