
STATUTORY INSTRUMENTS

1989 No. 635

The Electricity at Work Regulations 1989

PART I

INTRODUCTION

Citation and commencement

1. These Regulations may be cited as the Electricity at Work Regulations 1989 and shall come into force on 1st April 1990.

Interpretation

2.—(1) In these Regulations, unless the context otherwise requires—

“approved” means approved in writing for the time being by the Health and Safety Executive for the purposes of these Regulations or conforming with a specification approved in writing by the Health and Safety Executive for the purposes of these Regulations;

“circuit conductor” means any conductor in a system which is intended to carry electric current in normal conditions, or to be energised in normal conditions, and includes a combined neutral and earth conductor, but does not include a conductor provided solely to perform a protective function by connection to earth or other reference point;

“conductor” means a conductor of electrical energy;

“danger” means risk of injury;

“electrical equipment” includes anything used, intended to be used or installed for use, to generate, provide, transmit, transform, rectify, convert, conduct, distribute, control, store, measure or use electrical energy;

“firedamp” means any flammable gas or any flammable mixture of gases occurring naturally in a mine;

“injury” means death or personal injury from electric shock, electric burn, electrical explosion or arcing, or from fire or explosion initiated by electrical energy, where any such death or injury is associated with the generation, provision, transmission, transformation, rectification, conversion, conduction, distribution, control, storage, measurement or use of electrical energy;

“safety-lamp mine” means—

(a) any coal mine; or

(b) any other mine in which—

(i) there has occurred below ground an ignition of firedamp; or

(ii) more than 0.25% by volume of firedamp is found on any occasion at any place below ground in the mine;

“system” means an electrical system in which all the electrical equipment is, or may be, electrically connected to a common source of electrical energy, and includes such source and such equipment.

- (2) Unless the context otherwise requires, any reference in these Regulations to—
- (a) a numbered regulation or Schedule is a reference to the regulation or Schedule in these Regulations so numbered;
 - (b) a numbered paragraph is a reference to the paragraph so numbered in the regulation or Schedule in which the reference appears.

Persons on whom duties are imposed by these Regulations

3.—(1) Except where otherwise expressly provided in these Regulations, it shall be the duty of every—

- (a) employer and self-employed person to comply with the provisions of these Regulations in so far as they relate to matters which are within his control; and
 - (b) manager of a mine or quarry (within in either case the meaning of section 180 of the Mines and Quarries Act 1954(1)) to ensure that all requirements or prohibitions imposed by or under these Regulations are complied with in so far as they relate to the mine or quarry or part of a quarry of which he is the manager and to matters which are within his control.
- (2) It shall be the duty of every employee while at work—
- (a) to co-operate with his employer so far as is necessary to enable any duty placed on that employer by the provisions of these Regulations to be complied with; and
 - (b) to comply with the provisions of these Regulations in so far as they relate to matters which are within his control.

PART II

GENERAL

Systems, work activities and protective equipment

4.—(1) All systems shall at all times be of such construction as to prevent, so far as is reasonably practicable, danger.

(2) As may be necessary to prevent danger, all systems shall be maintained so as to prevent, so far as is reasonably practicable, such danger.

(3) Every work activity, including operation, use and maintenance of a system and work near a system, shall be carried out in such a manner as not to give rise, so far as is reasonably practicable, to danger.

(4) Any equipment provided under these Regulations for the purpose of protecting persons at work on or near electrical equipment shall be suitable for the use for which it is provided, be maintained in a condition suitable for that use, and be properly used.

Strength and capability of electrical equipment

5. No electrical equipment shall be put into use where its strength and capability may be exceeded in such a way as may give rise to danger.

(1) 1954 c. 70; section 180 was amended by S.I. 1974/2013.

Adverse or hazardous environments

6. Electrical equipment which may reasonably foreseeably be exposed to—
- (a) mechanical damage;
 - (b) the effects of the weather, natural hazards, temperature or pressure;
 - (c) the effects of wet, dirty, dusty or corrosive conditions; or
 - (d) any flammable or explosive substance, including dusts, vapours or gases,

shall be of such construction or as necessary protected as to prevent, so far as is reasonably practicable, danger arising from such exposure.

Insulation, protection and placing of conductors

7. All conductors in a system which may give rise to danger shall either—
- (a) be suitably covered with insulating material and as necessary protected so as to prevent, so far as is reasonably practicable, danger; or
 - (b) have such precautions taken in respect of them (including, where appropriate, their being suitably placed) as will prevent, so far as is reasonably practicable, danger.

Earthing or other suitable precautions

8. Precautions shall be taken, either by earthing or by other suitable means, to prevent danger arising when any conductor (other than a circuit conductor) which may reasonably foreseeably become charged as a result of either the use of a system, or a fault in a system, becomes so charged; and, for the purposes of ensuring compliance with this regulation, a conductor shall be regarded as earthed when it is connected to the general mass of earth by conductors of sufficient strength and current-carrying capability to discharge electrical energy to earth.

Integrity of referenced conductors

9. If a circuit conductor is connected to earth or to any other reference point, nothing which might reasonably be expected to give rise to danger by breaking the electrical continuity or introducing high impedance shall be placed in that conductor unless suitable precautions are taken to prevent that danger.

Connections

10. Where necessary to prevent danger, every joint and connection in a system shall be mechanically and electrically suitable for use.

Means for protecting from excess of current

11. Efficient means, suitably located, shall be provided for protecting from excess of current every part of a system as may be necessary to prevent danger.

Means for cutting off the supply and for isolation

12.—(1) Subject to paragraph (3), where necessary to prevent danger, suitable means (including, where appropriate, methods of identifying circuits) shall be available for—

- (a) cutting off the supply of electrical energy to any electrical equipment; and
- (b) the isolation of any electrical equipment.

(2) In paragraph (1), “isolation” means the disconnection and separation of the electrical equipment from every source of electrical energy in such a way that this disconnection and separation is secure.

(3) Paragraph (1) shall not apply to electrical equipment which is itself a source of electrical energy but, in such a case as is necessary, precautions shall be taken to prevent, so far as is reasonably practicable, danger.

Precautions for work on equipment made dead

13. Adequate precautions shall be taken to prevent electrical equipment, which has been made dead in order to prevent danger while work is carried out on or near that equipment, from becoming electrically charged during that work if danger may thereby arise.

Work on or near live conductors

14. No person shall be engaged in any work activity on or so near any live conductor (other than one suitably covered with insulating material so as to prevent danger) that danger may arise unless—

- (a) it is unreasonable in all the circumstances for it to be dead; and
- (b) it is reasonable in all the circumstances for him to be at work on or near it while it is live; and
- (c) suitable precautions (including where necessary the provision of suitable protective equipment) are taken to prevent injury.

Working space, access and lighting

15. For the purposes of enabling injury to be prevented, adequate working space, adequate means of access, and adequate lighting shall be provided at all electrical equipment on which or near which work is being done in circumstances which may give rise to danger.

Persons to be competent to prevent danger and injury

16. 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.

PART III

REGULATIONS APPLYING TO MINES ONLY

Provisions applying to mines only

17.—(1) The provisions of regulations 18 to 28 and Schedule 1 shall apply to mines only; and the provisions of that Schedule shall have effect in particular in relation to the use below ground in a coal mine of any film lighting circuit (as defined by paragraph 1 of that Schedule) at or in close proximity to a coal face.

(2) Expressions to which meanings are assigned by the Mines and Quarries Act 1954 shall, unless the contrary intention appears, have the same meanings in regulations 18 to 27 and Schedule 1.

Introduction of electrical equipment

18. Before electrical equipment (other than equipment approved for the purposes of regulation 20(1)) is first introduced into any underground part of a safety-lamp mine to which the Coal and Other Mines (Surveyors and Plans) Regulations 1956(2) apply, the manager shall submit to an inspector a copy of the ventilation plan required to be kept for that part by regulation 9 of those Regulations, on which the intended locations of that equipment shall be shown, together with a copy of any schematic diagram relating to that part prepared for the purposes of regulation 24(1).

Restriction of equipment in certain zones below ground

19.—(1) At every safety-lamp mine containing any zones below ground in which firedamp whether or not normally present is likely to occur in a quantity sufficient to indicate danger, there shall be prepared a suitable plan identifying such zones.

(2) Electrical equipment shall not be energised in such zones unless it is—

- (a) equipment of a kind approved for that purpose;
- (b) equipment approved pursuant to regulation 20(1);
- (c) equipment the use of which was lawful in such zones immediately before the coming into force of these Regulations;
- (d) equipment which has received a certificate of conformity or a certificate of inspection in accordance with Council Directive [82/130/EEC](#)(3) on the approximation of the laws of the Member States concerning electrical equipment for use in potentially explosive atmospheres in mines susceptible to firedamp, as adapted to technical progress by Commission Directive [88/35/EEC](#)(4);
- (e) equipment such as is specified in regulation 21(2);
- (f) equipment which is not capable of producing incendive electrical sparks in normal use; or
- (g) electrically-powered equipment not permanently installed in the mine but required occasionally for monitoring, testing, recording and measurement, and used where the concentration of firedamp is 0.8% by volume or less in accordance with suitable rules drawn up by the manager to ensure that danger will not thereby arise, which rules shall in particular include provision for personal supervision of that equipment by a competent person and testing for firedamp when it is in use;

and any lights which conform with this paragraph shall be permitted lights in any mine such as is specified in paragraph (1).

Cutting off electricity or making safe where firedamp is found either below ground or at the surface

20.—(1) Where any person at a mine detects firedamp in a concentration exceeding 1.25% by volume in the general body of the air either below ground at that mine or at any place on the surface thereat where any exhaustor in a firedamp drainage system is installed, firedamp is monitored or its heat content measured, he shall forthwith—

- (a) cut off the supply of electricity to any electrical equipment situated at the place where the said concentration was detected; or
- (b) (where this is not possible) take all reasonably practicable steps to make such equipment safe; or

(2) [S.I. 1956/1760](#), to which there are amendments not relevant to these Regulations.

(3) OJ No. L59, 2.3.82, p.10.

(4) OJ No. L64, 10.3.88, p.36.

- (c) (if the taking of the measures specified in sub-paragraphs (a) and (b) above does not fall within the scope of his normal duties) report the matter to an official of the mine who shall ensure that those measures are taken;

except that the provisions of sub-paragraphs (a) to (c) above shall not apply if the electrical equipment is approved for the purpose of remaining energised in such circumstances or (in the case of a safety-lamp mine) is electrical equipment such as is specified in regulation 21(2).

(2) If the supply of electricity to electrical equipment is cut off or the equipment made safe in accordance with paragraph (1), it shall remain in that condition until the senior official on duty at the mine having determined that it is safe to do so, directs that such precautions are no longer necessary.

(3) If the supply of electricity to electrical equipment is cut off or the equipment made safe in accordance with paragraph (1), details of the time, duration and location shall be recorded.

Approval of certain equipment for use in safety-lamp mines

21.—(1) Subject to paragraph (2), no electric safety-lamp, gas detector, telephone or signalling equipment or other equipment associated therewith or required for the safety of persons shall be taken or used below ground at any safety-lamp mine unless it is equipment which has been approved pursuant to regulation 20(1) or (in the case of electric safety-lamps) is of a type for the time being approved pursuant to section 64(2) of the Mines and Quarries Act 1954.

(2) Nothing in paragraph (1) shall prevent the taking or use below ground at any safety-lamp mine of any electrical equipment which was, before the coming into force of these Regulations, approved pursuant to regulations 20 and 21A of the Coal and Other Mines (Electricity) Regulations 1956(5).

Means of cutting off electricity to circuits below ground

22. At every mine at which electrical equipment which may give rise to danger is installed below ground and is supplied from a power source at the surface of the mine, switchgear shall be provided at the surface for cutting off the supply of current to that equipment, and adequate provision shall be made for the operation of that switchgear, including such means of communication as will, so far as is reasonably practicable, enable the switchgear to be operated in case of danger.

Oil-filled equipment

23. Electrical equipment using oil as a means of cooling, insulation or arc suppression shall not be introduced below ground at a mine.

Records and information

24.—(1) Suitable schematic diagrams of all electrical distribution systems intended to be operated at the mine (other than those operating at a voltage not exceeding 250 volts) shall, so far as is reasonably practicable—

- (a) be prepared and kept in the office at the mine; and
- (b) show the planned settings of any circuit electrical protective devices.

(2) Copies of such portions of the schematic diagrams prepared pursuant to paragraph (1) as are necessary to prevent danger and which show at least those parts of the electrical system which are served by switchgear operating at a voltage in excess of 250 volts shall be displayed at each place where such switchgear is installed.

(5) [S.I. 1956/1766](#); the relevant amending instruments are [S.I. 1974/1853](#) and [1977/1205](#).

(3) Plans on a suitable scale shall be kept in the office at the mine showing, so far as is reasonably practicable, the position of all permanently installed electrical equipment at the mine supplied at a voltage in excess of 250 volts.

Electric shock notices

25. Where, at any place at a mine, electric arc welding is taking place or electrical energy is being generated, transformed or used at a nominal voltage in excess of 125 volts a.c. or 250 volts d.c., a notice shall be displayed in a form which can be easily read and understood and containing information on the appropriate first-aid treatment for electric shock and details of the emergency action to be taken in the event of electric shock.

Introduction of battery-powered locomotives and vehicles into safety-lamp mines

26. No locomotive or vehicle which uses an electrical storage battery, either partly or wholly, as a power source for traction purposes shall be introduced below ground at a safety-lamp mine unless it is an approved locomotive or vehicle.

Storage, charging and transfer of electrical storage batteries

27. At any mine in which electrical storage batteries are used below ground, those batteries shall, so far as is reasonably practicable, be used, stored, charged and transferred in a safe manner.

Disapplication of section 157 of the Mines and Quarries Act 1954

28. Section 157 of the Mines and Quarries Act 1954(6) (which provides a defence in legal proceedings and prosecutions in certain circumstances) shall not apply in relation to any legal proceedings or prosecutions based on an allegation of a contravention of a requirement or prohibition imposed by regulations 18 to 27 or by or under Schedule 1.

PART IV

MISCELLANEOUS AND GENERAL

Defence

29. In any proceedings for an offence consisting of a contravention of regulations 4(4), 5, 8, 9, 10, 11, 12, 13, 14, 15, 16 or 25, it shall be a defence for any person to prove that he took all reasonable steps and exercised all due diligence to avoid the commission of that offence.

Exemption certificates

30.—(1) Subject to paragraph (2), the Health and Safety Executive may, by a certificate in writing, exempt—

- (a) any person;
- (b) any premises;
- (c) any electrical equipment;
- (d) any electrical system;
- (e) any electrical process;

(6) 1954 c. 70; section 157 was amended by S.I. 1974/2013.

(f) any activity,
or any class of the above, from any requirement or prohibition imposed by these Regulations and any such exemption may be granted subject to conditions and to a limit of time and may be revoked by a certificate in writing at any time.

(2) The Executive shall not grant any such exemption unless, having regard to the circumstances of the case, and in particular to—

- (a) the conditions, if any, which it proposes to attach to the exemption; and
- (b) any other requirements imposed by or under any enactment which apply to the case,

it is satisfied that the health and safety of persons who are likely to be affected by the exemption will not be prejudiced in consequence of it.

Extension outside Great Britain

31. These Regulations shall apply to and in relation to premises and activities outside Great Britain to which sections 1 to 59 and 80 to 82 of the Health and Safety at Work etc. Act 1974 apply by virtue of Articles 6 and 7 of the Health and Safety at Work etc. Act 1974 (Application outside Great Britain) Order 1977(7) as they apply within Great Britain.

Disapplication of duties

32. The duties imposed by these Regulations shall not extend to—

- (a) the master or crew of a sea-going ship or to the employer of such persons, in relation to the normal ship-board activities of a ship's crew under the direction of the master; or
- (b) any person, in relation to any aircraft or hovercraft which is moving under its own power.

Revocations and modifications

33.—(1) The instruments specified in column 1 of Part I of Schedule 2 are revoked to the extent specified in the corresponding entry in column 3 of that Part.

(2) The enactments and instruments specified in Part II of Schedule 2 shall be modified to the extent specified in that Part.

(3) In the Mines and Quarries Act 1954, the Mines and Quarries (Tips) Act 1969(8) and the Mines Management Act 1971(9), and in regulations made under any of those Acts, or in health and safety regulations, any reference to any of those Acts shall be treated as including a reference to these Regulations.

Signed by order of the Secretary of State.

7th April 1989

Patrick Nicholls
Parliamentary Under Secretary of State,
Department of Employment

(7) S.I. 1977/1232.

(8) 1969 c. 10.

(9) 1971 c. 20.