

AMR NVQ Draft Syllabus – Proposal

Scope:

“The installation and maintenance of battery operated “ plug and play” AMR devices connected to Industrial and commercial gas meters - not involving changes to the gas connections”

Objective of ensuring that installers are trained and competent able to exercise the correct professional judgement to enable them to carry installations to the required standards of quality and safety

Draft syllabus

Regulatory requirements

- An appreciation of the requirements of the following regulations and standards as they apply to the scope of activity:
 - HSAW Act
 - PPE at Work regulations - Personal Protective Equipment at Work Regulations 1992
 - Understanding of GM/7 – Connection of electrical equipment to gas meters and converters
 - BS 7671 – Wiring regulations and how they apply
 - PUWER - Provision and Use of Work Equipment Regulations 1998
 - Gas Safety (Installation & Use) Regs
 - Electricity at Work Act
 - DSEAR and ATEX regs relating to intrinsic safety of the equipment, the installation processes and meaning of Zones

Identification and management of hazardous situations

- Understanding of ATEX principles
- Understanding hazardous areas and meaning of zones
- Implications of installing across Zone barriers
- Identification of suitable devices and equipments
- Understanding the suitability of equipment
- Safe systems of work
- LEL/UEL (*Lower and upper explosive limits*) and GIA - (*gas in air*)
- LP Gas installations what types of equipment may be present
- Identification of unsafe installations and equipment
- Identification of meter tamper and what to do
- What to do if there is a gas leak
- What to do if a battery is damaged – spills and dangers of lithium cells
- Safe testing of existing wires (potential hazardous voltages and sparks)
- Recognising unsafe equipment and connections

Installation processes

- Identification of installed equipment – other loggers, chatter boxes, connection boxes and BMS systems
- Understanding the pulse chain and potential issues of connecting to and from other equipment.
- What is MPU work, types of MPU and when it is required
- Identification of meter types dials and pulse outputs.

- Correct interpretation of data plate information
- How to read meter dials and converters
- Understanding how meters provide a pulse – integral pulse, added pulse transmitter and use of optical devices
- Understanding what is a tamper circuit
- Correct selection of equipment and cables with relation to planned siting
- Understanding meaning of The *IP* Code (or International Protection Rating)
- Understanding basics of signal coverage (GSM and radio), positioning and use of external aerials
- Correct selection of cables and connectors to match meters and converters
- Basic PC skills and use of software
- Correct behaviour on site – how to deal with people on site and customers
- Commissioning equipment

Installation and diagnostic techniques

- Basic understanding of electrical circuits, what is polarity, wiring and how meters pulse
- Parallel and series connections and use of pulse splitters
- Correct selection & usage of test equipment
- Polarity testing between devices
- Looking for a pulse
- Continuity testing
- Understanding cable and connector specs
- Using and positioning to achieve best signal, use and positioning of external aerials
- On site handling and changing SIM cards and batteries
- Cable protection and siting and potential interaction with other services
- Practical skills – extension and joining of wires, making good connections and protection against the environment
- Cable colour and numbering protocols- current & legacy
- Siting of loggers and cable runs
- Basic earthing (i.e. do not remove add or change)
- Marking up, labelling and recording assets
- Pulse chain and responsibilities and best practice
- Managing and reinstating existing equipment
- Recording of removed assets
- Understanding issues of batteries, safe use, storage, disposal and handling

Environmental processes

Managing of new and removed batteries – awareness of safety and handling issues
 Disposal processes – Equipment and batteries
 Consequences of incorrect disposal
 Cleaning and removal of waste