RM Insight®

Managing hazardous tasks in the work place

A recent accident at an automotive workshop resulted in a fire causing serious injuries to a worker as well as extensive damage to motor vehicles and property. The fire is believed to have started when a fuel tank being removed from a vehicle fell to the ground and ignited.

The accident demonstrates the need for a risk assessment to be conducted prior to carrying out hazardous tasks. Job safety analysis (JSA) is a widely recognised tool for evaluating a task, identifying the hazards involved and eliminating or reducing the risk to workers as low as reasonably practicable.

A JSA consists of the following steps:

1. Document the activity: Assemble those involved in the activity and use a JSA worksheet, write down the tasks that make up the activity, step by step.
2. Identify the hazards: For each task, identify what part of the task may cause injury to those doing the work or to anyone else nearby.
3. Document the control measures: For each identified hazard, list the control measures to be put in place to eliminate or minimise the risk of injury.
4. Identify who is responsible: Record the name of the person responsible for implementing the control measures.
5. Monitor and review: Make sure the activity is supervised to ensure the documented process is being followed. The JSA should be reviewed whenever a documented activity changes or when there is a change of personnel.

The JSA for removal or work on a fuel tank would need to consider a number of hazards particularly regarding the storage and handling of flammable liquids. Flammable liquids represent a severe fire and explosion hazard due to their ease of ignition with vapours heavier than air, rapid flame spread and high heat release. Further information regarding flammable liquids is available in Vero's Risk improvement guide – flammable and combustible liquid hazards - fact sheet.

Risk mitigation and control measures to reduce the risk of a fire and explosion involving fuel tanks and flammable liquids would include the following:

- fuel should be removed from the vehicle prior to removing the tank (if possible)
- ensure the work area has good ventilation to prevent vapour accumulation
- eliminate all sources of ignition such as smoking and hot work (welding, cutting, grinding)
- disconnect the vehicle battery before commencing work
- use clamps to seal off all lines coming off the tank to control drips and vapours
- fit caps on the fuel tank openings to contain vapours
- seek assistance or use jacks when removing and moving the tank to prevent dropping
- safely drain tanks with approved pumps and anti-static bonding and transfer methods
- drain the tank outside the workshop where there are no ignition sources
- store drained fuel in approved flammable storage containers
- purge, inert and test tanks before performing any work or repairs on the tanks
- use non-sparking tools
- portable fire extinguishers suitable for use on flammable liquids should be available nearby for use by trained workers.

For tasks that will be carried out regularly, the risk assessment and control measures could be documented as a standard operating procedure (SOP) that is used whenever the task is performed.

For more information:
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