1981 No. 214

ELECTRICITY

The Electricity (Overhead Lines) Regulations (Northern Ireland) 1981

Made	*29th June 1981*
Coming into operation . . .	*1st September 1981*

The Department(**a**), of Commerce in exercise of the powers conferred on it by Article 36 of the Electricity Supply (Northern Ireland) Order 1972(**b**), and of every other power enabling it in that behalf, hereby makes the following Regulations.

PART I

Citation and commencement

1. These regulations may be cited as the Electricity (Overhead Lines) Regulations (Northern Ireland) 1981 and shall come into operation on 1st September 1981.

Interpretation

2. In these regulations the following expressions have the meanings hereby assigned to them:

"connected with earth" means connected with the general mass of earth in such a manner as will ensure at all times an immediate and safe discharge of energy;

"the Department" means the Department of Commerce;

"high voltage" means a voltage exceeding 650 volts;

"line conductor" means a conductor used or to be used for conveying a supply of electricity;

"low voltage" means a voltage not exceeding 650 volts;

"metalwork" means any metalwork other than a line conductor or earth lead;

"support" includes stays and struts, but does not include (*a*) insulators or their fittings or (*b*) metal brackets or fittings attached to buildings or structures.

Application

3.—(1) Subject to paragraph (4), Part II shall apply to electric lines placed above ground and erected before the coming into operation of these regulations being electric lines under the control of the Service.

(2) Subject to paragraph (4), Part III shall apply to electric lines placed above ground and erected by the Service after the date of coming into operation of these regulations.

(3) Subject to paragraph (4), Part IV shall apply to all electric lines whether placed above ground and erected before or after the coming into operation of these regulations, being electric lines under the control of the Service.

(4) These regulations shall not apply to any electric line above the ground within premises which are under the control of the Service and to which the public does not normally have access.

(**a**) Formerly Ministry: *see* 1973 c. 36 s. 40 and Sch. 5 para. 8(1)
(**b**) S.I. 1972/1072 (N.I. 9)

(5) References in Parts II, III and IV to electric lines or any description thereof are references to electric lines to which those Parts respectively apply.

Revocation

4. Any regulations relating solely to overhead lines made under section 6 of the Electric Lighting Act 1882(a) and continued in force by virtue of Article 36(3) of the Electricity Supply (Northern Ireland) Order 1972 shall cease to have effect.

PART II

EXISTING ELECTRIC LINES

Use of existing lines

5. The Service shall not use any line conductor or service line which does not meet the requirements of this Part.

Strength of line conductors

6. Every line conductor shall comply, as regards elongation, breaking load and elasticity with the specification of the British Engineering Standards Association or, as the case may be, the British Standards Institution in force at the date of its erection.

Minimum size of line conductors

7.—(1) Copper and other line conductors (other than service lines) shall be of such size as to have an actual breaking load of not less than 5502 newtons the equivalent minimum cross-sectional area and weight per kilometre being as follows:—

Conductor diameter	*Cross-sectional area*	*Weight per Km*
mm	sq mm	kg
4.06	12.9	115.4

(2) Service lines shall be of such size as to have an actual breaking load of not less than 3630 newtons, the equivalent minimum cross-sectional area and weight per kilometre of copper being as follows:—

Conductor diameter	*Cross-sectional area*	*Weight per Km*
mm	sq mm	kg
3.25	8.3	73.9

Minimum height of line conductors

8.—(1) The height above ground of any line conductor, at any point where it is over any road accessible to vehicular traffic, shall not, at a temperature of 50° Celsius, be less than the appropriate height specified in column 2 of Schedule 1.

(2) The height above ground of any line conductor, at any point where it is not over any road accessible to vehicular traffic, shall not, at a temperature of 50° Celsius, be less than the appropriate height specified in column 3 of Schedule 1; but this requirement shall not apply to:—

(*a*) any line conductor surrounded by insulating material suitable for the conditions under which it is to be used;

(a) 1882 c. 56

(*b*) any line conductor which is not so surrounded by insulating material and which is at least 4.3 metres above ground and connects transforming, switching or other equipment mounted on supports carrying line conductors with other such equipment or with any other line conductor; or

(*c*) any line conductor connected with earth.

(3) Paragraphs 1 and 2 do not apply to any line conductor in respect of which there exists a consent with regard to the height thereof from the Department given before the making of these Regulations and which is placed in accordance with that consent.

Danger notices

9. Every support carrying a high voltage line conductor shall be numbered consecutively and shall have a danger notice of a permanent character securely fixed to it. Adequate provision shall also be made to prevent unauthorised persons from climbing on the supports.

PART III

NEW ELECTRIC LINES

Restriction on placing electric lines above ground

10.—(1) The Service shall not:—

(*a*) place above ground any electric line;

(*b*) erect any support carrying line conductors; or

(*c*) place above ground any wire or cable attached to any such support; otherwise than in accordance with the provisions of this Part.

(2) Any electric line, support or wire or cable placed or erected in accordance with the provisions of paragraph (1) shall be so maintained that it complies with the provisions of this Part.

Minimum size of line conductors

11.—(1) Every line conductor placed above ground shall have a cross-sectional area of not less than 12 square millimetres except as provided for in paragraph (2).

(2) A line conductor with a cross-sectional area of less than that required by paragraph (1) but not less than 4 square millimetres may be placed above ground provided that:—

(*a*) where such a line conductor is in the open air and is not ordinarily accessible from the ground or from any building or structure, it is fixed at intervals not exceeding 5 metres to a support or to a building or structure;

(*b*) where such a line conductor is in the open air and is ordinarily accessible from the ground or from any building or structure, it is fixed at intervals to a support or to a building or structure in such a manner that it lies throughout its length as close as practicable against such support, building or structure.

Minimum height of line conductors

12.—(1) The height above ground of any line conductor, at any point where it is over any road accessible to vehicular traffic, shall not, at its likely maximum temperature (whether or not in use), be less than the appropriate height specified in column 2 of Schedule 2.

(2) The height above ground of any line conductor, at any point where it is not over any road accessible to vehicular traffic, shall not, at its likely maximum

temperature (whether or not in use), be less than the appropriate height specified in column 3 of Schedule 2 but this requirement shall not apply to:—

(*a*) any line conductor surrounded by insulating material suitable for the conditions under which it is to be used;

(*b*) any line conductor which is not so surrounded by insulating material and which is at least 4.3 metres above ground and connects transforming, switching or other equipment mounted on supports carrying line conductors with other such equipment or with any other line conductor; or

(*c*) any line conductor connected with earth.

Minimum height of wires and cables other than line conductors

13. The height above ground of any wire or cable which is attached to a support carrying any line conductor shall not, at its likely maximum temperature (whether or not in use), be less than 5.8 metres at any point where it is over any road accessible to vehicular traffic.

Warning notices

14. There shall be kept affixed to any support carrying a high voltage line conductor a notice inscribed with the word "DANGER" in white letters of at least 30 millimetres in height on a red background, or in red letters of the same dimensions on a white background.

PART IV

ALL ELECTRIC LINES

Materials of line conductors

15. Every line conductor shall be made of copper, aluminium or steel, or any alloys thereof, or any combination of any of such materials.

Stress limitations in line conductors and other wires and cables

16.—(1) In the case of a line conductor to which Part I of Schedule 3 applies the tension in that line conductor, or in any wire or cable attached to any support, bracket or fitting carrying such line conductor, shall be such that at a temperature of minus 5.6 degrees Celsius the forces specified in paragraph 2(*a*) of Schedule 3 can be accepted without the tension exceeding 40 per centum of the breaking load of that line conductor, wire or cable.

(2) In the case of any other line conductor, the tension in that line conductor, or in any wire or cable attached to any support, bracket or fitting carrying such line conductor, shall be such that at a temperature of minus 5.6 degrees Celsius the forces specified in paragraph 5(*a*) of Schedule 3 can be accepted without the tension exceeding 50 per centum of the breaking load of that line conductor, wire or cable.

Supports

17.—(1) Every support carrying a line conductor shall be made of wood, steel, reinforced concrete or pre-stressed reinforced concrete or any combination of any such materials, and, in any case in which wood or steel is used in the construction of a support, such wood or steel shall be so far as is reasonably practicable protected against decay or corrosion, as the case may be.

(2) Subject to paragraph (3) hereof every support and the foundations thereof shall be so constructed and sited, taking into account the reaction of the ground in which they are to be embedded to the loads which they are designed to carry, as to withstand simultaneously the forces specified in paragraph 5(*b*) of Schedule 3 without the stress

in the support or any of its constituent members exceeding 40 per centum of whichever of the following is appropriate:—

(*a*) the elastic limit in the case of all steel members other than crossarms, bracings and stays fixed to wooden, reinforced concrete or pre-stressed reinforced concrete supports;

(*b*) the ultimate tensile stress in the case of steel crossarms, bracings and stays fixed to wooden, reinforced concrete or pre-stressed reinforced concrete supports;

(*c*) the ultimate extreme fibre stress in the case of wooden supports and wooden crossarms;

(*d*) the ultimate compressive or shear stress of the material concerned;

(*e*) the crippling load of any strut;

(*f*) the maximum stress which can be accepted throughout a reinforced or pre-stressed reinforced concrete support without failure or inability to support further load.

(3) For the purposes of paragraph (2) hereof the forces specified in paragraph 2(*b*) of Schedule 3 shall apply in place of those specified in paragraph 5(*b*) of that Schedule in the case of any support carrying a line conductor to which Part I of that Schedule applies.

(4) The strength of every support carrying a line conductor shall, in the direction of such line conductor or the mean direction as the case may be, be not less than one quarter of its required strength in a horizontal direction at right angles to such direction.

(5) The minimum diameter of a wooden support at a point 1.5 metres above the butt shall be 150 millimetres.

Position, insulation and protection of line conductor

18.—(1) Every line conductor or part thereof (other than a line conductor connected with earth) which is not ordinarily accessible from the ground or from a building or structure shall either:—

(*a*) be supported at appropriate intervals by insulators suitable for the conditions under which it is to be used; or

(*b*) be effectively insulated by surrounding it with, or encasing it in, material suitable for the conditions under which it is to be used.

(2) Every line conductor or part thereof (other than a line conductor connected with earth) which is ordinarily accessible from the ground or from a building or structure shall be effectively insulated by surrounding it with, or encasing it in, material suitable for the conditions under which it is to be used, and every such line conductor or part thereof and any insulating material surrounding or encasing it shall be protected so far as is reasonably practicable against mechanical damage or interference.

(3) Any bare low voltage line conductor not connected with earth shall be situated throughout its length, vertically above a bare earth wire or a bare line conductor which is connected with earth.

Earthing connections

19.—(1) Any metalwork attached to, or forming part of, any support carrying a line conductor, other than a wooden pole, and every metal transformer case shall be connected with earth.

(2) Any metal bracket which carries a line conductor not connected with earth and which is attached to, in contact with or adjacent to any metalwork on or forming part