

Line of fire and exclusion zone failings

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Line of fire and exclusion zone failings

Summary

- RSHQ has identified a concerning pattern involving workers in 'no-go zones' and the lines of fire in recent serious accidents.
- Of the four fatalities this year, three involved maintenance work and 'no-go zones'.
- Learnings and recommendations are outlined below to help industry improve safety.

Issue Explained

Lines of fire & no-go zones

This year the Queensland coal mining industry has suffered four fatalities and a number of serious accidents.

Investigations are ongoing but it appears that in many cases, coal mine workers were in the 'line of fire' from unplanned releases of energy sources and within areas where it would reasonably be expected for exclusion zones to apply, also known as 'no-go zones'.

For example, in the most recent fatality at Oaky North coal mine on 2 October 2024, workers were standing in the line of fire. Based on initial investigation reports a sled, laden with conveyor trough frames was being winched up and along the conveyor walkaway. A sudden event has occurred and

two coal mine workers standing on the uphill side of the sled have been impacted resulting in one coal mine worker being fatally injured and another coal mine worker sustaining significant injuries.

In an earlier incident in September 2024, a tyre fitter and tyre manipulator operator were completing a vertical mount of a five-piece wheel assembly on rear dump truck at a surface mine's tyre bay, when the tyre fitter was struck by a falling bead seat band and side ring, suffering significant injuries to his foot, arm and head. Initial investigations show the injured worker was in the line of fire.

Fatal hazard controls

RSHQ has also identified an over-reliance on administrative controls (e.g. taking a simple step that appears to highlight an issue but does not remove the issue) in some cases. These provide a lower level of protection and are less reliable controls, instead of looking at safer ways to perform a task. It also appears that hazards and risks to individuals are not being identified.

Learnings

No-go zones:

- No-go zones or exclusion zones must be established, especially before maintenance tasks have commenced.
- The exclusion zone must be clearly defined and, where possible, physically prevent entry into the exclusion zone.
- Potential lines of fire must be considered when establishing no-go zones.
- Abnormal events, including component failure must be considered and may require a larger exclusion zone.
- RSHQ recommends reviewing no-go zones for all tyre, wheel and rim tasks.
- In some incidents, it appears that the Recognised Standard is not being followed. [Review the RS here.](https://www.resources.qld.gov.au/data/assets/pdf_file/0004/986071/recognised-standard-13.pdf) (https://www.resources.qld.gov.au/data/assets/pdf_file/0004/986071/recognised-standard-13.pdf).

Towing procedures:

- Equipment failure during hauling and loading type operations can occur at any stage. Workers need to be aware of this and stay well clear of items such as cables, ropes, and chains when they are under tension.
- When planning a task involving lifting or towing, the rating and yield load of all components including the connection points must be considered in the design of the lifting or towing system.
- Additionally, the structure supporting the connecting point should also be suitable for the task.

Fatal hazard controls:

- Review the 'hierarchy of controls': the most effective control measure involves eliminating the hazard and its associated risk. The best way to eliminate a hazard is to not introduce the hazard in the first place. Avoid relying on administrative controls.

- Review the mine Safety & Health Management System; particularly task-based risk management processes to ensure fatal hazards are identified.

Additional recommendations from RSHQ may be published during and following the investigation into these incidents.

Investigations are ongoing and further information may be published as it becomes available. The information in this publication is what is known at the time of writing.

We issue Safety Notices to draw attention to the occurrence of a serious incident, raise awareness of risks, and prompt assessment of your existing controls.

References and further information

- [Hauling equipment failure during conveyor belt change out | Resources Safety & Health Queensland: 26 July 2022 | 414](https://www.rshq.qld.gov.au/safety-notices/mines/hauling-equipment-failure-during-conveyor-belt-change-out) (<https://www.rshq.qld.gov.au/safety-notices/mines/hauling-equipment-failure-during-conveyor-belt-change-out>)
- [Stored energy while manual handling | Resources Safety & Health Queensland: 31 July 2007 | Alert 165](https://www.rshq.qld.gov.au/safety-notices/mines/stored-energy-while-manual-handling) (<https://www.rshq.qld.gov.au/safety-notices/mines/stored-energy-while-manual-handling>)
- [Towing of longwall chocks almost results in fatalities | Resources Safety & Health Queensland: 13 February 2007 | Alert 156](https://www.rshq.qld.gov.au/safety-notices/mines/towing-of-longwall-chocks-almost-results-in-fatalities) (<https://www.rshq.qld.gov.au/safety-notices/mines/towing-of-longwall-chocks-almost-results-in-fatalities>)
- [Uncontrolled movement of winch line | Resources Safety & Health Queensland: 7 October 2020 | Bulletin 12](https://www.rshq.qld.gov.au/safety-notices/petroleum-and-gas/uncontrolled-movement-of-winch-line) (<https://www.rshq.qld.gov.au/safety-notices/petroleum-and-gas/uncontrolled-movement-of-winch-line>)
- [Spotter struck in face by winch cable | Resources Safety & Health Queensland: 9 February 2018 | Alert 80](https://www.rshq.qld.gov.au/safety-notices/petroleum-and-gas/spotter-struck-in-face-by-winch-cable) (<https://www.rshq.qld.gov.au/safety-notices/petroleum-and-gas/spotter-struck-in-face-by-winch-cable>)
- [Recognised Standard 13 | Tyre, wheel and rim management Resources Safety and Health Queensland, 21 June 2024 | Version 2.0](https://www.resources.qld.gov.au/data/assets/pdf_file/0004/986071/recognised-standard-13.pdf) (https://www.resources.qld.gov.au/data/assets/pdf_file/0004/986071/recognised-standard-13.pdf)
- [Published by NSW Resources Regulator Title: Investigation report - Serious injury at Springvale Colliery 5 February 2019](https://www.resourcesregulator.nsw.gov.au/sites/default/files/documents/investigation-report-serious-injury-at-springvale-colliery.pdf) (<https://www.resourcesregulator.nsw.gov.au/sites/default/files/documents/investigation-report-serious-injury-at-springvale-colliery.pdf>)

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