

	Health, Safety, Quality and Environmental Alert	Alert number: 42-14	Document Reference: AMG/F/HSQE/001
	Burns following exposure to electric short circuit	Issue Date: 30/12/14	Author: Steve Milroy

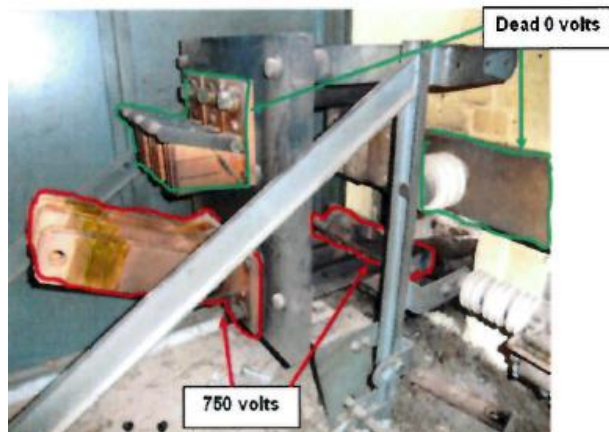
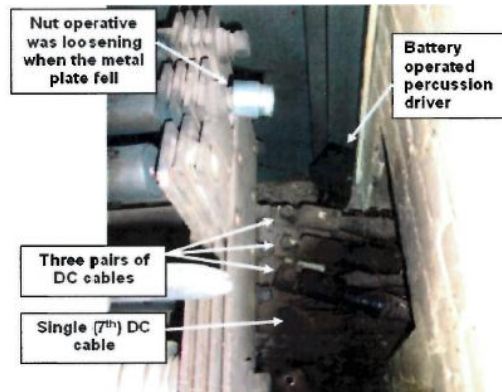
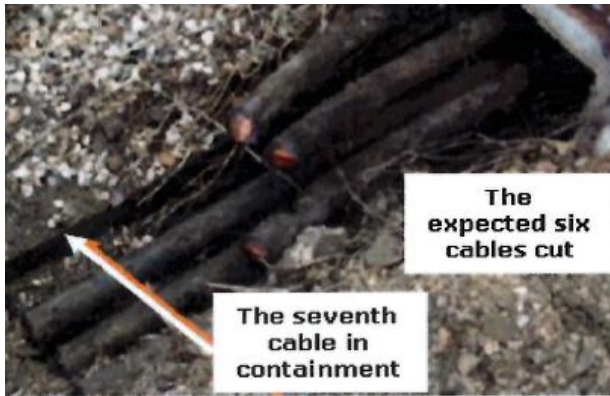
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Background

A dismantling operative was taking electrical equipment believed to be redundant apart when a plate he was unscrewing fell striking a busbar that was live. The operative received burns to his hand and face.

Immediate Cause

A Steel plate came into contact with live 750v DC cable end causing electrical flash over.



Underlying Causes

The presence of a seventh interconnecting cable between two DC Switchboards is an unusual configuration – but has now been found twice at DC Sub stations.

The presence of a seventh interconnecting cable was not identified by the designers in their design of the works.

Cable management sleepers left by another Principal Contractor in the planned disconnection / reconnection location prevented access to a concrete cable management pit linking the DC Switchboards together being accessed this would have allowed 7 DC cables in their individual wooden troughs to be identified.

The civil engineering operatives stopped their excavations when they discovered the expected number (6) of cables.

The Lead Test and Commissioning Engineer / Level A did not test that the decommissioned DC switchboard was electrically isolated once the new equipment was commissioned.

The handover was not completed correctly; potentially the absence of confirmation that the redundant DC switchboard was not electrically isolated would have been identified.

The incorrect handover and no confirmation that the redundant DC switchboard was electrically isolated was not recognised therefore a competent person was not sent to site when recovery started.

The operatives employed to dismantle the equipment questioned the smell in the substation that usually indicated the presence of electricity the site manager did not stop the works and ask for a competent person to confirm the redundant equipment was electrically isolated.

In the absence of a competent person to test the redundant DC switchboard was electrically isolated the site manager present carried out an ad hoc test which was inadequate and placed himself into severe danger of an electric shock, avoided only by the fact he did not touch the live part of the DC switchboard.

This action resulted in the work recommencing and an operative being placed into danger

Key Message

Always test before touch.

Always confirm the number of cables connected to a busbar – this is the second time an odd number of cables has been discovered

Source: Network Rail – IP Southern



Never assume equipment is isolated
– always test before touch.

