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NR/L2/CTM/012/014 Competence & Training in Signal Engineering

Sig 14: Undertake corrective and preventative maintenance of signalling cables.

1 Purpose.

The purpose of this competence standard is to define the competence requirements for persons required to undertake corrective and preventative maintenance of signalling cables.

2 Scope.

This competence standard applies in all circumstances where any person is required to maintain signalling cables on Network Rail managed infrastructure.

The level and extent of responsibility will include their own safety and that of others who might be affected by their work. The person will be expected to refer to others for authorisation when required, will be responsible for the implementation of the instructions and will work within set procedures and specifications. The person is responsible for the quality of their completed work.

This competence standard shall be used to assess the competence of people required to identify and work safely where wire degradation is identified & to maintain any of the following:

- Lineside cables.
- Power cables.
- Tail cables.
- Internal cable & wiring.

3 Competence Standard.

This Competence Standard comprises three elements.

Element 1 Carry out planned maintenance of signalling cables.

Element 2 Diagnose faults in signalling cables.

Element 3 Restore signalling cables to operational condition by repair.

Element 4 Conduct specified testing of signalling cables, analyse and interpret the results.

The first element is concerned with the safe completion of planned maintenance in accordance with instructions. The second and third fourth elements are concerned with the safe completion of locating, diagnosing and repairing faults. The fourth element deals with testing of the equipment and analysing and interpreting the results to make sure that the equipment meets its operating requirements.

To prove competence in this unit, the person shall demonstrate their ability to complete maintenance in accordance with instructions, locate, diagnose and repair faults associated with disconnection, short circuit core to core or short circuit core to earth caused by electrical or component failure or damage and complete the

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appropriate testing. The person will have to show they can follow recording, reporting and escalation procedures.

4 Assessment.

4.1 Initial Assessment.

Where the equipment is new to the person's area of responsibility evidence should be gathered of the person working on a range of cables types including as a minimum:

- Lineside cables.
- Power cables.
- Tail cables.
- Internal.

Performance evidence may come from a variety of sources and will include evidence derived from surveillance (direct observation) by an approved assessor. Evidence will also include detailed questioning and may additionally be supported by performance reports from the person's line manager.

4.2 Re-Assessment

Re-assessment shall be completed in accordance with the applicable requirements set out in 7.2 of NR/L2/CTM/012.

4.3 Knowledge Evidence that is common to the whole unit.

You shall have knowledge and understanding of:

- a) How the maintenance and testing activity may affect the safe operation of the railway.
- b) What procedures need to be followed to demonstrate operational and personal safety is maintained during the work.
- c) How to avoid personal injury during the work.
- d) How the cables are required to function under normal operating conditions including acceptable insulation and continuity values.
- e) What each of the cable types contributes to the overall operation of the signalling system.
- f) What terminology and methods are used to identify signalling cables.
- g) What tools are required to complete the work and what equipment calibration is required.
- h) What the limits of your responsibility and authority are.
- i) Who is responsible for taking the equipment out of operational service and handing the equipment back the equipment to operational service.
- j) What constitutes wire degradation and how to identify the different types
- k) Maintenance reporting documentation.
- l) Reporting lines and escalation procedures.

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