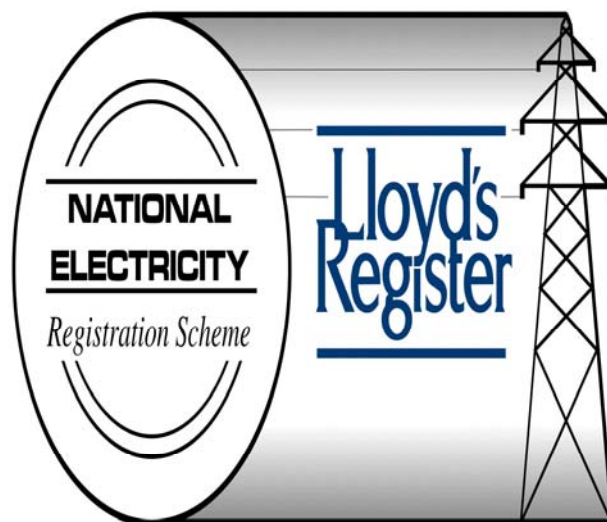


# National Electricity Registration Scheme (NERS)

## Guidance Document – Safety Management System

Rev 4 November 2007



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## Introduction

Among the Statutory Instruments that legislate on the construction and operation of electricity networks or installations two key ones are;

- The Electricity Safety, Quality and Continuity Regulations 2002 (amended 2006), and
- The Electricity at Work Regulations 1989.

These regulations are enabled under the Health and Safety at Work Act 1974.

The Electricity Safety, Quality and Continuity Regulations were principally directed towards the owners and operators of electricity generating, transmission and distribution systems and require that such systems are constructed, installed, used and maintained in such a way as to prevent danger or interruption to supply, so far as is reasonably practical. The Electricity at Work Regulations 1989 require that, in the workplace, electrical systems and any works carried out on them do not give rise to danger and that any person who may be exposed to the risk of danger shall have adequate technical knowledge or experience, or be under a degree of supervision. Also enabled under the H&SW Act were the Management of Health and Safety at Work Regulations 1999. These further required that employers set up and manage suitable and sufficient arrangements to ensure the health, safety and welfare of the entire workforce in the workplace.

These and other legal requirements have together created within the electricity industry a consensus which recognises that documented and comprehensive safety management systems are a prerequisite for contractors working on existing and potential electricity distribution system infrastructure. The National Electricity Registration Scheme (NERS) acknowledges this consensus and the existence and ongoing use of a safety management system is a requirement for initial and ongoing accreditation under the scheme.

The purpose of this document is to make explicit the elements of a safety management system that will meet the requirements of the NERS. The main elements of such a safe system of work are:

- Management of Work Activities
- Identification of Roles and Responsibilities
- Training, Competence and Authorisation of Staff
- Risk Assessments and Method Statements
- Monitoring and Supervision
- Accident Prevention and Investigation

The policy and procedures that relate to a safe system of work shall be written, clearly and unambiguously, communicated to all staff and are regularly reviewed and updated. All documents should be controlled and individual policies and procedures should be approved before issue and include on the document the title, issue date, revision status, and approver. They should also have an issue list together with records of receipt

This document should be read in conjunction with the current version of the National Electricity Registration Scheme Guidance Document.

## 1. Scope

Before any individual can be put to work or placed in an environment which has the risk of electrical hazards the level of training, experience and competence must be formally assured so as to obviate, so far as reasonably practical, the risk of danger.

An accepted industry definition of a Competent or Authorised Person is someone with adequate training, experience and knowledge that has been assessed and authorised in writing to undertake specific tasks on electrical plant or equipment. The Safety Management System shall include a documented process that provides assurance of compliance with the spirit of the general requirement and definition above.

The assessment process and the authorisation processes are two separate and independent functions, which must be undertaken by separate named officers who themselves have sufficient training, knowledge and experience to effectively undertake the responsibilities assigned to them. The formal system must be robust, free from commercial pressures and adequately document the training, knowledge, experience, selection, assessment, authorisation and appointment of staff and re-authorisation.

For the purposes of NERS the assessment and authorisation processes shall be applied to individuals working for a Utility Connections Provider (UCP) who perform work on existing or potential electricity distribution assets within the scope of that UCPs NERS accreditation. Such individuals may be direct labour of that UCP, or subcontractors of that UCP.

## **2. Safe System of Work**

### **2.1 Control of Safety Related Documents**

The UCP should have a Safety Policy Statement that relates directly to the Safety Management System (SMS). The responsibility for producing Health and Safety documentation relating to the SMS should be clearly identified and those given such responsibility should have sufficient knowledge and experience to be able to effectively execute their duties. Evidence to substantiate the relevant knowledge and experience should be maintained.

Internally produced SMS documentation should be controlled.

A procedure should be in place to control the issue of safety related documents (internally & externally produced) including a defined distribution list, signature for receipt, identification and withdrawal of superseded documents.

Responsibility for reviewing the effectiveness of the SMS internal policy and procedures should be clearly identified and records maintained of reviews.

### **2.2 Risk Assessments and Method Statements**

A procedure should be in place for undertaking risk assessments and producing method statements. The procedure should identify those responsible for undertaking generic risk assessments, producing method statements, communicating the information to staff and reviewing the effectiveness of the procedure. The risk assessments must address safety issues with respect to the work being carried out.

Project specific risk assessments should be undertaken when unusual circumstances may present risks outside of those covered under generic risk assessments. This risk assessment is to ensure that all control measures are in place and that no site conditions exist that would compromise the work proceeding safely.

In all circumstances site risk assessments shall be made before work begins and reviewed daily or more often if conditions change. Evidence of completed daily work site risk assessment documents shall be held by the UCP for a specified time.

Staff undertaking risk assessments shall be adequately trained to do so. The person responsible for reviewing the effectiveness of risk assessment process must be clearly identified.

### **2.3 Personal Protective Equipment**

A procedure shall be in place to ensure that suitable PPE is made available for the work being carried out for both directly employed and sub-contract staff. The procedure should also clearly identify how the suitability of electrical safety PPE is to be assessed and approved. PPE must be maintained in good condition, correctly used and routinely inspected. Records shall be kept of PPE issue together with routine inspections undertaken and any comments on condition.

## 2.4 Control of Electrical Safety Tools and Equipment

A procedure shall be in place for the control of tools and test equipment used for work. The procedure should allocate responsibilities for the approval, supply, control and issue of tools and equipment used by directly employed and sub-contract staff. The methods used to assess the suitability of tools and equipment should also be identified.

Those responsible for carrying out routine inspections and formal testing / calibration of tools and equipment shall be identified together with the test standards to be used. A suitable register shall be maintained identifying equipment by unique serial numbers and the location where the equipment is held or the individual to whom it has been issued. The register should also record dates of routine inspections and calibrations together with comments on condition and a repair history.

The procedure should identify how tools and equipment should be stored to prevent damage or deterioration in a depot, on a site, or whilst in transit on vehicles. Provision shall also be made for tools and equipment that are not fit for service to be held in quarantine, A quarantine area shall be a defined separate area to that in which serviceable tools and equipment are held, and should have controlled access. The procedure should also identify how tools and equipment, no longer serviceable, are to be replaced.

### **3. Assessment and Authorisation**

#### **3.1 Authorisation Procedure**

A written procedure shall be in place for the assessment and authorisation of staff which shall refer to relevant Safety Rules and Codes of Practice as the basic safe operating practices against which assessments and authorisations shall be awarded. The procedure shall identify the responsibilities of the Assessing Officer and Authorising Officer under the Safety Management System. It should be demonstrable that the authorisation process is free from commercial pressure.

For the authorisation of an individual the Authorising Officer should be provided with the candidate's assessment file, which must include the recommendation for authorisation signed by the Assessing Officer. The Authorisation Officer must be satisfied that the candidate has the necessary skills and ability to work safely on or near the relevant distribution networks and that the extent and limitation of the authorisation being given is unequivocal.

#### **3.2 Assessing Officer**

The Assessing Officer must be suitably qualified and have appropriate (to the NERS scope applied for) knowledge and experience of operational aspects of electricity distribution networks, of relevant safe working practices and have a detailed knowledge of the National Distribution Safety Rules and the relevant DNO, IDNO variants. The Assessing Officer's appointment must be formal, in writing, and the name(s) and designation should be notified to Lloyd's Register. The duties and responsibilities, with respect to the SMS, should be defined in writing. Training and previous experience in interviewing techniques should be demonstrable (e.g. NVQ A1 & A2 or equivalent.)

Evidence of the Assessing Officers academic qualifications, background and experience should be available. The Assessing Officer should not be subject to coercion or conflict of interest in undertaking assessment duties. A process shall be in place for keeping the Assessing Officer up to date with current operational and safety issues covering relevant electrical disciplines.

The Assessing Officer must review all competencies on an annual basis and this process shall be documented using a passport or alternative approved system of registration. The passport is a document that will be held by each Craftsperson and Operative. The Assessing officer will ensure that all competencies are current and update all passports on an annual basis. Competencies for crafts persons will be updated on the basis as described in the National Electricity Scheme Guidance document.

The Assessing Officer shall establish a system for ensuring that all DNO specifications, safety rules etc which are relevant to the scope of registration and held by the UCP, are current. He shall ensure that he is familiar with the variations that may exist between DNO's in terms of safety systems, procedures and specifications. The Assessing Officer must arrange the briefing of competent and authorised staff on such variations as they may relate to the work that they may be performing in the host DNO's region. These briefings and associated assessments shall be documented. If the variations are such that additional competencies are required then the Assessing Officer shall arrange for these (for example additional cable jointer competency, to account for a joint specification variation). The additional competency shall be documented by

the Assessing Officer, following a satisfactory test and assessment, by having the competency added to the craftsman's passport.

Changes of Assessing Officer shall be notified to Lloyd's Register in writing and relevant information on the successor, as described above submitted, for review.

The Assessing Officer can be an employee of the UCP or a consultant employed for this specific role.

### **3.3 Authorising Officer**

The Authorising Officer shall have suitable authority and shall have an appreciation of relevant distribution networks, of safe working practices and DNO Safety Distribution Safety Rules. The Authorising Officer's appointment must be formal, in writing, and the name(s) and designation shall be notified to Lloyd's Register.

The duties and responsibilities, with respect to the SMS, shall be defined in writing. Supporting evidence of the Authorising Officers academic qualifications, background and experience should be available. The Authorising Officer shall have the necessary authority to enforce this SMS and conformance with relevant Safety Rules. A process must be in place to enable the Authorising Officer to keep up to date with current safety legislation, safety rules and relevant electrical operations, including accident investigations.

The Authorising Officer shall be a full time employee of the UCP in a senior management position.

Changes of Authorising Officer shall be notified to Lloyd's Register in writing and relevant information on the successor, as described above, submitted for review.

### **3.4 Selection for Authorisation**

A selection procedure shall be in place for individuals to be chosen for authorisation. The selection process must identify minimum levels of knowledge, training and experience that are required and shall assess candidates in a structured way against a set of agreed criteria and trade skills. A trade test may be part of this process, carried by a recognised training establishment or authority. The selection and assessment process shall be documented and records maintained for all individuals even if they are unsuccessful.

### **3.5 Training in the Safety Management System**

A procedure shall be in place for the training of staff who are to be authorised under the relevant Safety Rules. The scope and level of training is dependent on the competence to be authorised and the procedure shall lay out the minimum requirement. The following table is a guide to minimum training requirements for different competency levels. Such training shall include assessments to determine that an acceptable level of understanding has been achieved.

Qualified Supervisor	Craftsperson	Operative	Subject
			Safety Rules
			Safety Management System
			Health & Safety at Work Act
			ESQC Regulations
			Electricity at Work Regulations
			Basic Electrical Awareness
			Risk Assessment
			Emergency Aid including Resuscitation

Training resources should be identified and evidence of training, such as training certificates, should be available for inspection. Where training under personal supervision is undertaken the minimum requirements in terms of duration, level of responsibility and limit of work activities shall be clearly defined. The person providing the personal supervision shall have the necessary experience and be authorised in writing to undertake these duties.

### 3.6 Assessment

The assessment procedure should identify the form of assessment to be undertaken. Whether in the form of theoretical (oral or written tests) or practical skills tests any questions must be commensurate with the level of authorisation being sought.

An assessment file should be compiled for each candidate and shall provide background supporting evidence towards the competence required; previous authorisations held, employment history, training details, and experience and skills test. The Assessing Officer may accept documented assessments of practical skills tests provided they are undertaken by a recognised training institution/facility. The Assessing Officer shall keep records of tests including, in the case of oral tests, oral responses given.

The Assessing Officer shall be satisfied that the candidate has demonstrated an adequate level of skill and knowledge before he can make a formal recommendation for Authorisation, which shall be documented. A process may be put in place for candidates who fail to attain the

required standard, in the form of development plans, additional training or working under close supervision. It would be expected that review periods would also be set to monitor progress.

An auditable trail of the assessment process shall be maintained which when successful shall result in an entry in the Craftsperson's/Operative's passport to provide for ready site based evidence.

### **3.7 Certificates**

Authorisation/competence certificates are required for craft persons. The authorisation/competence will be given in the form of a certificate, which must be signed and dated by the Assessing and Authorising Officers.

The scope of the authorisation must be clear and a validation period shall be defined, maximum permissible period is 3 years, with an annual review to ensure that the duties and activities performed within the review period are commensurate with the assigned authorisation/competence.

### **3.8 Authorisation Records**

An administration system shall be in place to record and control authorisations. Paper records should be protected against risk of fire. Records should include authorisation details, training data, copy training certificates, authorisation assessment details together with review dates. Access to the records should be limited to defined staff.

### **3.9 Authorisation Review and Refresher Training**

A procedure shall be in place to review Authorisations, which should also detail the provision of refresher training both for trade skills and SMS knowledge. The procedure should identify responsibilities for identifying refresher training and to initiate training when any changes of type of work, takes place.

Before an authorisation is considered for annual renewal a check shall be made that during the review period work has been undertaken across the scope of the existing authorisation. In the event that this is not the case then the authorisation/competence may be withdrawn or additional test/assessment performed in order to re-instate the authorisation level. For example, a joiner may not have performed a particular joint type for which he had an authorisation within the review period. Under such circumstances it may be decided at review that it is necessary for the joiner to perform such a joint under supervision to regain that aspect of his authorisation.

## **4. Sub-Contractors**

A policy shall be in place, which describes the control and use of subcontract staff in respect to the UCP's SMS. Sub-contractors must operate within an SMS. This may be achieved either through compliance with their own approved SMS where the subcontractor holds their own NERS accreditation or through a full integration of relevant subcontractor staff into the UCP's

SMS. The control and supervision of work undertaken by subcontractors shall be the equivalent of that for work undertaken by directly employed staff.

The subcontractors shall be required to possess passports and in the case of 'labour only contractors' the passports shall be maintained by the Accredited UCP's Assessing Officer who shall ensure that the procedures and systems for awarding and updating competencies is common for all passports issued by the UCP regardless of the holders employment status with the UCP.

## 5. Site Monitoring and Audits

A procedure shall be in place which describes how the operation of the Safety Management System is monitored on site for both directly employed and subcontract staff. The responsibility for undertaking site monitoring and formal site audits shall be identified and the staff assigned these duties shall have the necessary knowledge and experience. The frequency of formal site authorisation audits shall be defined and a programme produced to ensure that all individuals are audited within a review period. The review period shall be a maximum of one year. The review period should be shorter for newly authorised staff or those found to have an area of weakness in knowledge or skill identified from routine monitoring (supervision), site safety audits, or an operational incident.

The procedure shall outline a range of remedial actions that are matched to the severity of any non-conformances that are identified during site audits. These may include retraining, increased frequency of site audits or both. Site audits shall monitor conformity with the SMS and include detailed inspections of work instructions, method statements, generic/site specific and daily risk assessments, safety documents, safety clearances, electrical tools and test equipment. The procedure shall contain a sample audit sheet, a non-conformance close out procedure, and a process for monitoring trends of quality and safety.

A review process shall be in place, which monitors the overall effectiveness of the audit procedure. Records shall be maintained of audits, audit findings, close out actions and reviews.

## 6. Accident Investigation and Reporting

A procedure shall be established that describes the responsibility for accident and incident investigations involving the distribution system, relevant Safety Rules or the Safety Management System. This procedure shall also describe and the manner in which such accidents and incidents are investigated and reported. All accidents and incidents of a serious nature shall be reported to Lloyd's Register. Incidents involving the distribution system must also be reported to the host DNO. Incidents and accidents shall be notified to the Health and Safety Executive as required by Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR).

Responsibilities within the UCP for accident and incident investigation and reporting shall be identified and the level of an investigation should be commensurate with the severity of the accident/incident. Accidents/incidents involving personal injury, electrical flashover, electric shock, loss of supply or any breach of the relevant Safety Rules should have a panel of enquiry established. The person undertaking an accident investigation or leading a panel of enquiry shall

have sufficient knowledge and experience to undertake these duties. All panels of enquiry should, where appropriate, make available the opportunity for the host DNO to attend.

The procedure shall identify methods for recording accident investigations. It shall also identify responsibilities for ensuring that enquiry recommendations are implemented and reviewed and for ensuring that learning points are communicated to relevant managers and employees.

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