

electric lines intersect telegraph lines or cables, if so required by the Minister of Telegraphs.

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

The cost of all necessary guard-wires and special provisions required to comply with this clause, or deemed to be necessary as a protection to telegraph lines generally, shall be borne by the licensee, when the telegraph lines are erected before the electric lines. In other cases the licensee, on receipt of notice from the District Telegraph Engineer of the Post and Telegraph Department that it is proposed to run a telegraph line along the route, shall forthwith make the necessary changes required to comply with this clause at any points at which electric lines already cross such routes, the cost of such changes being borne by the Post and Telegraph Department.

#### 17. RAILWAY CROSSINGS.

No work of any nature shall be erected or constructed upon, over, or under any part of the New Zealand Government railways until the licensee has obtained the consent of the Minister of Railways thereto, as required by section 4 of the Government Railways Amendment Act, 1910 (No. 2).

#### 18. MOTOR INSTALLATIONS.

The frames of all fixed motors shall be connected to an efficient earth by a copper conductor in accordance with the rules of the Institution of Electrical Engineers of Great Britain for earthing. All metal casings of switches, resistances, fuses, cables, and wires shall be efficiently earthed in a similar manner.

Every motor must be controlled by an efficient quick-break iron-clad switch suitable to prevent arcing, and conveniently placed so that the person in charge of the motor can cut off wholly the supply from the motor and all devices in connection therewith.

Efficient fuses or other automatic cut out must be provided to efficiently protect the conductors in each circuit from excess of current.

Every precaution shall be taken in choosing positions for and in wiring and setting-up of motors, and the necessary devices in connection therewith, so that there shall be no danger of fire being caused by their normal or abnormal action, or of shock being sustained, or in the ordinary handling thereof.

Terminals of motors must be so guarded that they cannot be accidentally touched or short-circuited.

The insulation resistance of each motor-circuit, including all devices necessary for the working of the motor, shall be not less than 1 megohm to earth when all metal parts that are required to be connected to earth are so connected.

#### 19. SERVICE CONNECTIONS TO OVERHEAD LINES.

Electric service lines from aerial lines shall be taken from insulators, and shall not be tapped off between insulators. They 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 electric service line which is outside a building and is within 7ft. from any part of the building shall be rubber-insulated.

#### 20. MAINTENANCE.

Every electric line, including its supports, its conductors, and their insulating covering, and all structural parts and electric appliances and devices belonging to or connected with the line, shall be duly and efficiently maintained and supervised by the licensee as regards both electrical and mechanical conditions.

#### 21. LINES NOT IN COMMISSION.

An electric line shall not be permitted to remain erected after it has ceased to be used for the supply of energy, unless the licensee intends within a reasonable time again to take it into use.

#### 22. LIGHTNING-ARRESTERS.

Where any portion of an electric line or any support for an electric line is exposed in such a position as to be liable to injury from lightning, it shall be efficiently protected against such liability.

#### 23. UNDERGROUND CONDUCTORS

Underground conductors shall be thoroughly insulated, and shall be protected from mechanical damage by a wooden boxing or earthenware or stoneware conduit. They shall be laid, wherever possible, under the footpaths, and with a cover of at least 9 in. from the surface of the pavement. Where laid under the roadway this cover shall be increased to 2 ft.

All conduits, pipes, casings, and street boxes used as receptacles for electric lines shall be constructed of durable material, and shall be of ample strength to prevent damage from heavy

traffic, and reasonable means shall be taken to prevent the accumulation of gas in such receptacles.

Where any underground line crosses or is in proximity to any metallic substance special precaution shall be taken against the possibility of any electrical charging of the metallic substance from the line, or from any metallic conduit pipe or casing enclosing the line.

#### 24. EARTHING CONDUITS.

All metal conduits, pipes, or casings containing an electric line shall be efficiently earthed, and shall be so jointed and connected across all street boxes and other openings as to make good electrical connection throughout their whole length.

#### 25. STREET BOXES.

The covers of street boxes shall be so secured that they cannot be opened except by means of a special appliance. Street boxes shall be either filled solid with cable compound or, if not so filled, shall be inspected from time to time for the presence of gas, and suitable action shall be taken to check its influx and accumulation.

#### 26. INSULATION OF ELECTRIC MAINS.

Every main, either overhead or underground, 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 200 volts, and the licensee shall duly record the results of the tests of each main or section of a main and forthwith forward a report thereof to the Public Works Engineer at present stationed at Dunedin.

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 by the licensee without delay. Every such circuit shall be tested for insulation at least once in every week, and the licensee shall duly record the results of the tests and forward a report thereof at the end of each month to the Public Works Engineer at present stationed at Dunedin.

#### 27. CONTINUITY OF SUPPLY.

From and after the time when the licensee commences to supply energy in pursuance of this license, he shall maintain continuously, during the period of the day for which he has agreed with any consumer to supply energy, sufficient power for the use of all the consumers for the time being entitled to be supplied; provided that for any purposes connected with the efficient working of the undertaking the Minister may give permission to the licensee to discontinue the supply at such intervals of time and for such periods as he may think expedient. When the supply is so discontinued public notice shall be given, when practicable, of such discontinuance and of the probable duration thereof.

#### 28. SERVICE CONNECTIONS.

The licensee shall be responsible for all electric lines or wires, fittings, and apparatus belonging to him or under his control which may be upon a consumer's premises being maintained in a safe condition and in all respects fit for supplying energy.

In delivering the energy to a consumer's terminals the licensee shall exercise all due precautions so as to avoid risk of causing fire on the premises.

A suitable safety-fuse or other automatic circuit-breaker shall be inserted in each electric service line within a consumer's premises as close as possible to the point of entry, and contained within a suitable locked or sealed receptacle of fire-proof construction.

All electric wires and apparatus on a consumer's premises, except such parts as require to be earthed, shall be highly insulated and suitable for the voltage at which the supply is given. They shall be thoroughly protected against injury to the insulation or access of moisture. All electric wires shall be so fixed and protected as to prevent the possibility of electrical discharge to any adjacent metallic substance.

The maximum permissible current in any conductor shall not exceed the value permitted under the rules of the Institution of Electrical Engineers of Great Britain.

#### 29. INSTALLATION ON CONSUMER'S PREMISES.

The licensee shall not connect the wires and fittings on a consumer's premises with his mains, or in the case of premises already connected continue the supply from his mains, unless he is reasonably satisfied that the requirements of this