

# SAFETY ALERT



## ELECTRIC SHOCK FROM LONGWALL LIGHTING SYSTEM

### INCIDENT

An apprentice received an electric shock while working on a longwall face lighting system.

### CIRCUMSTANCES

The apprentice was involved in the installation and commissioning of a longwall face lighting system.

The flameproof power system, consisting of a flameproof supply and intrinsically safe lights, had been previously installed. All 110 volt cables, plugs and flameproof enclosures were installed and energised.

The victim was connecting the intrinsically safe (IS) luminare leads into the IS junction box (refer photograph #1) attached to the flameproof enclosure. The victim's hand contacted live terminals in the IS junction box and he received an electric shock at a voltage of 95V minimum.

### INVESTIGATION

Subsequent to the event an electrician tested the circuit with an approved meter between earth and the IS terminal. A blue spark was seen.

The apparatus was tested using the spark test apparatus at Test Safe, with a test gas having a factor of safety of 1.5. An ignition of the test gas occurred. The spark test was repeated with a test gas having a factor of safety of 1.0, and no ignition occurred. Further testing is being conducted.

Circuit Analysis carried out by Test Safe has confirmed an issue with the "reset circuit" failure mode.

The system operates at above extra low voltage as defined in Clause 33 of the Coal Mines (General) Regulation, 1999.

### RECOMMENDATION(S)

These systems must be installed, commissioned, maintained and decommissioned to manufacturer's instructions, Coal Mines Regulation Act and Regulations requirements and any conditions that may be determined by further testing.

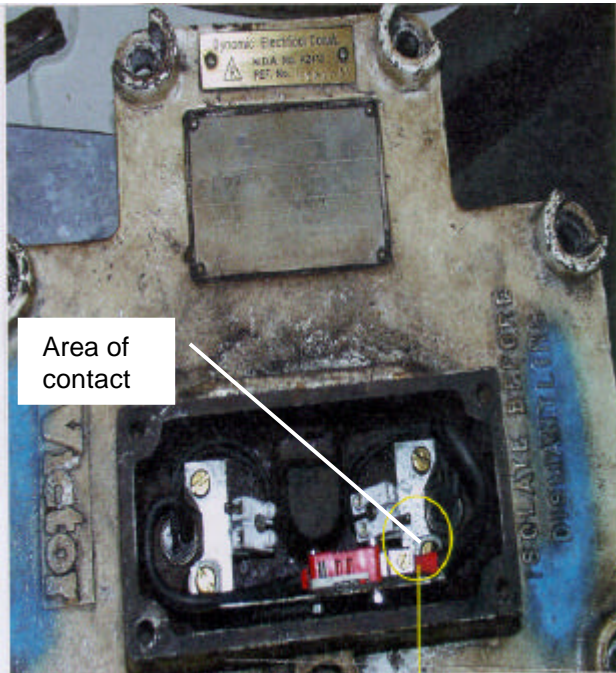
**As a matter of urgency, all mines using these systems review their safety by:**

- Removing from service the reset circuit using a safe method determined by consultation with the manufacturer (refer photograph #2 for existing arrangement).
- Contacting the manufacturers for further safety updates.
- Ensuring that Clause 6, Coal Mines (General) Regulation 1999, is complied with, to identify and deal with the risks of electric shock and ignition of flammable gas which this notice has highlighted.

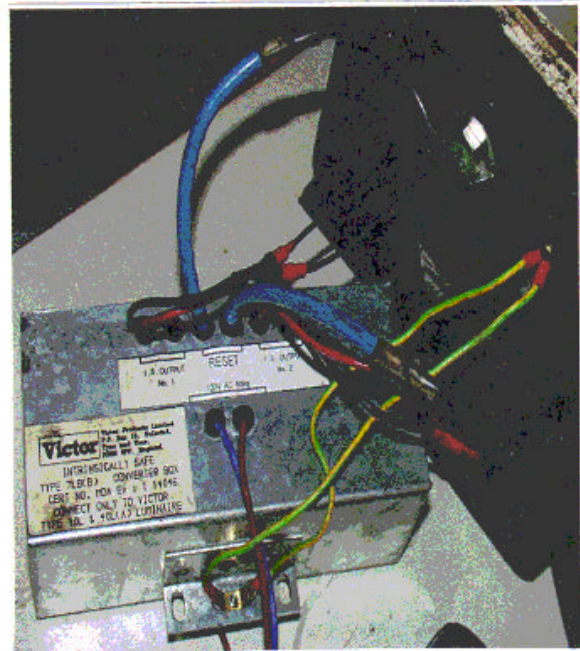
### SIGNED OFF

R Regan  
ASSISTANT DIRECTOR SAFETY OPERATIONS

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Photograph No. 1  
Area of contact



Photograph No. 2:  
Module inside flameproof enclosure