OUTLINE TRAINING PROPOSAL

Electrical Fundamentals, Testing and Certification for Service Engineers.
[3 - Day, Bespoke Course]

CLIENT
Retra House, St John's Terrace, 1 Ampthill Street, Bedford, MK42 9EY.

CONTACT
Pat Sheldrake - Events Manager and Company Secretary

OVERVIEW

> *"No person shall be engaged in any work activity where technical knowledge or experience is necessary to prevent danger or, where appropriate, injury, unless he possesses such knowledge or experience, or is under such degree of supervision as may be appropriate having regard to the nature of the work."*
>
> ***Regulation 16. Electricity at Work Regulations 1989***

All electrical systems carry an inherent degree of risk. Managing this risk in an effective manner enables possibilities for a reduction in the likelihood of an electricity related incident occurring. Such incidents can result in serious injury or fatality, disruption to business operations, financial implications and prosecution. Managing electrical safety requires personnel to take ownership of electrical safety matters; this includes ensuring that those who carry out work on or near the electrical system are suitably trained and equipped to perform the task at hand.

> **BS 7671:2018 - Regulation *132.16 Additions and Alterations to an installation.***
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> *"No alteration or addition, temporary or permanent, shall be made to an existing installation, unless it has been ascertained that the rating and the condition of any existing equipment, including that of the distributor, will be adequate for the altered circumstances. Furthermore, the earthing and bonding arrangements, if necessary, for the protective measure applied for the safety of the addition or alteration, shall be adequate."*

Retra members are engaged in the installation, repair and maintenance of domestic white goods and appliances across a range of domestic client and site specific installations.
Those undertaking such work should possess sufficient knowledge or experience to enable work to be carried out safely. For installation work, it is important that those undertaking electrical work have an understanding of the need to assess existing electrical installations prior to connection of additional loads. BS 7671:2018 requires that the rating and condition of the existing installation be confirmed along with the presence and adequacy of the existing earthing and bonding arrangements. The requirements above are deemed to be part of the 'Fundamental Principles' for safety as set out within BS7671:2018. Operatives will also need to have a sound understanding of appropriate methods of safely isolating the electrical supply and be able to carry out electrical commissioning inspection and tests prior to issue of certification and hand over. The importance of ensuring that those undertaking such work and, the adequacy of the supervision in the overall process of confirming that electrical installation work, is compliant and that the results of installation and maintenance activities are recorded correctly, cannot be overstated.

KEY TRAINING OBJECTIVES

1. Align Retra member working practices to meet the requirements of Regulation 16 - EAWR 1989.
2. Reduce likelihood of harm to Retra member engineers, and others, by the implementation of formal electrical isolation procedures.
3. Increase safety and traceability of completed 'minor electrical works' by the introduction of a formalized installation commissioning, testing and certification procedure.
4. Standardize approach to minor electrical installation work.
5. Enhance knowledge to enable compliant installation modifications to take place.

TRAINING OUTCOMES

It is taken that those attending this course will have a limited amount of prior electrical knowledge. This training is required to ensure that attendees are aware of the risks associated with electrical systems and the procedures to be followed to work safely and to leave systems in a safe state. Delegates will also be made aware of the legal requirements and implications associated with working on or near live electrical systems.

Key outcomes:

1. Understand the requirements for survey of existing installation - To ensure compliance of completed works with BS 7671.
2. Be able to safely isolate the electrical supply prior to commencement of works - To minimize likelihood of harm to operatives and customers.
3. Be able to carry out sound and secure final connections to electrical equipment - To ensure safety.
4. Understand and apply the requirements for testing the altered installation [EFLI, RCD, and Polarity] - To ensure compliance with BS 7671.
5. Be able to complete and issue applicable certification relating to installed work. - To provide traceability and ensure compliance with BS 7671.

PROPOSED CONTENT

Day 1

- Electrical Fundamentals – Electrical Science, Ohms Law, Power calculations.
- Guidance and Legislation relating to maintenance activities
  - → On overview of key parts of BS 7671:2018, Approved Document Part P and EAWR 1989. What is required, what are the implications?
- Identification of incoming earthing arrangements. TN-S, TN-C-S, TT.
  - → Earthing conductor inspection.
- Final circuit earthing
  - → The purpose and importance of final circuit earthing (circuit protective conductors)
- Identification of protective bonding including conductor identification and connection.
  - → The need for equipotential bonding.
- Types of circuit protection
  - → Fuses, MCBs, RCBOs, RCCBs.
- Cable and protective device size / relationship.
- Electrical connections and terminations - Meeting the requirements of Regulation 10 - EAWR 1989
- Methods of protection against electric shock

Day 2

- Guidance and Legislation relating to electrical isolation
  - → On overview of key parts of EAWR 1989 and GS38. What is required, what are the implications?
- Electrical Isolation [1ø]
  - → Selection of equipment
  - → Recognised electrical isolation procedure
  - → Practical assessment

Day 3

- Understanding the importance of Earth Fault Loop Impedance testing
- Understanding the importance of Residual Current Device testing
- Confirmation of correct polarity - Implication for safety
- Evaluation of test results – Ensuring outcomes of testing are correctly interpreted
- Completion of commissioning certification [Minor Electrical Works]
- Final assessments

Note: This training does not cover the installation of circuits or access to consumer units or distribution boards.

All modules are backed up by reference to appropriate information contained within: BS7671:2018, EAWR 1989 and HSE GS38. Reference to other applicable guidance documents and codes of practice may also be made.

VENUE

The proposed programme is to take place at NICEIC training centres in Dunstable or Chesterfield. Prices for training at other venues by arrangement.

DELEGATES

This proposal is based on up to 8 delegates attending each course

DURATION

This course is 3 days in duration

ENTRY REQUIREMENTS

There are no formal entry requirements for the candidates attending this training.

Nik Mitchell
Training Development Manager

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