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Please consult the author if you have any queries about the information below.

An incident occurred, during a cable fault location on the 11kV network, when the isolated zone under a Sanction for Test (SFT) become live for a short period, until the circuit protection operated. The cable being tested was connected to a section of overhead line with one of the POIs being an overhead in-line section*. The investigation into the incident revealed that the cause of this was the failure of a set of in-line section insulators on an ABSD pole. These insulators had been previously damaged and had electrically failed in the time since the SFT was issued. When the Circuit Main Earth (CME) was applied before testing commenced under the SFT, system volts were not observed on the isolated section.

When the faulty insulators broke down, they allowed the line to be energised to potentially phase to earth voltage and caused damage to the device being used to undertake the test. The Circuit Main Earth had been removed to allow testing to be undertaken. This meant there wasn't an Earth to provide protection to anyone in contact with the Network and the circuit underwent an auto reclose sequence. It was fortunate that no injuries occurred.

The investigating team did not establish the reason for the breakdown of the insulators during the process. One of the insulators was found to have a hairline crack and the other had a puncture possibly from a previous lightning strike. Therefore the assumption is there were changes in dielectric strength from the operation of the fault locating equipment or mechanical disturbance from the removal of the OHL Earths.

**It is the responsibility of line management to ensure that all appropriate employees are issued with this Bulletin and their understanding of the contents is checked.
This Bulletin will be subject to compliance audits after 14 days from the date of issue.**

***Note:-** An In-Line/Flying/Barrier section is a point of isolation made of two ceramic insulators or a composite shatterproof insulator, inserted into a tensioned conductor. They are commonly positioned on Recloser or ABSD poles but may be located on their own without any other apparatus.



Faulty Insulators from In-Line Section

All staff undertaking testing on High Voltage Networks shall ensure that:

- When testing takes place on Underground Cables where Overhead line is connected, where reasonably practicable, the Overhead line shall be disconnected with a Circuit Main Earth remaining on the Overhead Line.
- Where short sections of Overhead Line jumpers are connected between the pole box and the isolation point and where disconnecting the jumpers would encroach Safety Distances specified in DSR's rule 4.4.1 and Appendix D, it is acceptable to leave the jumpers connected, provided the Point of Isolation is an ABSD, Isolating knives or DOEF fuses. If an inline section provides part of the isolation point, then jumpers SHALL be disconnected.
- A visual inspection takes place on the condition of switchgear before switching as per DSR 01 002 8.2.6. This includes any insulators used to provide isolation, such as in line sections. Consideration should be given to the use of binoculars to provide a closer inspection.
- That Overhead Line Network is not subjected to HV Fault Locating or "thumping" when one or more of the Points of Isolation contain In Line Sections.

This Bulletin will remain in place until the relevant updates are made in DSR 01 002

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