

ORDER
ENERGY COORDINATION ACT 1994 S. 18B

**TO: ALL PERSONS WORKING ON AND OWNERS AND OPERATORS
OF LONG & CRAWFORD OIL-INSULATED HIGH VOLTAGE
COMBINED-FUSE SWITCHES**

PRELIMINARY

Pursuant to s.18B of the *Energy Coordination Act 1994*, this Order dated 13 February 2015 is issued to and affects all owners and operators of electrical installations incorporating oil-insulated high voltage (HV) combined-fuse switches manufactured by Long & Crawford Manchester later re-badged GEC-Alsthom (referred to herein as "L & C fuse switches").

**INVESTIGATION OF CATASTROPHIC FUSE SWITCH FAILURE ON
3 FEBRUARY 2015**

On 3 February 2015 electrical workers were engaged to perform maintenance on an 11kV oil-insulated Long & Crawford combined-fuse switch. A violent explosion occurred caused by a high-current fault within the unit's tank. Most of the insulating oil in the tank was vaporised instantly. The type of fuse switch involved permits a work practice whereby the three fuse cartridges immersed in the tank can be changed while the in-coming high voltage bus bars at the base of the tank remain energised.

This accident is under investigation by EnergySafety and WorkSafe WA. While the investigation is at an early stage, it appears that there has been a failure within the fuse switch concerned.

Opinion

Based on evidence obtained thus far from the investigation, I have formed the opinion that it may become dangerous to carry out the above-mentioned work practice on L & C fuse switches unless they are first completely isolated from the electricity supply. Therefore safeguards are justified to protect those called upon to carry out electrical work repairs or other maintenance on these switches.

My reasons for reaching this opinion are:

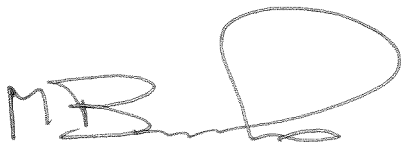
- An L & C fuse switch exploded at the Morley Galleria Shopping Centre on 3 February 2015, killing two persons and severely injuring two others;
- It is potentially unsafe to perform work on any item of electrical equipment while it remains energised, especially high voltage equipment;

- Many similar L & C fuse switches, of unknown number and location, are owned and operated by private owners, with unknown histories of preventative maintenance;
- Many such L & C fuse switches, again an unknown number, are likely to have been up to 40 years in service; and
- The L & C fuse switches are no longer manufactured and no reliable supply of spare parts exists.

ACTIONS REQUIRED

From the date of this Order:

1. No person shall open the lid of any L & C fuse switches until the unit to be worked upon is completely isolated from the electricity supply;
2. Owners and operators of L & C fuse switches shall not permit any person to open the lid of any L & C fuse switches until the unit to be worked upon is completely isolated from the electricity supply; and
3. L & C fuse switches worked upon must remain isolated until all work is completed and the tank lid closed.



Michael Bunko
DIRECTOR OF ELECTRICITY COMPLIANCE
Inspector (Electricity) Designation No. 2

EnergySafety
Department of Commerce
Government of Western Australia