



Access and Test Permits. SMEI Part 5

**Isolation and Earthing for Work on HV Electrical
Equipment. SMEI Part 6**

**Guide for Work on De-Energised Distribution
Overhead Lines**

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Topics

1. SM-EI Definitions amendments
2. SM-EI Part 5 amendments (Earthing)
3. SM-EI Part 6 amendments
4. Guide to Work on De-Energised Overhead Lines amendments

1. Definitions Amendments

Equipotential Zone

- Now focuses on 'working position' (new definition) rather than 'worksite'.
- Includes items 'deemed to be conductive'.
- Note that it applies to 'conductive parts which can be contacted by an employee'. (This is not a change)
- Secondary point of contact.

2. SM-EI Part 5 Amendments re Control of Temporary Earthing

Rule 3.501 (Basic access permit requirements)

- Issuer duties
- Before Access Permit is issued the issuer shall ensure required issuer applied safety measures have been applied.
- This includes where practicable earths required by rule 3.602I.ii. specifically between the point of isolation and the equipment to be worked on. (equipment under access permit).
- These are issuer applied safety measures.

Rule 3.501 (Basic access permit requirements) ctd

- ‘Where practicable’ has a high threshold.
- The article in section 8.3 of SR Newsletter provides further guidance on:
 - Application of ‘where practicable’ in this circumstance
 - Where earths may be applied, i.e. not necessarily at the point of isolation (except 3.602f)
 - Application of issuer applied safety measures on behalf of the issuer

Rule 3.511 (Basic test permit requirements)

- Requirements for test permits as for access permits but earths required by rule 3.602l.ii. in all circumstances

3. SM-EI Part 6 amendments

Temporary Earthing

- Part 3 section 6 has had substantive amendment in the Background, 3.601, 3.602 and 3.603
- Earthing is no longer directly linked to the existence of an access or test permit.
 - Section 6 requirements apply whether there is a permit or not, i.e. for all work on HV equipment which may be inadvertently livened
 - Emphasis on establishment of EPZ

Rule 3.601 (Isolation & earthing – basic requirements)

- Part (a) of the rule addresses two circumstances;
 - When a permit is to be issued
 - When a permit is not to be issued but inadvertent livening is possible, e.g. the equipment is de-commissioned
- Under a permit isolation, earthing and EPZ required
- When a permit is not issued control of voltage differences is still required.

Rule 3.602 (Isolation & earthing – general)

- Part f. applies to switchgear or disconnectors with no visible break. Where a permit is issued on the basis of an isolation with no visible break;
 - the recipient must be informed of this fact
 - Any earth switch integral with the isolator must be closed, or a temporary earth applied at the switch using the same earthing system as the switch

Rule 3.602 (Isolation & earthing – general) ctd

- Where an earth cannot be applied at the switch, e.g. because of cables, then consider how and where isolation and earthing should be provided.
- Refer to recently published interpretation on this rule. (On EEA website and summarised in SR Newsletter)
- Part I. now requires one set of earths to be visible from the ‘working position’ (defined)

Rule 3.602 (Isolation & earthing – general) ctd

- Part I. requires conductors to be earthed at all times unless a test permit applies for their removal for testing (Reqd by ESRs)
- Part I. Note 2 addresses earthing through high impedance equipment and requires additional provisions to be provided by the asset owner.

Rule 3.603 (Earthing & Short Circuiting Overhead Lines)

- Application of the rule to the earthing of overhead lines and the establishment of EPZ has been reviewed and amended;
 - Now requires one set of earths to be as close as practicable to the working position but recognises it is not always possible.
 - Where not as close as practicable at the start, the position must be improved as and when practicable

Rule 3.603 (Earthing & Short Circuiting Overhead Lines) ctd

- The *Guide for Work On De-Energised Distribution Overhead Lines* covers more detailed requirements.
- Part c. recognises there are circumstances where earths cannot be fitted each side of the working position, e.g. at the end of the line.

4. Guide to Work on De-Energised Overhead Lines amendments

Guide for Work on De-Energised Distribution Overhead Lines

- Terminology changes, i.e. working position
- Reinforcement of the definition of Equipotential Zone
- Stronger emphasis on the requirement to protect an employee from voltage differences (secondary points of contact)
- Imposes duty on Responsible Employees (Safety) and Supervisors to ensure the risk from voltage differences at the working position are managed.
- Reinforces that a range of solutions are available including cover up mats, use of insulating gloves, dielectric boots etc.

Guide for Work on De-Energised Distribution Overhead Lines

- Changes to isolation and earthing standards prescribed under SMEI are reinforced.
- Good management system should include preparing an earthing plan, critical in complex jobs.
- Range of difficult work situations identified, examples?
- The guide provides guidance on the action needed when it is not practicable to earth at the working position.

Thank you
Questions?