

ELECTRICITY REGULATIONS 1939

GN 31/1939

(Lane 1/937)

21 July 1939

section 49 ELECTRICITY ACT

1. Short title

These **regulations** may be cited as the **Electricity Regulations 1939**.

2. Application of regulations

These **regulations** shall apply to every undertaker and installations for the generation, transformation, distribution and use of energy for public and private purposes:

Provided that they shall not apply to any process or apparatus used exclusively for electro-chemical or electro-thermal or testing or research purposes, if such process be so worked, and such apparatus so constructed and protected, and such special precautions taken, as may be necessary to prevent danger as shall be approved by the Board.

3. Definitions

"alternate fixture" means two electric lamps controlled by one or more switches in such a manner that only one of the two lamps can be supplied with electric at a time;

"apparatus" means electric apparatus and includes all machines, apparatus and fittings in which conductors are used or of which they form a part;

"authorised person" means a person employed, appointed or selected by the user or undertaker, or by a consumer or jointly in cases where any electric lines or apparatus are in the joint charge of the undertaker and another body, company or person, to carry

out duties incidental to the generation, transformation, distribution or use of energy, such person being competent for the purposes of the article in which the term is used;

"Board" means the Central **Electricity** Board;

"circuit" means an electrical circuit forming a system or branch of a system;

"conductor" means a wire used for the supply of energy and arranged to be electrically connected to a system;

"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;

"consumer's terminals" means supply terminals and means the point or points on the consumer's premises at which the supply of energy is delivered to the consumer from the service line;

"consumer's wiring" means the electric lines situate upon the consumer's side of the supply terminals;

"dead" means at or about earth potential and disconnected from any live system.

"domestic electric appliance" means, for the purposes of these **regulations**, any electric appliance, such as a cooker, heater, flat iron, kettle, wash boiler, water heater, vacuum cleaner, fan, wireless set, sterilizer, etc., as may be used for household services, or for personal comfort;

"electrical equipment" means an installation or part of an installation;

"feeder" means any electric line to which service lines are not normally connected:

"final sub-circuit" means an outgoing circuit connected to one way on a distribution fuse board and intended to supply energy at one or more points to current-using appliances

without the intervention of a further distribution fuse board. It includes all branches and extensions which are derived from that particular way on the board;

"fixed lamp" means a lamp so connected to the consumer's installation that it can be supplied with electric energy therefrom without the restrictions associated with alternate fixtures;

"installation" means-

- (a) The operation of erecting and connecting up the necessary plant and equipment for the application of **electricity** on any particular premises or for a specific purpose;
- (b) The complete plant and equipment necessary for the application of **electricity** on any particular premises or for a specific purpose;

"insulation" means non-conducting material enclosing, surrounding or supporting a conductor or any part thereof and of such quality and thickness as to be suitable for the purposes of the article in which the term is used;

"lamp" means an electric lamp used for illumination purposes in which metal, carbon, composite or other filament or gas is rendered incandescent by the passage of an electric current;

"lighting fixture; means a "fixed lamp" or "alternative fixture";

"line conductor" means a conductor forming part of a system and used for the transmission or supply of energy including so much of any service line as may be under the control of the undertakers;

"live" means electrically charged;

"metal structure" means metal earth guards, metal or part metal line supports, stay wires, metal parts of buildings, and all metal parts not ordinarily intended to conduct energy;

"month" unless otherwise specified means for these and any **regulations** and Orders made under the **Electricity** Act the period between the regular monthly watt-hour meter reading and the next regular monthly watt-hour meter reading;

"order" means a direction in writing or printing or part in writing and part in printing;

"overhead line" means any electric line which is placed above ground and in the open air;

"permanently and solidly earthed" means an efficient electrical connection to the general mass of the earth and in the case of a line conductor at least as often as once in every half-mile length of such conductor and without a fuse-link, switch, circuit breaker, resistor, or impedance in the earth connections, so that the total resistance between any such electrical connection and earth shall not at any time exceed ten ohms;

"permanently and solidly earthed wire" means a wire that is permanently and solidly earthed but which does not form part of a system;

"power factor" means the ratio of the total watts to the total equivalent volt-amperes;

"public road" means any street, road, thoroughfare, avenue or square;

"switchboard" means an assemblage of switchgear or fuses, conductors, and other apparatus, with or without instruments, for controlling the distribution of energy, or for controlling or protecting electrical circuits, machines, and current-using appliances. The term does not, however, apply to a group of local switches on a final sub-circuit where each switch has its own insulating base;

"switch-station" means any premises or enclosure or part thereof, being large enough to admit the entrance of a person after the apparatus therein is in position, containing

apparatus for switching, controlling or otherwise regulating energy at a voltage above medium voltage but not for transforming or converting energy (other than transforming or converting solely for the operation of switchgear or instruments), and includes the apparatus therein;

"township" means any area administered by a municipal council;

"user" means the occupier of premises containing an installation;

"undertaker" means the Board;

"voltage" means electric pressure and electromotive force, and in particular the voltage, as measured by a suitable voltmeter, between any pair of conductors forming part of a system or between any point of either conductor and the earth.

Amended by [Act No. 70 of 1951]; [Act No. 80 of 1951]; [Act No. 5 of 1967]

4. Electric line supports

Electric line supports, unless otherwise authorised in writing by the Board, and subject to the conditions of such authority, shall be confined to one side only of public roads and railways:

Provided that the requirements of this regulation shall not apply to supports used for the purpose of carrying service lines from one side to the other of such public roads and railways, unless such supports interfere with the wires of other public services.

5. Material of line conductors

Line conductors shall be of copper, cadmium copper, aluminium, bronze, or other material as may be approved by the Board.

6. Minimum size of line conductors

- (a) The minimum permissible size for copper and other line conductors (other than service lines and permanently and solidly earthed line conductors) shall be such as to have an actual breaking load of not less than one thousand two hundred and thirty-seven pounds, the equivalent minimum cross-sectional area and weight per mile for copper being as follows-

Conductor	Cross-sectional area, square inches	Weight per mile lbs
No. 10 British Standard Wire Gauge	0.0201	469

Provided that the minimum permissible size for copper and other line conductors erected outside townships, and of service lines and permanently and solidly earthed line conductors shall be such as to have an actual breaking load of not less than eight hundred and sixteen pounds, the equivalent minimum cross-sectional area and weight per mile of copper being as follows-

Conductor	Cross-sectional area, square inches	Weight per mile lbs
No. 10 British Standard Wire Gauge	0.0129	262

Provided also that permanently and solidly earthed line conductors and service lines connected thereto, which do not cross public roads, may have an actual breaking load of not less than five hundred pounds, the equivalent cross-sectional area and weight per mile of copper being as follows-

Conductor	Cross-sectional area, square inches	Weight per mile lbs
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No. 12 British Standard Wire Gauge	0.0085	160
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- (b) Provided that if required by the Board line conductors which are permanently and solidly earthed shall be of the same material and cross-section as the unearthed line conductors of the same circuit.
- (c) The provisions of the preceding paragraphs shall apply to such electric lines as shall be erected or reconstructed on or after the 1st July, 1943.
- (d) Save as herein before provided and in so far as electric lines may exist and have been erected or reconstructed otherwise than in accordance with the provisions of paragraphs (a) and (b) of this regulation, such electric lines shall, until such steps shall be taken as to make them comply with the requirements laid down in the aforesaid paragraphs and prior to, but not after, the 31st day of December, 1945, comply with the provisions of the next succeeding paragraph.

On or after the 31st day of December, 1945, every electric line to which this paragraph applies shall be erected or reconstructed in compliance with the requirements laid down in paragraphs (a) and (b) of this regulation.

- (e) The minimum permissible size for copper and other line conductors, and of service lines and permanently and solidly earthed line conductors which cross public roads, shall be such as to have an actual breaking load of not less than eight hundred and sixteen pounds, the equivalent cross-sectional area and weight per mile of copper being as follows-

Conductor	Cross-sectional area, square inches	Weight per mile lbs
No. 10 British Standard Wire Gauge	0.0129	262

Provided that service lines and permanently and solidly earthed line conductors which do not cross public roads and have a distance between any two adjacent supports not exceeding one hundred and seventy five feet, and which consist of such material and are erected in such manner that the actual breaking load of the said line conductors and service lines including attachments therefor is not less than three hundred and thirty pounds, may be used, the equivalent cross-sectional area and weight per mile for copper of the wire used being as follows-

Conductor	Cross-sectional area, square inches	Weight per mile lbs
No. 14 British Standard Wire Gauge	0.005	102

Amended by [Act No. 70 of 1951]

7. Line conductors to be inaccessible

- (a) Line conductors shall be rendered inaccessible to any person from any building or other place without the use of a ladder or other special appliance.
- (b) Regard shall be had to the normal use by the public or the occupier of any premises or land and where necessary the height of the line conductors shall be increased to provide sufficient clearance for safety in accordance with such use.

8. Line conductors crossing a public road or railway or crossing, or in proximity to or mounted on the same pole as other line conductors, telegraph wires, or metal structure.

Where a line conductor crosses a public road or railway, or crosses over, or under, or is in proximity to any other line conductor, or telegraph wire, or any metal structure, precautions shall be taken to prevent danger so far as practicable, and also to prevent

contact due to breakage or otherwise, between the line conductor and the other line conductor, telegraph wire, or metal structure.

The precautionary means to be adopted shall be-

- (1) (a) The use of conductors of ample mechanical strength, widely spaced cross arms, short spans, double or extra heavy cross arms, extra heavy metal pins or other metal insulator supports, extra heavy insulators, wires and poles properly supported and stayed, sufficient clearance between line conductors and metal structure, and, if required by the Board, wires terminated at each end of the span where the crossing occurs or where such line conductors are in proximity to any other line conductor, telegraph wire or metal structure.
- (b) The clearance between telegraph wires, and medium or low voltage line conductors, shall not, under conditions of maximum sag, be less than two feet. Provided that where telegraph wires are not erected on the same pole as the medium or low voltage line conductors, the medium or low voltage line conductors shall be placed out of reach of a lineman who may be working on any part of a pole supporting such telegraph wires.
- (c) Telegraph wires, when required to cross line conductors, shall be placed below them. Provided that telegraph wires may be placed above medium or low voltage line conductors, provided the telegraph wires have a breaking load not less than three hundred and twenty pounds, and they are efficiently protected by a covering of durable insulating material or by an earth wire run immediately above the said line conductors for the length of the span.
- (d) Line conductors shall not be placed on the same cross arm with telegraph wires, neither shall high voltage line conductors be placed on the same cross arm as medium or low voltage line conductors.

(e) Where the line conductors forming part of systems at different voltages, or line conductors and telegraph wires are erected on the same pole, adequate provisions shall be made to guard against danger to linemen and from the lower voltage system or telegraph wires being charged above their normal voltage due to leakage from the higher voltage system.

(2) Any other means approved in writing by the Board.

9. Supports

Line conductors shall be attached to suitable insulators carried on supports of iron, steel or reinforced concrete, or, subject to the approval of the Board, on supports of wood. Special precautions shall be taken to prevent the corrosion of all metal work above, at and below the surface of the ground.

10. Strength of support

The supports, in conjunction with stays or struts, if provided, shall withstand without damage and without movement in the ground the longitudinal, transverse and vertical loads which occur. In no case shall the strength of a support in the direction of the overhead line be less than one-quarter the required strength in a direction transverse to the line.

(i) The following factors of safety shall apply to each support-

Material	Factor of Safety
Iron or steel.....	2.5
Wood.....	4.5
Reinforced concrete.....	3.5

These factors of safety shall be calculated on the assumption that all line conductors, cables and wires carried by the supports are at a temperature of fifty degrees

Fahrenheit, and that together with the supports they are subjected to a wind pressure of twenty pounds per square foot at right angles to the line, calculated on the whole of the projected area.

The wind pressure on the lee side members of lattice steel or other compound structures, including A and H poles, shall be taken as one-half of the wind pressure on the windward side members.

The factor of safety shall be calculated on the crippling load of struts and upon the elastic limit of tension members.

- (ii) Provided that, in addition to the requirements of this regulation, a support constructed of rail sections and erected after the date hereof shall not consist of more than two rail sections to every main pole member and the joint between such sections shall be in the upper half of the length of the support above the ground.

11. Climbing on supports to be prevented

Adequate provisions, such as the use of tubular or rail poles erected so that the line conductors cannot be easily reached from any building, etc., or of anticlimbing spikes, shall be made to prevent unauthorised climbing of overhead line supports.

12. Factor of safety of steel or iron stay rods and stay wires

The factor of safety of steel and iron stay rods and stay wire shall be two and a half based on the breaking load.

13. Factor of safety of line conductors

The factor of safety of line conductors shall not be less than two. The factor of safety shall be based on the breaking load and shall be calculated on the assumption that the conductors are at a temperature of fifty degrees Fahrenheit, and that they are simultaneously subjected to a wind pressure of twelve pounds per square foot at right

angles to the line, calculated on the whole of the projected area of the conductors carried by the supports.

The elasticity of the metal may be allowed for in calculating the sag for line conductors.

14. Minimum height of line conductors

(a) (a) System Voltage between conductors	Minimum Height Over roads	Minimum Height Over other positions
Not exceeding 650 volts.....	18 feet	17 feet
Exceeding 650 volts but not exceeding 11,000 volts.....	19 feet	18 feet
Exceeding 11,000 volts but not exceeding 66,000 volts.....	20 feet	20 feet
All earth conductors.....	18 feet	17 feet

(b) The height from the ground of service lines where carried across or along a carriageway shall not be less than 15 and 14 feet respectively.

Amended by [GN No. 106 of 1977]

15. Service lines

Service lines shall be connected to line conductors at a point of support only, and shall be fixed to insulators on consumer's premises. Every point of a service line, other than a conductor of the service line connected to a permanently and solidly earthed line conductor, which is accessible from a building with the use of a ladder or other special appliance, shall be efficiently protected either by durable weatherproof insulating material or by other means approved by the Board.

16. Provision to prevent danger

(1) Where the voltage to earth exceeds medium voltage precautions shall be taken to prevent danger-

(i) from a broken line conductor by the provision of-

(a) a permanently and solidly earthed wire carried continuously from pole to pole and connected to a suitable metal earth guard placed immediately below the line conductors to be protected and so arranged in relation to such line conductors that in the event of breakage of anyone of them it shall make contact with the metal earth guard and thereby be earthed, and thence by the use of suitable protective devices, made dead; or

(b) other means approved by the Board.

(ii) from a leakage from line conductors by the provision:

(a) in cases where metal poles are used, of- a permanently and solidly earthed wire, running from pole to pole and electrically connected to every pole, supporting metal work of all insulators, struts and staywires; or

(b) other means approved by the Board.

(c) in cases where wooden and concrete poles are used of- a permanently and solidly earthed wire, running from pole to pole and electrically connected to every stay wire and to every bonding wire which shall itself be electrically connected to the supporting metal work of all insulators, the bonding wire terminating at the lowest part of the supporting metal work; or

(d) other means approved by the Board.

- (2) Provided that where supports carrying such overhead lines are erected in positions not less than fifty feet from a public road, and are not carrying medium or low voltage line conductors, or telegraph wires other than those where the speaking or signalling apparatus is specially insulated from the effects of high voltage in accordance with plans approved in writing by the Board, such metal guards and permanently and solidly earthed wires may, unless otherwise required by the Board, be omitted from such supports.

17. Erection of high voltage electric lines, systems and apparatus to be authorised

- (a) Electric lines, systems and apparatus for use at high voltage shall not be provided without the prior consent in writing of the Board and in accordance with such conditions as it may prescribe in such consent.
- (b) In applying for such consent, plans, specifications, etc. shall be submitted indicating clearly the technical particulars, etc. of such electric lines, systems and apparatus as may be necessary to form an opinion as to whether the installation when completed will be in accordance with the requirements of these **regulations**.

Electric lines, system and apparatus to be certified

- (c) Every such electric line, system and apparatus shall be certified by an Inspector as having been designed, constructed, erected or laid in accordance with the requirements of this regulation before any such electric line, system or apparatus is brought into use for the purposes of the supply of energy.

18. Insulation test of high voltage electric lines, circuits and apparatus

- (a) All electric lines, circuits and apparatus for use at high voltage shall be tested by the undertakers for resistance of insulation after having been placed in position and before being brought into use for the purposes of the supply of energy.

- (b) The said electric lines, circuits and apparatus shall not be brought into use for the purposes of the supply of energy unless the insulation of every point thereof has withstood the continuous application between conductors and also between conductors and earth during a period of not less than one-half minute of alternating current at a testing voltage equal to at least one and a half-times the pressure of supply.
- (c) Where any high voltage electric line, circuit or apparatus has been disconnected from a system for alteration or repair, such electric line circuit or apparatus shall not be reconnected to the system until the undertakers have satisfied themselves that the insulation of the electric line, circuit or apparatus is in sound condition.
- (d) The resistance of insulation of all electric lines, circuits and apparatus for use at high voltage shall be determined by the undertakers at least once every twelve months.
- (e) The undertakers shall duly record the result of any tests made under this regulation.

19. Protection against excess leakage

- (a) Every electric line for use at high voltage and all apparatus associated therewith shall be provided with an efficient automatic device which will ensure at all times an immediate and safe discharge of energy in the event of any excess leakage.
- (b) All electric lines for use at high voltage (other than overhead lines and electric lines situated in generating stations, sub-stations and switch-stations, including outdoor sub-stations and outdoor switch-stations) shall have the conductors enclosed in metal sheathing which shall be electrically continuous and permanently and efficiently connected with earth; and the conductivity of the metal sheathing shall be maintained and precautions taken where necessary to avoid corrosion of the sheathing.

- (c) In the event of a failure of insulation occurring between one conductor and the metal sheathing at any point along an electric line for use at high voltage, the impedance shall be such that with the full voltage of supply maintained at the point where energy is given to the system or circuit of which the said electric line forms part, the current resulting from such failure shall not be less than twice the value of the current for which the aforesaid automatic devices are set to operate. The value of the resulting current shall be ascertained either by tests or by computation, but in the latter case the conductivity of the earth itself shall be disregarded. Where the neutral point of the system is connected with earth through a resistance, the value of such resistance shall be added to the value of the resistance of the metal sheathing for the purpose of computation. To provide for the contingency of faults to earth developing simultaneously at different places on two phases of an alternating current system at high voltage, the computation of the resulting current in the case of systems not connected with earth shall be made on the assumption that the neutral point of the system is earthed without resistance.

20. Generators, motors and transformers to be protected

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

21. Access by public forbidden

Adequate means shall be provided for preventing access by the public or any unauthorised person to any part of an installation which is designed to be electrically charged at high voltage.

22. General conditions as to transformation, control, etc

Energy transmitted, supplied or used at high voltage may be transformed, converted, regulated or otherwise controlled as the case may be in sub-stations and switch-stations, including outdoor sub-stations and outdoor switch-stations, in completely enclosed street boxes or similar structures erected above ground, in street boxes constructed underground, in fire-resisting casings on the premises of a consumer, on the supports of overhead lines, or in other suitable positions adjacent to the electric lines of the system concerned:

Provided that-

- (i) (i) Sub-stations and switch-stations shall preferably be erected above ground, but where necessarily constructed underground there shall be due provision for drainage. They 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.
- (ii) (ii) Sub-stations and switch-stations 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.
- (iii) Where energy is transformed, suitable provision shall be made by connecting with earth a point of the system at the lower voltage or otherwise as the Board in its discretion may order, to guard against danger by reason of the said system becoming accidentally charged above its normal voltage by leakage from or contact with the system at the higher voltage.
- (iv) Outdoor sub-stations and outdoor switch-stations shall (except in cases where the apparatus is completely enclosed in the manner described in paragraph (vi) hereof and connected with the system by armoured electric lines) be efficiently protected by fencing not

less than eight feet in height, or such other means as the Board may approve so as to prevent access to the electric lines and apparatus therein by any unauthorised person.

- (v) Underground street boxes containing transformers shall not also contain switches or other apparatus, and any switches, fusible cut-outs or apparatus required for controlling or other purposes shall be fixed in separate receptacles preferably above ground.
- (vi) Fire-resisting casings on the premises of a consumer shall be of metal efficiently connected with earth or of any other material of which the Board may approve, and shall completely enclose the whole of the electric lines (other than overhead lines) and apparatus on the premises designed to be, electrically charged at high voltage and shall be secured so as to prevent access by unauthorised persons. They shall be labelled with an appropriate danger notice and with the name and address of the undertakers.

23. Constructional details: Precautions against danger

Where energy at high voltage is transformed, converted, regulated or otherwise controlled-

- (a) In street boxes or similar structures or in fire-resisting casings on the premises of a consumer-
 - (i) all doors or covers shall be so secured that they cannot be opened except by means of a key or special appliance. The enclosed conductors and apparatus shall be so constructed, protected and arranged that when the door or cover giving access to an operating or switch panel is opened, it shall not be possible for the person opening the door or cover to come into contact with metal electrically charged at high voltage.

Unless the conditions of supply are such that the whole of the enclosed conductors and apparatus may be made dead at the same time for the purpose of cleaning or for other work thereon, the conductors and apparatus shall be so arranged that they may be made dead in sections, and the sections shall be so separated by divisions or screens from all adjacent live metal that work on any section made dead can be carried by an authorised person without danger. Every fusible cut-out shall either be capable of being made dead by a switch or shall be so constructed and placed that it can be handled without danger by an authorised person for the purpose of renewal. Reasonable means shall be taken to prevent as far as possible any influx of water.

(ii) All electric lines forming part of different systems and passing through the same street box or similar structures shall be readily distinguishable from one another, and all electric lines at high voltage in street boxes or similar structures shall be adequately supported and protected so as to minimize risk of damage to or from adjacent electric lines.

(b) On the supports of overhead lines or in other suitable positions adjacent to the electric lines of the system concerned-

the high voltage conductors and transforming or switching apparatus, unless completely enclosed and connected with the system by armoured electric lines, shall be so arranged that no live metal with which contact can be made shall be at a less distance than fifteen feet from the ground or less than fifteen feet from any place accessible to an unauthorised person, or less than eight feet from any operating, inspecting or working platform or position upon which it is intended that any authorised person may stand while live metal is exposed. Adequate provision shall be made to prevent unauthorised climbing; and where a portable ladder is used for the purpose of operating, special means shall be provided to secure the ladder in position and the arrangements shall be such that there is no danger to an authorised person when operating. The means provided for disconnecting a transformer, circuit-breaker or fusible cut-out from electric

lines which are live at high voltage, and also the said fusible cut-out itself, if intended to be renewed while the electric lines are live at high voltage, shall be so constructed and placed that they can be operated or renewed, as the case may be, by an authorised person without danger.

24. Connection with earth

- (a) A point of every system for use at low, medium and high voltage shall, unless otherwise authorised in writing by the Board, be efficiently connected with earth, and the insulation of each such system shall be efficiently maintained at all other parts.
- (b) The connection with earth shall be made at one point only in each system, unless connection with earth at more than one point is for the time being required by the Board and is made in accordance with such conditions as he may prescribe.
- (c) The design, construction and maintenance of earth connections shall be such that when contact is made between a non-earthed conductor and metal connected with earth, or between an earthed conductor and another conductor of the same system, the resulting leakage current shall not be less than twice the value of the current required to operate the device which makes the line dead.
- (d) Systems, lightning arrestors and metal structures where required to be connected with earth shall, except in special cases and only then with the consent in writing of the Board, and in accordance with the conditions of such consent, be independently connected to earth by connections spaced, if practicable, at least twenty feet apart, unless an extensive underground water piping system is available, in which case this may be used for the earth connections of systems and metal structures, provided independent earth connections are made to the water piping, and adequate arrangements are made to ensure that every such earth connection is efficiently maintained.

25. Protection of portable apparatus

- (a) In all cases where the person handling portable apparatus or pendant lamps with switches, for alternating current or pressures above one hundred and ten 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 or pendant lamps 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 work of the apparatus. A lamp holder shall not be in metallic connection with the guard or other metal work of a portable lamp.
- (b) In such places as are referred to in paragraph (a) above, 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.

26. Precautions against metal work becoming electrically charged

Where any electric line (other than an overhead line) at the time it is placed in position crosses or is in proximity to any pipe, line or other metal, precautions shall be taken by the undertakers to prevent such pipe, line or other metal from becoming electrically charged; and any metal work enclosing, supporting or otherwise associated with electric lines and apparatus, unless designed to serve as a conductor shall, where necessary to prevent danger, be efficiently connected with earth.

27. Identification of conductors of service lines

The separate conductors of service lines shall be permanently marked by the undertaker by colouration, labels or otherwise, as close as practicable to the consumer's terminals

so as to indicate in a distinctive manner the polarity of the conductors, or the neutral, earthed and live phase conductors as the case may be.

28. Connection with consumer's installation

The undertakers shall not permanently connect a consumer's installation with their electric lines unless they are reasonably satisfied that the connection, if made, would not cause or be likely to cause a leakage from the consumer's installation exceeding one ten-thousandth part of the maximum current to be supplied to the said installation; and where the undertakers decline to make such connection they shall serve upon the consumer a notice stating their reasons for so declining.

Amended by [GN No. 146 of 1945]

29. Discontinuance of supply in certain circumstances

- (a) Where a supply of energy is being afforded to a consumer, and the undertakers, after making such examination as the circumstances permit, have reasonable grounds for supposing that a leakage exceeding the amount mentioned in regulation 28 exists or is likely to exist at some part of the consumer's installation, the undertakers may, if satisfied that immediate action is justified as a work of emergency in the interests of the public safety, or in order to avoid undue interference with the efficient supply of energy to other consumers, as a work of emergency, forthwith discontinue the supply of energy to the consumer's installation and shall give immediate notice in writing of the discontinuance to the consumer, specifying the matter complained of and requiring the consumer to remedy the same.
- (b) In any other case, the undertakers may require the consumer to permit an officer of the undertakers duly authorised by them in writing, or, if the undertakers so require, an Inspector, to inspect and test the said installation. If, as the result of any such inspection or testing, the officer or Inspector confirms the existence or the likelihood of a leakage from the consumer's installation exceeding the amount specified in regulation 28,

the undertakers may forthwith by notice in writing specify any matter complained of and require the consumer to remedy the same within such reasonable period as may be specified in that behalf in the notice; and if the consumer fails to show to the reasonable satisfaction of the undertakers that the said matter has been remedied, the undertakers may, on the expiration of the said period, discontinue the supply of energy to the consumer's installation, giving immediate notice in writing of such discontinuance to the consumer.

- (c) If the supply is discontinued or declined in accordance with the requirements of this regulation or regulation 28 hereof it shall not recommence until the undertakers are reasonably satisfied that the leakage has been removed.

Amended by [GN No. 146 of 1945]

30. Appeal to Inspector

If any consumer is dissatisfied with the action of the undertakers in refusing to give, or in discontinuing or in not recommencing the supply of energy to the said consumer's installation, such installation shall, on application by him, be tested for the existence of leakage, etc., by an Inspector; and any determination under this regulation shall be final and binding on both parties.

The text of this regulation shall be inscribed on every notice given by the undertakers to a consumer under the provisions of either of the two last preceding **regulations**.

31. Protection against excess energy

For protection against excess energy, a suitable fusible cut-out or other automatic circuit-breaker of adequate rupturing capacity completely enclosed in a suitable locked or sealed receptacle of solid fireproof construction shall be inserted by the undertakers in each service wire as close as practicable to the consumer's terminals and in a position which, in the opinion of the undertakers, is suitable for the purpose:

Provided that where the fusible cut-out required by this regulation is attached to the outside of the consumer's premises in a position to be out of reach without the assistance of a special appliance, the said fusible cut-out need not be locked or sealed:

Provided also that no fusible cut-out shall be inserted in any permanently and solidly earthed line conductor or service line connected thereto:

Provided also that when a supply of energy is given at high voltage, provision shall be made whereby (a) the fusible cut-out or automatic circuit-breaker can be isolated from the service line, and (b) the consumer is enabled to cut off all the voltage from the consumer's terminals without risk of danger.

32. Undertaker's line,s etc., on consumer's premises

In the case of electric lines and apparatus situated on the premises of a consumer and belonging to the undertakers or under their control, the undertakers shall be responsible for such electric lines and apparatus being installed and maintained in a safe condition and suitable for their respective purposes and being so fixed and protected as to prevent the possibility of leakage to any adjacent metal:

Provided that the obligation imposed by this regulation in regard to the maintenance of any electric lines and apparatus as aforesaid situated on the consumer's side of the consumer's terminals and forming the whole or part of the consumer's installation shall be subject to the terms of any agreement entered into between the undertakers and the consumer with respect to the letting on terms of hire or hire-purchase of the said whole or part of the consumer's installation.

33. Introduction of three-wire or multiphase supply to consumer's premises

- (a) A supply of energy at medium voltage shall not be given by the undertaker to any consumer unless it is required for a medium voltage apparatus such as a four hundred volt motor, or unless a two-wire low voltage supply would cause a voltage variation beyond the limit of four per cent up or down, and it may only be given in the latter case provided

the total connected load on the consumer's installation exceeds three kilowatts.

- (b) The undertaker shall not, however, give a supply of energy for use at low voltage to any installation from more than two conductors of a three-wire or multi-phase system at medium voltage unless he is reasonably satisfied in respect of the installation-
 - (i) that the consumer's terminals are arranged in separate pairs in such a manner that so far as is reasonably practicable there shall be no danger of shock at medium voltage;
 - (ii) that the consumer's wiring connected to the separate pairs of consumer's terminals is kept separate and distinct, except where placed in screwed or other approved conduit;
 - (iii) that all socket outlets and apparatus in the same room are connected to the same phase conductor (or to the same side of a three-wire system).
- (c) Where transforming apparatus is used, suitable provision shall be made, preferably by earthing some point of the system at the lower voltage, to guard against danger by reason of the said system becoming accidentally charged above its normal voltage by leakage from or contact with the system at the higher voltage.

34. High voltage supply shall not be given to consumers

A supply of energy at high voltage shall not be given by the undertakers to any consumer unless -

- (a) all conductors and apparatus intended for use at high voltage and situated on the premises of the consumer are inaccessible to the

consumer, and all operations in connection with the said apparatus are carried out by the undertakers by arrangement with the consumer; or

- (b) the consumer gives to the undertaker a guarantee in writing that at all times when the supply of energy is in use an authorised person will be in charge of that portion of the consumer's installation which is for use at high voltage, and that instructions as to the treatment of persons suffering from electric shock will be affixed on or in the premises of the consumer.

35. Water heating by high voltage

A supply of energy at high voltage shall not be given by an undertaking to any consumer for the purposes of apparatus for the electric heating of water in which a live heating element is employed in direct contact with the water except with the consent in writing of the Board and subject to such terms and conditions as it may impose.

36. Declared type of current, frequency and voltage at supply terminals

- (a) Before commencing to give a supply of energy to any consumer, the undertakers shall declare to that consumer-
 - (i) (i) the type of current, whether direct or alternating, which they propose to supply;
 - (ii) (ii) in the case of alternating current, the number of phases and also the constant frequency at which they propose to deliver the energy to the consumer's terminals; and
 - (iii) (iii) the constant voltage at which they propose to deliver the energy to the consumer's terminals.
- (b) The type of current, the number of phases and the frequency in the case of alternating current and the voltage declared as aforesaid shall be constantly maintained subject as respects the frequency to a permissible variation not exceeding one and a half per cent above or below the declared frequency and as respects the voltage to a permissible variation

not exceeding six per cent above or below the declared voltage, and shall not be altered or departed from nor shall the aforesaid permissible variations be exceeded except with the consent in writing of the Board and subject to such terms and conditions as it may impose.

- (c) Public notice in such manner and for such period as the Board may approve or require shall be given by the undertakers of any application made by them for the consent of the Board to an alteration of the declared type of current, or the number of phases or the frequency in the case of alternating current, or the voltage, as the case may be, or of the aforesaid permissible limits of variation in respect of frequency or voltage.
- (d) Alterations in consumer's apparatus, necessitated by the alteration of the supply, shall be carried out at the undertakers' expense, provided that no liability shall attach to the undertakers in respect of apparatus installed by the consumer after he has received notice of the intended alterations not less than two months nor more than four months before the date fixed for carrying them out.

Amended by [GN No. 214 of 1951]

37. Service line to be provided by undertaker

For the supply of energy to the consumer's terminals all conductors and fittings generally shall be provided and erected by the undertaker at his own expense:

Provided that, if the amount spent on a service line exceeds the cost of providing and erecting a suitable copper wire overhead service line one hundred and twenty-five feet in length, the excess may, in the undertaker's discretion, be borne by the consumer, and the service line shall, notwithstanding such contribution by the consumer, remain the property of the undertaker:

Provided also that the cost of erecting and maintaining any structures that may be required by the undertaker to be attached to the consumer's premises for the purpose of

extending the service wires and fittings at a sufficient height above such premises for reasons of safety, shall be borne by the consumer:

Provided further that the undertaker shall have the right to extend service lines from one consumer's terminals to another consumer's terminals.

Amended by [GN No. 146 of 1945]

38. Consumers to pay any sums due

- (a) Any consumer neglecting to pay to the undertaker any charge or other sum due by him in respect of the supply of energy shall render himself liable to have his supply cut off:

Provided that the supply shall not be cut off:

- (i) in the case of a metered consumer, before the expiry of 20 days after a notice in writing stating the amount of the charge or other sum due has been given to the consumer, or, in his absence, left at the premises to which energy is supplied, unless three clear days' notice in writing has been given to the consumer by leaving the same with him or, in his absence, at the premises to which energy is supplied;
- (ii) in the case of a flat rate consumer, before the 20th day of the month in respect of which the charge or other sum is due, unless three clear days' notice in writing has been given to the consumer by leaving the same with him or, in his absence, at the premises to which energy is supplied.

Provided also that such supply shall remain cut off only until the charge or other sum due by the consumer has been paid and no longer.

- (b) Any reasonable expense incurred by the undertaker in the application of this regulation whether by cutting or disconnecting or reconnecting any electric line or other work through which energy may be supplied shall be borne by the consumer.
- (c) A consumer who has not paid any sum or sums due by him on the date such sum or sums become payable shall pay, in addition, a surcharge of 10 per cent thereon.

Amended by [GN No. 62 of 1956]

39. Recovery of charges

Every metered consumer shall, within 17 days from the date on which the written notice stating the amount of the charge or other sum due by him has been left with him or at the premises to which energy is supplied pay such charge or other sum to the undertaker:

Provided that the undertaker may require any consumer to give adequate security for the payment of all sums due or to become due to him.

[62/56]

40. Charge for testing and connecting

The cost of the testing and connecting of a consumer's installation or of an extension thereto made with a view to determining the possible existence of an excessive leakage shall not be chargeable to the consumer:

Provided that, in the event of a first test revealing a leakage exceeding the limits defined in regulation 28 hereof, a charge not exceeding two rupees may be made by the undertaker on the consumer for every subsequent test made at the latter's request.

41. Undertaker may refuse the use of domestic appliances

The undertaker may refuse the addition of any domestic electric appliances to any consumer's installation if he considers that such addition would impair the supply of energy to other consumers. Any consumer, dissatisfied with such refusal, shall have the right to appeal to the Board, whose decision shall be final.

42. Alternate fixtures

Consumers shall be allowed to install alternate fixtures up to a maximum of one-half of the total number of lighting fixtures on the installation.

43. Supply to hairdressing establishments

No undertaker shall give a supply of energy to hairdressing or such-like establishments for use in apparatus to be used on or near the human body, unless they are reasonably satisfied in respect of such apparatus that all reasonable precautions have been taken to prevent electric shock:

Provided that if such establishments believe the supply to be unreasonably withheld, they may appeal to the Board whose decision in the matter under dispute shall be final and binding on both parties.

44. Meters

(a) The amount of energy supplied by an undertaker to any consumer (according to the method of charging) shall, except as otherwise agreed between the undertaker and the consumer, be ascertained by means of an appropriate meter duly certified and sealed by the Board, or by an Inspector, or by the undertaker giving the supply.

(b) A meter shall be considered to be duly qualified for certification if-

(i) It is of an approved type and size which shall be determined by

- (A) the suitability of the current range of the meter for the supply of energy to be registered;
 - (B) the suitability of the voltage and frequency of the meter for the supply of energy to be registered;
 - (C) the suitability of the meter in relation to the number of phases by which the supply of energy is to be given and as to whether such supply is balanced or unbalanced.
- (ii) The limits of error of the meter, including external shunts and the connecting leads to be ultimately used therewith and current transformers, if used, at the ordinary working temperatures, standard voltage and frequency, do not exceed plus or minus two per cent when tested at the minimum, the maximum, and one intermediate load, and do not exceed plus or minus five per cent when tested at the rated volt-amperes at one-half power factor. In determining the said limits of error no rotating sub-standard shall be used at less than one-quarter of its normal full load, and no indicating instrument at a load, which gives less than forty per cent of its full-scale reading.
- (iii) (iii) It does not register with its main circuit open.
- (iv) (iv) In the case of a meter which has already been certified, no alteration has been made to the meter subsequent to such certification.
- (c) No consumer shall, unless duly authorised by the undertaker, connect or disconnect any meter used for ascertaining the value of the supply, and thereby the charge payable, with or from any electric line through which energy is supplied by the undertaker; and if any person acts in contravention of this provision he shall be liable for each offence to a penalty not exceeding one hundred rupees.

(d) Where any consumer who is supplied with energy by the undertaker from any main is provided with a certified meter for the purpose of ascertaining the value of the supply and the undertaker changes the method of charging for the energy supplied from such main, or changes the type of current, etc., so that the said meter is no longer a certified meter in accordance with the requirements of this regulation, the said undertaker shall pay to that consumer the reasonable expenses to which he may be put in providing a new meter for the purpose of ascertaining the value of the supply according to the changed conditions, and such expenses may be recovered by the consumer from the undertaker as a civil debt.

(e) An Inspector may check any meter in use for ascertaining the value of the supply to any consumer in order to determine whether it is a certified meter in accordance with the requirements of this regulation; the Inspector's decision in this matter shall be final and binding on all the parties concerned. In the event of such a check proving a meter not to be certified, its use for the purpose of ascertaining the value of the supply shall be thenceforward discontinued until it has been duly certified.

Provided that due notice shall be given to the undertaker of the intention to check such meter so as to give him an opportunity of being represented when meter is being checked.

(f) In the event of any consumer requiring the undertaker to check the correctness of the meter used for recording the energy consumed by such consumer, the undertaker shall do so, but may, provided such meter is found to be a certified meter in accordance with the requirements of this regulation, charge such consumer a fee of two rupees together with the reasonable expenses incurred in removing and reinstalling such meter.

(g) In the event of a defect being ascertained in a meter resulting in a faulty registration of the number of units consumed, the undertaker or consumer

shall be entitled to an adjustment of the account for the month in question based on the average monthly payment for the preceding six months or since such supply began, whichever shall be the shorter period, and the other party shall be bound to agree. Provided that if the circumstances of the supply for such preceding period used for determining the average monthly payment were such as to make an appreciable difference in the actual amount of energy consumed for anyone month as compared with any other month within such period, then, failing an agreement between the undertaker and the consumer, the Board shall decide the amount payable for the month in question and its decision shall be final and binding on both parties.

45. Consumer to keep his meter in proper order

Every consumer shall at all times at his own expense keep in proper order all meters belonging to him whereby the value of the supply is to be ascertained and in default of his so doing the undertakers may cease to supply energy through the meter.

46. Inspection etc. of meter by undertakers

The undertakers shall have access to and be at liberty to take off, remove, test, inspect and replace any such meter at all reasonable times. Provided that all reasonable expenses incurred in connection with such action shall, in the event of the meter being found not to be in proper order, be paid by the consumer.

47. Difference as to correctness of meter to be settled by Inspector

If any difference arises between any consumer and the undertakers as to whether any meter, including a maximum power demand meter, whereby any value of the supply is ascertained (whether belonging to the consumer or to the undertakers) is or is not in proper order for correctly registering that value, or as to whether that value has been correctly registered in any case by any meter, that difference shall be determined upon application of either party by an Inspector, and the Inspector shall also order by which of the parties the costs of and incidental to the proceedings before him shall be paid or

whether these costs shall be divided and, if so, in what proportions, and the decision of the Inspector shall be final and binding on all parties:

Provided that such costs shall not exceed the sum of five rupees.

48. Undertakers may place meters to measure supply or to check measurement

In addition to any meter which may be placed upon the premises of any consumer to ascertain the value of the supply, the undertakers may place upon his premises such meter or other apparatus as they may desire for the purpose of ascertaining or regulating either the amount of energy supplied to the consumer or the number of hours during which the supply is given or the maximum power taken by the consumer or any other quantity or time connected with the supply. Provided that the meter or apparatus shall be of such construction and pattern and shall be fixed and connected with the service lines in such manner as may be approved by the Board and shall be supplied and maintained entirely at the costs of the undertakers and shall not, except by agreement, be placed otherwise than between the mains of the undertakers' and the consumer's terminals.

49. Dispute between undertakers and consumer

In any dispute between the undertakers and a consumer in respect of the correctness of the amount of energy or power chargeable the undertakers shall communicate to such consumer the provisions of regulation 47.

50. Meter rent

(a) In cases of supply by meter, the undertaker shall bear the cost of the meter but shall be entitled to charge a monthly rental for such meter which shall not exceed one thirty-sixth of the total cost of such meter, including the cost of associated fittings, if any.

(b) (b) If a special type of meter is required to measure the consumption of **electricity**, the undertaker may require the

consumer to provide the meter at his own expense in which case no rental charge shall be made.

Amended by [GN No. 7 of 2002]

51. Apparatus and conductors to be of sufficient size.

All apparatus and conductors (including flexible 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, and all single-pole switches shall be inserted in live conductors only.

52. Conductors to be protected

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.

53. Control of electric motors

Every electric motor shall be controlled by an efficient switch or switches for starting and stopping and the said switch or switches shall be so placed as to be easily worked by the person in charge of the motor. All metal work enclosing, supporting or associated with an installation unless designed to serve as a conductor shall be efficiently connected with earth.

54. Electric motors, etc. to be fenced

Every part of electric generators, motors and rotary convertors, and of every flywheel and power transmission driver associated therewith, shall be securely fenced, unless it is in such a position, or of such construction, as to be as safe to every person employed or working on the premises as it would be if securely fenced:

Provided that the requirements of this regulation shall not apply to a case where it is not practicable to comply therewith without serious interference with the work:

Provided also that the requirements of this regulation shall not apply to any person carrying out an examination, lubrication or adjustment where the part is necessarily in motion.

55. Protection of motors, etc

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

56. Motors to be controlled by cut-off switch

The supply of energy to each motor or separate piece of apparatus shall be controlled by means of an efficient cut-off switch placed in such a position as to be readily accessible to and easily operated by the person in charge of the said motor or apparatus and so connected in circuit that by its means all voltage can be cut off from the motor or apparatus itself and from any regulating switch, resistance or other device associated therewith.

57. Switching off of motors and transmission gear

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

58. Receptacles for electric lines and apparatus

All conduits, pipes, casings, street boxes and similar structures used as receptacles for electric lines or apparatus shall be constructed of durable material, and where placed under carriageways shall be of ample strength to withstand traffic.

59. Precautions against excess energy

Every distinct circuit shall be protected against excess energy by means of a suitable fusible cut-out or other automatic circuit-breaker of adequate rupturing capacity suitably located and of such construction as to prevent danger from overheating, arcing, or the scattering of hot metal when they come into operation and as to permit of the ready renewal of the fusible metal without danger.

60. Precautions against fire

- (a) In delivering energy to a sub-station or switch-station (including an outdoor sub-station or outdoor switch-station) or to the premises of a consumer, all due precautions shall be exercised so as to avoid risk of causing fire therein.
- (b) In the case of sub-stations and switch-stations special precautions shall be taken to prevent the spread of any fire resulting from the ignition of oil from any cause; and adequate provision shall be made for the extinguishing of any fire which may occur. Spare oil shall not be stored in any sub-station or switch-station.

61. Switch boards

- (a) 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.

- (b) In every switchboard for high voltage:

- (i) Every high voltage conductor within reach from the working platform, or in any switch-board passageway, shall be so placed or protected as adequately to prevent danger.
- (ii) The metal cases of all instruments working at high voltage shall be either earthed or completely enclosed with insulating covers.
- (iii) All metal handles of high voltage switches, and, where necessary to prevent danger, all metal gear for working the switches, shall be earthed.
- (iv) When work has to be done on any switchboard, then unless the switchboard be otherwise so arranged as to secure that the work may be carried out without danger, either the switchboard shall be made dead, or if the said switchboard be . so arranged that the conductors thereof can be made dead in sections, and so separated by permanent or removable divisions or screens from all adjoining sections of which the conductors are live, that work on any section may be carried out without danger, that section on which work has to be done shall be made dead.

62. Cutting off of pressure

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

63. Insulation test of low and medium voltage electric lines and circuits

- (a) All electric lines and circuits (other than overhead lines) for use at low and medium voltage shall be tested for resistance of insulation after having been placed in position and before being brought into use for the purposes of the supply of energy.

- (b) The said electric lines and circuits shall not be brought into use for the purposes of the supply of energy unless the insulation of every part thereof has withstood the continuous application of a testing voltage of not less than five hundred volts between conductors and also between conductors and earth during a period of not less than one-half minute.
- (c) Where any such electric line or circuit has been disconnected from a system for alteration or repair, such electric line or circuit shall not be reconnected to the system until the undertakers have satisfied themselves that the insulation of the electric line or circuit is in sound condition.
- (d) The result of any test made under this regulation shall be duly recorded.

64. Maintenance of insulation

The undertakers shall maintain the insulation of every system for use at low voltage or medium voltage (including all electric lines and apparatus forming part of the system and service lines up to the consumer's terminals) so that the leakage current shall not under any conditions exceed one-thousandth part of the maximum current. Any excessive leakage shall be remedied without delay.

65. Authorised person only to undertake work

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 Board directs that he shall not do so. No person except an authorised person or a competent person over twenty-one 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 alone.

66. Notice of accidents and inquiries to be made

- (i) The undertaker or user shall send to the Board notice of any accident by explosion or fire, and also of any other accident of such kind as to have caused, or to be likely to have caused, loss of life or personal injury, which has occurred in any part of the works or their circuits, or in connection with those works or circuits, and also notice of any loss of life or personal injury occasioned by any such accident. The notice shall be sent by the earliest practicable means of communication after the accident occurs, or, as the case may be, after the loss of life or personal injury becomes known to the undertaker or user. If any undertaker or user fails to comply with the provisions of this regulation he shall be liable for each default to a penalty not exceeding one hundred rupees.

- (ii) The Board or Inspector shall, if deemed necessary, inquire as to the cause of any accident affecting the safety of the public which may have been occasioned by or in connection with the undertaker or user's works, whether notice of the accident has or has not been received from the undertaker or user, or as to the manner or extent in and to which the provisions of these **regulations** so far as they affect the safety of the public have been complied with by the undertaker or user.

67. Protection from lightning

Electric lines, where necessary, shall be efficiently protected against damage from lightning.

68. Lighting

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

69. Restricting area liable to interruption

- (a) The system of the undertakers for the supply of energy throughout their area of supply shall be separated into sections and shall be so designed, and provided, where necessary, with circuit-breakers or fusible cut-outs, so located as to restrict within reasonable limits the extent of the portion of the area affected by a failure of any part of the system.
- (b) All reasonable precautions shall be taken against accidental interruptions of supply during installation, extension, replacement, repairs and maintenance. Failure of supply affecting one-quarter or more of the undertaker's consumers must be notified to the Director.

70. Undertakers to provide constant supply

From the time when the undertakers commence to supply through any main, they shall maintain a supply of energy sufficient for the use of all consumers for the time being entitled to be supplied from that main; and that supply shall be constantly maintained without change of polarity in the case of direct current and without change of the neutral or earthed conductor in the case of alternating current:

Provided that, for the purposes of testing or for any other purposes connected with the efficient working of the undertaking, the Board may give permission to the undertaker to discontinue the supply at such intervals of time and for such periods as he may think expedient, subject in cases of emergency, to notice being given by the undertaker in the manner and for the period required by the Board to all consumers likely to be affected by such discontinuance:

Provided also that the polarity in the case of direct current and the neutral or earthed conductor in the case of alternating current may be changed with the like consent.

71. Inspections, examinations and tests

The Board, Inspectors and agents duly authorised by the Board shall be entitled at all times to inspect and to make examination and tests of electric lines, apparatus, works and instruments of undertakers and to examine, check for accuracy and take records of the readings of such instruments, and the undertakers shall afford all due facilities for any such inspections, examinations and tests:

Provided that the undertakers shall not be responsible for any interruption in the supply of energy which may be occasioned by any such inspection, examination or test.

72. Penalties on default

If the undertakers or user make default in complying with the provisions of these **regulations** they shall on conviction be liable to a penalty not exceeding one hundred rupees for every such default, and to a daily penalty not exceeding one hundred rupees during such time as the default continues. The recovery of a penalty under these **regulations** shall not affect the liability of the undertakers or user to make compensation in respect of any damage or injury which may be caused by reason of the default.

73. Fixing of declared pressure at consumer's terminals

Before commencing to give a supply of energy to any consumer, the undertakers shall declare to that consumer the constant pressure at which they propose to supply energy at his terminals. The, pressure so declared shall be constantly maintained, subject to a variation not exceeding four per cent under any conditions of supply which the consumer is entitled to receive, or such other variation as the Board may from time to time allow, and shall not be altered or departed from to an extent greater than that variation except by consent of the local authority, and upon such terms and conditions as the local authority may impose, and after public notice has been given during a period of one month, in such manner as the local authority may require, of the intention of the undertakers to apply for consent to alter the same. If the local authority refuse to consent to an alteration or impose any terms or conditions with which the undertakers are dissatisfied, the undertakers may appeal to the Board whose decision shall be final.

74. System and voltage of supply

Undertakers shall supply energy to consumer's installations, at a voltage of two hundred and thirty or four hundred and sixty in the case of a single phase supply, and at a voltage of four hundred between phases in the case of a three-phase supply.

75. Rate applicable to apparatus set up by consumer

A consumer shall not connect, or allow to be connected, any lamp, machine or appliance or any apparatus whatsoever, to any installation supplied with energy by the undertaker at a rate lower than the rate applicable to such lamp, machine, appliance or apparatus.

76. Rate of energy obtained from undertaker's system for lighting purposes

A consumer shall not obtain energy for lighting purposes through an electric machine driven by electric energy obtained from the undertaker's system, except at the lighting rates applicable to such consumer's premises.

77. Resale of electric energy forbidden

A consumer shall not sell or supply electric energy supplied to his premises under an agreement with the undertaker, to any other consumer, person or persons or to any other premises, other than those in respect of which such agreement is made, or permit such sale or supply to be made.

78. Consumer to pay cost of installing meter in suitable position

The position of the consumer's terminal shall be determined by the undertaker. The meter to be used for recording the quantity of electrical energy supplied to a consumer shall be placed adjacent to the consumer's terminals. Where in the opinion of the undertaker such position is inconvenient or may be a source of danger to life or property, or should the consumer require the meter to be placed in some other position on his premises as may be agreed to by the undertaker, or if at some time subsequent to the installing of the meter it is to be removed elsewhere for any of the above reasons, the

additional cost of installing the meter to a position other than adjacent to the consumer's terminals, or of removing it to another position, shall be borne by the consumer.

79. Supply to be by agreement

Before commencing to give a supply of **electricity** to a consumer the undertaker may require that consumer to enter into an agreement to take such supply for a period not exceeding twelve months from the date at which the supply is first given.

80. Undertaker to lay mains in area of supply

It shall be lawful for the authority to order that mains be laid by the undertaker within a period of six months at such places in such undertaker's area of supply where, in the opinion of the authority, there is a reasonable demand for consumers to be supplied with energy. Provided that notwithstanding anything to the contrary in these or other **regulations** or Orders made under the **Electricity** Act, such Order shall not be binding on the undertaker-

- (1) if the consumers to be supplied with **electricity** from such mains do not, if required by the undertaker to do so, enter into an agreement to take such supply of **electricity** for three years at least as will produce such annual sum (not exceeding twenty per cent. upon the expense of providing and laying down the required mains and any other mains or additions to existing mains which may be necessary for the purpose of connecting such mains with the nearest source of supply) as may be specified by the undertaker, and give sufficient security for payment of all moneys which may become due under such agreement, or
- (2) if the Board, on the appeal of the undertaker, holds such order to be unreasonable. Whenever the Board, on the appeal of the undertaker, holds that the order of the authority is unreasonable, it shall be lawful for the Board to determine the conditions under which such mains may be laid.

81. Minimum and fixed charge, and meter rent

- (1) The minimum and fixed charge as may be included in a tariff by order of the Board as provided for in section 10 of the **Electricity** Act, and the meter rent, shall be payable in advance.
- (2) If the service to a consumer, which shall include additions to a consumer's installation affecting the charges payable by such consumer, is established at any time other than at the beginning of a calendar month, the minimum and fixed charge, and the meter rent, due for the broken period of such calendar month, shall be determined in the following manner.
 - (a) If the monthly minimum or fixed charge exceeds twenty-five rupees, the charge due for such broken period shall be calculated on a pro rata basis, in relation to the number of days remaining in the calendar month during which the service is established.
 - (b) In all other cases the monthly minimum and fixed charge and the monthly meter rent shall be payable in full for such broken period provided the service is given on or before the 15th of the month. If the service is given after the 15th of the month one-half of the monthly minimum and fixed charge and of the monthly meter rent shall be payable for such broken period.
- (3) If the undertaker is unable to gain access to a consumer's residence for the purpose of reading the meter to determine the charge for electrical energy consumed during the month, then the undertaker may assume that the number of units consumed during such month was the same as during the previous month, or during the last month when the meter could be read, and the consumer may be charged accordingly; provided that when the meter can be subsequently read such charge shall be adjusted to accord with the actual number of units consumed during the period; provided also that if for the same reasons the meter cannot be read during three successive months, the consumer's supply may be cut off after three clear days' notice in writing has been given by the undertaker to the consumer.

81A. Electricity Bill

The Board may issue more than one **electricity** bill indicating the monthly watt-hour meter reading to any commercial or industrial consumer during a month.

Added by [GN No. 53 of 2007]

82. Undertaker may refuse to give a supply of energy to electric motors

The undertaker may refuse to connect a consumer's electric motor to the mains if he considers that connection would impair the supply of energy to other consumers. Any consumer, dissatisfied with such refusal, shall have the right to appeal to the Board whose decision shall be final.

83. Maximum power of single phase alternating current motor

Unless approved in writing by the undertaker, consumers shall not connect a single phase alternating current motor of more than two horse power rated maximum power, to the undertaker's system. Where this horse power rating is exceeded a three-phase motor shall be used unless otherwise required by the undertaker.

84. Starting switches for three phase motors

(1) Three-phase alternating current motors up to not more than three horse power rated maximum power, if arranged to start without load such as by means of a loose pulley or clutch, may be started by switching direct on to the undertaker's supply system.

(2) Three-phase alternating current motors of up to fifteen horse power rated maximum power, if of the squirrel cage type, shall be started up by means of an auto-transformer or by the star-delta method.

- (3) Three-phase alternating current motors of more than fifteen horse power rated maximum power, shall be of the slip-ring type, unless otherwise required by the undertaker, and the starter shall be suitable for that type. Motors other than of the slip-ring type, specially designed to reduce the starting current or required for power factor improvement, may be used in all cases, provided the starting current is limited to one and one-half times the full load current of the motor.

85. Testing of circuit-breaker tripping devices

Circuit-breaker tripping devices shall be tested at their service setting before being put in commission, and subsequently at intervals of six months or less as may be required to ensure that the devices shall open the circuit-breaker when the electrical conditions are such as to exceed the trip coil settings.

- 86.** Overhead line conductors and telegraph wires shall not be supported by the same pole unless suitable fuses and lightning arrestors are inserted, connected and arranged, in each such telegraph wire, so that in the event of a leakage from a line conductor to a telegraph wire, the terminal apparatus of the telegraph wires shall, by the operation of the fuses, be electrically disconnected from that section of the telegraph wires where the leakage occurs.