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NR/L3/ELP/29987

Module 9

Isolation and Earthing when Constructing or Dismantling Overhead Line Equipment

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1 Purpose

This module provides a consistent approach for dealing with new overhead line equipment, overhead line equipment under construction and redundant existing overhead line equipment being dismantled so that the general requirements for working on or about 25 kV a.c. electrified lines are not prejudiced.

NOTE: Further requirements for working on or about the electrified lines are contained in the Rule Book Module AC (GE/RT8000/AC and Handbook HB16 (GE/RT8000/HB16)).

2 Scope

This module states the requirements for constructing overhead line equipment, working on new overhead line equipment and dismantling existing overhead line equipment.

It is applicable to Network Rail personnel and to Network Rail's contractors.

To provide a consistent approach to working on or about 25 kV a.c. electrified lines, Train Operating Companies may, as best practice, apply this standard in full on infrastructure they control.

This Standard also includes:

- Work on or about any future sections of electrification on Network Rail controlled infrastructure and areas required to adopt a process for securing points of disconnection to form points of isolation to use the Supplementary Isolation Process (Module X).
- Planning of isolations, testing and earthing of overhead line equipment on Network Rail controlled infrastructure equipped with 750V d.c. overhead line system (Sheffield Tram Train - Module Y).
- Planning of isolations, testing and earthing of overhead line equipment on Network Rail controlled infrastructure equipped with 1500V d.c. overhead line system (Sunderland Metro Systems Operating Area – Module Z).

3 New OLE and OLE Under Construction

3.1 General

Work involving the installation of new overhead line equipment, including extension to an existing electrified route, shall take into account, where relevant, the requirements of this standard.

The time at which the physical connection to the existing overhead line equipment is made shall be pre-planned and all the necessary arrangements made.

Module 6 states the requirements for the planning of isolations of existing overhead line equipment.

All new OLE, or OLE under construction, which is physically connected to existing OLE shall be treated as live and this standard shall apply, EXCEPT where a buffer section is interposed between the existing OLE and the new OLE or OLE under construction, in accordance with the clause 3.2.

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3.2 Buffer Sections

Where new OLE or OLE under construction physically connects to existing OLE, there shall be a buffer section interposed between them in accordance with Network Rail standard NR/SP/ELP/27205.

3.3 Earths

Where all non-operational OLE, including OLE under construction, whether or not connected to existing OLE shall be earthed.

Where there is no track or the track is under construction, the OLE shall be earthed.

Module 7 states the requirements for the location of earths on overhead line equipment and the continuity of the overhead line equipment between successive earths.

The use of portable or permanent earths, the method of application and their location shall be recorded.

NOTE: A Form B, Part 2 may be used for this purpose.

As new OLE is erected, Module 7 clause 11 states the requirements for earths to be applied progressively as the length installed increases.

3.4 Energisation

Where all operational OLE, whether the OLE is made live or not, the date of energisation of the new OLE is the time at which the requirements of this standard shall apply. This shall be no later than the date and time of actual making live.

Notification of energisation shall be given in accordance with the requirements of Network Rail standard NR/L2/ELP/24013.

Energisation shall not take place until revised isolation diagrams and instructions have been produced and have been distributed to all necessary parties in accordance with the requirements of Network Rail standard NR/L2/ELP/27550.

3.5 Section Proving

At the time of energisation of the new OLE, either by connection to a new supply point, or by connection to existing OLE, the integrity of the sectioning and insulation shall be proved to be in accordance with that shown on the isolation diagrams and instructions by undertaking section proving in accordance with Network Rail Standard NR/L2/ELP/27314.

All section proving activities shall be planned in advance in accordance with Module 6.

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4 Dismantling Redundant OLE

4.1 General

The time at which the physical connection from the existing overhead line equipment is severed shall be pre-planned and all the necessary arrangements made. Module 6 states the requirements for the planning of isolations of existing overhead line equipment.

4.2 Earths

Where there is no track or the track is being removed, the OLE shall be isolated and earthed in accordance with Module 7.

4.3 Isolation Diagrams and Instructions

Where the OLE to be dismantled results in an alteration to the isolation diagram, the arrangements for the preparation, checking, approval, issue and distribution shall be made in accordance with the requirements of Network Rail standard NR/L2/ELP/27550, to allow the isolation diagram, and relevant isolation instructions, to be implemented at the time the OLE concerned is removed.

The new isolation diagrams and isolation instructions shall be implemented at the time the Form B for the dismantling work is cancelled and a competent person shall check that the revised overhead line equipment layout corresponds to the details shown in the new isolation diagrams and isolation instructions. A declaration to this effect shall be made to the ECO. Where the details do not correspond, the requirements for the correction of errors stated in Network Rail standard NR/L2/ELP/27550 shall be implemented.