



Mines Safety Bulletin No. 88

Date: 26 October 2009

Subject: Electric shocks from welding equipment

Background

The number of electric shock incidents from welding equipment has increased noticeably in the past four months, with 16 incidents reported to Resources Safety. This is a worrying trend that needs to be addressed by responsible persons at Western Australian mining operations.

Immediate causes or contributory factors

Analysis of the incident reports identified the following issues:

- faulty or damaged equipment, such as broken hand-pieces;
- careless work practices, such as direct contact with the electrode or work piece with bare hands, arms or other exposed parts of the body;
- failure to identify and address the hazard levels presented by the working environment; and
- damaged, wet or inappropriate gloves and protective clothing.

Recommendations

- Review welding procedures at the mine site and ensure measures include the identification of welding environments and the necessary risk controls for each environment type. As a minimum, all procedures must comply with Australian Standard AS 1674.2:2007 *Safety in welding and allied processes – Electrical*.
- Ensure employees and contractors who carry out or supervise welding work are trained in the use of these procedures and any associated checklists.
- Remind employees who carry out welding work about the dangers of electricity and the necessary safe practices when welding. Resources Safety's *Mine Safety Matters* brochures on these topics are available from the website.
- Ensure welding machines, cables and appliances are all suitable for the work environment.
- Use hazard reducing devices such as voltage reduction devices (VRDs) or trigger switches.
- Where possible, use DC welders in preference to AC welders.
- Ensure welding machines, cables and appliances are maintained in good condition and regularly checked by a competent person, and defective equipment is not used.
- Where possible, perform work on a dry insulated floor. Wooden platforms, rubber mats and dry areas provide extra protection, particularly in confined spaces.
- Check personal protective equipment and clothing before use and change it if it becomes wet.
- Refer to the Welding Technology Institute of Australia's *Technical Note 7: Health and safety in welding*, which is an approved code of practice under the *Mines Safety and Inspection Act 1994* and an excellent resource for training, refresher programs and toolbox meetings.

Simon Ridge

STATE MINING ENGINEER