

SAFETY BULLETIN

DATE: AUGUST 2022

Mobile lighting plant at mining workplaces

This safety bulletin provides safety advice for the NSW mining industry.

Issue

During recent open cut coal mines inspections, mobile lighting plants were identified with issues that could influence safe vehicle movements and interactions during night hours or poor lighting conditions, such as fog.

Poorly set-up, operated and maintained lighting plant can impact the health and safety of workers that are undertaking activities in locations expected to be lit effectively. There is also a risk to worker health and safety when operated if they are poorly engineered or maintained.

Circumstances/observations

Mobile lighting plants are used extensively in open cut operations (as well as coal handling stockpiles and emplacement sites). These are either trailer or skid mounted and powered by a diesel engine (some driving a 415-volt three phase alternator, while others are extra low voltage (ELV supplying LED lights). Hydraulic controls are often used to raise and lower the lighting tower for transport.

The following was observed with lighting plant:

- No operational risk assessments were undertaken for the various types and models of lighting plant to ensure hazards were identified and controlled consistent with the hierarchy of control measures.
- Inadequate introduction to site systems.
- Inadequate bunding to control unwanted vehicle interaction/collision.
- Pre-start system failures, including non-existent and inadequate prestart inspections
- Fire extinguishers not maintained and no up-to-date stamped inspection tag.
- Inadequate workforce training.

- Damaged and defective lights, and lights not operating
- Positioned on uneven ground, making operation and maintenance worker access difficult.
- Incorrectly positioned lights that interfere with the vision of drivers of both heavy and light vehicles, especially at intersections.
- Towers not being fully lowered and secured before relocating.
- Damage affecting the structural integrity of the plant along with damaged handrails and steps.
- Raised platforms without handrails or other controls to prevent a fall from the platforms.
- Buckled and uneven surfaces creating trip hazards for operational and maintenance workers.
- Worn, damaged tow chains and slings.
- Trailer units with tyres with cuts and abrasions, low tread depth and under inflated
- Breakaway systems on trailer units, where fitted, were not used by workers setting up to tow and relocate this style plant – they didn't know the breakaway system existed or how to connect it.
- Damaged stabiliser legs and missing wheel chocks for trailer units.
- Damaged, unusable tow plugs and wiring.
- Damaged, inadequate or ineffective guarding of rotating parts - fan blades and pulleys.
- Damaged lagging on exhaust systems, and no labels warning of hot surfaces.
- Poor electrical standards, which resulted in several electric shocks.
- Poor housekeeping with the alternator and engine compartments, and the mast hydraulic accumulator compartments (where separate), awash with oil and diesel spillage, fines, and rags as well as other flammable materials such as carboard and paper.

Recommendations

- Operational risk assessments should be undertaken for all mobile lighting plant at the mine, to ensure all hazards are identified and controlled as per the hierarchy of controls. An assessment of each plant should be undertaken, with plant modified as necessary so they comply with the electrical engineering control plan (EECP) and the mechanical engineering control plan (MECP).
- In addition to operator pre-use inspections, mobile lighting plant installations should be inspected regularly by competent electrical and mechanical tradespersons, and deficiencies/defects rectified in accordance with the mine's defect management systems.
- Lighting plants must be maintained in fit for purpose condition and at frequencies identified by the mine's maintenance system. This should be based on original equipment manufacturer

(OEM) recommendations and the MECP and EEC requirements and includes testing electrical protection and earthing where the type of plant dictates.

- Mobile lighting plant relocation, set-up, and positioning standards should be developed and documented. Workers should be trained in the standards and the standards enforced by supervisors to ensure the safety of the lighting units and there is no unwanted interaction risk with vehicles.

Figure 1– Fall from Heights risk - sled style lighting plant



Figure 2 – Damaged platforms



Figure 3– Unsecured LV electrical protection devices – accessible by non-electrical workers



Figure 4– Ineffective guarding against rotating parts



NSW Resources Regulator lighting plant safety alerts:

[SA00-08 Electric shock from mobile lighting plant #1](#)

[SA00-07 Electric shock from mobile lighting plant #2](#)

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