

CHAPTER IV

¹[GENERAL SAFETY REQUIREMENTS]

29. Construction, installation, protection, operation and maintenance of electric supply lines and apparatus-

¹[(1) All electric supply lines and apparatus shall be of sufficient ratings for power, insulation and estimated fault current and of sufficient mechanical strength, for the duty which they may be required to perform under the environmental conditions of installation, and shall be constructed, installed, protected, worked and maintained in such a manner as to ensure safety of ²[human beings, animals and property].]

(2) Save as otherwise provided in these rules, the relevant code of practice of the ³[Bureau of Indian Standards] ⁴[including National Electrical Code] if any may be followed to carry out the purposes of this rule and in the event of any inconsistency, the provision of these rules shall prevail.

(3) The material and apparatus shall conform to the relevant specifications of the ³[Bureau of Indian Standards] where such specifications have already been laid down.

1. Subs. by GSR 358, dt. 30.4.1987, w.e.f. 9.5.1987.
2. Subs. by GSR 45, dt. 1.1.1993, w.e.f. 23.1.1993.
3. Subs. by GR. 466, dt. 18.7.1991, w.e.f. 17.8.1991.
4. Ins. by GSR 358, dt. 30.4.1987, w.e.f. 5.9.1987.

30. Service lines and apparatus on consumer's premises-

(1) The supplier shall ensure that all electric supply lines, wires, fittings and apparatus belonging to him or under his control, which are on a consumer's premises, are in a safe condition and in all respects fit for supplying energy and the supplier shall take due precautions to avoid danger arising on such premises from such supply lines, wires, fittings and apparatus.

(2) Service-lines placed by the supplier on the premises of a consumer which are underground or which are accessible shall be so insulated and protected by the supplier as to be secured under all ordinary conditions against electrical, mechanical, chemical or other injury to the insulation.

(3) The consumer shall, as far as circumstances permit, take precautions for the safe custody of the equipment on his premises belonging to the supplier.

(4) The consumer shall also ensure that the installation under his control is maintained in a safe condition.

31. Cut-out on consumer's premises-

(1) The supplier shall provide a suitable cut-out in each conductor of every service-line other than an earthed or earthed neutral conductor or the earthed external conductor of a concentric cable within a consumer's premises, in an accessible position. Such cut-out shall be contained within an adequately enclosed fireproof receptacle.

Where more than one consumer is supplied through a common service-line, each such consumer shall be provided with an independent cut-out at the point of junction to the common service.

(2) Every electric supply line other than the earth or earthed neutral conductor of any system or the earthed external conductor of a concentric cable shall be protected by a suitable cut-out by its owner.

¹[(3) * * * * *]

1. Sub-rule (3) omitted by GSR 358, dt. 30.4.1987, w.e.f. 5.9.1987.

32. Identification of earthed and earthed neutral conductors and position of switches and cut-outs therein- Where the conductors include an earthed conductor of a two-wire system or an earthed neutral conductor of a multi-wire system or a conductor which is to be connected thereto, the following conditions shall be complied with--

(1) An indication of a permanent nature shall be provided by the owner of the earthed or earthed neutral conductor, or the conductor which is to be connected thereto, to enable such conductor to be distinguished from any live conductor. Such indication shall be provided-

(a) Where the earthed or earthed neutral conductor is the property of the supplier, at or near the point of commencement of supply;

(b) Where a conductor forming part of a consumer's system is to be connected to the supplier's earthed or earthed neutral conductor, at the point where such connection is to be made;

(c) In all other cases, at a point corresponding to the point of commencement of supply or at such other points as may be approved by an Inspector or any officer appointed to assist the Inspector and authorised under sub-rule (2) of rule 4A.

(2) No cut-out, link or switch other than a linked switch arranged to operate simultaneously on the earthed or earthed neutral conductor and live conductors shall be inserted or remain inserted in any earthed or earthed neutral conductor of a two wire-system or in any earthed or earthed neutral conductor of a multi-wire system or in any conductor connected thereto with the following exceptions: -

- (a) A link for testing purposes, or
- (b) A switch for use in controlling a generator or transformer.

33. Earthed terminal on consumer's premises-

- (1) The supplier shall provide and maintain on the consumer's premises for the consumer's use a suitable earthed terminal in an accessible position at or near the point of commencement of supply as defined under rule 58.

Provided that in the case of medium, high or extra-high voltage installation the consumer shall, in addition to the afore mentioned earthing arrangement, provide his own earthing system with an independent electrode.

Provided further that the supplier may not provide any earthed terminal in the case of installations already connected to his system on or before the date to be specified by the State Government in this behalf if he is satisfied that the consumer's earthing arrangement is efficient.

- (2) The consumer shall take all reasonable precautions to prevent mechanical damage to the earthed terminal and its lead belonging to the supplier.

¹[(3) The supplier may recover from the consumer the cost of installation on the basis of schedule of charges notified in advance and where such schedule of charges is not notified, the procedure prescribed, in sub-rule (5) of rule 82 will apply]

1. Subs. by GSR 1074, dt. 5.11.1985, w.e.f. 16.11.1985.

34. Accessibility of bare conductors- Where bare conductors are used in a building, the owner of such conductors shall-

- (a) Ensure that they are inaccessible;
- (b) Provide in readily accessible position switches for rendering them dead whenever necessary; and
- (c) Take such other safety measures as are considered necessary by the Inspector.

35. Danger Notices- The owner of every medium, high and extra-high voltage installation shall affix permanently in a conspicuous position a danger notice in Hindi or English and the local language of the district, with a sign of skull and bones ¹[of a design as per the relevant ISS No. 2551] on-

(a) Every motor, generator, transformer and other electrical plant and equipment together with apparatus used for controlling or regulating the same;

(b) All supports of high and extra-high voltage overhead lines which can be easily climb-upon without the aid of ladder or special appliances;

Explanation-- Rails, tubular poles, wooden supports, reinforced cement concrete poles without steps, I-sections and channels, shall be deemed as supports which cannot be easily climbed upon for the purposes of this clause.

(c) Luminous tube sign requiring high voltage supply, X-ray and similar high-frequency installations;

Provided that where it is not possible to affix such notices on any generator, motor transformer or other apparatus, they shall be affixed as near as possible thereto; or the word 'danger' and the voltage of the apparatus concerned shall be permanently painted on it.

Provided further that where the generator, motor, transformer or other apparatus is within an enclosure one notice affixed to the said enclosure shall be sufficient for the purposes of this rule.

1. Added by GSR 512, dt. 29.6.1983, w.e.f. 16.7.1983.

36. Handling of electric supply lines and apparatus-

(1) Before any conductor or apparatus is handled adequate precautions shall be taken, by earthing or other suitable means, to discharge electrically such conductor or apparatus, and any adjacent conductor or apparatus if there is danger therefrom, and to prevent any conductor or apparatus from being accidentally or inadvertently electrically charged when persons are working thereon.

Every person who is working on an electric supply line or apparatus or both shall be provided with tools and devices such as gloves, rubber shoes, safety belts, ladders, earthing devices, helmets, line testers, hand lines and the like for protecting him from mechanical and electrical injury. Such tools and devices shall always be maintained in sound and efficient working conditions:

(2) No person shall work on any live electric supply line or apparatus and no person shall assist such person on such work, unless he is authorised in that behalf, and takes the safety measures approved by the Inspector.

(3) Every telecommunication line on supports carrying a high or extra-high voltage line shall, for the purpose of working thereon, be deemed to be a high voltage line.

1. Proviso omitted by GSR 358, dt. 30.4.1987, w.e.f. 9.5.1987.

37. Supply to vehicles, cranes, etc.- Every person owning a vehicle, travelling crane or the like to which energy is supplied from an external source shall ensure that it is efficiently controlled by a suitable switch enabling all voltage to be cut off in one operation and, where such vehicle, travelling crane or the like runs on metal rails, the owner shall ensure that the rails are electrically continuous and earthed.

38. Cables for portable or transportable apparatus-

(1) Flexible cables shall not be used for portable or transportable motors, generators, transformer rectifiers, electric drills, electric sprayers, welding sets or any other portable or transportable apparatus unless they are heavily insulated and adequately protected from mechanical injury.

(2) Where the protection is by means of metallic covering, the covering shall be in metallic connection with the frame of any such apparatus and earth.

(3) The cables shall be three core type and four-core type for portable and transportable apparatus working on single phase and three phases supply respectively and the wire meant to be used for ground connection shall be easily identifiable.

39. Cables protected by bituminous materials-

(a) Where the supplier or the owner has brought into use an electric supply line (other than an overhead line) which is not completely enclosed in a continuous metallic covering connected with earth and is insulated or protected in situ by composition or material of a bituminous character-

(i) Any pipe, conduit or the like into which such electric supply line may have been drawn or placed shall, unless other arrangements are approved by the Inspector in any particular case, be effectively sealed at its point of entry into any street box so as to prevent any flow of gas to or from the street box; and

(ii) Such electric supply line shall be periodically inspected and tested where accessible, and the result of each such inspection and test shall be duly recorded by the supplier or the owner.

(2) It shall not be permissible for the supplier or the owner after the coming into force of these rules, to bring into use any further electric supply line as aforesaid

which is insulated or protected in situ by any composition or material known to be liable to produce noxious or explosive gases on excessive heating.

40. Street boxes-

(1) Street boxes shall not contain gas pipes, and precautions shall be taken to prevent, as far as reasonably possible, any influx of water or gas.

(2) Where electric supply lines forming part of different systems pass through the same street box, they shall be readily distinguishable from one another and all electric supply lines at high or extra-high voltage in street boxes shall be adequately supported and protected to as to prevent risk of damage to or danger from adjacent electric supply lines.

(3) All street boxes shall be regularly inspected for the purpose of detecting the presence of gas and if any influx or accumulation is discovered, the owner shall give immediate notice to any authority or company who have gas mains in the neighbourhood of the street box and in cases where a street box is large enough to admit the entrance of a person after the electric supply lines or apparatus therein have been placed in position, ample provision shall be made-

(a) To ensure that any gas which may by accident have obtained access to the box shall escape before a person is allowed to enter; and

(b) For the prevention of danger from sparking.

(4) The owners of all street boxes or pillars containing circuits or apparatus shall ensure that their covers and doors are so provided that they can be opened only by means of a key or a special appliance.

41. Distinction of different circuits- The owner of every generating station, sub-station, junction-box or pillar in which there are any circuits or apparatus, whether intended for operation at different voltages or at the same voltage, shall ensure by means of indication of a permanent nature that the respective circuits are readily distinguishable from one another.

¹[41A. Distinction of the installations having more than one feed- The owner of the every installation including sub-station, double pole structure, four pole structure or any other structure having more than one feed, shall ensure by means of indication of a permanent nature, that the installation is readily distinguishable from other installations.]

1. Ins. by GSR 529, dt. 11.7.1986, w.e.f. 19.7.1986.

42. Accidental charge- The owners of all circuits and apparatus shall so arrange them that there shall be no danger of any part thereof becoming

accidentally charged to any voltage beyond the limits of voltage for which they are intended.

Where A.C. and D.C. circuits are installed on the same support they shall be so arranged and protected that they shall not come into contact with each other when live.

43. Provisions applicable to protective equipment-

(1) Fire buckets filled with clean dry sand and ready for immediate use for extinguishing fires, in addition to fire extinguishers suitable for dealing with electric fires, shall be conspicuously marked and kept in all generating stations, enclosed sub-stations and switch stations in convenient situation.

The fire extinguishers shall be tested for satisfactory operation at least once a year and record of such tests shall be maintained.

(2) First-aid boxes or cupboards, conspicuously marked and equipped with such contents as the State Government may specify, shall be provided and maintained in every generating station, enclosed sub-station and enclosed switch station so as to be readily accessible during all working hours. All such boxes and cupboards shall, except in the case of unattended sub-stations and switch stations, be kept in charge of responsible persons who are trained in first-aid treatment and one of such person shall be available during working hours.

¹[(3) Two or more gas masks shall be provided conspicuously and installed and maintained at accessible places in every generating station with capacity of 5 MW and above and enclosed sub-station with transformation capacity of 5 MVA and above for use in the event of fire or smoke.

Provide that where more than one generator with capacity of 5 MW and above is installed in a power station, each generator would be provided with at least two separate gas masks in accessible and conspicuous position.

Provided further that adequate number of gas masks would be provided by the owner of every generating station and enclosed sub-station with capacity less than 5MW and 5MVA respectively, if so desired by the Inspector.]

1. Ins. by GSR 466, dt. 18.7.1991, w.e.f. 17.8.1991.

44. Instructions for restoration of persons suffering from electric shock-

(1) Instructions, in English or Hindi and the local language of the district and where Hindi is the local language, in English and Hindi for the restoration of persons suffering from electric shock, shall be affixed by the owner in a conspicuous place in every generating station, enclosed sub-station, enclosed

switch-station and in every factory as defined in clause (m) of section 2 of the Factories Act, 1948 (63 of 1948) in which electricity is used and in such other premises where electricity is used as the Inspector or any officer appointed to assist the Inspector may, by notice in writing served on the owner, direct.

(2) Copies of the instructions shall be supplied on demand by an officer or officers appointed by the Central or the State Government in this behalf at a price to be fixed by the Central or the State Government.

(3) The owner of every generating station, enclosed sub-station, enclosed switch-station and every factory or other premises to which this rule applies, shall ensure that all authorised persons employed by him are acquainted with and are competent to apply the instructions referred to in sub-rule (1).

(4) In every manned high voltage or extra-high voltage generating station, sub-station or switch station, an artificial respirator shall be provided and kept in good working condition.

¹[44A. Intimation of Accident- If any accident occurs in connection with the generation, transmission, supply or use of energy in or in connection with, any part of the electric supply lines or other works of any person and the accident results in or is likely to have resulted in loss of human or animal life or in any injury to a human being or an animal, such person or any authorised person of the State Electricity Board/Supplier, not below the rank of a Junior Engineer or equivalent shall send to the Inspector a telegraphic report within 24 hours of the knowledge of the occurrence of the fatal accident and a written report in the form set out in Annexure XIII within 48 hours of the knowledge of occurrence of fatal and all other accidents. Where practicable a telephonic message should also be given to the Inspector immediately the accident comes to the knowledge of the authorised officer of the State Electricity Board/ Supplier or other person concerned.]

1. Subs. by GSR 1049, dt. 17.10.1985, w.e.f. 9.11.1985.

45. Precautions to be adopted by consumers ¹[owners occupiers], electrical contractors, electrical workmen and suppliers-

(1) No electrical installation work, including additions, alterations, repairs and adjustments to existing installations, except such replacement of lamps, fans, fuses, switches, low voltage domestic appliances and fittings as in no way alters its capacity or character, shall be carried out upon the premises of or on behalf of any ²[consumer, supplier, owner or occupier] for the purpose of supply to such ²[consumer, supplier, owner or occupier] except by an electrical contractor licensed in this behalf by the State Government and under the direct supervision of a person holding a certificate of competency and by a person holding a permit issued or recognised by the State Government.

Provided that in the case of works executed for or on behalf of the Central Government and in the case of installations in mines, oil fields and railways, the Central Government and in other cases the State Government may, by notification in the Official Gazette, exempt, on such conditions as it may impose, any such work described therein either generally or in the case of any specified class of ²[consumers, suppliers, owners or occupiers] from so much of this sub-rule as requires such work to be carried out by an electrical contractor licensed by the State Government in this behalf.

³[(2) No electrical installation work which has been carried out in contravention of sub-rule (1) shall either be energised or connected to the works of any supplier.]

⁴[(3) * *]

1. Ins. by GSR 529, dt. 11.7.1986, w.e.f. 19.7.1986.
2. Subs. by GSR 45, dt. 1.1.1993, w.e.f. 23.1.1993.
3. Subs. by GSR 529, dt. 11.7.1986, w.e.f. 19.7.1986.
4. Sub-rule (3) omitted by GSR 844, dt. 31.7.1985, w.e.f. 7.9.1985.
46. Periodical inspection and testing of consumer's installation. -

(1) (a) Where an installation is already connected to the supply system of the supplier, every such installation shall be periodically inspected and tested at intervals not exceeding five years either by the Inspector or any officer appointed to assist the Inspector or by the supplier as may be directed by the State Government in this behalf or in the case of installations belonging to, or under the control of the Central Government, and in the case of installation in mines, oilfields and railways by the Central Government.

(b) Where the supplier is directed by the Central or the State Government as the case may be to inspect and test the installation he shall report on the condition of the installation to the consumer concerned in a form approved by the Inspector and shall submit a copy of such report to the Inspector or to any officer appointed to assist the Inspector and authorised under sub-rule (2) of rule 4A.

(c) Subject to the approval of the Inspector, the forms of inspection report contained in Annexure IX-A may, with such variations as the circumstances of each case require, be used for the purposes of this sub-rule.

(2) (a) The fees for such inspection and test shall be determined by the Central or the State Government, as the case may be, in the case of each class of consumers and shall be payable by the consumer in advance.

(b) In the even it of the failure of any consumer to pay the fees on or before the date specified in the fee-notice, supply to the installation of such consumer shall be liable to be disconnected under the direction of the Inspector. Such

disconnection, however, shall not be made by the supplier without giving to the consumer seven clear days' notice in writing of his intention so to do.

(c) In the event of the failure of the owner of any installation to rectify the defects in his installation pointed out by the Inspector or by any officer appointed to assist him and authorised under sub-rule (2) of rule 4A in the form set out in Annexure IX and within the time indicated therein, such installation shall be liable to be disconnected ¹[under the directions of the Inspector] after serving the owner of such installation with a notice.

Provided that the installation shall not be disconnected in case an appeal is made under rule 6 and the appellate authority has stayed the orders of disconnection.

Provided further that the time indicated in the notice shall not be less than 48 hours in any case.

Provided also that nothing contained in this clause shall have any effect on the application of rule 49.

(3) Notwithstanding the provisions of this rule, the consumer shall at all times be solely responsible for the maintenance of his installation in such condition as to be free from danger.

1. Subs. by GSR 29, dt. 24.12.1983, w.e.f. 14.1.1984.