

33218, deposited in the office of the Minister of Public Works, at Wellington, in the Wellington Provincial District.

### SCHEDULE.

#### CONDITIONS.

1. In the following conditions,—

“Consumer’s wires” means any electric line on a consumer’s premises which is connected with the service lines of the Board.

“Inspecting Engineer” means the Engineer or other officer appointed by the Minister for the purpose of inspecting the works to be constructed or maintained by the Board.

“Pressure” means the difference of electrical potential between any two conductors through which a supply of energy is given, or between any part of either conductor and the earth.

“Minister” means the Minister of Public Works.

“Telegraph” includes telephone.

Any metallic body to be “efficiently connected with earth” shall be connected with the general mass of the earth in such manner as will ensure at all times an immediate and safe discharge of electrical energy.

2. The supply of electrical energy shall be given to private consumers by means of direct current on the three-wire system at a pressure of 230 volts effective between each of the outer wires and the neutral and 460 volts between the two outer wires. The declared voltage at the consumers’ terminals shall be 230 and 460 volts respectively.

3. The neutral wire shall be efficiently insulated throughout its length, and shall be earthed only at the power-station. The earth connection shall be provided with a switch for cutting off the earth connection for testing, and with a recording ammeter reading to a maximum of 5 amperes.

4. The main switchboard shall be made of and be mounted on material that is not inflammable.

5. Except where otherwise provided, the overhead conductors may be of bare hard-drawn copper or aluminium wire. If at any time it is found detrimental to the public safety to have these wires bare, the Minister may require the Board to have them insulated, and they shall thereupon be insulated accordingly. No electric-light wire shall come within 3 ft. of any other class of aerial wires or of cables, except where it may be permitted to pass the electric-light wires through such other wires or cables at a pole.

6. Where lead-covered telephone cables or any open telegraph or other aerial wires are crossed above or beneath by the electric-light wires, the latter wires shall be insulated with not less than 600-megohms-per-mile grade of vulcanized rubber throughout the crossing-span, and over every such span they shall be suitably suspended from effectively earthed steel bearer-wires if the Minister of Telegraphs shall so require.

7. In places where it may be required to cross with the electric-light wires through any other aerial wires or through cables, all such through crossings, if permitted, shall be effected at a pole. In every case of a through crossing, no matter whose property the lines crossed through may be, the method of carrying the electric-light wires across the pole, protecting them thereon, preventing other wires from coming into contact with them, and protecting persons working on the poles from danger of shock, shall be to the satisfaction of the Minister of Telegraphs. Where the insulated wires cross through on the pole they shall be encased in a protecting tube for the entire length of the arms on such pole. If metal pipe is used to encase the wires it shall be effectively earthed.

8. Efficient guard-wires shall, if so required by the Minister of Telegraphs or the Minister, be erected in a manner to meet with the approval of either one Minister or the other, or both, as the case may require, at all crossings and places where the electric-light wires intersect telegraph or other wires. The Board shall bear the expense of such guard-wires in all cases where an electric-light wire intersects a telegraph or other wire previously existing.

9. In running the lines authorized by this license through streets where no telegraph lines exist, the Board shall keep to one side of the street; and in running service wires to the opposite side of the street, the Board shall arrange so as to interfere as little as possible with the route of any future telegraph line.

10. Except by permission of the Minister, all overhead electric-light pole lines shall be placed on the opposite side of the streets to that on which any telegraph-pole lines exist; and where the erection of the electric-light wires necessitates the alteration of any existing telegraph wires, and such alteration is approved by the Minister of Telegraphs, the expense of the alteration shall be borne by the Board.

11. Where the electric-light wires are on one side of a street and the telegraph wires are on the other, and service is required to be given from either to the other side of the street, the Board and the Minister of Telegraphs shall give to each other reasonable facilities as far as possible to effect supply.

12. Every main shall be tested for insulation after having been placed in position and before it is used for the purposes of supply, the testing pressure being at least 500 volts, and the Board shall duly record the results of the tests of each main or section of a main, and forthwith forward a report thereof to the District Engineer of Public Works at Auckland.

13. The insulation of every complete circuit used for the supply of energy, including all machinery, apparatus, and devices forming part of or in connection with such circuit, shall be so maintained that the leakage current shall not under any conditions exceed one-thousandth part of the maximum supply current. Every leakage shall be remedied without delay. Every such circuit shall be tested for insulation at least once in every week, and the Board shall duly record the results of the tests, and forward a report thereof at the end of each week to the District Engineer of Public Works at Auckland.

14. The sectional area of the conductor in any electric line other than service wires or connections to street lamps laid or erected in any street shall not be less than 7/18 standard wire gauge. Service wires and connections to street lamps shall not be less than No. 12 standard wire gauge if solid, or 7/20 standard wire gauge if stranded.

15. All metal pipes or coverings containing any electric wire shall be efficiently connected with earth, and shall be so jointed as to make good electrical connection throughout their whole length.

16. Arc lamps used in any street for public lighting shall be so fixed as not to be in any part at a less height than 10 ft. from the ground.

All arc lamps shall be so guarded as to prevent pieces of ignited carbon or broken glass falling from them, and shall not be used in situations where there is any danger of the presence of explosive dust or gas.

17. The variation of pressure at any consumer’s terminals shall not exceed 4 per cent. above or below the normal pressure at which he is being supplied.

18. Every support for an aerial line shall be of durable material and properly strengthened against forces due to wind-pressure, change of direction of line, and unequal length of span. The factor of safety of such supports shall be at least four if of iron, steel, or reinforced concrete, and six if of wood, taking into consideration all possible stresses, including wind-pressure at 30 lb. per square foot on plane surfaces and 18 lb. per square foot of diametrical plane for cylindrical surfaces. The stress in the aerial conductors shall not exceed 28,000 lb. per square inch for copper and 15,000 lb. per square inch for aluminium in the extreme case of a temperature of 12° Fahr. and a wind-pressure of 18 lb. per square foot of diametrical plane occurring simultaneously.

19. Earth-wires, where led down poles, shall be protected by casing for a distance of 8 ft. from the ground.

20. All aerial wires shall be attached to suitable insulators carried on cross-arms of suitable material and cross-section, and they shall be so attached to the insulators or guarded that they cannot fall away from the support. Conductors covered with insulating material shall be so attached that their insulation will not be impaired where they are secured to the insulator.

21. Any aerial wire shall not in any part thereof be at a less height from the ground than 18 ft., or within 5 ft. measured horizontally or vertically from any part of any building or erection other than a support for the line, except where brought into a building for the purpose of supply. No work of any nature shall be erected or constructed upon, over, or under any part of the New Zealand Government railways until the Board has obtained the consent of the Minister of Railways thereto, as required by section 4 of the Government Railways Amendment Act, 1910 (No. 2).

22. Service lines from aerial lines shall be led as directly as possible to insulators firmly attached to some portion of the consumer’s premises which is not accessible to any person without the use of a ladder or other special appliance. Every portion of any service line which is outside a building, and is within 7 ft. from any part of the building, shall be rubber-insulated.

23. Where an aerial line crosses a street, the angle between the line and the direction of the street at the place of crossing shall not be less than 60 degrees, and the spans shall be as short as possible. The minimum height of the line shall be 20 ft. above the street level.

24. Where an aerial line crosses or is in proximity to any metallic substance, precautions shall be taken against the possibility of the line coming into contact with the metallic substance, or of the metallic substance coming into contact with the line by breakage or otherwise.