

33.—When any means or appliance for securing health or safety is provided under these Regulations for the use of any person, that person shall use the means or appliance.

34.—A person shall not wilfully misuse or interfere with any means or appliance provided under these Regulations for securing health, safety or welfare.

Sealed with the Official Seal of the Ministry of Labour for Northern Ireland this 12th day of April, 1945, in the presence of

(L.S.)

F. C. S. Moore,

Assistant Secretary.

SPECIAL REGULATIONS, DATED 1ST DAY OF OCTOBER, 1945, MADE BY THE MINISTRY OF LABOUR UNDER SECTION 65 OF THE FACTORIES ACT (NORTHERN IRELAND), 1938.

1945. No. 113

The Ministry of Labour for Northern Ireland (hereinafter referred to as "the Ministry"), in pursuance of the powers conferred upon it by Section 65 of the Factories Act (Northern Ireland), 1938, (hereinafter referred to as "the Act") and of all other powers enabling it in that behalf, hereby makes the following Special Regulations :—

PART I

Preliminary

1.—(1) These Regulations may be cited as the Electricity (Factories Act) Special Regulations (Northern Ireland), 1945, and shall come into force on the 19th day of November, 1945.

(2) The Regulations made by the Secretary of State on the 23rd December, 1908, under Section 79 of the Factory and Workshop Act, 1901 (a), for the generation, transformation, distribution and use of electrical energy in premises under the Factory and Workshop Acts, 1901 and 1907 (b), are hereby revoked so far as they relate to Northern Ireland.

2. These Regulations shall, subject to the provisions of Regulation 4 hereof, apply to the generation, transformation, conversion, switching, controlling, regulating, distribution and use of electrical energy in any factory and in any premises, place, process, operation or work to which the provisions of Part IV of the Act with respect to special regulations for safety and health are applied by that Act.

(a) 1 Edw. 7, c. 22.

(b) S. R. & O. 1908, No. 1312.

3. In these Regulations the following expressions* have the meanings hereby assigned to them respectively; that is to say :—

“ *Pressure* ” means the difference of electrical potential between any two conductors, or between a conductor and earth as read by a hot wire or electrostatic volt-meter.

“ *Low-Pressure* ” means a pressure in a system normally not exceeding 250 volts where the electrical energy is used.

“ *Medium-Pressure* ” means a pressure in a system normally above 250 volts, but not exceeding 650 volts, where the electrical energy is used.

“ *High-Pressure* ” means a pressure in a system normally above 650 volts, but not exceeding 3,000 volts, where the electrical energy is used or supplied.

“ *Extra-high Pressure* ” means a pressure in a system normally exceeding 3,000 volts, where the electrical energy is used or supplied.

“ *System* ” means an electrical system in which all the conductors and apparatus are electrically connected to a common source of electro-motive force.

“ *Conductor* ” means an electrical conductor arranged to be electrically connected to a system.

“ *Apparatus* ” means electrical apparatus, and includes all apparatus, machines, and fittings in which conductors are used, or of which they form a part.

“ *Circuit* ” means an electrical circuit forming a system or branch of a system.

“ *Insulating stand* ” means a floor, platform, stand or mat

“ *Insulating screen* ” means a screen

“ *Insulating boots* ” means boots

“ *Insulating gloves* ” means gloves

“ *Covered with insulating material* ” means adequately covered with insulating material of such quality and thickness that there is no danger.

“ *Bare* ” means not covered with insulating material.

“ *Live* ” means electrically charged.

“ *Dead* ” means at, or about, zero potential, and disconnected from any live system.

“ *Earthed* ” means connected to the general mass of earth in such manner as will ensure at all times an immediate discharge of electrical energy without danger.

“ *Sub-station* ” means any premises, or that part of any premises, in which electrical energy is transformed or converted to or from pressure

* Printed in *italics*.

above medium pressure, except for the purpose of working instruments, relays, or similar auxiliary apparatus ; if such premises or part of premises are large enough for a person to enter after the apparatus is in position.

“ *Switchboard* ” means the collection of switches or fuses, conductors, and other apparatus in connection therewith, used for the purpose of controlling the current or pressure in any system or part of a system.

“ *Switchboard passage-way* ” means any passage-way or compartment large enough for a person to enter, and used in connection with a switchboard when live.

“ *Authorised person* ” means (a) the occupier, or (b) a contractor for the time being under contract with the occupier, or (c) a person employed, appointed, or selected by the occupier, or by a contractor as aforesaid, to carry out certain duties incidental to the generation, transformation, conversion, switching, controlling, regulating, distribution, or use of electrical energy, such occupier, contractor, or person being a person who is competent for the purposes of the regulation in which the term is used.

“ *Danger* ” means danger to health or danger to life or limb from shock, burn, or other injury to persons employed, or from fire attendant upon the generation, transformation, conversion, switching, controlling, regulating, distribution, or use of electrical energy.

“ *Public Supply* ” means the supply of electrical energy (a) by any statutory body, local authority, company, or person authorised by Act of Parliament or by Special Order granted and confirmed by the Ministry of Commerce for Northern Ireland to give a supply of electrical energy ; or (b) otherwise under the regulations of the said Ministry of Commerce.

PART II

Exemptions

4.—(1) Nothing in Regulations 7, 8, 9, 12, 14, 15, 16, 20, 21, 22, 26, 27, 28, 29, 30, 31, 33, 34, 35 and 36 shall apply, unless on account of special circumstances the Ministry shall give notice to the occupier that this exemption does not apply—

- (a) To any system in which the pressure does not exceed low pressure direct or 125 volts alternating ;
- (b) In any public supply generating station, to any system in which the pressure between it and earth does not exceed low pressure ;
- (c) In any above-ground sub-station for public supply, to any system not exceeding low pressure.

(2) Nothing in these Regulations shall apply to any service lines or apparatus on the supply side of the consumer's terminals, or to any

chamber containing such service lines or apparatus, where the supply is given from outside under the regulations of the Ministry of Commerce for Northern Ireland ; provided always that no live metal is exposed so that it may be touched.

(3) If the occupier can show, with regard to any requirement of these Regulations, that the special conditions in his premises are such as adequately to prevent danger, that requirement shall be deemed to be satisfied ; and the Ministry may by Order direct that any class of special conditions defined in the Order shall be deemed for the purposes of all or any of the requirements of these Regulations adequately to prevent danger, and may revoke such Order.

(4) Nothing in these Regulations shall apply to any process or apparatus used exclusively for electro-chemical or electro-thermal or testing or research purposes ; provided such process be so worked and such apparatus so constructed and protected and such special precautions taken as may be necessary to prevent danger.

(5) The Ministry may, by Order, exempt from the operation of all or any of these Regulations any premises to which any special rules or regulations under any other Act as to the generation, transformation, conversion, switching, controlling, regulating, distribution or use of electrical energy apply, and may revoke such Order.

(6) The Ministry may, if satisfied that safety is otherwise practically secured, or that exemption is necessary on the ground of emergency or special circumstances, grant such exemption by Order, subject to any conditions that may be prescribed therein ; and may revoke such Order.

(7) Nothing in these Regulations shall apply to domestic factories or domestic workshops.

(8) Nothing in these Regulations shall apply to apparatus, other than portable apparatus, forming part of the permanent electrical installation of a building, structure, ship or place by reason only that the apparatus, or the installation of which it forms a part, is used for the lighting of any building operation or work of engineering construction or work in a ship to which the provisions of Section 109 (2) or Section 110 of the Act apply or for the supply of electrical energy for the purposes of any such operation or work.

PART III

Duties

5. It shall be the duty of the occupier to comply with these Regulations, and it shall be the duty of all agents, workmen and persons employed to conduct their work in accordance with these Regulations.

6. All apparatus and conductors shall be sufficient in size and power for the work they are called upon to do, and so constructed, installed,

protected, worked and maintained as to prevent danger so far as is reasonably practicable.

7. All conductors shall either be covered with insulating material, and further efficiently protected where necessary to prevent danger, or they shall be so placed and safeguarded as to prevent danger so far as is reasonably practicable.

8. Every switch, switch fuse, circuit-breaker, and isolating link shall be :—(a) so constructed, placed, or protected as to prevent danger ; (b) so constructed and adjusted as accurately to make and to maintain good contact ; (c) provided with an efficient handle or other means of working, insulated from the system, and so arranged that the hand cannot inadvertently touch live metal ; (d) so constructed or arranged that it cannot accidentally fall or move into contact when left out of contact.

9. Every switch intended to be used for breaking a circuit and every circuit-breaker shall be so constructed that it cannot with proper care be left in partial contact. This applies to each pole of double-pole or multipole switches or circuit-breakers.

Every switch intended to be used for breaking a circuit and every circuit-breaker shall be so constructed that an arc cannot accidentally be maintained.

10. Every fuse, and every automatic circuit-breaker used instead thereof shall be so constructed and arranged as effectively to interrupt the current before it so exceeds the working rate as to involve danger. It shall be of such construction or be so guarded or placed as to prevent danger from over-heating, or from arcing or the scattering of hot metal or other substance when it comes into operation. Every fuse shall be either of such construction or so protected by a switch that the fusible metal may be readily renewed without danger.

11. Every electrical joint and connection shall be of proper construction as regards conductivity, insulation, mechanical strength and protection.

12. Efficient means, suitably located, shall be provided for cutting off all pressure from every part of a system, as may be necessary to prevent danger.

13. 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.

14. Where one of the conductors of a system is connected to earth, no single-pole switch, other than a link for testing purposes or a switch for use in controlling a generator, shall be placed in such conductor or any branch thereof.

A switch, or automatic or other cut-out may, however, be placed in the connection between the conductor and earth at the generating station, for use in testing and emergencies only.

15. Where one of the main conductors of a system is bare and uninsulated; such as a bare return of a concentric system, no switch, fuse, or circuit-breaker shall be placed in that conductor, or in any conductor connected thereto, and the said conductor shall be earthed.

Nevertheless, switches, fuses, or circuit-breakers may be used to break the connection with the generators or transformers supplying the power; provided that in no case of bare conductor the connection of the conductor with earth is thereby broken.

16. Every motor, converter and transformer shall be protected by efficient means suitably placed, and so connected that all pressure may thereby be cut off from the motor, converter or transformer as the case may be, and from all apparatus in connection therewith; provided, however, that where one point of the system is connected to earth, there shall be no obligation to disconnect on that side of the system which is connected to earth.

17. Every electrical motor shall be controlled by an efficient switch or switches for starting and stopping, so placed as to be easily worked by the person in charge of the motor.

In every place in which machines are being driven by any electric motor, there shall be means at hand for either switching off the motor or stopping the machines if necessary to prevent danger.

18. Every flexible wire for portable apparatus, for alternating currents or for pressures above 150 volts direct current, shall be connected to the system either by efficient permanent joints or connections, or by a properly constructed connector.

In all cases where the person handling portable apparatus or pendant lamps with switches, for alternating current or pressures above 150 volts direct current, would be liable to get a shock through a conducting floor or conducting work or otherwise, if the metal work of the portable apparatus became charged, the metal work must be efficiently earthed; and any flexible metallic covering of the conductors shall be itself efficiently earthed and shall not itself be the only earth connection for the metal of the apparatus. And a lampholder shall not be in metallic connection with the guard or other metal work of a portable lamp.

In such places and in any place where the pressure exceeds low pressure, the portable apparatus and its flexible wire shall be controlled by efficient means suitably located, and capable of cutting off the pressure, and the metal work shall be efficiently earthed independently of any flexible metallic cover of the conductors, and any such flexible covering shall itself be independently earthed.

19. The general arrangement of switchboards shall, so far as reasonably practicable, be such that—

- (a) All parts which may have to be adjusted or handled are readily accessible.
- (b) The course of every conductor may where necessary be readily traced.
- (c) Conductors, not arranged for connection to the same system, are kept well apart, and can where necessary be readily distinguished.
- (d) All bare conductors are so placed or protected as to prevent danger from accidental short circuit.

20. Every switchboard having bare conductors normally so exposed that they may be touched, shall, if not located in an area or areas set apart for the purposes thereof, where necessary be suitably fenced or enclosed.

No person except an authorised person, or a person acting under his immediate supervision, shall for the purpose of carrying out his duties have access to any part of an area so set apart.

21. All apparatus appertaining to a switchboard and requiring handling, shall so far as practicable be so placed or arranged as to be operated from the working platform of the switchboard, and all measuring instruments and indicators connected therewith shall, so far as practicable, be so placed as to be observed from the working platform. If such apparatus be worked or observed from any other place, adequate precautions shall be taken to prevent danger.

22. At the working platform of every switchboard and in every switchboard passage-way, if there be bare conductors exposed or arranged to be exposed when live so that they may be touched, there shall be a clear and unobstructed passage of ample width and height, with a firm and even floor. Adequate means of access, free from danger, shall be provided for every switchboard passage-way.

The following provisions shall apply to all such switchboard working platforms and passage-ways constructed after January 1st, 1909, unless the bare conductors, whether overhead or at the sides of the passage-ways, are otherwise adequately protected against danger by divisions or screens or other suitable means :—

- (a) Those constructed for low-pressure and medium-pressure switchboards shall have a clear height of not less than 7 ft., and a clear width measured from bare conductor of not less than 3 ft.
- (b) Those constructed for high-pressure and extra high-pressure switchboards, other than operating desks or panels working solely at low-pressure, shall have a clear height of not less

than 8 ft. and a clear width measured from bare conductor of not less than 3 ft. 6 in..

- (c) Bare conductors shall not be exposed on both sides of the switchboard passage-way unless either (i) the clear width of the passage is in the case of low-pressure and medium-pressure not less than 4 ft. 6 in., and in the case of high-pressure and extra high-pressure not less than 8 ft., in each case measured between bare conductors, or (ii) the conductors on one side are so guarded that they cannot be accidentally touched.

23. In every switchboard for high-pressure or extra high-pressure :—

- (a) Every high-pressure and extra high-pressure conductor within reach from the working platform or in any switchboard passage-way shall be so placed or protected as adequately to prevent danger.
- (b) The metal cases of all instruments working at high-pressure or extra high-pressure shall be either earthed or completely enclosed with insulating covers.
- (c) All metal handles of high-pressure and extra high-pressure switches, and, where necessary to prevent danger, all metal gear for working the switches, shall be earthed.
- (d) When any work is done on any switchboard for high-pressure or extra high-pressure the switchboard shall be made dead unless—
- (1) the section of the switchboard on which the work is done (hereinafter referred to as “ the relevant section ”) is made dead and every other section which is live is either (i) so separated from the relevant section by permanent or removable divisions or screens as not to be a source of danger to persons working on the relevant section, or (ii) in such a position or of such construction as to be as safe as if so separated as aforesaid ; or
 - (2) the switchboard itself is so arranged as to secure that the work is done without danger without taking any of the precautions aforesaid.

24. All parts of generators, motors, transformers, or other similar apparatus, at high-pressure or extra high-pressure, and within reach from any position in which any person employed may require to be, shall be, so far as reasonably practicable, so protected as to prevent danger.

25. Where a high-pressure or extra high-pressure supply is transformed for use at a lower pressure, or energy is transformed up to above low-pressure, suitable provision shall be made to guard against danger by reason of the lower pressure system becoming accidentally charged

above its normal pressure by leakage or contact from the higher-pressure system.

26. Where necessary to prevent danger, adequate precautions shall be taken either by earthing or by other suitable means to prevent any metal other than the conductor from becoming electrically charged.

27. Adequate precautions shall be taken to prevent any conductor or apparatus from being accidentally or inadvertently electrically charged when persons are working thereon.

28. Where necessary adequately to prevent danger, insulating stands or screens shall be provided and kept permanently in position, and shall be maintained in sound condition.

29. Portable insulating stands, screens, boots, gloves, or other suitable means shall be provided and used when necessary adequately to prevent danger, and shall be periodically examined by an authorised person.

30. Adequate working space and means of access, free from danger, shall be provided for all apparatus that has to be worked or attended to by any person.

31. All those parts of premises in which apparatus is placed shall be adequately lighted to prevent danger.

32. All conductors and apparatus exposed to the weather, wet, corrosion, inflammable surroundings or explosive atmosphere, or used in any process or for any special purpose other than for lighting or power, shall be so constructed or protected, and any special precautions shall be taken as may be necessary adequately to prevent danger in view of such exposure or use.

33. No person except an authorised person or a competent person acting under his immediate supervision shall undertake any work where technical knowledge or experience is required in order adequately to avoid danger ; and no person shall work alone in any case in which the Ministry directs that he shall not. No person except an authorised person, or a competent person over 21 years of age acting under his immediate supervision, shall undertake any repair, alteration, extension, cleaning, or such work where technical knowledge or experience is required in order to avoid danger, and no one shall do such work unaccompanied.

Where a contractor is employed, and the danger to be avoided is under his control, the contractor shall appoint the authorised person, but if the danger to be avoided is under the control of the occupier, the occupier shall appoint the authorised person.

34. Instructions as to the treatment of persons suffering from electric shock shall be affixed in all premises where electrical energy is generated, transformed, or used above low-pressure ; and in such

premises, or classes of premises, in which electrical energy is generated, transformed or used at low-pressure, as the Ministry may direct.

35. Every sub-station shall be substantially constructed, and shall be so arranged that no person other than an authorised person can obtain access thereto otherwise than by the proper entrance, or can interfere with the apparatus or conductors therein from outside, and shall be provided with efficient means of ventilation and be kept dry.

36. Every sub-station shall be under the control of an authorised person, and none but an authorised person or a person acting under his immediate supervision shall enter any part thereof where there may be danger.

37. Every underground sub-station not otherwise easily and safely accessible shall be provided with adequate means of access by a door or trap-door, with a staircase or ladder securely fixed and so placed that no live part of any switchboard or any bare conductor shall be within reach of a person thereon: Provided, however, that the means of access to such sub-station shall be by a doorway and staircase (a) if any person is regularly employed therein, otherwise than for inspection or cleaning, or (b) if the sub-station is not of ample dimensions and there is therein either moving machinery other than ventilating fans or extra high-pressure.

Sealed with the Official Seal of the Ministry of Labour for Northern Ireland this 1st day of October, 1945, in the presence of

(L.S.)

F. C. S. Moore,

Assistant Secretary.

Weekly hours of Young Persons under sixteen in the Printing, Bookbinding and Allied Industries

REGULATIONS, DATED 27TH DECEMBER, 1945, MADE BY THE MINISTRY OF LABOUR UNDER SECTION 77 (2) OF THE FACTORIES ACT (NORTHERN IRELAND), 1938.

1945. No. 131

The Ministry of Labour for Northern Ireland (in these Regulations referred to as "the Ministry"), in pursuance of the powers conferred upon it by sub-section (2) of Section 77 of the Factories Act (Northern Ireland), 1938 (a) (hereinafter referred to as "the Act") and of all other powers enabling it in that behalf, hereby makes the following Regulations:—

1. The Factories (Weekly hours of Young Persons under sixteen in the Printing, Bookbinding and Allied Industries) Regulations

(a) 2 Geo. 6. Ch. 23.