

CENTRAL ELECTRICITY AUTHORITY**NOTIFICATION**

New Delhi, the 8th June, 2023

No. CEA-PS-16/1/2021-CEI Division.—Whereas the draft of the Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2022 was published in six newspaper dailies, as required by sub-section (3) of section 177 of the Electricity Act, 2003 (36 of 2003) read with sub-rule (2) of rule 3 of the Electricity (Procedure for Previous Publication) Rules, 2005 for inviting objections and suggestions from all persons likely to be affected thereby, before the expiry of the period of forty-five days, from the date on which the copies of the newspaper containing the said draft regulations were made available to the public;

And whereas copies of the said newspapers containing the public notices and the said draft regulations on the website of the Central Electricity Authority were made available to the public on 14th June, 2022;

And whereas the objections and suggestions received from the public on the said draft regulations were considered by the Central Electricity Authority;

Now, therefore, in exercise of the powers conferred by clause (b) of sub-section (2) of section 177 and read with section 53 of the Electricity Act, 2003, and in suppression of the Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010, except as respects things done or omitted to be done before such suppressions, the Central Electricity Authority hereby makes the following regulations, namely: –

Chapter I**Preliminary**

1. Short title and Commencement. – (1) These regulations may be called the Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2023.

(2) These regulations shall come into force on the date of publication in the Official Gazette.

(3) **Scope and extent of application.** – These regulations shall be applicable to electrical installation including electrical plant and electric line, and the person engaged in the generation or transmission or distribution or trading or supply or use of electricity.

2. Definitions. – (1) In these regulations, unless the context otherwise requires,

- (a) “Act” means the Electricity Act, 2003 (36 of 2003);
- (b) “accessible” means within physical reach without the use of any appliance or special effort;
- (c) “aerial bunched cable” means polyethylene or cross linked polyethylene insulated cable having three or four cores with aluminium conductors twisted over a central bare or insulated aluminium alloy or steel messenger wire;
- (d) “apparatus” means electrical apparatus and includes all machines, fittings, accessories and appliances in which conductors are used;
- (e) “bare” means not covered with insulating materials;
- (f) “bonding conductor” means the inter connecting conductors for the purpose of equipotential bonding with the main earth;
- (g) “cable” means a length of insulated single conductor, solid or stranded, or two or more such conductors each provided with its own insulation, which are laid up together;
- (h) “chartered electrical safety engineer” means a person authorised by the Appropriate Government as referred in regulation 6;
- (i) “circuit” means an arrangement of conductor or conductors for conveying electricity and forming a system or a branch of a system and protected at the origin;
- (j) “circuit breaker” means a mechanical switching device, capable of making, carrying and breaking currents under normal circuit conditions and also making, carrying for a specified duration and breaking currents under specified abnormal circuit condition;
- (k) “concentric cable” means a composite cable comprising an inner conductor which is insulated and one or more outer conductors which are insulated from one another and are disposed over the insulation of, and more or less around, the inner conductor;
- (l) “conductor” means any wire, cable, bar, tube, rail or plate used for conducting electricity;

- (m) “conduit” means rigid or flexible metallic tubing or mechanically strong and fire resisting non-metallic tubing into which a cable or cables may be drawn for the purpose of affording it for mechanical protection;
- (n) “connected load” means the sum of the ratings in kilowatt or kilovolt-ampere of the apparatus connected to the installation of the consumer which may be connected simultaneously to the source;
- (o) “contact potential” means electric potential difference across the junction of two different objects in the absence of electric current;
- (p) “covered with insulating material” means adequately covered with insulating material of such quality and thickness as to prevent danger;
- (q) “cut out” means any device for automatically interrupting the flow of electricity through the conductor when the current increases above a pre-determined value, and shall also include fusible cut-out;
- (r) “danger” means risk to health or life or any part of body from electric shock, burn or other injuries to person, or property, or from fire or explosion, attendant upon the generation, transmission, transformation, conversion, distribution or use of electricity;
- (s) “dead” means at or about earth potential and disconnected from any live system and is used only with reference to current carrying parts when these parts are not live;
- (t) “designated person” means a person whose name appears in the record maintained under sub-regulation (2) of regulation 3 by the supplier or consumer, or the owner, agent or manager of all electrical installations including mine, or the agent of any company operating in an oil-field or the owner of a drilled well in an oil-field or a contractor;
- (u) “earthing” means connection of the exposed conductive and extraneous parts of an installation to the main earthing terminal of that installation or connection of neutral of transformer or generator or equipment to general mass of earth or earth bonded bar of that installation;
- (v) “earthing arrangement or earthing system” means all the electric connections and devices involved in the earthing of a system, an installation or equipment;
- (w) “electric vehicle” means any vehicle propelled, partly or wholly, by an electric motor drawing current from a rechargeable storage battery, or other portable energy storage devices or other self-generating electric source;
- (x) “electric vehicle supply equipment” means an element in electric vehicle charging infrastructure that supplies electric energy for recharging the battery of electric vehicles;
- (y) “enclosed substation” means any premises or enclosure or part thereof, being large enough to enable the entry of a person after the apparatus therein is in position, containing apparatus for transforming or converting electricity to or from a voltage at or exceeding six hundred fifty volt (other than transforming or converting solely for the operation of switch gear or instruments) with or without any other apparatus for switching, controlling or otherwise regulating the electricity, and includes the apparatus therein;
- (z) “enclosed switching station” means any premises or enclosure or part thereof, being large enough to enable the entry of a person, after the apparatus therein is in position, containing apparatus for switching, controlling or otherwise regulating electricity at or exceeding six hundred fifty volt but not for transforming or converting electricity (other than for transforming or converting solely for the operation of switchgear or instruments) and includes the apparatus therein;
- (za) “equipotential bonding” means an electrical connection putting various exposed conductive parts and extraneous conductive parts at a substantially equal potential;
- (zb) “exposed conductive part” means a conductive part which can readily be touched and which is not normally live, but which may become live under fault conditions;
- (zc) “extraneous conductive part” means a conductive part not forming part of the electrical installation and liable to introduce an electric potential, generally the electric potential of a local earth;
- (zd) “flameproof enclosure” means an enclosure in which the parts which can ignite an explosive atmosphere are placed and which can withstand the pressure developed during an internal explosion of an explosive mixture and which prevents the spread of explosion to the explosive atmosphere surrounding the enclosure;
- (ze) “flexible cable” means a cable consisting of one or more cores each formed of a group of wires, the diameter and the physical properties of the wires and insulating material are to allow flexibility;
- (zf) “guarded” means covered, shielded, fenced or otherwise protected by means of suitable casings, barrier,

- rails or metal screens to remove the possibility of dangerous contact or approach by persons or objects to a point of danger;
- (zg) “hand-held portable apparatus” means an apparatus designed to be capable of being held in the hands and moved while connected to a supply of electricity;
- (zh) “high voltage direct current” means direct current voltage one hundred kilovolt and above used for transmission of power;
- (zi) “inspector of mines” means an inspector appointed under the mines Act, 1952 (35 of 1952);
- (zj) “installation” means any composite electrical unit used for the purpose of generating, transforming, transmitting, converting, distributing or utilizing electricity;
- (zk) “Installation Manager” has the same meaning as defined in the Oil Mines Regulations, 2017;
- (zl) “intrinsically safe circuit” means any circuit in which any spark or any thermal effect produced in the conditions specified in the relevant standards, which include normal operation and specified fault conditions and not capable of causing ignition of a given explosive gas atmosphere;
- (zm) “intrinsically safe apparatus” means an electrical apparatus in which all the circuits are intrinsically safe circuits;
- (zn) “lightning arrester” means a device which has the property of diverting to earth any electrical surge of excessively high amplitude applied to its terminals and is capable of interrupting follow on current, if present, and restoring itself thereafter to its original operating conditions;
- (zo) “linked switch” means a switch with all the poles mechanically linked to operate simultaneously;
- (zp) “live” means electrically charged;
- (zq) “load despatcher” means the personnel engaged in operation of Load Despatch Centre;
- (zr) “metallic covering” means mechanically strong metal covering surrounding one or more conductors;
- (zs) “mine” shall have the same meaning as defined in clause (j) sub-section (1) of section 2 of the Mines Act, 1952 (35 of 1952);
- (zt) “neutral conductor” means that conductor of a multi-wire system, the voltage of which is normally intermediate between the voltages of the other conductors of the system and shall also include return wire of a single phase system;
- (zu) “notified voltage” means a voltage notified by the Appropriate Government under intimation to the Authority for the purpose of specifying the voltage level up to which self-certification is to be carried out under regulation 32 and regulation 45;
- (zv) “occupier” means the owner or person in occupation of the premises where electricity is used or proposed to be used;
- (zw) “open sparking” means sparking which owing to the lack of adequate provisions for preventing the ignition of inflammable gas external to the apparatus would ignite such inflammable gas;
- (zx) “owner or agent or manager of a mine” have the same meanings as are assigned to them in the Mines Act, 1952 (35 of 1952);
- (zy) “portable apparatus” means an apparatus which is so designed as to be capable of being moved while in operation;
- (zz) “portable hand lamp” means a portable light-fitting provided with suitable handle, guard and flexible cord connected to a plug;
- (zza) “protective conductor” means a conductor used for protection against electric shock and intended for connecting together which may include exposed conductive parts, extraneous conductive parts, the main earthing terminal, and the earthed point of the source, or an artificial neutral;
- (zzb) “self-certification” means a certification by a supplier or owner or consumer in the prescribed format as required under regulation 32 and regulation 45;
- (zzc) “socket outlet” means an electrical device that is for fixing at a point where fixed wiring terminates, and provides a detachable connection with the pins of a plug, and has two or more contacts and includes a cord extension socket attached to a flexible cord that is permanently connected to installation wiring;
- (zzd) “span” means the horizontal distance between two adjacent supporting points of an overhead conductor;

- (zze) “standard” means Indian Standard and in absence of Indian Standard, International Electrotechnical Commission Standard, Institute of Electrical and Electronic Engineers Standard, European Norms Standard in the sequence of their appearance unless stated otherwise;
- (zzf) “street box” means an enclosed structure, either above or below ground containing apparatus for transforming, switching, controlling or otherwise regulating electricity;
- (zzg) “supplier” means any generating company or licensee from whose system electricity flows into the system of another generating company or licensee or consumer;
- (zzh) “supply lead” means a piece of equipment used to establish the connection between the electric vehicle and either a socket-outlet or a charging point;
- (zzi) “switch” means a manually operated device for opening and closing or for changing the connection of a circuit;
- (zzj) “switchboard” means an assembly including the switchgear for the control of electrical circuits, electric connections and the supporting frame;
- (zzk) “switchgear” shall denote switches, circuit breakers, cut-outs and other apparatus used for the operation, regulation and control of circuits;
- (zzl) “system” means an electrical system in which all the conductors and apparatus are electrically connected to a common source of electric supply;
- (zzm) “telecommunication line” means any equipment, structure and cable designed or intended for use in telecommunication;
- (zzn) “transportable apparatus” means apparatus which is operated in a fixed position but which is so designed as to be capable of being moved readily from one place to another;
- (zzo) “watt” is a unit of active power; and
- (zzp) “MW” means megawatt and is equal to 10^6 watts.

(2) Words and expressions used herein and not defined in these regulations but defined in the Act shall have the meanings respectively assigned to them in the Act.

Chapter II

Designated Person, Chartered Electrical Safety Engineer, Training and Certification

- 3. Designated person to operate and carry out the work on electrical lines and apparatus.** – (1) The supplier or consumer, or owner of electrical installation, owner or agent or manager of a mine, or agent of any company operating in an oil-field or owner of a drilled well in an oil-field or a contractor who has entered into a contract with a supplier or a consumer, or owner of electrical installation, owner or agent or manager of a mine, or agent of any company operating in an oil-field or owner of a drilled well in an oil-field to carry out duties incidental to the generation, transformation, transmission, conversion, distribution or use of electricity shall designate person for the purpose to operate and carry out the work on electrical lines and apparatus.
- (2) The supplier or consumer, or owner or agent or manager of a mine, or agent of any company operating in an oil-field or the owner of a drilled well in an oil-field or a contractor referred to in sub-regulation (1) shall maintain a record, in paper or electronic form, wherein the names of the designated person and the purpose for which they are designated, shall be entered.
- (3) No person shall be designated under sub-regulation (1) unless,-
- he possesses a certificate of competency or electrical work permit, issued by the Appropriate Government; and
 - his name is entered in the register referred to in sub-regulation (2).
- 4. Inspection of record of designated person.** – (1) The record maintained under sub-regulation (2) of regulation 3 shall be produced before the Electrical Inspector as and when required.
- (2) If on inspection, the Electrical Inspector finds that the designated person does not comply with sub-regulation (3) of regulation 3, he shall recommend the removal of the name of such person from the record.
- 5. Electrical Safety Officer.** – (1) All suppliers of electricity including generating companies, transmission companies and distribution companies shall designate an Electrical Safety Officer for ensuring observance of safety measures specified under these regulations in their organisation for construction, operation and maintenance of electrical system of all generating stations, transmission lines, substations, distribution systems and supply lines.

(2) The Electrical Safety Officer shall possess a degree in Electrical Engineering with at least five years experience in operation and maintenance of electrical installations or a Diploma in Electrical Engineering with at least ten years experience in operation and maintenance of electrical installations:

Provided that the Electrical Safety Officer designated for mines shall possess educational qualification as mentioned in sub-regulation (2) with at least five years of experience in operation and maintenance of electrical installations relevant to mines.

(3) For every electrical installation including factory registered under the Factories Act, 1948 (63 of 1952) with more than 250 kW connected load and mines and oil-field as defined in the Mines Act, 1952 (35 of 1952), with more than 2000 kW connected load, the owner of the installation or the management of the factory or mines, as the case may be, shall designate Electrical Safety Officer under sub-regulation (1) and having qualification and experience specified in sub-regulation (2), for ensuring the compliance of the safety provisions laid under the Act and the regulations made thereunder:

Provided that the Electrical Safety Officer shall carryout recommended periodic tests as per the relevant standards, and inspect such installations at intervals not exceeding one year, and keep a record thereof in Form I or Form II or Form III or Form IV, as the case may be, of Schedule II of these regulations; test reports and a register of recommendations in regard with safety duly acknowledged by owner; compliances made thereafter; and such records shall be made available to the Electrical Inspector, as and when required.

6. Chartered Electrical Safety Engineer. – (1) The Appropriate Government shall authorise Chartered Electrical Safety Engineer from amongst persons having the qualification and experience as per the guidelines issued by the Authority to assist the owner or supplier or consumer of electrical installations for the purpose of self-certification under regulation 32 and regulation 45 of these regulations.

(2) The Appropriate Government shall upload the name of the Chartered Electrical Safety Engineer, as soon as any person is authorised as Chartered Electrical Safety Engineer, on the web portal of the Government or the Department dealing with matters of inspection of electrical installations for the information of the owner or supplier or consumer.

7. Safety measures for operation and maintenance of generating station. – (1) The Engineers and Supervisors engaged or appointed to operate or undertake maintenance of any part or whole of a generating station shall hold degree or diploma in Engineering relevant to the electrical installations from a recognised institute or university.

(2) The Engineers and Supervisors engaged or appointed for operation and maintenance of generating station shall have successfully undergone the type of training as specified by the Authority in its guidelines issued under sub-regulation (4) from time to time, within two years from the date of engagement or appointment.

(3) The Technicians to assist Engineers or Supervisors shall possess a certificate in appropriate trade, preferably with a two years course from an Industrial Training Institute recognised by the Central Government or the State Government and shall have successfully undergone the type of training as specified in sub-regulation (4), within two years from the date of engagement or appointment:

Provided that the existing employees, as on the date of notification of these regulations, who are extending technical assistance to Engineers or Supervisors and do not have requisite qualification as mentioned in this regulation, shall have to undergo the training either from Power Sector Skill Council or from training institute recognised by the Authority for carrying out trade specific course as per the guidelines issued by the Authority and get certificate as mentioned above within two years from the date of notification of these regulations.

(4) The Authority shall issue guidelines for the training for operation and maintenance of generating station within six months of the notification of these regulations:

Provided that the duration and content of the training course shall be as specified in the guidelines.

(5) The owner of every generating station shall arrange for training of personnel engaged or appointed to operate and undertake maintenance of the generating station from its own institute or any other institute recognised by the Authority or State Government as per the guidelines and shall maintain records of the assessment of these personnel issued by the training institute in the format prescribed in guidelines and such records shall be made available to the Electrical Inspector, as and when required.

(6) The certificate of recognition of the training institute under these regulations shall be displayed by the Institute on its website at home page.

(7) Notwithstanding anything contained in sub-regulation (4), the training syllabus may be customised by the owner of the generating station of capacity below 100 MW owning the training institute for the purpose of imparting training to its employees under intimation to the Authority.