

Assist in the removal of signalling equipment

Overview

This standard identifies the competences you need to assist in the removal of signalling systems and equipment under direction as part of maintenance or fault finding activities, including the use of correct tools and equipment in accordance with your organisation's procedures. The signalling equipment in this standard can be for over ground or underground rail transportation systems and can be applicable for the new European Train Control System (ETCS).

You will be required to use the appropriate tools and equipment throughout the removal activities, and to apply a range of disconnection methods and techniques to safely remove the equipment, and to make safe any connections as appropriate to the equipment removed. Where appropriate, you may also assist in working with computers or electronic controllers, making dis-connections and removing hardware. The removal activities will include making sure that any removed signalling equipment is moved and stored safely before it is repaired, refitted or disposed of.

Your responsibilities will require you to comply with organisational policy and procedures for the removal activities undertaken, and to report any problems with the activities, tools or equipment used that you cannot personally resolve, or are outside your permitted authority, to the relevant people. You must check that all tools, equipment and materials used in the activities are removed from the work area on completion of the work, and that the relevant job/task documentation is completed accurately and legibly. You will be expected to work to instructions in conjunction with others, taking personal responsibility for your own actions, and for the quality and accuracy of the work that you carry out.

The removal activity may be carried out as a team effort, but you must demonstrate a significant personal contribution to the activities, in order to satisfy the requirements of the standard, and you must demonstrate competence in all the areas required by the standard.

Your underpinning knowledge will be sufficient to provide a sound basis for your work, and will enable you to adopt an informed approach to applying procedures for the removal of signalling equipment. You will have an understanding of the equipment being removed and its disconnection requirements, in adequate depth to provide a sound basis for carrying out the removal process safely and effectively.

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You will understand the safety precautions required when carrying out the removal activities, especially those for ensuring the safe isolation of services. You will be required to demonstrate safe working practices throughout, and will understand your responsibility for taking the necessary safeguards to protect yourself and others in the workplace.

Safety is a key theme throughout this standard and you will be able to identify all the necessary safety requirements and take the relevant action to ensure the safety of yourself, others and railway operations.

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Performance criteria

You must be able to:

1. work safely at all times, complying with your organisation's procedures
2. identify any necessary changes to safety requirements on arriving at site, including prompt reporting to the relevant person(s)
3. correctly locate and identify the equipment to be removed
4. follow all relevant diagrams and specifications
5. establish and, where appropriate, mark component/equipment orientation for re-assembly
6. ensure that any stored energy or substances are released safely and correctly
7. label relevant wiring and components and note the configuration settings
8. assist with the removal of the required equipment using approved tools and techniques
9. take suitable precautions to prevent damage to equipment during removal
10. provide appropriate electrostatic protection for electronic equipment, where appropriate
11. store or discard the removed equipment in accordance with your organisation's procedures
12. report completion of activities in line with your organisation's procedures
13. deal promptly and effectively with problems within your control and report those which cannot be resolved

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Knowledge and understanding

You need to know and understand:

1. the relevant health and safety legislation, regulations and safe working practices and procedures as appropriate to the activity such as the Safe System of Work (SSOW)
2. how to locate and safely access the site
3. how to locate and identify the equipment to be removed
4. the isolation and lock-off procedure or permit-to-work procedure that applies to the system (such as electrical isolation, locking off switchgear, placing of warning notices, proving the isolation has been achieved and secured)
5. the classification of different voltage levels and the authority requirements for working on them
6. what constitutes a hazardous voltage/current and how to recognise victims of electric shock
7. how to reduce the risks of an electric shock (such as insulated tools, rubber mating and isolating transformers)
8. the importance of wearing protective clothing and other appropriate safety equipment (PPE) during the removal activities
9. the importance of ensuring any stored energy or substances are released safely and correctly
10. hazards associated with carrying out signalling removal activities (such as stored energy, radio frequency radiation, electrical supplies, electrical/electronic interfaces, using damaged or badly maintained tools and equipment, not following laid-down procedures), and how to minimise these and reduce any risks
11. the importance of marking the component/equipment orientation for re-assembly and how to undertake this
12. the relevant methods, techniques and procedures for the removal activities
13. how to source and follow the relevant technical information, standards, diagrams, instructions, specifications and schedules for the removal of signalling equipment
14. your organisation's procedures for the use, care and control of tools and equipment including calibration
15. the procedures and precautions to be adopted to eliminate electrostatic discharge (ESD) hazards when working with and handling electronic devices
16. how to select the correct tools for the activity, including how to

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- confirm that they are calibrated and stored correctly after use
17. how to identify the various types of connectors used and the correct tools and equipment to make the disconnections correctly
 18. the different types of mounting, connecting and cable supporting systems used by the signalling equipment
 19. how to label and store removed equipment for re-use, repair or disposal
 20. the relevant reporting lines and procedures that are approved by your organisation
 21. the limits of your own authority and responsibility and those of others involved such as SWL (Safe Work Leader)

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Scope/range related to performance criteria

1. Follow the health and safety legislation, regulations and safe working practices and procedures, from the following as applicable to the work location and activities:
 1. your organisation's safety management system
 2. relevant sections of the HASWA
 3. COSHH
 4. safe work plans
 5. SWL (Safe Work Leader)
 6. track access restrictions
 7. track work instructions
 8. track possession
 9. task risk control sheets
 10. current rule book
 11. regulations for working under OHLE and in the vicinity of DC lines (where appropriate)
 12. equipment disconnections
 13. manual handling regulations
 14. RIDDOR
 15. safety sign regulations
 16. PPE

2. Identify the access requirements related to **one** of the following types of site equipment locations:
 1. trackside
 2. internal (such as signal box, equipment room)
 3. areas to which the public have access
 4. confined spaces
 5. elevated structures

3. Assist in the removal of **one** of the following types of signalling equipment:
 1. points
 2. train control (such as signals, balises or other method of authorising train movements)
 3. train detection (such as track circuits or axle counters)
 4. power supplies
 5. ETCS
 6. other industry specific signalling equipment

4. Use the following types of approved/calibrated tools and

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equipment as applicable to the equipment being removed:

1. power tools
 2. hand tools
 3. wire and cable strippers/cutters
 4. IDC tools
 5. termination tools
 6. wrenches
 7. soldering irons
 8. manual handling equipment
5. Disconnect the following types of terminations/connections during the removal of the equipment as applicable to the type of equipment:
1. mechanical
 2. fluid power
 3. soldered
 4. electronic
 5. IDC
 6. optical
 7. other specific type of termination/connection
6. Ensure that removal activities comply with **one** of the following:
1. infrastructure guidelines and standard operating procedures
 2. equipment manufacturer's documents
 3. BS, ISO and/or BS EN standards
 4. other industry specific signalling standards/specifications
7. Assist in the completion of the relevant removal records, to include **one** of the following, and pass it to the appropriate people:
1. job card
 2. equipment logs and action report
 3. company reporting procedures
 4. other industry specific equipment records

Glossary

COSHH

Control of Substances Hazardous to Health Regulations

COSS

Controller of Site Safety

DC

Direct Current

ETCS

European Train Control System

ERTMS

European Train Traffic Management System

HASWA

Health and Safety at Work Act

IDC

Insulation Displacement Connection

OHLE

Overhead Line Equipment

PPE

Personal Protective Equipment

PTS

Personal track safety certificate

RIDDOR

Reporting of Injuries, Diseases and Dangerous Occurrences Regulations

SSOW

Safe System of Work

SWL

Safe Work Leader

SMTH

Signalling Maintenance Testing Handbook

Your organisation

This is the company you work for or are contracted to, or, if you are self-employed, the rules you have set for yourself to ensure that you comply with relevant legal and licensing requirements

Organisation's procedures

These are the procedures your organisation has in place to ensure compliance to the relevant rules, regulations, instructions, policies, procedures and laws relevant to the activity

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