

UKOPA/04/0097

Learning from incidents with a potential significant impact.

Incident.

- An excavator driver was cleaning his bucket on completion of remedial drainage work prior to leaving the site in a field adjacent to the NW ethylene pipeline in Southern Scotland.
- The technique employed was to fully extend the excavator arm and tap the bucket against another excavator bucket lying on the ground. This usually dislodged any spoil stuck in the bucket. During this operation the tooth of the excavator bucket struck the teeth on the other bucket, which caused a chard of metal to fly into the excavator cab and into the drivers eye.
- The driver was taken to hospital and it was subsequently confirmed that he had lost the sight in one of his eyes.
- The front window of the cab was open and the driver was not wearing safety spectacles at the time of the accident.



### Findings from investigation.

- The excavator bucket teeth are constructed of hardened steel. If struck together it is possible that metal chards could be created.
- As the weather was extremely hot the driver had removed the front glass screen from the excavator cab and was not wearing safety spectacles at the time of the incident. The driver was not complying with the requirements for PPE stipulated on the Shell Cross Country Permit to Work.
- Stanlow requires excavator drivers to wear safety glasses when the cab window is open. If the cab is fully enclosed then safety glasses may be removed. However all PPE must be available in the machine cab at all times. It is explicit in the Stanlow Site Rules that safety glasses be worn in plant areas and it is also stated in the civil Trade Standards that normal site PPE be worn for civil activities unless otherwise exempted on the Permit to Work.
- The cascade of safety issues and safety culture in sub contracts of this type should be improved. The excavator driver's misperception of the risks involved when cleaning his equipment on completion of the work resulted in him not wearing eye protection. He did not appreciate the risk, as he was carrying out an activity that he had completed many times without incident. He was unaware of the danger of hitting two hardened steel materials together.
- Safe visiting may have discovered the drivers non compliance with respect to the wearing of safety glasses, however it is unlikely to have identified the unsafe method of cleaning the excavator bucket. The driver was a CITB licensed driver with over 30 years experience. No evidence could be found of HSE or CITB guidance or good practice concerning the cleaning of excavator buckets, however, the machine manual states that the cab windows should be closed during machine operation.



## Key learning and recommendations.

- Follow Permit To Work controls.
- Inform all excavation contractors of the consequences of cleaning excavator buckets in this manner and that this method should not be used. Consideration should be given to the use of scrapers and brushes to clean out buckets.
- Include in risk assessments the risk of the excavator bucket hitting another piece of hardened steel.
- Specific to such remote locations there is a need to ensure all sub contractors are included in the safe visit programme and that our own evolving safety culture and behaviours on Sites such as Stanlow is being adopted by such sub contractors.
- Use the consequences of the incident to reinforce the use of appropriate PPE to others specifically those third parties operating in and around those activities being managed by the Cross Country Pipeline group, eg. farmers etc.
- Excavation contractors should ensure that cab windows are closed during machine operation as per equipment manufacturers instructions.
- Reinforce the responsibilities and accountabilities regarding safety issues and communications, eg. issue and delivery of Tool Box Talks etc. between Shell, Main Contractors and Sub Contractors.
- Reinforce by Tool Box Talk the importance of PPE not only in the execution of the work but in the preparation for and completion of the work which may be remote from the work site.
- Advise industry, equipment manufacturers and other Shell groups concerning this incident.

For any further information on this incident contact Ian Darlington, Stanlow Refinery Safety Advisor  
Tel: +44 151 350 4030.