

# STOP AND THINK TALK

A briefing tool for managers

## ISOLATION AND LOCK OFF – PLANT & EQUIPMENT

During the past three years over 40 people have died as a result of incidents in the manufacturing industry, most commonly when cleaning machinery blockages or carrying out running repairs without the correct safeguards. Properly managing isolation and lock off procedures to secure machinery and ensure there is no power feed to the equipment lowers the risk of serious or fatal injury. One fifth of fatal accidents involve contact with moving machinery.

It's not as if the risks of moving machinery are new – people need to stop and think before they work on a machine. It is not enough for managers to just provide safeguards and introduce an isolation and lock off procedure, assuming employees will follow it. People need to be carefully trained in the procedure and supervised by a competent manager. Management must carry out regular checks to confirm the procedure is always followed.

TRAGEDY: Inquiry launched after man, 28, killed in accident at concrete firm

## Worker dies trapped in plant machinery



A young man was killed becoming entangled in the tail drum of an unguarded conveyor on a concrete plant. The subsequent court case resulted in two managers of the company being imprisoned. The victim left behind a young wife and child.

This incident would not have happened with basic safe systems of work in place. Guards together with robust isolation and lock off systems are designed to prevent this type of incident.

## QUARRY WORKER SUFFERS SEVERE INJURIES

A building supplies company has been fined £200,000 after a quarry worker lost an ear when he fell into an electric fan. The injured person suffered severe injuries to his face and arm after becoming caught in the electric cooling fan of a motor. The electric fan on the motor had been left uncovered and was not isolated and the injured person became entangled in it when it was switched on.

The injured person underwent emergency surgery and his left ear was later amputated. He has been left with scars to his arms and rib cage and is still unable to eat and drink properly due to loss of control of his lower lip.

## CONTRACTORS ESCAPE DEATH - JUST

Whilst assisting a colleague with the replacement of aggregate weigh hopper liner plates on a concrete batching plant, a contractor suffered fractures to his leg and ankle when the batch conveyor he was standing on started unexpectedly. The contractor's leg was drawn under the tail snub roller and his colleague was fortunate to escape major injury when he and the liner plates dropped through the gates. Personnel had to use an oxy/acetylene cutter to remove the snub roller and free the contractor, who was taken by ambulance to hospital where he was diagnosed with a broken ankle and a double compound fracture of the lower left leg. He subsequently suffered an infection to the leg and was still receiving treatment almost a year later.

As a result of the seriousness of this incident disciplinary action was taken against employees involved and the Contractor was suspended from working on company sites until their employees had undergone extensive retraining.



## MAINTENANCE FITTER HAS ARM SEVERED

A maintenance fitter had his arm severed when it became entangled in a cement screw at a concrete plant. The injured person was believed to be clearing a blockage and had isolated the piece of equipment by removing a circuit breaker. It is believed the circuit breaker was left near the control panel and was reinserted by another person who was unaware of the maintenance activity. The cement screw was energised and drew the injured persons arm into the mechanism.



# STOP AND THINK TALK

## Isolation and Lock off – Plant and Equipment

### Preparation

This stop and think talk can be used individually or with a group of people. It could be delivered in the workplace, perhaps in a control room with isolators and lock facilities. Take care that the area is suitable for people to hear and see what you are doing if you are carrying out a practical demonstration. Participants should receive a copy of the talk for their CPD files as well as signing the training declaration.

### Introduction (After reading out the case studies)

There have been several incidents within the company and the wider building materials industry resulting in serious or potentially serious injuries as a result of a failure to isolate and lock off plant and equipment. There have also been several incidents of disciplinary action taken, including dismissal, where people have failed to carry out laid down procedures. Whilst each of these incidents had different factors involved they all had a common theme whereby individuals or groups of people did not follow safe working practices designed to protect them and others. These events highlight the need for all to ensure that plant and equipment is always isolated and locked off before carrying out any maintenance or activity that could endanger anyone.

## THE TALK

Use the questions below to open the discussion under each heading and then go through the lists explaining in detail each hazard / control and what is expected

### Hazards

**Question 1 – What are the hazards if the plant and the equipment is not isolated and locked off prior to working on it ?**

- Entrapment in moving mechanical parts
- Being struck by moving object
- Electrical shock
- Being crushed
- Being hit by falling object
- Being engulfed in material - suffocated

### Controls

**Question 2 – What are the controls are in place to enable plant and equipment to be isolated and locked off?**

- Local isolators/Main isolators
- Lockout multi-hasps-for single/multi person lock off
- Padlocks-one key only
- Permits to work (where applicable)
- Safe systems of work (SSOW)
- Warning signs
- Authorised, trained and competent personnel

### Isolation Principles (ISIL-P)

**Question 3 –What are the principles of isolation?**

- Identify the plant that needs to be isolated (including plant feeding into and from the isolated area)
- Stop the plant
- Isolate the plant – turning off and discharging energy
- Lock off – Everyone working on the equipment or in the vicinity must individually lock off
- Prove the plant is isolated – try starting it

### Restarting Equipment

**Question 4 – What precautions should be taken before restarting equipment?**

- All guards secured in place
- All tools and equipment removed
- People in area warned of restart
- Last person to remove lock off isolator is responsible for checking everything is safe to restart

### Maintenance activities on site

**Question 5 – What maintenance do you undertake? What needs to be locked off or isolated?**

Any moving equipment/ Electrical equipment  
Mixers (and feed conveyors / cement screws /  
Discharge gates / skips) / Conveyors / Crushers  
Material hoppers/silos / Hydraulic equipment/ Air  
receivers / Gas supply / Water supply  
Any equipment normally guarded

**Note: Trip Wires and Emergency Stop buttons are not isolators and should not be used to stop the plant to carry out work.**

### Practical Demonstration

Carry out a practical demonstration on a piece of plant or equipment. Get each member of the audience to demonstrate understanding by carrying out the process.

### AND FINALLY...

1. Clarify any points as required.
2. Ask if there are any other safety related issues that should be discussed.
3. Get everyone to sign the training declaration.
4. Thank everyone for their participation.

