

NSW Mine Safety Legislation

Considerations for autonomous mining equipment

Garvin Burns
Chief Inspector

September 2022

resourcesregulator.nsw.gov.au



Australian WHS Legislation

**There is no MSHA
equivalent in
Australia.**

Australia has “model” work health and safety legislation.

This was drafted under an agreement between the Commonwealth (federal) and state governments, with the intent of harmonising WHS laws across the country, and was first released in 2011.

Most states and territories have adopted the legislation, with minor amendments, including NSW.

States have responsibility for regulating work health and safety, and the commonwealth has no over-arching powers.

NSW, and some other states, also have separate safety regulations specifically for the mining industry.

Mine Safety Legislation

**Mine safety
legislation varies
significantly from
state to state!**

- In NSW - prescriptive legislation primarily to manage “Principal Hazards”
- Principal hazards have the reasonable potential to cause multiple deaths in a single incident or in a series of recurring incidents
- In the context of this presentation, roads and vehicle operating areas are identified as a principal hazard.
- All mine operators are required to prepare a principal hazard management plan for each prescribed principal hazard.
- Legislation identifies those matters which must be considered in the development of these plans.
- The regulator does not approve these plans, however may issue directions if a plan is considered non-compliant.

Key principle of WHS legislation

**The regulator is not
a duty holder – it
performs a function**

*Protect workers and other persons from harm by requiring **duty holders** to eliminate or minimise risk so far as is reasonably practicable...*

Duty holders include:

- persons controlling a business or undertaking (the mining company)
- designers, manufacturers, importers and suppliers of plant
- persons who install or commission plant
- company officers (the directors)
- workers (which will include supervisors)

Functions of the regulator

**The regulator does
not approve
activities**

- These are prescribed in the WHS Act
- Monitor and enforce compliance by use of delegated powers
 - Issue directions to address non-compliances
 - Prohibit activities to remove risk
 - Stop work orders
- Provide advice and information on work health and safety to duty holders and the community
- Collect, analyse and publish statistics
- Promote and support education and training on work health and safety matters

Advice and Information

A CoP should be considered when determining what is “reasonably practicable”.

- Codes of Practice (CoP)
 - Not prescribed, however have “evidentiary status”
- Design Guidelines and Technical Reference Guides
 - May be prescribed through orders or regulation
- Australian and international standards
 - May be prescribed through orders or regulation
- Guidance notes, fact sheets, safety alerts, investigation and compliance reports
- Industry seminars and forums

Considerations for autonomous equipment

**The mine operator
owns the risk!**

- A mine operator must assess the risk and implement controls, in accordance with the hierarchy of controls.
- Compliance with all prescribed legislative requirements must be able to be demonstrated.
- A mine operator should be able to demonstrate that relevant non-prescribed guidance and technical information has been considered when determining ways to manage the risk.
- Controls must be identified in the principal hazard management plan for roads and vehicle operating areas, and the mechanical and electrical engineering control plan
 - Must include process for verifying that the controls remain effective
 - Must be reviewed if there is an incident

Considerations for autonomous equipment

The regulator does not require a mine operator to notify of the introduction of autonomous equipment, and does not approve the use of the equipment at a mine, however will:

- prohibit the use of the equipment if there is a concern that workers may be exposed to serious risk.
- issue directions to address non-compliances to regulations.
- request mine operators who are progressing the introduction of new technology to share their experiences at industry seminars and forums

Rollout of new technology

Proactive engagement with the regulator at the feasibility stage is of utmost importance

While autonomous haulage is in widespread use in Western Australian iron ore mines, take-up of the technology has been far slower in other states.

One open cut mining operation in NSW currently has a modest fleet of Hitachi EH5000 haul trucks in service, and two large underground metalliferous mines have autonomous boggers in service. Remote control technology is widely utilised in underground coal and metalliferous mines.

Several mine operators have advised the regulator that they are considering the introduction of autonomous and semi-autonomous equipment and are proactively engaged with us to ensure that the equipment will be compliant and safe.

Thank You

