

Ref:	NR/L3/ELP/29987/12
Issue:	4
Date:	05/09/2015
Compliance date:	11/01/2016

Level 3

Working On or About 25 kV A.C. Electrified Lines

Module 12 Management of Local Isolation Instructions for Overhead Line Equipment

(This module is one of a suite of modules forming Network Rail standard NR/L3/ELP/29987 'Working On or About 25 kV A.C. Electrified Lines')

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Published and Issued by Network Rail, 2nd Floor, One Eversholt Street, London NW1 2DN.



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1 Purpose

This module will produce a consistent approach to the production, approval, distribution and auditing of local isolation instructions on 25 kV a.c. electrified lines. Further requirements for working on or about the electrified lines are contained in the Rule Book Module AC (GE/RT8000/AC).

2 Scope

This module states the requirements for the management of local isolation instructions for the isolation and earthing of overhead line equipment where local isolation is allowed, in accordance with Module 8, on 25 kV a.c. electrified lines.

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

It is also applicable to Train Operating Companies having locally controlled 25 kV a.c. overhead lines which about those controlled by Network Rail.

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 on all infrastructure they control.

3 Roles and Responsibilities

3.1 Network Rail Controlled Infrastructure

The production, procurement or approval of local isolation instructions for the locations on Network Rail controlled infrastructure shall be the responsibility of the DUE&PME.

The local isolation and earthing of the electrical subsections in sidings shall be undertaken only by a Nominated Person trained in, and certificated to carry out, the isolation and earthing procedure in accordance with the prescribed local isolation instructions prepared in accordance with this module. A list of Nominated Persons is held by each electrical control appropriate to its operational area.

Certain circumstances could dictate that the isolation and earthing of the electrical subsections in sidings is undertaken by a method other than the specified local isolation instructions as stated in Module 8. In this case an overhead line permit shall be issued by a Nominated Person in accordance with Module 7.

3.2 Electric Traction Depots, Electric Inspection and Cleaning Sheds, etc.

At electric traction depots, electric inspection and cleaning sheds, etc. leased or owned by a Train or Freight Operating Company holding an approved Railway Safety Case, the Operator is responsible for the isolation and earthing of certain electrical subsections specified in the isolation instructions.

The production or procurement of local isolation instructions for the locations concerned is the responsibility of the Train or Freight Operating Company.

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Where such local isolation instructions interface with, or affect, Network Rail controlled infrastructure, the local isolation instructions shall be approved by the DUE&PME.

4 Local Isolations in Sidings

At certain sidings, an isolation can be undertaken by the adoption of the requirements stated in Module 8. In this case, a blockage of the line to electric trains and isolation and earthing of the overhead line equipment may be performed locally by a person having local control over train movements and implemented by means of locking-off instead of the issue of an overhead line permit.

The electrical subsections where local isolations can be implemented are specified in the isolation instructions and where such a local isolation is required on Network Rail controlled infrastructure, the written local isolation instructions shall be in accordance with this module.

5 Content of Local Isolation Instructions

5.1 Sample Local Isolation Instruction

Appendix A contains a typical local isolation instruction that may be used for guidance in preparing local isolation instructions.

This instruction shall state the detailed requirements enabling isolations to be carried out in accordance with Module 8.

5.2 General Instructions

5.2.1 Safety Information

The local isolation instructions shall specify the general or location-specific safety information, or amendments to the safety information, as appropriate in accordance with the requirements of the relevant Network Rail standards. This shall include, but not be specifically limited to:

- a) a description of the siding(s) and the corresponding electrical subsection(s);
- b) the means of protection against the movement of vehicles;
- c) the method of blocking to electric trains in accordance with specified operating instructions;
- d) the presence of any other electrical hazards that must be taken into account, e.g. an adjacent autotransformer feeding system having autotransformer feeders;
- e) the use of portable earthing equipment;
- f) carrying out the isolation and earthing procedure in accordance with the local isolation instructions and Module 8;
- g) the custody of keys, personal padlocks, etc;

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- h) operating and maintaining a record of isolations undertaken in the siding(s); and
- i) where applicable, operating and maintaining a record of ladders permitted in the siding(s).

Note: A site layout diagram may be included in the local isolation instructions where this will assist.

5.2.2 Protection Against Movement of Vehicles

The local isolation instructions shall require that before commencing work on a traction unit or rail vehicle in a siding, protection against the movement of vehicles shall be provided as required by Rule Book GE/RT8000.

Local operating instructions or the local isolation instructions, as appropriate to the specific location, shall specify the procedure for preventing the movement of electric trains towards any line or siding where the electrical subsection(s) in the siding(s) concerned is to be isolated under the local isolation instructions.

The local isolation instructions shall require that the protection arrangements shall be positioned on the approach side of each section insulator for the electrical subsection(s) in the siding(s) which are to be isolated.

5.2.3 Use of Portable Earthing Equipment

The local isolation instructions shall specify that portable earths and earthing poles shall conform to the relevant Network Rail standards, be of suitable current rating and shall be used only by persons who have been specially trained, are competent and have been authorised in their use in accordance with Modules 8 and 10.

The local isolation instructions shall specify that it is the responsibility of the user to arrange that adequate systems are in place for the inspection and maintenance of portable earthing equipment in accordance with relevant Network Rail standards.

5.3 Carrying Out the Local Isolation

5.3.1 Additional Location-Specific Information and/or Amendments

The local isolation instructions shall specify additional location-specific information, or amendments, as appropriate to the requirements of Module 8. This shall include, but not be specifically limited to:

- a) the identity of and the working limits of the electrical subsection(s);
- b) the identity of the siding switch(es) to be operated;
- c) the location of the siding switch(es) to be operated, and if appropriate the location of the switch key box(es);
- d) the locations of the portable earth(s) to be applied and whether single or duplicate;
- e) the requirements for the use or issue of personal padlocks or the issue of keys, as appropriate; and

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- f) the procedure in the case of an isolation of an abutting electrical subsection where local isolation is not allowed.

5.3.2 Electrical Subsection(s) Isolated

The local isolation instructions shall specify the electrical subsection(s) in the siding(s) that are permitted to be isolated locally in accordance with the prescribed isolation instructions.

Where an autotransformer feeding system is adjacent to the siding(s), any subsections of autotransformer feeder which must be isolated to provide a safe working distance shall be included within the local isolation instructions.

5.3.3 Facilities to Enable Local Isolations

For local isolations to be implemented, the following overhead line facilities are provided in accordance with Network Rail standard NR/SP/ELP/27203:

- a) a section insulator is provided in the overhead line equipment of each siding or group of sidings concerned at the electrical feeding end (for terminal sidings) or both ends (for through wired sidings) to isolate the electrical subsection(s) from any abutting electrical subsection(s) that could be live;
- b) siding switch(es) are provided at one end of each electrical subsection(s) of OLE concerned for the purpose of feeding the siding(s). In the case of through wired sidings, switch(es) might be provided at both ends;
- c) the section insulator(s) and any associated siding switch(es) are positioned so that no part of the equipment which could remain live while the electrical subsection(s) in the siding(s) concerned is isolated is within 2.75 metres (9 feet) of the working limits of the electrical subsection(s) in the siding(s) isolated;
- d) the siding switch(es) have 'closed', 'open' and, generally, 'earthed' positions. The connections are arranged so that when the switch is in the 'earthed' position the electrical subsection(s) subject to the local isolation procedure is connected to earth; and
- e) designated earthing points are provided appropriate to the working limits of the siding(s) concerned.

5.3.4 Switches to be Operated and Their Location

The local isolation instructions shall specify the siding switch or sequence of siding switches to be operated, the structure number(s) of the siding switch(es) and whether the specific siding(s) employs switch(es) with an 'earth' position or whether other arrangements are installed, in accordance with the prescribed isolation instructions.