

Safety Alert

Alert: May 2015

Overhead Powerlines Incident

Event:

Recently two near misses occurred whilst a light tower was being set up and operated on a mobile roadwork site.

Incident 1: The light tower was being positioned by the worker and had been detached from the towing vehicle. The legs of the light tower were extended to stabilise the tower and the lights turned on.

Conditions on site were wet due to the commencement of rain and the worker raised the lighting arm on the tower to its fullest extent. Although no physical contact with the line was made, due to the wet weather and the nearness of the light to the power line, the power arced to the light tower, travelled through the tower and jumped to the tow ball of the towing vehicle. The tow vehicle took the force of the surge and the vehicles' engine bay caught fire. The worker was fortunate not to receive physical injuries.

Incident 2: This incident occurred after emergency services arrived and took control of the site. The first respondent on site representing the Energy provider advised emergency personnel that the power was off to the line and it was safe. Emergency personnel proceeded to extinguish the vehicle fire using water hoses.

A second surge of power passed through the equipment causing the vehicles front tyres to explode and emergency personnel withdrew to a safe distance.

As a result of this event multiple injuries or fatalities could have occurred, it is important that the use of light towers is reviewed by all organisations.

Hazard:

The potential consequences from this type of event is;

- Electrocution or shock causing death or injury, internal organ damage or burns
- Plant explosions from tyres (pyrolysis) giving rise to high velocity projectiles from rims and wheels
- Fires to equipment, vehicles, plant and adjacent property

Light Towers are a piece of equipment which is commonly used on many work sites, emergency services and others, due to its design this equipment has the potential to come into contact with overhead powerlines during movement or, when the tower arm is being raised. It also is generally used at night when visibility is reduced.

Issues with managing Light Tower Hazards:

- Light towers can be raised, without any engineering restrictions on the tower arm to a **potential height** of up to 12.5 metres dependant on model and size selected.
- Light towers generally do not have engineering controls such as a height restrictors fitted and often this equipment is hired in, limiting the hirers control over engineering out the hazard
- Whilst instructions from suppliers advise not to; light towers can be relocated with the arm in a fully extended position, there is no alarm or lock out device which prevents workers from taking this shortcut
- If working within any metropolitan area, overhead powerlines present a hazard to all personnel on site, but in particular, during the placement, implementation and operation of light towers.
- These lights are often provided to ensure visibility of the traffic controllers and other site personnel during night works so often they are positioned by traffic controllers who are given the task of 'setting up' the site, these workers may not be trained as an Accredited Person in Overhead Powerlines or have the benefit of knowledge of this hazard other than the controls indicated in SWMS.

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Legislation relating to the management of working near overhead powerlines requires the following;

- Understanding important parts of the planned works and how to deal with changes as the work proceeds
- Understand what plant will be used in the operations
- Identifying possible hazards and risks associated with the works
- Ensuring compliance with all conditions imposed by legislation and/or electricity company
- Ensuring effective communications is in place between workers on site
- Provision of training to workers relevant to activities and hazards
- Supervision of workers to ensure safe work procedures are followed
- Ensuring approach distances are appropriate for the authorisation levels of workers undertaking the works
- Managing the impact of environmental factors including storms and lighting in the area

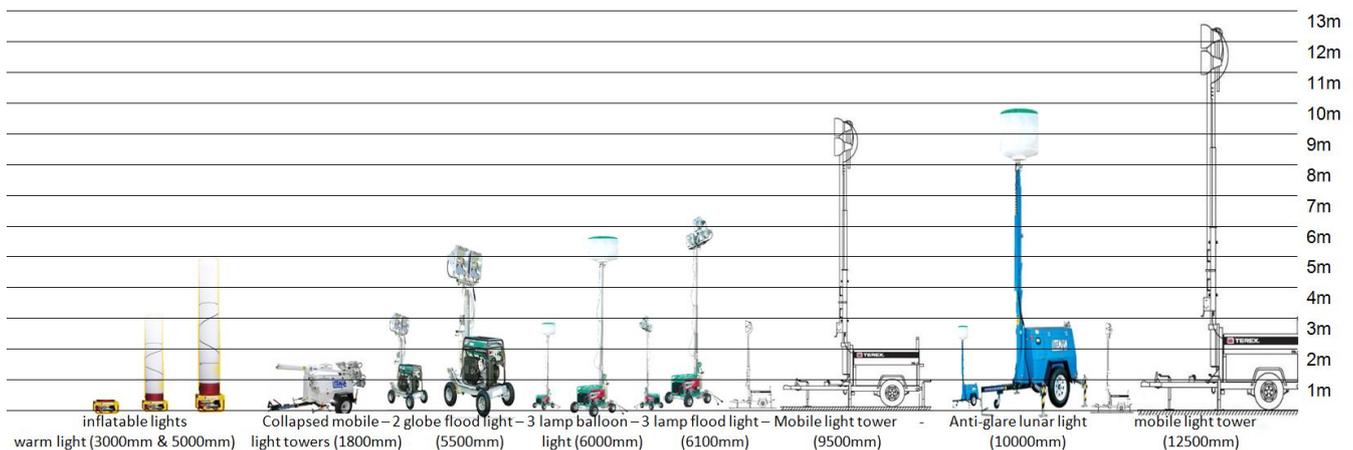
Mandatory Training Required:

Workers must not be allocated tasks which would put them in breach (or have the potential to breach) the approach distances relevant to their level of training as per ***the Code of Practice 'Working in the Vicinity of Overhead and Underground Electric Lines'***.

Lessons Learned:

- Identify, assess and control the risk of contact with power lines when undertaking activities where equipment/plant is used which has the POTENTIAL to be extended/reach to those lines and contact or arc with power lines.
- Where ever possible, eliminate the risk and ensure that light towers are not used in the vicinity of overhead powerlines, if there is no other choice of location then the Hierarchy of Control must be applied to ensure the risk is reduced to an acceptable level.

Potential Reach of Typical Light Towers Used



Important Note:

The Energy provider advises that any power line will attempt to reset itself when an interruption to its service is detected, only after multiple attempts to reset will the line shut down and power is disconnected. Therefore any attempt at rescue or emergency response should be undertaken with caution as further power surges may occur.