Safety Advice 06-2003 (B) (NZ)

HAYWARDS INCIDENT: 11 kV SWITCHGEAR INSTALLATION

[UPDATE on previous Safety Advice dated 12 March 2003]

This is advice of an electrical accident that may be relevant to other electricity supply industry business units. The accident involved flashover and serious harm in the course of installing a replacement 11kV switchboard for supply to a distribution network.

BACKGROUND

On the morning of 5 March 2003, an electrical fitter and an apprentice were seriously harmed in the course of installing replacement 11kV switchgear.

The accident involved contact with newly installed and recently livened 11kV switchboard terminations through the removal of a circuit breaker cubicle panel, without an Access Permit (AP). The live equipment accessed was under the operational control of a controller.

Investigations showed there were no defects or problems with the newly installed equipment.

The electrical fitter and apprentice were briefed on work to be carried out under an AP, which was to cut and remove single phase cables from a bus cubicle. The work plan was to re-connect these cables to another bus cubicle later in the day. Equipment in the second cubicle was live at the time, and a further AP had been planned for, but not issued, to cover the re-connecting work activity. This removal and re-connecting work required access to the rear of the switchboard via different cubicle panels.

Newly Commissioned Equipment Notices had been placed on some of the newly installed equipment. Temporarily placed red insulation tape crosses were fixed to some of the rear cubicle panels to remind the employees concerning which panels were and were not being worked on that day.

After cutting the cables under AP, the employees then moved to the unmarked rear panel (ie no temporary red tape cross) covering the cubicle where re-connection was to take place. The employees then unbolted this panel without having obtained an AP to cover this work activity. After the panel was removed they contacted live terminations and were involved in flashover from the switchgear.

INITIAL LOSS DESCRIPTION

The accident resulted in serious harm to the two employees. One employee died from extensive burns and the other was hospitalised for long term treatment of extensive burns.

APPARENT CAUSE

Failure to obtain an AP prior to the gaining of access to live equipment.

RECOMMENDATIONS

The following points are reinforced as factors for preventing recurrence:

- Ensure appropriate Access Permits are obtained before accessing in-service or live equipment.
- Ensure consistent and thorough application of Newly Commissioned Equipment notices.
- Ensure any work party systems used to control the work (eg. visible markings such as tape, painted messages etc) are entirely consistent with the boundaries of the safety controls defined in the Access Permit(s).
- Ensure employee briefings, such as tailgates, cover the scope of the work to be undertaken, possible hazards, and the safety controls/boundaries agreed under the Access Permit(s). It is important that employees can demonstrate complete understanding of the scope of work, possible hazards and the safety controls.