
Overview

This standard is for people who commission electrical systems and equipment

The person carrying out this work must be able to comply with the processes and procedures for the commissioning and handing over of an electrical system and equipment in accordance with the current versions of the appropriate industry standards and regulations, the specification; industry recognised working practices, the working environment and the natural environment.

They must know, understand and apply the correct methods and procedures for the commissioning and handing over the electrical system and equipment including the:

- identification and use of the correct instruments
- completion of the relevant documentation
- recording of relevant data and information
- identification and consideration of the customer's need for electrical systems and equipment configuration
- planning of the resources required to carry out the commissioning process

Please note that industry specific terminology is identified by *italic* text and its explanation and/or definition can be found in the glossary of this standard.

**Performance
criteria**

To carry out this work in accordance with the current versions of *the appropriate industry standards and regulations, the specification, working practices, the working environment and the natural environment*

You must be able to:

- P1 identify the *customer/client's* requirements
- P2 plan the **commissioning process**
- P3 determine and obtain the **resources** required to undertake the process
- P4 ensure methods and **organisational procedures** are implemented correctly
- P5 verify that the *customer/client's* requirements are met
- P6 resolve any problems identified
- P7 specify methods and **organisational procedures** which conform with *customer/client* requirements
- P8 confirm that conditions are suitable for commissioning to take place
- P9 complete the **commissioning process**
- P10 record and assess **information** in accordance with **organisational procedures**
- P11 ensure that the results are recorded in the appropriate **information** systems and passed to the **relevant people**
- P12 ensure that the **electrical system** and **equipment** is ready for hand over to the *customer/client*
- P13 identify and explain any variations
- P14 obtain *customer/client* acceptance of the **electrical system** and **equipment** in accordance with **organisational procedures**
- P15 ensure that all relevant **documentation** is correctly completed and recorded in the appropriate **information** systems in accordance with **organisational procedures**

Knowledge and understanding

To carry out this work in accordance with the current versions of *the appropriate industry standards and regulations, the specification, working practices, the working environment and the natural environment*

You need to know and understand:

- K1 the operation, applications, advantages and limitations of different **electrical systems**
- K2 the **requirements** for the **commissioning process**
- K3 the **resources** required to undertake the **commissioning process**
- K4 methods, **organisational procedures** and systems to:
 - K4.1 record and assess **information**
 - K4.2 ensure that the results are recorded in the appropriate **information systems** and passed to the **relevant people**
- K5 the correct methods and **organisational procedures** for implementing the **commissioning process**
- K6 conditions that are suitable to implementation
- K7 how to resolve any problems identified
- K7 how to ensure that the **electrical system** and **equipment** is ready for hand over to the *customer/client*
- K8 methods for providing clear and accurate **information** to **relevant people**
- K9 the **organisational procedures** for:
 - K9.1 notifying relevant people of any variations
 - K9.2 obtaining *customer/client* acceptance of the **electrical system** and **equipment**
 - K9.3 the completion of all relevant **documentation**
 - K9.4 recording of **information** and/or data in the appropriate **information systems**

Additional information**Scope related to
performance criteria**

The contexts and circumstances below identify where and when the NOS could apply.

1 Working environments (internal and/or external)

- 1.1 commercial
- 1.2 industrial
- 1.3 domestic
- 1.4 agricultural
- 1.5 horticultural
- 1.6 leisure and entertainment
- 1.7 residential medical and care facilities
- 1.8 public highways and parks
- 1.9 *public services establishments*
- 1.10 pre 1919 traditional/historic buildings

2 Electrical system

An electrical system, internal and/or external, in a building and/or structure that has an extra low voltage and/or low voltage single and/or multi-phase supply, circuits, equipment and components to provide:

- 2.1 control
- 2.2 communication
- 2.3 heating
- 2.4 lighting
- 2.5 power

**Range related to
performance criteria****The contexts and circumstances below identify where and when the NOS
must apply****1 The commissioning process**

- 1.1 tests and testing
- 1.2 trails
- 1.3 configuration
- 1.4 hand-over

2 Equipment, accessories and components

- 2.1 consumer units
- 2.2 distribution boards and/or panels
- 2.3 isolators
- 2.4 circuit breakers
- 2.5 fuses
- 2.6 switches
- 2.7 socket-outlets
- 2.8 earthing protection
- 2.9 luminaries
- 2.10 motor control equipment
- 2.11 control panels – alarms; emergency lighting; environmental control
- 2.12 control devices – electrical; electronic; electro-mechanical
- 2.13 solar photovoltaic panels – control equipment, components and accessories
- 2.14 micro-wind turbine control equipment
- 2.15 cable glands

3 Relevant people

- 3.1 *customers/clients*
- 3.2 client representatives
- 3.3 supervisors
- 3.4 site/contract manager
- 3.5 other contractors/trades
- 3.6 members of the public
- 3.7 work colleagues

4 Documentation

4.1 electrical installation certificates

4.2 electrical installation condition reports

4.3 minor electrical installation works certificates

4.4 schedules of inspections

4.5 schedules of test results

4.6 operational instructions

4.7 manufacturers' instructions

4.8 handover agreements

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knowledge and
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3 Organisation procedures

- 3.1 information management
- 3.2 project management
- 3.3 risk assessment
- 3.4 risk management
- 3.5 implementing and monitoring health and safety requirements and issues
- 3.6 implementing and monitoring issues relating to the *natural environment*
- 3.7 customer services
- 3.8 accident reporting

3.9 emergencies

3.10 communication with relevant people

4 Resources

4.1 labour

4.2 plant and equipment

4.3 instruments

4.4 finance

4.5 IT

4.6 materials and other consumables

5 Information

5.1 technical – design documentation; plans; installation specifications; equipment specifications; manufacturers' data; manufacturers' instructions; BIM data

5.2 functional – operational instructions

5.3 *customer/client* information – drawings; diagrams; user instructions; specifications

5.4 contractual

5.5 statutory consents

5.6 health and safety

5.7 environmental considerations

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Glossary**Appropriate industry standards and regulations for:**

- electricity at work
- the quality of buildings and building work in England, Northern Ireland, Scotland and Wales
- requirements for electrical installations
- electricity safety, quality and continuity
- working at heights managing health and safety at work
- workplace health and safety and welfare
- personal protection at work
- provision and use of work equipment
- manual handling operations
- construction design and management
- controlling noise at work
- controlling asbestos in the work place
- controlling substances hazardous to health
- recycling and disposal of waste electrical and electronic equipment

Specification

A verbal and/or documented instruction that is an explicit set of requirements for installing, maintaining and/or servicing identified systems, equipment or products, to be satisfied by materials, components, design, processes, procedures, data management and/or service(s).

Clients/customers

- purchaser of installation and/or maintenance services
- other trades and services at the work site
- colleagues within the same organisation
- architect
- contract manager
- main/sub-contractor
- consultant
- local authority representatives
- work colleagues

A **public services establishment** can be a:

- hospital/medical centre
- school/college/university
- museum/library
- prison
- military base
- car park
- church or other place of worship

Natural environment

The climate, weather and natural resources that effect and are affected by human life and economic activity

Working practices

Methods, techniques and procedures that are adopted for carrying out specific tasks that ensures workers' exposure to hazardous situations is controlled in a safe manner when:

- working with equipment, tools and plant
- working with materials and substances (hazardous and non-hazardous)
- manual handling lifting
- using lifting equipment
- using personal protective equipment (PPE)

Personal protective equipment (PPE)

- safety helmets/hats
- hairnets
- gloves
- safety steel toe capped boots/shoes
- safety spectacles/goggles
- face shields/visors
- ear plugs/muffs
- conventional or disposable overalls, boiler /chemical suits, aprons

- respiratory protective equipment (RPE)
- high visibility clothing

Links to other NOS

SUMETS1 Plan, prepare and install environmental technology systems

SUMETS7 Service and maintain environmental technology systems

SUMETS10 Inspect and commission environmental technology systems

SUMETS11 Diagnose and rectify faults in environmental technology systems

External Links

Links correct at time of NOS approval:

- Health & Safety Executive Documents <http://www.hse.gov.uk/pubns>
- The quality of buildings and building work in England
<https://www.gov.uk/government/policies/providing-effective-building-regulations-so-that-new-and-altered-buildings-are-safe-accessible-and-efficient>
- The quality of buildings and building work in Wales
<http://wales.gov.uk/topics/planning/buildingregs/?lang=en>
- The quality of buildings and building work in Northern Ireland
<http://www.dfpni.gov.uk/building-regulations>
- The quality of buildings and building work in Scotland
<http://www.scotland.gov.uk/Topics/Built-Environment/Building/Building-standards>
- British Standard 7671 – Requirements for Electrical Installations
<http://www.theiet.org/resources/wiring-regulations/>
- Carriage of dangerous goods authorisations
<https://www.gov.uk/government/publications/carriage-of-dangerous-goods-authorisations>
- The requirements and information on microgeneration
<https://www.gov.uk/government/publications/microgeneration-strategy>

SUMET07
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Status	Original draft
Originating organisation	SummitSkills
Original URN	EL26
Relevant occupations	Highway Electrical Systems Installer; Installation Electrician; Maintenance Electrician; Electrical Trades; Electrician; Highway Electrical Systems Commissioning Electrician; Highway Electrical Systems Service & Maintenance Electrician; Industrial and Commercial Systems Engineer
Suite	Electrotechnical
Key words	Commissioning process; electrical systems and equipment; industry standards and regulations; specification; the working environment and the natural environment
