



DEPARTMENT OF MINES  
WESTERN AUSTRALIA

SIGNIFICANT INCIDENT REPORT NO. 16

SUBSTATION TRANSFORMER EXPLOSION

INCIDENT

An electrical supervisor and an electrician received severe burns to their upper body, face and arms when they inadvertently removed the lid and commenced work on a 'live' 11,000 volt transformer. The work was scheduled to be carried out on an adjacent transformer which had been properly isolated for the purpose, but the persons involved entered the 'live' transformer compound by mistake. They reached into the 'live' transformer tank with tools, and an ionisation explosion resulted, causing extensive injuries to the casualties, who were set alight and required 4 and 8 weeks hospitalisation.

CAUSE

The accident was caused by their failure to identify correctly the equipment which had been isolated.

COMMENTS AND PREVENTATIVE ACTION

The fundamental cause of this accident can involve any equipment requiring remote isolation, and ALL persons carrying out such tasks need to ensure **THEIR OWN** safety before commencing work. In this accident **TWO** people made the same mistake whereas a simple '**TEST BEFORE TOUCH**' voltage check would have indicated danger. Remember to check your test instrument before and after use.

Labelling of the transformers was correct but obscurely positioned at the rear. Ensure all labels are prominent and **DO NOT ASSUME** that the No. 1 item of equipment will always be on the left when approached.

Statutory requirements for the control of maintenance and switching of high voltage equipment are detailed in regulations 301-319 of the Electricity Act Regulations 1947 and further expanded in Australian Standard AS2467. Company electrical safety procedures need to embrace these minimum requirements and also incorporate adequate 'check' provisions to eliminate foreseeable danger. Consultation with the Department's Special Inspectors of Mines will be welcomed from all parties and every assistance given.

**“CHECK! DOUBLE CHECK! AND CHECK THE CHECKER!”**

J M Torlach  
STATE MINING ENGINEER

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**SAFETY AWARENESS SAVES LIVES**