



National  
Operational  
Guidance

**Control measure - Maintain safe working distance: Overhead line equipment ..... 2**



# Control measure - Maintain safe working distance: Overhead line equipment

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## Control measure knowledge

The safe working distance from overhead line equipment (OLE) is three metres. However, if a person is in need of rescue, the safe working distance is no closer than one metre from the OLE, including personnel and any equipment. In this instance, incident commanders should ensure that 'emergency SWITCH OFF' is requested immediately and train vehicle movements are stopped before commencing any operations. Confirmation that the emergency switch off is in place must be received from the rail operator before any person or conductive equipment comes closer than three metres.

When a member of the fire and rescue service, or any conductive material, has to come closer than one metre to overhead line equipment (OLE), a further request for earthing must be made, and there must be confirmation that earthing has been carried out, before crews wearing full personal protective equipment (PPE), including electrical gloves, can remove any casualties from cables or machinery using dry non-conductive equipment. If there is an immediate life-saving opportunity, where waiting for the line to be earthed may lead to loss of life, a rescue can be attempted following confirmation that the power is isolated, and as long as crews remain at least one metre from OLE and use dry, non-conductive material to carry out their actions. Full PPE and electrical gloves must be worn.

For information a rail incident officer (RIO) cannot earth overhead line equipment (OLE) and a specialist team will be dispatched to carry this out, which will result in delays.

Terminology used in the rail industry for emergency isolation is emergency 'switch off'; this term should be understood and used by fire and rescue services. Emergency switch off will normally occur between two neutral-to-neutral sections covering an approximate area of twenty miles; the whole of the track and surrounding utilities will be isolated on receipt of this request. A request to isolate a particular line won't apply on a request of an emergency switch off.

Other factors may require overhead line equipment traction current to be shut down, such as:

- A rescue is to be carried out in smoke or high humidity (e.g. following a fire in a tunnel)
- There are signs of damage to, or collapse of, the overhead line equipment (OLE) structures
- It is not possible to assess how far a casualty is from power supplies

Until a section of overhead line equipment (OLE) is both isolated and earthed it is possible that residual current is present. Where high voltage power lines are located close to isolated OLE power cables, it is important to ensure that the cables are isolated and earthed, to avoid introducing

additional risks to firefighters through the induction of electrical current. There is also a risk that when a line is isolated, but not earthed, an electrified rail vehicle can still pass into the isolated area and re-energise this section of track.

Rescues involving direct current electric rail (third and fourth rail systems)

When performing a rescue from traction current involving electrified third or fourth rail systems, incident commanders should implement all relevant control measures.

If necessary, a rescue may be attempted before power off is confirmed providing:

- Crews wear full personal protective equipment (PPE) including electrical gloves
- The rescuer is standing on dry, non-conductive material (such as dry salvage sheet without metal ringlets, wood or thick rubber)
- If the above cannot be achieved, then the person should be moved away using dry non-conductive material; metal objects must not be used.

## **Strategic actions**

## **Tactical actions**

Incident commanders should:

- Ensure staff and equipment are kept at least three metres away from overhead line equipment
- For the rescue of live person(s) personnel and equipment must not come within 1 metre of OLE
- Request the use of short-circuiting (SCD) or earthing devices – to be used only by qualified personnel