

Technical Bulletin

TB 0300 - Emergency Showers & Eyewash Systems In Transmission & Zone Substations

Purpose

The purpose of this bulletin is to state the new requirements for emergency showers and eyewash systems within transmission and zone substations.

These requirements consider the justification of this equipment while providing a low-risk safe work environment for all staff.

Background

Current industry standards for high voltage substations in relation to the provision for emergency eyewash and deluge states that these units are to be fundamentally used by workers for the management of treating hazardous spills on humans. Furthermore, SDI522 – "Emergency Showers & Eyewash Systems" additionally states that deluge showers are also to be used for extinguishing fires.

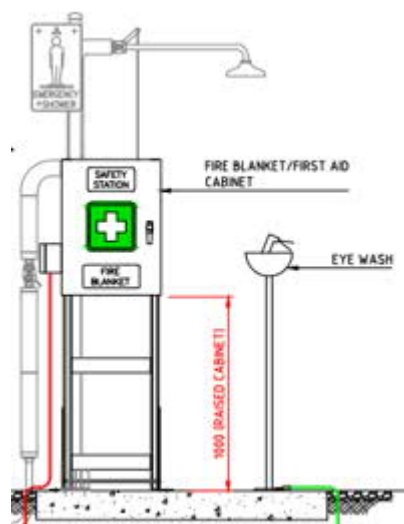
Equipment utilised in modern substations have reduced the potential risks to operational staff. This equipment includes the utilisation of:

- Sealed lead acid batteries which have coagulated gel acid electrolyte.
- Switchgear with vacuum type medium, arc fault venting and mechanical interlocks.
- High-speed protection.

Additionally, with the introduction of the new arc rated and flame retardant 4 cal/cm² clothing has further reduced the potential risk to staff.

It has now been assessed through consultation with operational and field staff, risk assessment and safety in design (SiD) process that the required number of deluge showers could be reduced (taking into account the safety improvements for modern substations) while still providing the facilities to assist in the treatment of

tissue damage caused by fire or hazardous chemical spills. One of the safety improvements, as an outcome of these consultations, was to introduce a safety station which includes a combine deluge shower/ eye wash/ fire blanket/ medical emergency button (note that this medical emergency button is in addition to the button which is normally located in the control room). This safety station will be located adjacent to the front parking area and the proposed design is shown as follows:



It was also decided to install additional deluge showers if:

- Required to traverse stairs higher than 800mm.
- Required to traverse further than a 60m radius to high voltage equipment located in a switchyard.

Note that the design of these systems are to be assessed as a part of the required SiD risk assessment process.

Actions

Delivery Excellence

- Implement the new proposal for all new greenfield substations.
- Implement the SiD process for substation designs as per company policy and procedures which will include assessing emergency showers and eyewash systems.

Asset Planning & Performance

- New ruleset to be amended in SDI522 instead of revised.
- Review the effectiveness of the deluge showers in 3 years' time

Impacted Standards

The contents of this technical bulletin will be included in the next update of the following standard:

- SDI 522 – Emergency Showers & Eyewash Systems