Underground Refuge Stations in Mines

Purpose

To provide best practice recommendations for workplace parties to consider when fulfilling their responsibilities under the Occupational Health and Safety Act (OHSA) and Regulation 854 regarding underground refuge stations.

Objectives

- To provide information on the location, and construction of refuge stations in underground mines.
- To provide information on the required contents, and other considerations to improve the refuge station environment during an underground emergency

Legal requirements

Section 26 of Regulation 854 (Mines and Mining Plants) under the Occupational Health and Safety Act covers the important requirements.

Background information

In the event of a fire or other disaster, refuge stations should be located in all areas underground where there is a possibility that persons may not be able to reach a mine exit in a reasonably short time. A refuge station should be located in a fresh air circuit and away from extreme hazard areas such as diesel repair stations and oil, fuel or explosives storage areas. All persons who are in parts of an underground mine where there are refuge stations should be familiar with the location of those stations.

Considerations

As per section 26 of Regulation 854, all refuge stations must:

1. Be of a size that will accommodate all anticipated occupants;
2. Be constructed of components/materials that have at least a one-hour fire resistance rating;
3. Be capable of being sealed so as to prevent the entry of gases;
4. Be supplied with a means of potable water;
5. Be supplied with a means of compressed air; and
6. Have a means of communication to a point on the surface.
In addition to what is required by the regulation as set out above, there are additional considerations or acceptable practices that may apply. These include that refuge stations should:

1. Be excavated from solid material (rock, salt, gypsum etc.) preferably.
2. Have a steel man door, which can be positively latched and tightly sealed. There should be a small opening to exhaust stale air that can be sealed when required.
3. Be fitted with heaters, or air coolers as applicable; and lights.
4. Contain enough benches to comfortably seat the persons who will use it.
5. Have a drain that will permit the escape of wastewater but will stop the inflow of outside air.
6. Have a container of clay or other caulking compound kept in a condition suitable for use.
7. Have compressed air left on in the refuge station with the door shut to ensure positive pressure, so that no contaminants will enter when workers are first entering.
8. Contain a basket stretcher, blankets and a first aid kit; all of which are regularly inspected and maintained.
9. Have a supply of emergency tools such as axes, saws, ropes, shovels, jacks etc., and a 10-lb. dry chemical fire extinguisher.
10. Contain a copy of the fire procedure and the procedure to be followed in the refuge station during an emergency.
11. Have portable latrine facilities for both women and men, including provisions for privacy and toiletries.
12. Have a means of disconnect for A/C units or ventilation fans supplying cool/fresh air to refuge station.
13. Have a means of shutting down or closing intake ventilation pipes used for A/C units or ventilation fans.
14. Be routinely inspected and properly maintained for its intended use.
15. Be clearly marked with signage and locations clearly identified on mine plans.

**Note:** Heat Stress should also be considered when developing fire procedures for mines where increasing temperatures inside a refuge station may pose a risk to workers.

**More information**

- [Mining safety](http://Ontario.ca/miningsafety)
- [Workplace Safety North](http://www.workplacesafetynorth.ca)
Toll-free number

Call 1-877-202-0008 any time to report critical injuries, fatalities or work refusals. Call 8:30 a.m. to 5 p.m. Monday to Friday for general questions about workplace health and safety. **Always call 911** in an emergency.

**Disclaimer:** This guideline has been prepared to assist workplace parties in understanding some of their obligations under the OHSA and its regulations. It is not intended to replace the OHSA or its regulations — reference should always be made to the official version of the legislation.

It is the responsibility of workplace parties to ensure compliance with the legislation. This guideline does not constitute legal advice. If you require assistance regarding interpretation of the legislation and its potential application in specific circumstances, please contact your legal counsel.

While this guideline will also be available to Ministry of Labour inspectors, they will apply and enforce OHSA and its regulations based on the facts as they find them in the workplace. This guideline does not affect their enforcement discretion in any way.

Produced by the Mining Health and Safety Program of the Occupational Health and Safety Branch, Ministry of Labour.

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