

LV Flashover

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Issued by	Paul Turner, Head of Policy and Safety
Applicable to	All colleagues and contractors

On the 27/08/20 a fault technician attended a Substation to remove a set of Bidoyng Units. Following inspection, the decision was made not to change them. The Bidoyngs were not disturbed and the LV cabinet door was closed. On closure of the cabinet door a flashover occurred, and the cabinet door swung open. It became apparent that there had been a failure on one of the Bidoyng Units, and an engineer was requested to attend.

On inspection it was identified the locking mechanism of the cabinet door had made contact with the busbar toggle of the primary fuse holder when the door was closed. This contact ruptured the plastic toggle cover and caused the door to make direct contact with the live metal element of the fuse underneath.

This was a direct connection with the LV busbar and as such was protected by the substation HV protection via the 6.6kv fuse switch.

The HV protection did not operate during the flashover. After a thorough inspection no further damage was identified to the LV Board, with damage to the Bidoyng restricted to the Primary Fuse Holder. The full set of Bidoyngs were safely removed and standard fuses reinserted.



Key Points to Remember:

- The Bidoyng had been seated correctly and was fully inserted onto the Yellow phase, however Bidoyngs are much larger than a Standard LV fuse and only just fit inside an LV Cabinet with standard door arrangement.
- The Door Locking Mechanism had aligned perfectly with the Primary Busbar Toggle on the Yellow phase and closed the gap sufficiently to crush it and cause a flashover.
- This type of door sometimes requires a little force to enable the locking handle to spin and close.
- Had the door locked before the contact then there would have been a Flashover inside the LV Cabinet behind the door that was closed and locked.
- Full PPE was worn at the time of the incident.