SHE Alert
Hungry Snout —RIDDOR Lost Time Injury

SHE 0009
24th May 2019

Introduction

This briefing is for ESD and our supply chain following a RIDDOR lost time injury at our Hungry Snout. This Alert summarises the aspects raised. We will be attending team forums over the next month to give a more detailed view of learning points.

Summary of Incident?

During the re-connection of an existing 400v power cable to an existing MCC fuse switch compartment on a Scottish Water Site, an electrical flash over occurred resulting in the hospitalisation of an electrician.

The electrician had been working in the compartment with the fuse switch isolated. Whilst inserting the bolt through the cable ring crimp and the termination lug on the switch, the bolt was dropped behind the switch and made contact between a live conductor and the compartment backplate, resulting in an electrical short to earth.

This caused a flash over and the electrician received burns to the hands, wrist and face.

Figure 1 – Showing the layout of the compartment

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SHE Alert

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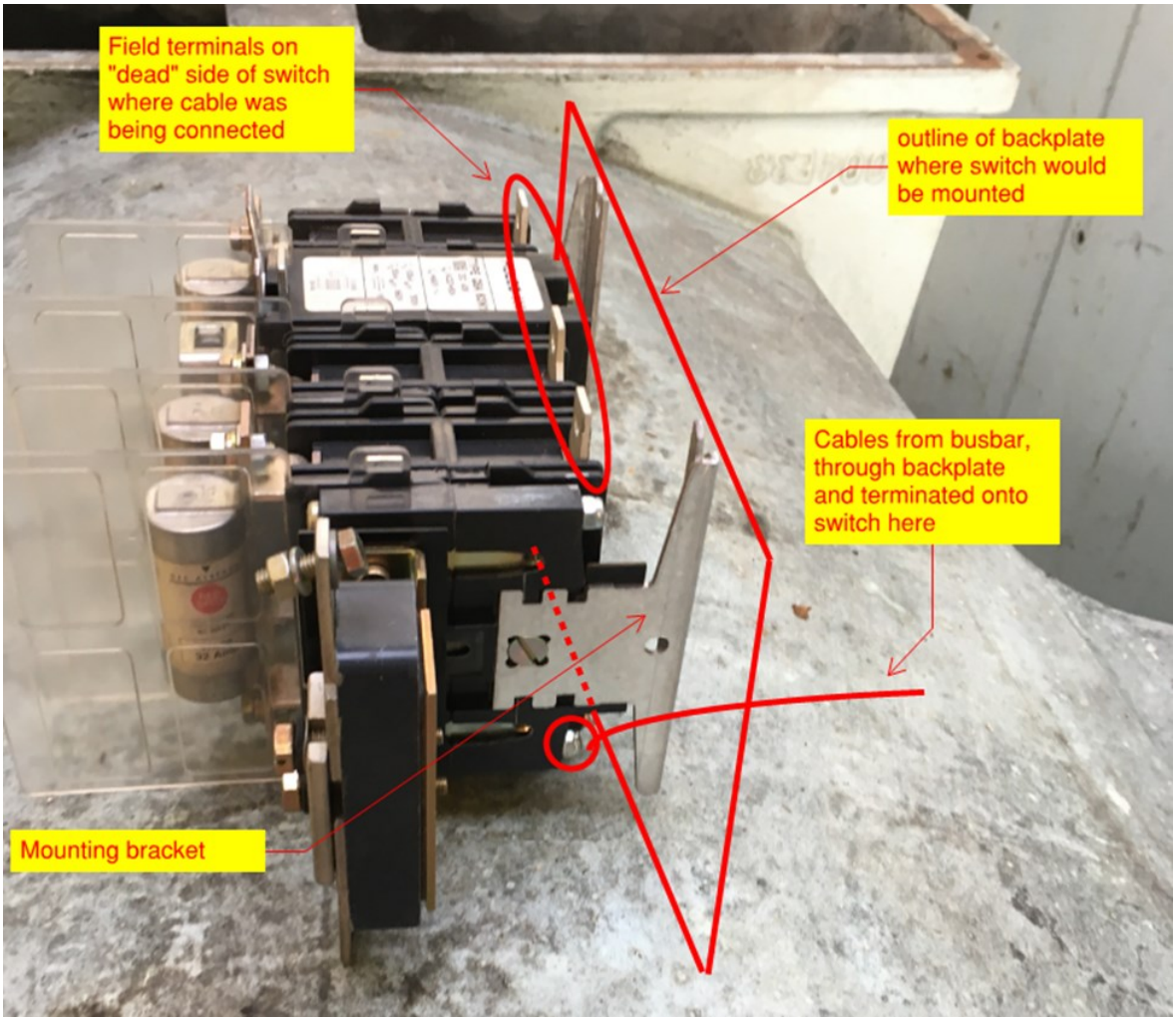
SHE 0009

24th May 2019

Figure 2 - This is a photo of a replacement switch of the same type marked up to show where the backplate and terminals are.



Cause

A combination of the following factors resulted in the incident:

- The design of the switch includes a gap (20mm to less than 10mm in places) at the back of the switch which was not visible from the front and is still difficult to see from the pictures of the insitu switch;
- The gap is not shrouded to prevent access behind it;
- The fuse switch is cabled from the switchgear busbars. The live cabling from the busbars is connected to the bottom of the fuse switch and the isolated field cabling is connected at the top. This orientation is 180 degrees from current conventional designs; and
- The compartment contains a transit piece to allow the live cable to pass from the busbars to the fuse switch compartment. This transit is proud by approx. 10mm from the bottom of the backplate at the rear of the fuse switch and has assisted in trapping the bolt

The fact that there was a gap and it was unshrouded, coupled with the live terminals on the bottom of the fuse switch and the ledge created by the transit piece, all contributed to the bolt being trapped and the electrical short occurring.

SHE Alert

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SHE 0009

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Actions to prevent reoccurence

- On current and future projects, where the scope requires interfacing with existing switchgear, a review of the type of switchgear shall be undertaken at the earliest opportunity to determine and mitigate any such hazards
- Any intrusive work on this type of switch shall only be undertaken with the live terminals isolated. This may involve isolation of the relevant MCC
- If it cannot be guaranteed that the live conductors in MCC compartments are adequately protected/shrouded or that the activity can be safely managed, isolation of the MCC must be considered. If this is required, other measures may need to be put in place so it is important the above information is ascertained as soon as possible.

Please liaise with your M&E Delivery resources to assist.

Investigations are still underway and the full cause and details are yet to be ascertained, however the fact remains that on this type of switch and possibly others, there is a gap which may be unshrouded and that an object could fall through the gap and short out. The busbar cabling arrangement is also not in line with current designs.

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