



## Importance of Drain Earths.

The purpose of this safety express is to highlight the importance of the positioning and application of Drain Earths established by the Scottish Power Safety Rules (Electrical and Mechanical) , PSSI 4 and MSP 1.7.

On Wednesday 27<sup>th</sup> July 2016 a serious incident occurred during an outage at Sutton Mill, Cledford, Middlewich as work was in progress on an 11kV spur line. No one was injured as a result of the incident.

This incident involved the spur line conductors clashing with a LIVE 33kV overhead line that oversails the spur line (i.e. an impressed voltage) and resulted in the 33kV protection operating and the 11kV spur line burning down at the point of application of a Drain Earth.

The following extracts serve as an important reminder for the correct use of Drain Earths in preventing a major injury or fatality.

When work is to be carried out on **HV Apparatus**, which has been **Isolated** and **Earthed**, and **Danger** from induced voltages, impressed voltages or inadvertent backfeed could arise during the course of work, **Drain Earths** shall be applied. (Basic Safety Rule A3.4)

[OPSAF 11-009](#) (MSP 1.7) item 10 requires:

When **Danger** may be caused by induced voltage, impressed voltage or inadvertent back feed, use shall be made of **Drain Earths** to ensure **Safety from the System**.

10.2.1 On overhead lines, **Drain Earths** shall be applied in accordance with PSSI 4.

10.2.2 The **Senior Authorised Person** responsible for issuing the **Safety Document** shall ensure that the correct number of **Drain Earths** are issued/available and shall enter this number on the **Safety Document**.

**It is without doubt that the correct application of Drain Earths in compliance with the Scottish Power Safety Rules prevented injury or worse to the teams working on site.**

## Recommendations and action points

- Careful consideration should be given to the application and location of Drain Earths to protect working parties from the hazards associated with overhead line crossings.
- Please follow the links below to fully familiarise yourself and your team with:

[OPSAF 10-004](#) PSSI 4 – HIGH VOLTAGE OVERHEAD LINES – WORK ON PHASE CONDUCTORS

[OPSAF 11-009](#) MSP 1.7 - APPLICATION, REMOVAL ETC OF PORTABLE EARTHS, FIELD EQUIPMENT EARTHS AND LV PORTABLE SHORTS

[OHL 25-003](#) APPLICATION AND REMOVAL OF HV PORTABLE EARTHS FOR WOOD POLE OVERHEAD LINES

