# Health Safety and Environmental Alerts August Newsletter

**Grontmij would like to thank all the clients and contractors (listed on the back page of this report) who regularly send us safety alerts/updates which we use to compile this newsletter; this however in no way implies that any of these companies were involved in any of the events reported.**

## Confined space incident

A tragic fatality incident has occurred within a confined space on a waste water treatment works.
The incident involved a fire in a confined space while maintenance work was being carried out; the exact cause of the accident is as yet unknown.

The incident is currently being investigated by the Health & Safety Executive along with the Utility Company.

**What is a confined space?**
The HSE definition of a Confined Space is:"a place which is substantially enclosed (though not always entirely), and where serious injury can occur from hazardous substances or conditions within the space or nearby (e.g. lack of oxygen)"

Some confined spaces are fairly easy to identify, e.g. enclosures with limited openings:

- Storage tanks; silos; reaction vessels; enclosed drains; sewers.

Others may be less obvious, but can be equally dangerous, for example:

- Open-topped chambers; vats; combustion chambers in furnaces etc; ductwork; unventilated or poorly ventilated rooms.

**Action Required**

- Only enter a confined space if it is a planned activity and you are trained and briefed
- Lone working is not permitted for confined space entry
- A 'Top Man' must always be present and they must not enter the confined space to assist in any circumstance
- Implement agreed lines of communication before entry into the space
- Provide adequate and suitable safe lighting including provision for emergency lighting (torch, head lamp)
- Preclude smoking or naked flames within or in the immediate vicinity of the confined space
- Check the confined space atmosphere with approved atmosphere monitors prior to and continuously during the entry and only enter if safe
- A rescue plan must be in place prior to work commencing. In the event of a gas alarm being given, the space must be evacuated immediately
- Ensure that any equipment or tools selected are appropriate for the atmosphere, i.e. intrinsically safe where risk of explosive gasses or excess oxygen levels
- If in doubt, always classify a confined space to a greater control level. It is safer to do this rather than underrate the hazard and expose people to a greater risk.



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## Collapse of steel reinforcement cage

An incident has occurred which resulted in the serious injury of two operatives who had been carrying out work on behalf of the Principal Contractor.
The work involved the installation of a reinforcement cage for a reinforced concrete (RC) central pier as part of a new road bridge structure. The new supporting RC pier was 25m in length x 8.5m high.
The activity was being carried out using two separate mobile elevated working platforms (MEWP) each containing two
operatives.
During the operation the reinforcement cage rotated and collapsed under its own weight causing the steelwork to strike one of the MEWPs causing it to overturn.
As a result, both of the operatives in the MEWP were seriously injured.

**Actions Required**
It is essential that all work which requires the installation of steel reinforcement for concrete walls, piers and other supporting structures considers the following:

Design
The Designer must ensure that all designs identify residual risks to ensure that safe systems of work for construction and maintenance can be developed.
The risk assessment should provide information relating to the safe sequence of construction which will be referred through the Method Statement produced as part of the safe system of work.

Safe System of Work
This will include Risk Assessments and Method Statements which identify all significant hazards and risks to ensure suitable controls can be implemented (including demarcated areas to prevent unauthorised access into hazardous areas). All controls must be fully communicated to those affected by the work activity including the level of supervision required and the site monitoring regime needed.

Health and Safety Responsibilities
Duty holders must ensure that everybody is made aware of their roles and responsibilities. All personnel
must ensure the health and safety of themselves and others who may be affected by their acts and/or omissions.
The Principal Contractor is required to inform all site personnel that if they witness an unsafe condition or act, they must STOP the activity immediately and report it to their Supervisor / Line Manager.

## ATEX compliance for electrical equipment installed within a hazardous area

A site investigation has found that the pressure transmitters purchased and installed within the Hazardous Areas are incorrect. The pressure transmitters are suitable for Non Hazardous areas only, and have been found to be installed within Zone 2 areas.

A Zone 2 area is described as:
An area in which an explosive gas atmosphere is not likely to occur in normal operation but, if it does occur, will persist for a short period only.

Action Taken

- The electrical isolation of any non-process critical pressure transmitter instruments to reduce the risk.
- The remaining transmitters have been visually inspected and gas checked.


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- The remaining instruments have been wrapped in a fire blanket to reduce any risk further.
- The contractor is reviewing all instrumentation on site for compliance to ensure there are no other risks on site.
- The contractor has ordered replacement ATEX rated Pressure Transmitters and requested accelerated delivery (currently 10 days).
- There is in place a restriction on the maintenance of the Pressure Transmitters until the replacement instruments are installed.

## Active Office Working

According to the World Health Organisation (WHO), a lack of physical activity is one of the TOP FOUR leading causes of preventable death worldwide, ahead of high cholesterol, alcohol and drug abuse. Additionally, in recent years a variety of major international research projects have produced compelling evidence that sitting for more than 4 hours each day leads to:

- Enzymes responsible for burning harmful blood fats shutting down
- Reduced calorie burning (Metabolic Rate)
- Disrupted blood sugar levels
- Increased insulin and blood pressure levels
- Leg muscles switch off

Irrespective of your level of physical activity, the result leads to an increased risk of:

| | | |
|---|---|---|
| Heart Disease | Diabetes | Obesity |
| Cancer | Back Ache | Dementia |
| Muscle Degeneration | Depression | |

Why not try:

- Standing during phone calls
- Standing and taking a break from your computer every 30 minutes
- Having standing or walking meetings
- Eating your lunch away from your desk
- Walking to your colleague's desk instead of phoning or emailing them
- Standing at the back of the room during presentations

Regular minor movements whilst at work are essential for us to keep our bodies healthy, leading to:

- Reduced absenteeism
- Illness prevention and stress relief
- Increased productivity, engagement, fulfilment and enjoyment

## Cable Strike during removal of soil

A Contractor moving spoil using a 360 excavator near to the Northern Power Grid substation reported striking a cable duct beneath the spoil. On investigation it was found that the 132kv cable within the duct had been damaged. This incident is under investigation.

**Action Required**

- Ensure that all works involving underground services are planned, services are identified, detected, marked and safe excavation/digging practices are implemented.
- Ensure that full consultation has been carried out with the owners to obtain suitable information on buried services in particular their location and status.
- Ensure that all buried services have been identified detected and marked before breaking ground.



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- Ensure that the contractors are trained and competent and are aware of the hazards and risks.
- Ensure the team are fully briefed and understand the works to be done.
- Ensure that the team understand what to do in the event of an emergency
- Before starting work complete a thorough Point of Work Risk Assessment.
- Always apply safe excavation techniques and understand when it is essential to hand dig.
- If unsure "STOP" work immediately.

## Loading MEWP with no fall restraint

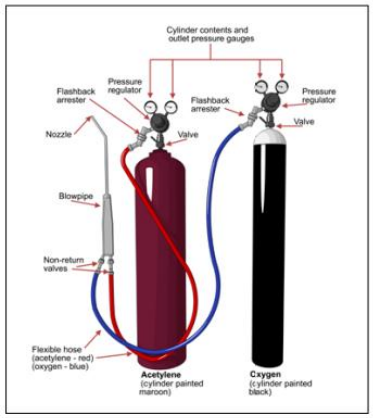
An HGV driver from a plant hire company attended a Delivery Vehicle Central construction site to collect two Genie Z Boom MEWPs which were to be off-hired. During the task he was observed driving (in the basket) and loading the MEWPs without wearing the correct PPE - most importantly, without any fall restraint (see photograph).

The driver entered the site and stopped the low loader on the substation access road a short distance from where the MEWPs were parked in a laydown area. He proceeded to drive the MEWPs onto the low loader but without the required PPE, i.e. full-body harness and fall restraint lanyard (connected to the anchor point on the MEWP basket), hart hat, light eye protection and long sleeves. When challenged the driver stated that his company policy/procedure regarding operation of MEWPs did not require him to wear a harness and lanyard as he was only loading the MEWP. The incident was reported as a near miss and an investigation carried out.

Subsequently, the plant hire company confirmed that their policy/procedures DO require operators to wear a harness and fall restraint lanyard for ALL boom-type MEWP operations – including loading and off-loading.

## Fire incident involving Acetylene

Flame from the acetylene bottle




Typical equipment used in oxy / acetylene gas welding processes

An acetylene bottle caught fire when using burning equipment at Sussex Gardens in London.

The site was immediately attended by the Fire Services who set up a 200 mtr exclusion zone to vehicles and pedestrians which impacted local businesses.

The size of the exclusion zone reduced throughout the monitoring period to reduce the impact to the local surrounding area.

The gas was allowed to burn off and the site was handed back over just after 5 o'clock in the morning.

An investigation into the incident is already underway and will rely on conclusions drawn from independent inspections of the equipment.

Until we are able to determine the cause of the incident, all sites and workshops are reminded of the following requirements:

- Only competent personnel should use this equipment
- Issue hot works permit and check controls
- Visually check all equipment, flash arresters, valves, pressure gauges, hoses for signs of damage before use
- Ensure cylinders are kept upright and restrained in bottle cages
- After use, switch off valves (cylinder and blowpipes) and vent excess gas from hoses
- For long lengths of hose, fit flash arrestors on both the blowpipe and the regulator. Shorten the hose as soon as the long hose is no longer required



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## Over turned All-Terrain Vehicle

An unauthorised and untrained operative off loaded a 2014 Polaris ATV from a trailer and proceeded to drive a short distance before overturning the ATV in a cabling compound.
The operative removed the Polaris ATV from the trailer and ran the ATV for approximately 70 metres. He was exceeding the compound speed limit prior to making a sharp turn to the right before losing control and overturning the ATV. The operative was wearing his PPE and had on his seatbelt at the time. He was not injured and was helped from the ATV by his work colleagues. The supervisor and work colleague did not challenge the operative or prevent him from operating the ATV. The weather conditions at the time of the incident were dry and windy. The ground area was level with which was constructed of type 1 material.

**Action Required**

- Ensure operatives are trained and authorised before operating All Terrain Vehicles.
- Management must ensure all operatives and supervisors follow SHE standards and act as Brothers Keeper.
- Encourage your teams to consider the implications of their actions. Help them have the confidence to stop the job if they think it's unsafe.

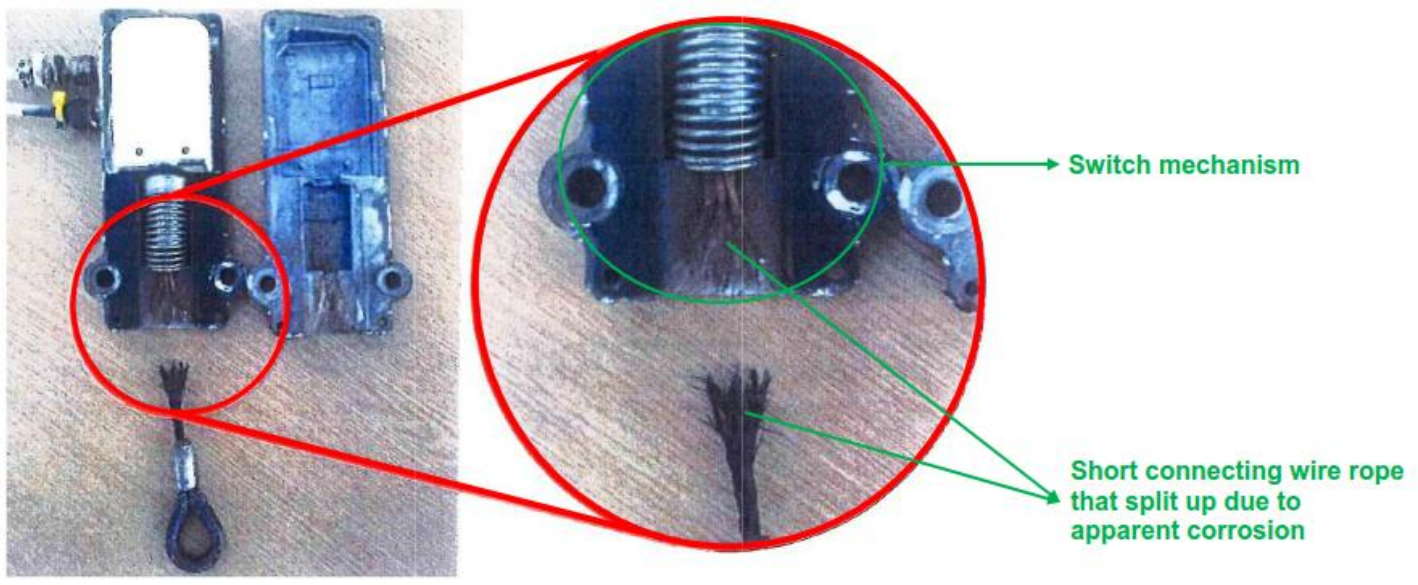
## Over hoist switch failure

A near miss occurred when the wire rope in the over hoist switch of a Liebherr crane failed, causing the chandelier block to slide down the pumping shaft along the dead rope of the crane, striking the sheaths on the hook block damaging the chandelier block.

The block split in two pieces when it struck the hook block, projecting the elements in the immediate vicinity. Nobody was injured as an exclusion zone was in place at the time of the incident.

Further investigation has revealed that the short wire rope connecting the switch mechanism to the chain holding the chandelier block on this type of switch had corroded, causing it to break.

The crane has a 6 monthly thorough examination prior to its hire on the project but this corrosion issue could not be seen during a routine visual inspection as it had taken place inside the hoist switch.




Even though this appears to be an extremely rare issue with this type of switch, it has been agreed that routine inspections of the cranes will now include the lubrication of the connecting wire rope as a preventative measure



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against corrosion and degradation. This specific item will be recorded accordingly as part of the existing planned maintenance documentation.

The incident and findings have been reported to Liebherr for further manufacturer's instructions on the use and maintenance of the cranes.

**Listed below are the Clients and Contractors who regularly contribute to this report.**

- Aecom
- Anglian Water
- Balfour Beatty
- Barhale WSP
- Black & Veach
- Carillion
- Coast to Coast (C2C)
- Costain
- Environment Agency
- Forkers Ltd
- Galiford Try
- Gammon Construction
- GBM
- Halcrow Group
- Health & Safety Executive
- Highways England
- J Brown Construction
- Jacobs
- Magnox Ltd
- Morrison Construction
- May Gurney
- Morgan Sindall
- MVB
- National Grid
- Network Rail
- NMC Nomenca
- North Midland Construction
- Northumbrian Water
- Plowman Craven
- Scottish & Southern Energy
- Scottish Power Utilities
- Scottish Water Solutions
- Severn Trent Water
- Speedy
- Thames Water
- Structural Safety Ltd
- The Construction Plant Hire Association
- United Utilities
- Wessex Water
- Yorkshire Water



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