

recorded allow deviation in respect of matters referred in regulations 14 to 19, regulation 30, sub-regulations (2), (3) and (5) of regulation 37, sub-regulation (3) of regulation 38, clauses (i) to (iv) of regulation 39, clause (xii) of regulation 43, regulation 45, sub-regulation (2) of regulation 46, regulations 48, regulations 54 to 56, regulations 59 to 63, regulation 67, regulation 74, regulation 77, regulations 81 to 94, regulation 104, sub-regulations (6), (8) and (10) of regulation 109, regulation 116 and regulations 119 to 135 on case to case basis.

Explanation. – Every order allowing the deviations by the Electrical Inspector or the Electrical Inspector of Mines under sub-regulation (2) shall be placed before the Central or State Government which shall have the final decision.

Schedule I

Handling of electric supply lines and apparatus

[See sub-regulation (3) of regulation (21)]

Part-I

Precautions to be observed: -

- (1) Hotline maintenance trained personnel only shall be designated to do work on line.
- (2) Work permit shall be taken from the terminal substations at each end of the line.
- (3) Work shall be performed with proper planning and prior understanding and clarity.
- (4) Favourable climatic condition for hotline operations is sunny weather. If the weather forecasts rain or thunderstorms work will not begin.
- (5) Organisation of work shall be discussed among the members and responsibility of each team member fixed.
- (6) Before going to the work site, all equipment and tools shall be inspected and checked for correct operation.
- (7) Auto re-closure shall be in 'OFF' position for the line at both ends.
- (8) The work procedure shall be discussed with the team member at the tower location and the responsibility of each member shall be properly defined.
- (9) The land in close vicinity to the tower/poles shall be cleared to provide a site area for the required tools.
- (10) All cleaned hot sticks, strain carrier and other assemblies shall be kept on the hotline tool rack to avoid ground contact.
- (11) Helmet, safety shoes and safety belt shall compulsorily be used.
- (12) All hot sticks and ladders shall be cleaned and checked for integrity by the hot sticks tester.
- (13) All linemen in the hotline team shall be equipped with personal protective equipment during the work.
- (14) No live-line team members on the tower and conductor shall wear any metallic chain, wristwatch or ring to avoid any circulating current.
- (15) The team of linemen shall wear conductive socks, boots, helmets and hand gloves. The 'hot-end' lineman shall wear complete bare hand suit.
- (16) Tarpaulin sheet should be laid on the work area.
- (17) A light vehicle shall be kept nearby during entire work period.

Tools normally required for hot line maintenance operation: -

The following tools conforming to the relevant standards or equivalent specifications shall be used in on-line working:

- (1) Wire tongs;
- (2) Wire tongs saddle;
- (3) Tie sticks;
- (4) Strain link sticks;
- (5) Roller link sticks;
- (6) Suspension link sticks;
- (7) Auxiliary arms;
- (8) Strain carrier;

- (9) Gin poles;
- (10) Cum-a-along clamp;
- (11) Safety equipment like conductor guards, X-arm guards, insulator covers, hand gloves and the like; and
- (12) Hot sticks.

Safe Working Distance: -

The following safe working distances shall be observed for hot line maintenance operations:

Phase to Phase	Safe Clearance
kV	Metre
11	0.61
33	0.71
66	0.91
110	1.02
132	1.07
220	1.52
400	2.13

Handling electric supply lines and apparatus for carrying out shutdown work or testing

[See sub-regulation (3) of regulation (21)]

Part-II

Precautions to be observed: -

- (1) Before commencement of any shutdown work or testing in an electric supply line or apparatus, the Engineer or Supervisor in-charge of the work or testing shall identify the possible hazards, such as; electrocution, flash over, fall of person from height, fall of objects from height, failure of tools and plants, fire, and the like, that may be encountered while carrying out the work or testing near charged area and take necessary precaution to protect the working personnel.
- (2) The Engineer or Supervisor in-charge of the work shall, before commencement of any work, brief the entire working group or gang regarding the hazards that may be encountered and the necessary precautions to be taken by them.
- (3) The Engineer or Supervisor in-charge of the work shall obtain proper permit-to-work from the concerned Operation In-charge(s) and ensure that the electric supply line or apparatus or section is isolated from all sources of energy, de-energised and earthed.
- (4) The Engineer or Supervisor in-charge of the work shall ensure that adequate and appropriate local earths are fixed at the zone of working, and the earthing rods remain connected to the isolated section of the electric supply line or apparatus or section till all men and materials have been moved away to safe zone and permit to work is returned on completion of the work.
- (5) If the local earths are required to be removed for any testing purpose, the same shall be done only when all the working personnel are in the safe zone, on the ground or on the tower, and in the presence of the Engineer or Supervisor. If the working personnel are required to go up or approach the conductor(s) subsequently for any work, such as removal of test leads, tightening or adjustment, they shall be permitted to proceed only after re-fixing the local earths, as required.
- (6) The Engineer or Supervisor in-charge of the work shall positively confirm by suitable means that the electric supply line or apparatus or section is totally dead before giving clearance for the working personnel to approach the same.
- (7) The Engineer or Supervisor in-charge of the work shall, while carrying out the shutdown work or testing, ensure that working personnel are maintaining safe distance from the adjacent charged electric supply line or apparatus or section, and also, no objects, such as tools and plants, ladders, cranes, man-lifts, and the like, are moved, so as to infringe the safe distance, endangering the working personnel.
- (8) Mobile cranes, derricks, man lifts and wheel mounted ladders shall be effectively earthed when being moved or

operated in close proximity with energised apparatus or section.

(9) Portable ladders and poles shall be carried only in the horizontal position when being moved in close proximity with energised lines or equipment or area.

Further Precautions to be observed: -

(1) Adequate and effective supervision shall be ensured by the owner as well as the contractor for all activities while working or testing on electric supply lines and apparatus when any shutdown work or testing is done near charged electric supply line or apparatus or section.

(2) Lone worker shall never be allowed to work on electric supply lines, equipment and apparatus or while testing.

(3) Sufficient supervisory personnel shall be deployed for close monitoring while various type of works are under progress at the same or different locations. Supervising work shall never be delegated to the sub-contractors' personnel.

(4) The deployed Supervising Personnel shall not leave the working spot when shutdown work at height or testing is in the progress, as the working personnel may not be aware of the consequences of unsafe practices. No other work, which requires them to move out of the location, shall be undertaken by Supervising personnel, when shutdown work or testing is in the progress.

(5) Wherever shutdown activities are required to be carried out for more than one day on any electric supply lines, apparatus or section, earthing provided at the said work site shall be inspected by the Engineer or Supervisor everyday morning for their healthiness, fitness and proper tightening, before giving clearance for the working personnel to climb the tower or structure to resume the work.

Handling high voltage direct current apparatus for carrying out shutdown work or testing

[See sub-regulation (3) of regulation (21)]

Part-III

Precautions to be observed: -

(1) The Engineer or Supervisor in-charge of the work shall obtain proper Permit-To-Work (PTW) from the concerned Operation In-charge(s) and ensure that the electric supply line or apparatus or section is isolated from all sources of energy, de-energised and earthed.

(2) Before commencement of any shutdown work or testing of high voltage direct current apparatus, the Engineer or Supervisor in-charge of the work or testing shall identify the possible hazards, such as; electrocution, flash over, fall of person from height, fall of objects from height, failure of tools and plants, fire, and the like, that may be encountered while carrying out the work or testing near charged area and take necessary precaution to protect the working personnel.

(3) The Engineer or Supervisor in-charge of the work shall, before commencement of any work, brief the entire working group or gang of the hazards that may be encountered and the necessary precautions to be taken by them.

(4) Attach warning labels to all neighboring installation parts (to be removed after the works have been carried out).

(5) The Engineer or Supervisor in-charge of the work shall allow access to the valve hall, DC Filter Area, AC Filter Area and DC hall (if any) only when the apparatus therein are completely de-energised and effectively earthed.

(6) The work on AC/DC filter bank shall only begin after earthing the entire capacitor bank.

(7) There shall be at least ten minute time gap between earthing the entire capacitor bank and starting the work on bank. There after unit must be short circuited.

(8) The de-energised bushing shall be checked for stored charge by touching all the surfaces of both indoor and outdoor side composite insulators and all other parts of the bushing using a proper test instrument.

(9) The gas pressure inside high voltage direct current through wall bushing shall be reduced to a level prescribed by the manufacturer before starting any work or handling of the bushing.

Handling Gas Insulated Switchgear (GIS) apparatus for carrying out shutdown work or testing

[See sub-regulation (3) of regulation (21)]

Part-IV

Precautions to be observed: -

- (1) The Engineer or Supervisor in-charge of the work shall obtain proper Permit-To-Work from the concerned Operation In-charge(s) and ensure that the electric supply line or apparatus or section is isolated from all sources of energy, de-energised and earthed.
- (2) Operation, maintenance and repair must be carried out by trained and certified personnel only.
- (3) Before commencement of any shutdown work or testing of gas insulated switchgear apparatus, the Engineer or Supervisor in-charge of the work or testing shall identify the possible hazards, such as; electrocution, flash over, fall of person from height, fall of objects from height, failure of Tools and Plants, fire, and the like, that may be encountered while carrying out the work or testing near charged area and take necessary precaution to protect the working personnel.
- (4) The Engineer or Supervisor in-charge of the work shall, before commencement of any work, brief the entire working group or gang of the hazards that may be encountered and the necessary precautions to be taken by them.
- (5) Wear hearing protection during operation.
- (6) Take care while touching the enclosure at any time as enclosures may heat up to the temperature of 70°C.
- (7) Observe the procedures for storage, transportation, and the use of filling equipment.
- (8) Wear the personal protective equipment: respirator mask (self-contained breathing equipment if necessary), protective overall, protective gloves, safety shoes, safety glasses.
- (9) Attach warning labels to all neighboring installation parts (to be removed after the works have been carried out).
- (10) Provide proper electrical clearance as required by interlocking rules. Mark e.g. main circuits and control circuits with appropriate tags.
- (11) Block off neighboring live parts with screens, insulating mats or spacer grids in order to prevent unintended contacts.
- (12) While working on any compartment in gas insulated switchgear, the immediate adjacent compartment(s) must be also depressurised for safety of the working person.
- (13) SF₆ gas becomes contaminated and contains poisonous substances after events such as arc faults. Hence, handling of SF₆ in such cases must be done using proper PPEs and by a trained personnel, preferably from the original equipment manufacturer.
- (14) The switchgear installation shall not be operated if the density of SF₆ gas indicated at the density monitors is not in the operating range.
- (15) Do not remove any protective covers if an assembly is energized.
- (16) The Engineer or Supervisor in-charge of the work shall ensure that adequate and appropriate local earths are fixed at the zone of working, and the earthing rods remain connected to the isolated section of the electric supply line or apparatus or section till all men and materials have been moved away to safe zone and Permit-To-Work is returned on completion of the work.

Schedule II

Forms of Inspection Report

[See regulation (32) and (45)]

FORM I**(Installations of voltage up to and including 250V)**

Report _____

Date of inspection by Electrical Inspector or self-certification by supplier/owner/consumer

Date of last inspection or self-certification _____

1. Consumer No. _____

2. Voltage and system of supply:

(i) Volts _____ (ii) No. of Phases _____ (iii) AC/DC _____

3. Type of wiring* _____

**State type of wiring whether casing capping, lead covered of teak wood batten, concealed conduit, Tough Rubber Sheathed and any other type.*

4. Name of the consumer or owner _____

5. Address of the consumer or owner _____

6. Location of the premises _____

7. Particulars of the installations:

	Number	Connected Load in kW
(a) (i) Light Points	_____	_____
(ii) Fan Points	_____	_____
(iii) Plug Points	_____	_____

(b) Other equipment (complete details to be furnished):

(i) _____

(ii) _____

Total connected load in kW _____

Maximum current demand in Amps _____

(on the basis of total connected load)

(c) Generators: (complete detail to be enclosed)

Make	S. No.	kVA rating	Voltage rating	Type
(i) _____				
(ii) _____				

8. General conditions of the installation:

Sl. No.	Regulation No.	Requirements	Report	
1.	Regulation 14	(i) Is/Are there any visible sign(s) of overloading in respect of any apparatus wiring?	Yes/No	
		(ii) Condition of flexible cords, sockets, switches, plug-pins, cut-outs and lamp holders and such other fittings.	Satisfactory/ Not Satisfactory	
		(iii) General condition of wiring.	Satisfactory/ Not Satisfactory	
		(iv) Whether any unauthorised temporary installation exist?	Yes/No	
		(v) State if sockets are controlled by individual switches.	Yes/No	
		(vi) Any other defect or condition which may be a source of danger. If yes, give details.	Yes/No	
2.	Regulation 15	Give report on condition of service lines, cables, wires, apparatus and such other fittings placed by the supplier or owner of the premises. If not satisfactory, give details.	Satisfactory/ Not Satisfactory	
3.	1	Regulation 16	Whether suitable cut-outs provided by the supplier at the consumer's premises are within enclosed fire proof receptacle?	Yes/No
4.	1	Regulation 17	(i) State if switches are provided on live conductors.	Yes/No
		(ii) State if indication of a permanent nature is provided as per regulation so as to distinguish earthed or earthed	Yes/No	

		neutral conductor from the live conductor.	
		(iii) Whether a direct line is provided on the neutral in the case of single-phase double pole iron clad switches instead of fuse?	Yes/No
5.	Regulation 18	(i) State if earthed terminal is provided by the supplier.	Yes/No
		(ii) Have three pin plugs been provided for plug points?	Yes/No
		(iii) General visible condition of the earthing arrangement.	Satisfactory/ Not Satisfactory
6.	Regulation 19	Are the live parts in building inaccessible?	Yes/No
7.	Regulation 36	State insulation resistance between conductors and earth in Mega Ohms.	----- Mega Ohms
8.	Regulation 37	(i) State if linked switches of requisite capacity are provided near the point of commencement of supply.	Yes/No
		(ii) State if the wiring is divided in suitable number of circuits and each such circuit is protected by suitable cut-out.	Yes/No
		(iii) State if supply to each motor or apparatus is controlled by suitable linked switch.	Yes/No
9.	Regulation 43	(i) Have the frames of every generator, stationary motor and so far as practicable portable motor and the metallic parts (not intended as conductors) of all other apparatus used for regulating* or controlling electricity been earthed by two separate and distinct connections with earth?	Yes/No
		(ii) Is the earth wire free from mechanical damage?	Yes/No
		(iii) In the case of conduit, or lead covered wiring, has the conduit or lead-cover been efficiently earthed?	Yes/No
		(iv) If the consumer has his own earth-electrode, state if it is properly executed and has been tested. If yes, give value of earth resistance	----- Ohms
10.	Regulation 44	Whether residual current device of appropriate capacity as defined in Regulation have been provided?	Yes/No
11.	Overhead Lines	(i) State if the consumer has any overhead lines.	Yes/No
		(ii) Does the overhead line near the premises of consumer meets the requirement of regulation 60, 61 and 62? If not, give details.	Yes/No
		(iii) Is guarding provided for overhead lines as per Regulation 76?	Yes/No
		(iv) Any other remarks.	

Date:

Signature of the supplier/ Owner / Consumer

Name _____

Designation _____

File No. _____

To: Office of Electrical Inspector for

* Not applicable to isolated wall tubes or to brackets, electroliers, switches, ceiling fans and such other fittings (other than portable hand lamps and transportable apparatus) unless provided with earth terminal.

FORM II**[See Regulation (32) and (45)]****(Installations of voltage level more than 250 V up to and including 650 V)**

Report / Application No. _____

Date of inspection by Electrical Inspector or self-certification by supplier/owner/consumer _____

Date of last inspection or self-certification _____

1. Consumer No. _____

2. Voltage and system of supply:

(i) Volts _____ (ii) No. of Phases _____ (iii) AC/DC _____

3. Name of the consumer or owner _____

4. Address of the consumer or owner _____

5. Location of the premises _____

6. Particulars of the installations:

(a) Motors:

Make	S. No.	kW/MW rating	Voltage rating	Type
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(i) _____

(ii) _____

(b) Other equipment (complete details to be furnished):

(i) _____

(ii) _____

(c) Total connected load kW / kVA _____

(d) Generators: (complete detail to be enclosed)

Make	S. No.	kVA rating	Voltage rating	Type
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(iii) _____

(iv) _____

7. General condition of the installation:

Sl.No.	Regulation No.	Requirements	Report
1.	Regulation 3	Is the record of the designated persons properly made and kept up to date and duly attested?	Yes/No
2.	Regulation 14	(i) Is/Are there any visible sign(s) of overloading in respect of any apparatus wiring?	Yes/No
		(ii) Whether any unauthorised temporary installation exist?	Yes/No
		(iii) Are the electric supply lines and apparatus so installed, protected, worked and maintained as to prevent danger?	Yes/No
		(iv) Any other general remarks.	
3.	Regulation 15	Give report on condition of service lines, cables, wires, apparatus and such other fittings placed by the supplier or owner of the premises. If not satisfactory, give details.	Satisfactory/ Not Satisfactory
4.	Regulation 16	Whether suitable cut-outs/CBs provided by the supplier at the consumer's premises are within enclosed fire proof receptacle?	Yes/No
5.	Regulation 17	(i) Whether switches are provided on live conductors?	Yes/No
		(ii) Whether indication of a permanent nature is provided as per regulation so as to distinguish earthed or earthed neutral conductor from the live conductor as per IS color	Yes/No

		code?	
		(iii) Whether a direct line is provided on the neutral in the case of single-phase double pole iron clad switches/Isolators/CBs instead of fuse?	Yes/No
6.	Regulation 18	(i) Whether earthed terminal is provided by the supplier?	Yes/No
		(ii) General visible condition of the earthing arrangement.	Satisfactory/ Not Satisfactory
7.	Regulation 19	(i) Are bare conductors in building inaccessible?	Yes/No
		(ii) Whether readily accessible switches have been provided for rendering them dead?	Yes/No
8.	Regulation 20	Whether "Danger Notice" in Hindi and the local language of the district and of a design as per the relevant standards is affixed permanently in conspicuous position?	Yes/No
9.	Regulation 21	(i) Whether insulating floor or mats have been provided?	Yes/No
		(ii) Whether identification of panel has been provided on the front and the rear of the panel?	Yes/No
10.	Regulation 23	Whether flexible cables used for portable or transportable equipment covered under the regulation, are heavily insulated and adequately protected from mechanical injury?	Yes/No
11.	Regulation 24	State the condition of metallic coverings provided for various conductors.	Satisfactory/ Not Satisfactory
12.	Regulation 26	Whether the circuits or apparatus intended for operating at different voltage(s) are distinguishable by means of indication(s) of permanent nature?	Yes/No
13.	Regulation 28	Whether all circuits and apparatus are so arranged that there is no danger of any part(s) becoming accidentally charged to any voltage beyond the limits of voltage for which it/they is/are intended?	Yes/No
14.	Regulation 29	(i) In the case of generating stations, whether fire-buckets filled with clean dry sand have been conspicuously marked and kept in convenient location in addition to fire-extinguishers suitable for dealing with fires ?	Yes/No
		(ii) Whether First Aid Boxes or cupboards conspicuously marked and properly equipped are provided and maintained?	Yes/No
		(iii) Is adequate staff trained in First Aid Treatment and firefighting?	Yes/No
15.	Regulation 30	(i) Whether 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 resuscitation of persons suffering from electric shock have been affixed in a "conspicuous place"?	Yes/No
		(ii) Are the persons specified under this Regulation able to apply instructions for resuscitation of persons suffering from electric shock?	Yes/No
16.	Regulation 36	State insulation resistance between conductors and earth in Mega Ohms.	----- Mega Ohms
17.	Regulation 37	(i) Whether a suitable linked switch, or circuit breaker is placed near the point of commencement of supply so as to be readily accessible and capable of being easily operated	Yes/No

		to completely isolate the supply?	
		(ii) Whether every distinct circuit is protected against excess electricity by means of a suitable circuit breaker or cut-out ?	Yes/No
		(iii) Whether suitable linked switch or circuit breaker is provided near each motor or apparatus for controlling supply to the motor or apparatus?	Yes/No
		(iv) Whether adequate precautions are taken to ensure that no live parts are so exposed as to cause danger?	Yes/No
18.	Regulation 39	(i) Whether clear space of 100 cm is provided in front of the main switchboard?	Yes/No
		(ii) Whether the space behind the switchboard exceeds 75 cm in width or is less than 20 cm?	Yes/No
		(iii) In case the clear space behind the switchboard exceeds 75 cm, state whether a passage way from either end of the switchboard to a height of 1.80 metre is provided.	Yes/No
19.	Regulation 43	(i) Have the frame of every generator, stationary motor and so far as practicable, portable motor and the metallic parts (not intended as conductors) of all transformers and any other apparatus used for regulating or controlling electricity and all apparatus consuming electricity at voltage exceeding 250 V but not exceeding 650 V been earthed by two separate and distinct connections with earth?	Yes/No
		(ii) Have the metal casings or metallic coverings containing or protecting any electric supply line or apparatus been properly earthed and so joined and connected across all junction boxes as to make good mechanical and electrical connection?	Yes/No
		(iii) Whether the consumer's earth-electrode is properly executed and has been tested. If yes, give value of earth resistance?	Yes/No _____ Ohm
		(iv) Is the earth wire free from any mechanical damage?	Yes/No
		(v) Whether record of earth resistance value maintained?	Yes/No
		(vi) Is the protective equipotential bonding tested?	Yes/No
		(vii) Is the fault loop impedance at origin of installation tested?	Yes/No
		(viii) Is the fault loop impedance of each circuit tested?	Yes/No
		(ix) Is the fault loop impedance tested for all sources?	Yes/No
20.	Regulation 44	Whether Residual Current Device of Appropriate capacity as defined in Regulation have been provided?	Yes/No
21.	Regulation 47	Have the protections and interlocks for the generating units been provided. Details of the protections shall be given.	Yes/No
22.	Overhead Lines	(i) State if the consumer has any overhead lines.	Yes/No
		(ii) Does the overhead line near the premises of consumer meets the requirement of regulations 60, 61 and 62? If not, give details.	Yes/No
		(iii) Is guarding provided for overhead lines as per regulation 76?	Yes/No
		(iv) Any other remarks.	Yes/No

Date:

Signature of the supplier/ Owner / Consumer

Name _____

Designation _____

File No. _____

To: Office of Electrical Inspector for

FORM III**(See Regulation 32 and 45)****(Installations of voltage exceeding 650 V)**

Report / Application No. _____

Date of inspection by Electrical Inspector or self-certification by supplier/owner/consumer

Date of last inspection or self-certification _____

1. Consumer No. _____

2. Voltage and system of supply:

(iii) Volts _____ (ii) No. of Phases _____ (iii) AC/DC _____

3. Name of the consumer or owner _____

4. Address of the consumer or owner _____

5. Location of the premises _____

6. Particulars of the installations:

(a) Transformers: (complete detail to be enclosed)

Make	S. No.	kVA/MVA rating	Voltage rating	Type
(i) _____	_____	_____	_____	_____
(ii) _____	_____	_____	_____	_____

(b) Generators: (complete detail to be enclosed)

Make	S. No.	kVA/MVA rating	Voltage rating	Type
(v) _____	_____	_____	_____	_____
(vi) _____	_____	_____	_____	_____

(c) List of Motors with rating, protection, overload setting, size of earth conductor used to be furnished

Make	S. No.	kW/MW rating	Voltage rating	Type
(iii) _____	_____	_____	_____	_____
(iv) _____	_____	_____	_____	_____

(d) List of equipment with complete details of HT /LT switchgears/ apparatus with their rating to be furnished):

(iii) _____

(iv) _____

(e) Total connected load kW / kVA _____

Complete list of connected loads to be furnished.

7. General condition of the installation:

Sl. No.	Regulation No.	Requirements	Report

1.	Regulation 3	Is the record of the designated persons properly made and kept up to date and duly attested?	Yes/No
2.	Regulation 5	Whether Electrical Safety Officer as required under the Regulation is designated?	Yes/No
	Regulation 14	(i) Is/Are there any visible sign(s) of overloading in respect of any apparatus?	Yes/No
		(ii) Whether any unauthorised temporary installation exist?	Yes/No
		(iii) Whether the motors and controlling equipment are being overhauled periodically and record kept of the same in a register?	Yes/No
		(iv) Whether the transformer oil samples are being tested periodically and results recorded in a register? State value of dielectric strength of oil.	Yes/No ---- kV/mm
		(v) Whether suitable lightning arresters have been provided near the transformers for protection against lightning?	Yes/No
		(vi) Whether earth resistance is being measured periodically once a year and results recorded in a register? Copy of record to be enclosed.	Yes/No
		(vii) Any other defect or condition which may be a source of danger. If yes, please explain?	Yes/No
		(viii) Whether operation and maintenance data has been clarified, categorised and computerised for prompt and easy retrieval?	Yes/No
		(ix) Whether residual life assessment and life extension programmes are being undertaken for installations or equipment of voltage exceeding 650 V (applicable for installations or equipment more than 15 years old)?	Yes/No
		(x) Whether all required type and routine tests at factory done for equipment? Deficiencies and discrepancies in above test report and results, if any, shall be reported.	Yes/No
		(xi) Are there deficiencies in construction with reference to Indian Standard requirements? Please specify.	Yes/No
4.	Regulation 15	Give report on condition of service lines, cables, wires, apparatus and such other fittings placed by the supplier or owner of the premises. If not satisfactory, give details.	Satisfactory/ Not Satisfactory
5.	Regulation 16	Whether suitable cut-outs/CBs provided by the supplier at the consumer's premises are within enclosed fire proof receptacle?	Yes/No
6.	Regulation 17	(i) Whether switches are provided on live conductors?	Yes/No
		(ii) Whether indication of a permanent nature is provided as per Regulation so as to distinguish earthed or earthed neutral conductor from the live conductor?	Yes/No
		(iii) Whether a direct line is provided on the neutral in the case of single-phase double pole iron clad switches/CBs instead of fuse?	Yes/No
7.	Regulation 18	(i) Whether earthed terminal is provided by the supplier?	Yes/No
		(ii) General visible condition of the earthing arrangement.	Satisfactory/ Not Satisfactory

8.	Regulation 19	(i) Are live parts in building inaccessible?	Yes/No
		(ii) Whether readily accessible switches have been provided for rendering them dead?	Yes/No
9.	Regulation 20	Whether “Danger Notice” in Hindi and the local language of the district and of a design as per the relevant standards is affixed permanently in conspicuous position?	Yes/No
10.	Regulation 21	(i) Whether the practice of working on live lines and apparatus is adopted? If so, have the safety measure been adopted as per Schedule I?	Yes/No
		(ii) Whether insulating floor or mats conforming to the relevant standards have been provided?	Yes/No
		(iii) Whether identification of panel has been provided on the front and the rear of the panel?	Yes/No
11.	Regulation 23	Whether flexible cables used for portable or transportable equipment covered under the Regulation, are heavily insulated and adequately protected from mechanical injury?	Yes/No
12.	Regulation 24	State the condition of metallic coverings provided for various conductors.	Satisfactory/ Not Satisfactory
13.	Regulation 26	Whether the circuits or apparatus intended for operating at different voltage(s) are distinguishable by means of indication(s) of permanent nature?	Yes/No
14.	Regulation 28	Whether all circuits and apparatus are so arranged that there is no danger of any part(s) becoming accidentally charged to any voltage beyond the limits of voltage for which it/they is/are intended?	Yes/No
15.	Regulation 29	(i) In the case of generating stations and enclosed sub stations, whether fire-buckets filled with clean dry sand have been conspicuously marked and kept in convenient location in addition to fire-extinguishers suitable for dealing with electric fires?	Yes/No
		(ii) Whether First Aid Boxes or cupboards conspicuously marked and properly equipped are provided and maintained?	Yes/No
		(iii) Is adequate staff trained in First Aid Treatment and firefighting?	Yes/No
16.	Regulation 30	(i) Whether 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 resuscitation of persons suffering from electric shock have been affixed in a “conspicuous place”?	Yes/No
		(ii) Are the persons mentioned in this regulation able to apply instructions for resuscitation of persons suffering from electric shock?	Yes/No
17.	Regulation 36	State insulation resistance between conductors and earth in Mega Ohms.	----- Mega Ohms
18.	Regulation 37	(i) Whether a suitable linked switch, or a circuit breaker, or an emergency tripping device is placed near the point of commencement of supply so as to be readily accessible and capable of being easily operated to completely isolate the supply?	Yes/No
		(ii) Whether suitable linked switch or a circuit breaker to carry and break the full load current is provided on the	Yes/No

		secondary side of a transformer?	
		(iii) Whether every distinct circuit is protected against excess electricity by means of a suitable circuit breaker or cut-out?	Yes/No
		(iv) Whether linked switch or circuit breaker or emergency tripping device is provided near the motor or other apparatus at voltage exceeding 650 V but not exceeding 33kV for controlling supply to the motor or apparatus?	Yes/No
		(v) Whether adequate precautions are taken to ensure that no live parts are so exposed as to cause danger?	Yes/No
19.	Regulation 39	(i) Whether clear space of 100 cm is provided in front of the main switchboard?	Yes/No
		(ii) Whether the space behind the switchboard exceeds 75 cm in width or is less than 20 cm?	Yes/No
		(iii) In case the clear space behind the switchboard exceeds 75 cm, state whether a passage way from either end of the switchboard to a height of 1.80 metre is provided.	Yes/No
20.	Regulation 46	(i) Whether all conductors and apparatus including live parts thereof are inaccessible	Yes/No
		(ii) Whether all windings of motors or other apparatus are suitably protected?	Yes/No
		(iii) Whether the separation wall or fire wall between apparatuses or consumer premises, in a substation or a switching station with apparatus having more than 2000 litres of oil are installed, have been provided as required under the regulation?	Yes/No
		(iv) Where 9000 litre or more of oil is used in any one oil tank, has provision been made for draining away or removal of oil which may leak or escape from such tank(s)?	Yes/No
		(v) Whether suitable firefighting system as per the regulation has been provided?	Yes/No
		(vi) Whether trenches inside substation containing cables are filled with non-inflammable material or completely covered with non-inflammable slabs?	Yes/No
		(vii) Are conductors and apparatus so arranged that they may be made dead in sections for carrying out work thereon?	Yes/No
21.	Regulation 47	Whether protections and interlocks have been provided? Give the details of the protection schemes and their settings.	Yes/No
22.	Regulation 50	(i) Have all non-current carrying metal parts associated with the installation been effectively earthed with the earthing system or mat by two separate and distinct connections?	Yes/No
		(ii) Is the earth wire free from any mechanical damage?	Yes/No
		(iii) Has the neutral point at the transformer and generator been earthed by two separate and distinct connections with earth?	Yes/No
		(iv) Have the metal casings or metallic coverings containing or protecting any electric supply line or apparatus been properly earthed and so joined and connected across all junction boxes as to make good mechanical and	Yes/No

		electrical connections throughout their whole length?	
		(v) Whether earthing has been properly executed and has been tested. If yes, give value of earth resistance.	Yes/No ___ Ohm
23.	Regulation 51	(i) Is the outdoor (except pole type) substation efficiently protected by fencing not less than 1.8 metre in height?	Yes/No
		(ii) Whether the mounting of a transformer on a single pole or H pole is done as per relevant standard.	Yes/No
24	Regulation 52	(i) Where platform type construction is used for pole type substation, has sufficient space for a man to stand on the platform been provided?	Yes/No
		(ii) Has hand-rail been provided and connected with earth (if metallic and if substation has not been erected on wooden supports and wooden platform)?	Yes/No
25.	Regulation 53	Has suitable provision been made for immediate and automatic or manual discharge of every static condenser on disconnection of supply?	Yes/No
26	Overhead Lines	(i) What is the minimum size of the conductors of overhead lines used? State the type of conductors. (Regulation 57)	Minimum size of Conductor ---
		(ii) Whether clearances above ground of the lowest conductor of overhead lines are as per regulation 60? State clearance.	Yes/No --- metre
		(iii) On the basis of maximum sag, whether vertical clearances where the line of voltage exceeding 650 V passes above or adjacent to any building or part of a building as per regulation 63? State clearance.	Yes/No --- metre
		(iv) On the basis of maximum deflection due to wind pressure, whether horizontal clearances between the nearest conductor and any part of such building are as per regulation 63? State clearance.	Yes/No --- metre
		(v) Where conductors forming parts of system at different voltages are erected on the same supports, whether adequate provision has been made as per regulation 64 to guard against danger to linemen and others from the lower voltage system being charged above its normal working voltage by leakage from or contact with the higher voltage system?	Yes/No
		(vi) Where overhead lines cross or are in proximity to each other whether they have been suitably protected to guard against possibility of their coming in contact with each other as per regulation 71?	Yes/No
		(vii) Has every guard wire been properly earthed as per regulation 72 at each point at which its electrical continuity is broken?	Yes/No
		(viii) (a) Whether metal supports of overhead lines and metallic fittings attached thereto are permanently earthed as per regulation 74? (b) Has each stay-wire (except in case where an insulator has been placed in it at a height not less than 3 metre from the ground) been earthed as per regulation 74?	Yes/No Yes/No
		(ix) (a) Whether overhead line is suitably protected with a device for rendering the line electrically harmless in case	Yes/No

		it breaks as per regulation 76? (b) Whether anti-climbing devices have been provided at each support as per regulation 75?	Yes/No
		(x) (a) Has the owner of overhead lines adopted efficient means for diverting to earth any electrical surges due to lightning in every overhead line which is so exposed as to be liable to injury from lightning as per regulation 77? (b) Whether earth lead from the lightning arresters is connected to a separate earth electrode as per regulation 77?	Yes/No Yes/No
		(xi) Whether unused overhead lines are maintained in a safe mechanical condition as per regulation 78?	Yes/No
		(xii) Whether statutory clearances from Authorities i.e. Forest Department/Railways/PTCC/Defence (AHQ) /Civil Aviation have been taken as per the relevant standards. If yes, enclose copies of the same.	Yes/No
		(xiii) Any other remarks.	Yes/No

In addition to above, following electrical equipment wise test details to be given, if applicable:

Sl. No.	Equipment	Test Conducted	Test Results	Remarks
1.	Linked Switch with fuses (s)	(i) Mechanical operation	Smooth/Trouble some	
		(ii) Rating of Fuse	-----Amps	
		(iii) Contact of blades	Full/Partial	
2.	Isolator (Sl. No.--- Make: Capacity:	(i) Mechanical operation	Ok/Not Ok	
		(ii) Remote Operation	OK/Not OK	
		(iii) Local Operation	OK/Not OK	
		(iv) Measurement of contact resistance		
		(v) Interlocking with earth switch	OK/Not OK	
		(vi) Interlocking with Circuit Breaker	OK/Not OK	
		(vii) IR Values • Open condition • Closed condition	Phase to Phase and Phase to Earth --- M Ohm --- M Ohm --- M Ohm --- M Ohm	
3.	Circuit Breaker (Circuit breaker location and no.) Circuit breaker control circuits	(i) Rating of Circuit Breaker • Type • Voltage • Normal Current • Rupturing Current	----- ----- kV ----- Amps ----- kA	
		(ii) IR Values • Open condition • Closed Condition	Phase to Phase and Phase to Earth --- M Ohm --- M Ohm --- M Ohm --- M Ohm	
		(iii) Contact Resistance including Dynamic Contact Resistance Measurement	-----micro ohm	
		(iv) Mechanical Operation	Instant smooth /time gap (Sec.)	
		(v) Remote operation	OK/Not OK	

		(vi) Local Operation	OK/Not OK	
		(vii) Interlocking with Isolator	OK/Not OK	
		(viii) Interlocking with earth switch	OK/Not OK	
		(ix) Alarm and Trip for OTI/WTI/Buchholz/PRV/etc.,	OK/Not OK	
		(x) Earth Fault Relay	OK/Not OK	
		(xi) Over Current Relay	OK/Not OK	
		(xii) Under Voltage Relay	OK/Not OK	
		(xiii) other safety Alarms	OK/Not OK	
		(xiv) Whether all the provisions of Regulation 37 are satisfactory?	OK/Not OK	
4.	Transformer Transformer No., Location, (Transformer Sl. No. Make, Capacity, Voltage Ratio)	(i) Insulation Resistance Values • HT to LT • HT to Earth • LT to Earth	-----M ohm -----M ohm -----M ohm	
		(ii) Break down Voltage test • Oil sample I (Top) • Oil Sample II (Bottom)	----- kV ----- kV	
		(iii) Vector Group Test	OK/Not OK	
		(iv) Polarity Tests	OK/Not OK	
		(v) Magnetic Balance	OK/Not OK	
		(vi) Tan Delta Test	OK/Not OK	
		(vii) Oil level in conservator tank	OK/Not OK	
		(viii) Oil level in breather cup	OK/Not OK	
		(ix) OTI/WTI settings	A/T--- ⁰ C/--- ⁰ C A/T--- ⁰ C/--- ⁰ C	
		(x) OTI/WTI alarm and trip operation	OK/Not OK	
		(xi) Operation of Buchholz relay	OK/Not OK	
		(xii) Operation of PRV	OK/Not OK	
		(xiii) Oil leakage	OK/Not OK	
		(xiv) Interlock of door switch of dry transformer	OK/Not OK	
		(xv) Clearances • Side Clearance: • Between two Transformers:	-----cm -----Metre	
		(xvi) Body Earth Resistance	----- Ohm	
		(xvii) Neutral Earth Resistance	N ₁ ---Ohm, N ₂ ---Ohm	
		(xviii) Earth Flat Size Material used • Body: • Neutral:	----- -----	
		(xix) Operation of ON LOAD & OFF LOAD Tap Changers	OK/Not OK	
		(xx) Sweep Frequency Resonance Analysis Test (SFRA)	OK/Not OK	
		(xxi) Dielectric Frequency Resonance Analysis (DFRA) Test	OK/Not OK	
		(xxii) Partial Discharge Tests	OK/Not OK	
5	DG Generators: Generator No.,	(i) Type of Generator		
		(ii) Interlocking with other supply	OK/Not OK	

	Location, (Alternator and Engine Sl. No. Make, Capacity)	sources	
		(iii) Body earth resistance	----- Ohm
		(iv) Neutral earth resistance	N ₁ ---Ohm N ₂ ---Ohm
		(v) Earth Flat Size, Material used (Cu/Al) • Body: • Neutral:	----- -----
		(vi) Generator Protection details	-----
6.	Cable (Details to be given: size, length, type)	(i) Insulation Resistance Values: • Ph - Ph: • Ph – Earth: • Ph – Earth + other Ph:	----- M Ohm ----- M Ohm ----- M Ohm
		(ii) Cable trays	Provided/ Not provided
		(iii) Cable tray earthing	OK/Not OK
		(iv) Cables bending radius	OK/Not OK -----metre
7.	Panels	(i) No. of panels	___ Nos
		(ii) Location of panel	To be enclosed
		(iii) Rating of the panel	___ Amp
		(iv) Size and current rating of the main Bus bars and the distribution Bus bars of the panel	___ mm, _____ Amp
		(v) Whether the Bus bar size of the panel suitable to rating of the panel	Yes/No
		(vi) IP Protection of panel	_____
		(vii) Type of cable entry	Top Entry/Bottom Entry
		(viii) No. of Incomers and Bus couplers in a Panel	___ Nos
		(ix) Ratings of the Circuit Breakers	___ Amp
		(x) No. of MCCBs of each rating in the panel	___ Nos
		(xi) No. of spare MCCBs of each rating	___ Nos
		(xii) Panel Clearance from the wall	___ mm
		(xiii) Clearance between two panels i.e. adjacent panels	___ mm
		(xiv) Whether all the provisions of Regulation 39 followed	Yes / No
		(xv) Size of the Earth strip used for earthing of the panel	___ sqmm
8.	Earthing	(i) Metal and size of Earth Strips	Cu/Al/GI --- Sqmm
		(ii) Type of earthing	Plate/Pipe/Counterpoise
		(iii) Location and No. of earth electrode	___ Nos
		(iv) Values of Earth resistance of each earth electrode and Grid	___ Ω
		(v) Earth mat resistance	___ Ω
9.	Potential Transformer	(i) Ratio test	OK/not OK
		(ii) Polarity test	OK/not OK
		(iii) BDV of oil	----- kV
		(iv) IR test	(R) P-E-----M Ohm

			(Y) P-E-----M Ohm (B) P-E-----M Ohm	
		(v) Tan Delta and Capacitance measurement	_____	
10.	Current Transformer	(i) Ratio test	OK/not OK	
		(ii) Polarity test	OK/not OK	
		(iii) BDV of oil	----- kV	
		(iv) IR test	(R) P-E-----M Ohm (Y) P-E-----M Ohm (B) P-E-----M Ohm	
		(v) Tan Delta and Capacitance measurement	_____	
11.	Overhead lines and DP structure	(i) Size of the poles of DP structure	_____	
		(ii) Clearance between phases to phase and phase to earth.	_____	
		(iii) Ground clearance of the conductors.	_____	
		(iv) Check of electrical clearance along the route of overhead line,	Ok/ Not Ok	
		(v) Check of guarding and clearance at road crossings.	Ok/ Not Ok	
		(vi) Check the footings of the poles.	Ok/ Not Ok	
		(vii) Earthing arrangements	Ok/ Not Ok	
		(viii) What is the minimum size of the conductors of overhead lines used? State the type of conductors.	_____	
		(ix) Whether all the provisions of regulation 60, 62, 63, 64, 71, 72 and 74 are satisfied.	Yes / No	
General Observations:				
1.	Check of phase to phase, phase to ground and sectional clearance			
2.	Check of Manufacture test reports of individual equipment (Copies to be enclosed)			
3.	General observation and views (Specific deviation from the requirements of the Regulations shall be clearly brought out)			

Date:

Signature of the supplier/ Owner / Consumer

Name _____

Designation _____

File No. _____

To: Office of Electrical Inspector for

(For Self-certification by supplier /owner /consumer)

CERTIFICATE**[Under Regulation (32) and (45) of CEA (Measures relating to Safety & Electricity Supply) Regulation, 2023]**

This is to certify that the electrical installation is complete in all respects and the work has been carried out conforming to the CEA (Measures relating to Safety & Electric Supply) Regulation, 2023 and relevant standards. The site tests done are found to be in order and it is electrically safe to operate the apparatus free from any danger.

Encl: Test reports

(Signature)

Self-certifying supplier / owner / consumer

Name _____

(Signature)

Chartered Electrical Safety Engineer

Name _____

File No. _____

To: Office of Electrical Inspector for

Forms of Inspection Report
[See sub-regulation (3) of regulation (32)]

FORM IV
(Electrical Installations in Mine)

Report No.: _____

Date of Inspection: _____

Date of last inspection: _____

Name of the Inspecting Officer: _____

1. Name of the Mine:
2. Name of the Owner:
3. Name of the Agent:
4. Name of the Mine Manager:
5. Name of the Colliery Engineer:
6. Name of the Safety Officer:
7. Name of the designated Electrical Safety Officer:
8. Name of the Electrical Supervisor:
9. Name of the workman Inspector (Electrical) :
10. Name of the Engineer (concerned Section) :
11. Name of the working seam:
12. Working district Inspected:
13. Name of the persons accompanied during inspection:
14. Voltage and system of supply:
 - (i) Volts _____
 - (ii) No. of Phases _____
 - (iii) AC/DC _____
15. Particulars of the installations/ apparatus installed and their location as per mine plan:
16. Illumination level:
17. Percentage of methane/other explosive gas:
18. Dry bulb temperature, wet bulb temperature in case of underground mine:
19. Velocity/speed of air in case of underground mineL:
20. General conditions of the installation:

Sl. No.	Regulation No.	Requirements	Report
1.	Regulation 98	On or before the first day of February in every year, notice in the form set out in Schedule IX or Schedule X whichever is applicable is sent.	Yes/No
2.	Regulation 99	The plans specified under this regulation are kept in the office of the mine manager and available to the Inspector or inspector of	Yes/No

		mines.	
3.	Regulation 100	(i) Whether adequate illumination by electricity without causing glare and strain has been provided in the mines?	Yes/No Satisfactory/ Not satisfactory
		(ii) Whether efficient means of communication is provided between the point where the switchgear under sub-regulation (1) Regulation 107 is erected, the shaft bottom and other distributing centers in the mine.	Yes/No Satisfactory/ Not Satisfactory
		(iii) Whether fire extinguishing appliances of adequate capacity and of an approved type are installed and properly maintained in every place containing apparatus, other than cables, telecommunication and signalling apparatus.	Yes/No Satisfactory/ Not Satisfactory
		(iv) Is minimum clearance above ground of the lowest conductor of overhead lines or overhead cables where dumpers or trackless vehicles are being operated, not less than twelve metre in height.	Yes/No
4.	Regulation 101	(i) Are transformers and switchgear placed in a separate room, compartment or box where necessary to prevent danger of mechanical damage?	Yes/No
		(ii) Is the room, compartment or box substantially constructed and kept dry and illuminated?	Yes/No
		(iii) Is efficient ventilation provided for all apparatus installed therein?	Yes/No
5.	Regulation 102	(i) Is earthing carried out by connection to an earthing system at the surface of the mine and in a manner approved by Electrical Inspector of mines?	Yes/No
		(ii) Are all metallic sheaths, coverings, handles, joint boxes, switchgear frames, instrument covers, switch and fuse covers of boxes, all lamp holders, unless efficiently protected by an insulated covering made of fire resisting material, and the frames and bedplates of generators, transformers and motors, including portable motors, earthed by connection to an earthing system in the manner specified in regulation 102?	Yes/No Satisfactory/ Not satisfactory
		(iii) Are all conductors, of an earthing system having conductivity, at all parts and all joints, at least equal to fifty per cent of that of the largest conductor used solely to supply the apparatus?	Yes/No
6.	Regulation 116	Whether the neutral or mid-point is earthed by connection to the earthing system in the manner specified in regulation 102.	Yes/No
7.	Regulation 103	(i) Is automatic disconnection of supply to any part of the system, where a fault, including an earth fault, occurs and is the fault current limited to the specified values, by employing suitably designed, restricted neutral system of power supply?	Yes/No
		(ii) Whether the operation of the switchgear and the relays are recorded daily at the generating station, substation or switch station in a register kept for the purpose?	Yes/No
		(iii) Whether the effectiveness of the switchgear and the protective system being always kept and maintained in working order?	Yes/No
		(iv) Whether the switchgear and the protective system checked once every three months and the result thereof recorded in a	Yes/No

		separate register kept for the purpose?	
8.	Regulation 104	(i) Is electricity transmitted into a mine at a voltage exceeding 11000 V and used therein at a voltage exceeding 6600 V?	Yes/No
		(ii) Is the voltage of hand-held portable apparatus used, not exceeding 125 V?	Yes/No Applicable/ Not applicable
		(iii) In belowground mines, whether the lighting system has a mid or neutral point connected with earth and the voltage not exceeds 125 V between phases is used?	Yes/No Applicable/ Not applicable
		(iv) On the surface of a mine or in an open cast mine, has the neutral or the midpoint of the lighting system is connected with earth and the voltage between the phases not exceeds 250 V?	Yes/No
		(v) Is the voltage of portable hand-lamps used in underground working of mine or oil-fields not exceeding 30 V?	Yes/No Applicable/ Not applicable
9.	Regulation 105	Where electricity is transformed, has suitable provision made to guard against danger by reason of the lower voltage apparatus becoming accidentally charged above its normal voltage by leakage from or contact with the higher voltage apparatus.	Yes/No
10.	Regulation 107	(i) Whether properly constructed switchgear for disconnecting the supply of electricity provided at a point approved by Electrical Inspector of mines?	Yes/No
		(ii) When any cable or overhead line supplying electricity from the aforesaid switchgear is live, whether a person designated to operate the said switchgears is available within easy reach thereof?	Yes/No
		(iii) Whether the main mechanical ventilator operated by electricity interlocked with the switchgear so as to automatically disconnect the power supply in the event of stoppage of main mechanical ventilator?	Yes/No Applicable/ Not applicable
		(iv) Whether every motor is controlled by switchgear, arranged so as to disconnect the supply from the motor and from all apparatus connected thereto and whether such switchgear be so placed to easily operate by the person designated to operate the motor?	Yes/No
		(v) Is the switchgear so placed, disconnects the supply automatically, in the event of conditions of over-current, over-voltage and single phasing?	Yes/No
		(vi) Is the Auxiliary fan interlocked with the switchgear controlling power supply to the in bye face equipment of below ground coal mine for automatic disconnection of power supply in the event of the stoppage of the auxiliary fan?	Yes/No Applicable/ Not applicable
11.	Regulation 108	(i) Whether all cables are covered with insulating material and efficiently protected from mechanical damage and supported at sufficiently frequent intervals and in such a manner as to prevent damage to such cables?	Yes/No Satisfactory/Not satisfactory
		(ii) Whether all cables are protected by a metallic covering and which contain all the conductors of a circuit and the sheath of metal-sheathed cables and the metallic armouring of	Yes/No Satisfactory/Not

		armoured cables is of a thickness not less than that recommended in the relevant Standard?	satisfactory
		(iii) Is the metallic covering of every cable electrically and mechanically continuous throughout, earthed by a connection to the earthing system of conductivity specified therein and efficiently protected against corrosion?	Yes/No Satisfactory/Not satisfactory
		(iv) Whether the metallic covering of every cable is having a conductivity at all parts and at all joints at least equal to fifty per cent of the conductivity of the largest conductor enclosed by the said metallic covering?	Yes/No Satisfactory/Not satisfactory
		(v) Are the cables and conductors where connected to motors, transformers, switchgear and other apparatus, installed so that they are mechanically protected by securely attaching the metallic covering to the apparatus and the insulating material at each cable end is efficiently sealed so as to prevent the diminution of its insulating properties?	Yes/No Satisfactory/Not satisfactory
		(vi) Whether properly constructed and certified glands or bushes are used to prevent abrasion or to secure gas-tightness?	Yes/No
12.	Regulation 109	(i) Whether flexible cables used for portable or transportable apparatus are covered with insulating material which shall be efficiently protected from mechanical injury?	Yes/No
		(ii) Is the flexible metallic covering of a cable, used by itself to form an earth conductor for such apparatus without an earth conductor?	Yes/No
		(iii) Whether every flexible cable intended for use with portable or transportable apparatus connected to the system and to such apparatus by properly constructed connectors?	Yes/No
		(iv) At every point where flexible cables are joined to main cables, is a circuit breaker provided which is capable of automatically disconnecting the supply from such flexible cables?	Yes/No
		(v) Is every flexible cable attached to a portable or transportable machine examined periodically by the designated person?	Yes/No
		(vi) Whether flexible cable exceeding in specified length being used with any portable or transportable?	Yes/No
		(vii) Are flexible cables used with apparatus other than portable or transportable apparatus?	Yes/No
13.	Regulation 110	Whether all portable and transportable machines operate on remote control from the concerned switchgear with relevant provision?	Yes/No
14.	Regulation 111	(i) Whether all apparatus maintained reasonably free from dust, dirt and moisture, and kept clear of obstruction?	Yes/No Satisfactory/ Not satisfactory
		(ii) Whether the following notices in Hindi and local language of the district, so designed and protected as to be easily legible at all times, be exhibited at the following places, namely: – <ul style="list-style-type: none"> • where electrical apparatus is in use, a notice forbidding undesignated persons to operate or otherwise interfere with such apparatus; • in the interior or at the surface of the mine where a 	Yes/No Yes/No

		telephone or other means of communication is provided, a notice giving full instructions to person, at the surface of the mine, designated to effect the disconnection of the supply of electricity to the mine?	
		(iii) Whether all apparatus, including portable and transportable apparatus, operated only by those persons who are designated for the purpose?	Yes/No
		(iv) Where a plug-and-socket-coupling other than of bolted type is used with flexible cables, whether an electrical inter-lock or other approved device provided to prevent the opening of the coupling while the conductors are live?	Yes/No
15.	Regulation 112	Give report on the compliance of provisions of this regulation as the case maybe.	Satisfactory/Not satisfactory
16.	Regulation 114	(i) Whether adequate precautions are taken to prevent signal and telephone wires coming into contact with other cables and apparatus?	Yes/No
		(ii) Is the voltage used in any one circuit not exceeding 30 V?	Yes/No
17.	Regulation 115	(i) Whether haulage by electric locomotives on the overhead trolley-wire system, at voltage not exceeding 650V?	Yes/No
		(ii) Whether haulage by storage battery locomotives used with the prior consent in writing of the Electrical Inspector of mines?	Yes/No
18.	Regulation 117	(i) Whether electrical supervisors, as directed by Electrical Inspector of mines are appointed in writing by the owner, agent or manager of a mine or by the agent or the owner, of one or more wells in an oil-field to supervise the installation?	Yes/No
		(ii) Whether electricians as directed by the Electrical Inspector of mines, are appointed in writing by the owner, agent or manager of a mine or by the agent or the owner, of one or more wells in an oil-field for compliance with the duties specified in this regulation?	Yes/No
		(iii) Whether persons appointed to operate, supervise, examine or adjust any apparatus are competent to undertake the work which he is required to carry out as directed by the Engineer?	Yes/No Satisfactory/Not satisfactory
		(iv) Whether the electrical supervisor is maintaining log-book made up of the daily log sheets prepared in the form set out in Schedule-XI?	Yes/No
19.	Regulation 118	Whether the persons engaged for operation and maintenance of electrical installations have undergone training meant for the particular mining installations	Yes/No Satisfactory/Not satisfactory

Date:

Signature of the Inspecting Officer

Name _____

Designation _____

File No. _____

Copy forwarded to Electrical Inspector for

Schedule III

Form for obtaining test results by supplier at each supply point to consumer

[See sub-regulation (4) of regulation (33)]

1. Name and address of the consumer
2. Details of installation
3. Short circuit fault level of the installation
4. Date of commissioning of installation (in case of additional supply or reconnection)
5. Results of tests conducted:

Sl. No.	Equipment	Test Conducted	Test Results	Remarks
1.	Linked Switch with fuse(s)	(i) Mechanical operation	Smooth/troublesome	
		(ii) Rating of fuse	----- Amp.	
		(iii) Contact of blades	Full/Partial	
2.	Isolator	(i) Mechanical operation	OK/not OK	
		(ii) Remote operation	OK/Not OK	
		(iii) Local operation	OK/Not OK	
		(iv) Measurement of contact resistance	-----micro Ohm	
		(v) Interlocking with earth switch	OK/Not OK	
		(vi) Interlocking with CB	OK/Not OK	
		(vii) IR Values <ul style="list-style-type: none"> • Open condition • Closed condition 	Ph-Ph Ph-E --- M Ohm --- M Ohm --- M Ohm --- M Ohm	
3.	Circuit Breaker Sl. No. ----- Circuit Breaker Control Circuits	(i) Rating of Circuit Breaker <ul style="list-style-type: none"> (a) Type (b) Voltage (c) Normal Current (d) Rupturing capacity 	----- ----- kV ----- Amps ----- KA	
		(ii) IR Values <ul style="list-style-type: none"> • Open condition • Closed condition 	Ph-Ph Ph-E --- M Ohm --- M Ohm --- M Ohm --- M Ohm	
		(iii) Contact Resistance	-----micro Ohm	
		(iv) Mechanical operation	Instant smooth/ time gap (Sec.)	
		(v) Remote operation	OK/Not OK	
		(vi) Local operation	OK/Not OK	
		(vii) Interlocking with isolator	OK/Not OK	
		(viii) Interlocking with earth switch	OK/Not OK	
		(ix) Alarm and Trip for OTI/ WTI/ Buchholz / PRV	OK/Not OK	
		(x) Earth Fault Relay	OK/Not OK	
		(xi) Over Current Relay	OK/Not OK	
		(xii) Under Voltage Relay	OK/Not OK	
		(xiii) SF ₆ pressure alarm and trip operation test	OK/Not OK	
4.	Transformer Sl. No. ----	(i) Insulation Resistance Values: <ul style="list-style-type: none"> • HT to LT 	-----M ohm	

		<ul style="list-style-type: none"> • HT to Earth • LT to Earth 	<p>-----M ohm</p> <p>-----M ohm</p>	
		(ii) Break down Voltage Test <ul style="list-style-type: none"> • Oil Sample – I (Top) • Oil Sample – II (Bottom) 	<p>-----kV</p> <p>-----kV</p>	
		(iii) Vector Group Test	OK/Not OK	
		(iv) Polarity Tests	OK/Not OK	
		(v) Magnetizing Balance	OK/Not OK	
		(vi) Tan Delta Test (as per capacity)	OK/Not OK	
		(vii) Oil level in conservator Tank:	OK/Not OK	
		(viii) Oil level in breather cup	OK/Not OK	
		(ix) OTI/WTI settings	A/T---- ⁰ C A/T---- ⁰ C	
		(x) OTI/WTI alarm and trip operation	OK/Not OK	
		(xi) Operation of Buchholz relay	OK/Not OK	
		(xii) Operation of PRV	OK/Not OK	
		(xiii) Oil leakage	OK/Not OK	
		(xiv) Interlock of door switch for dry transformer	OK/Not OK	
		(xv) Clearances for <ul style="list-style-type: none"> • Side clearance • Between two Transformers 	<p>----- Cms</p> <p>----- Metre</p>	
		(xvi) Body earth resistance	----- Ohm	
		(xvii) Neutral earth resistance	N ₁ ---Ohm N ₂ ---Ohm	
5.	DG Set Sl. no. for <ul style="list-style-type: none"> • Alternator: • Engine: 	(i) Interlocking with other Supply Sources	OK/Not OK	
		(ii) Body earth resistance	----- Ohm	
		(iii) Neutral earth resistance	N ₁ ---Ohm N ₂ ---Ohm	
6.	Cables Size: ----Sq. mm	(i) Insulation Resistance Values: <ul style="list-style-type: none"> • Ph - Ph : • Ph – Earth: • Ph – Earth + other Ph: 	<p>----- M Ohm</p> <p>-----M Ohm</p> <p>-----M Ohm</p>	
		(ii) Bending Radius	OK/Not OK	
7.	Earthing	(i) Metal and Size of Earth Strips	Cu/Al/GI --- Sq. mm	
		(ii) Type of Earthings: <ul style="list-style-type: none"> • Plate Earthing • Pipe Earthing • Counter poise Earthing 	<p>Yes/No</p> <p>Yes/No</p> <p>Yes/No</p>	
		(iii) Values of earth resistances of earth electrodes for <ul style="list-style-type: none"> • Reactor Neutral: • LAs: • Structure: • Frames/Bodies of equipment: • Motors: 	<p>N₁ ----ohm N₂ ----ohm</p> <p>(R) ---ohm (Y) ---ohm</p> <p>(B) ----ohm</p> <p>-----ohm</p> <p>-----ohm</p> <p>-----ohm</p>	
8.	Potential	(i) Ratio test	OK/Not OK	

	Transformer	(ii) Polarity test	OK/Not OK	
		(iii) BDV of oil	-----kV	
		(iv) IR test	(R) P-E-----M Ohm (Y) P-E-----M Ohm (B) P-E-----M Ohm	
9.	Current Transformer	(i) Ratio test	OK/Not OK	
		(ii) Polarity test	OK/Not OK	
		(iii) BDV of oil	-----kV	
		(iv) IR test	(R) P-E-----M Ohm (Y) P-E-----M Ohm (B) P-E-----M Ohm	
10.	Transmission line	(i) Physical condition of conductor/tower	OK/Not OK	
		(ii) Check of tower accessories	OK/Not OK	
		(iii) Tower footing resistance	-----Ohm	
		(iv) Conductor continuity test	OK/Not OK	
		(v) Check of ground clearance	OK/Not OK	
		(vi) Check of electrical clearance along the route	OK/Not OK	

General Observations:

Sl. No.	Item	Observations
1.	Check of required phase to phase, phase to ground and sectional clearance.	
2.	Check of equipment lay out and over all installation details.	
3.	Test of resistance of earth mat or earth electrodes as applicable.	
4.	Check of consumer's pre-commissioning test reports of individual equipment.	
5.	Check of manufacturer's routine/type test reports of individual equipment.	
6.	Whether Inspector's approval if applicable is obtained?	
7.	Whether owner's self-certification about compliance with the Regulations is obtained?	
8.	General observation and views (specific deviation from the requirements of the Regulations shall be clearly brought out).	

Name, Signature and Seal of the Authority

Schedule IV

Form for notice in respect of failure of supply

[See sub-regulation (3) of regulation (41)]

- (1) Name and address of the supplier :
 (2) Date and time of failure of supply :
 (3) Areas affected due to failure :
 (4) Causes of failure :
 (5) Probable time for restoration of supply :
 (6) Additional information, if any :

Date :

(Name, Signature, Designation and Seal of Authority)

Place:

Time:

Schedule V**Minimum safety working clearances where electricity at voltage exceeding 650 V is supplied, converted, transformed or used**

[See sub-regulation (2)(iii) of regulation (46)]

Highest System Voltage (kV)	Safety Working Clearance (Metre)
12	2.6
36	2.8
72.5	3.1
145	3.7
245	4.3
420	6.4
800	10.3

(1) The above values are valid for altitude not exceeding 1000 m. A correction factor of 1.25 per cent per 100 m is to be applied for increasing the clearance for altitude more than 1000 m and up to 3000 m;

(2) The above safety working clearances are based on an insulation height of 2.44 m which is the height of lowest point on the insulator, where it meets the earthed metal, from the ground;

(3) “Safety Working Clearance” is the minimum clearance to be maintained in air between the live part of the equipment on one hand and earth or another piece of equipment or conductor on which it is necessary to carry out the work, on the other;

(4) The “Highest System Voltage” is defined as the highest rms phase to phase voltage which occurs under normal operating conditions at any time and at any point of the system. It excludes voltage transients (such as those due to system switching) and temporary voltage variations due to abnormal system conditions (such as those due to fault conditions or the sudden disconnection of large loads).

Schedule VI**Minimum safety clearances to be maintained for bare conductors or live parts of any apparatus in outdoor HVDC substations, excluding overhead lines of HVDC installations**

[See sub-regulation (3) of regulation (46)]

Sl. No.	DC Voltage (kV)	Pole to Earth Clearance (Metre)	Ground Clearance (Metre)
1.	100 kV	1.17	4.55
2.	200 kV	1.80	5.65
3.	300 kV	2.45	6.75
4.	400 kV	3.04	8.00
5.	500 kV	3.65	9.00
6.	600 kV	3.98	10.10
7.	800 kV	5.30	11.20

(1) The above ground clearances are not applicable to equipment that are housed within fence or a building and where access is prevented under energised condition through a suitable safety interlocking scheme;

(2) The above pole to earth clearances are for conductor-structure electrode configuration using gap factor k equal to 1.35.

(3) It is recognised that within a substation many different types of electrode configurations shall be there with different values of k, therefore, the above clearance shall be modified based upon the values of gap factor for a particular electrode configuration subjected to the minimum ground clearance.

(4) Clearance shall be provided for electrical apparatus so that sufficient space is available for easy operation and maintenance without any hazard to the operating and maintenance personnel working near the equipment and for ensuring adequate ventilation.

Schedule VII

Part-A

Form for reporting failure of transformer & reactor of 220 kV and above voltage class

[See sub-regulation (8) of regulation (48)]

1.	Name of Substation	:	
2.	Utility	:	
3.	Faulty Equipment (ICT/auto-transformer/GT/reactor etc.)	:	
4.	Rating (MVA/MVAR, Voltage ratio, 1-phase/3phase)	:	
5.	Make (Original equipment manufacturer)	:	
6.	Serial No.	:	
7.	Date and time of occurrence of fault	:	
8.	Fault discovered during operation or periodic testing/ maintenance	:	
9.	Year of manufacturing	:	
10.	Date of commissioning	:	
11.	Sequence of events/Description of fault (SoE with time stamp, protection operated during fault)	:	
12.	Details of tests done after failure (What tests were conducted after the discovery of failure. If no tests were conducted, reasons for the same may be stated.)	:	
13.	Observations (Visual observations e.g. bulging of tank, fire, any leakage of oil, damage to various components of transformer/ reactor and nearby equipment/ material etc.)	:	
14.	Probable cause of failure	:	
15.	If original equipment manufacturer representative had inspected the equipment or visited the site after failure, their remarks, MoM etc. may be attached.	:	
16.	Present condition of equipment	:	

	(Whether repairable or beyond repair)		
17.	(a) Details of previous maintenance (Activities carried out in previous maintenance including the tests conducted, periodicity of the maintenance activities) (b) Whether any abnormality observed in these tests. If yes, attach the test reports. (c) What steps were taken to address the abnormality?	:	
18.	Details of any previous failure on the same unit	:	
19.	Is tertiary winding provided	:	Yes/No
20.	Is tertiary loaded? If yes, specify load on tertiary	:	Yes/No
21.	Whether tertiary terminals are bare/ insulated?		
22.	Details of protection for tertiary	:	
23.	Whether relay time is synchronised with UTC?	:	Yes/No
24.	Bushing details (OIP/RIP/RIS, porcelain /polymer housing)	:	
25.	On Load Tap Changer or Off Circuit Tap Changer	:	
26.	Tap position of OLTC at the time of failure	:	
27.	Past record of operation of OLTC	:	
28.	Tap range	:	
29.	Details of P\protection provided for transformer/GT/reactor	:	
30.	Details of Protection operated	:	
31.	Whether equipment is properly earthed	:	
32.	Earth resistance of substation and date of its measurement	:	
33.	Surge arrester: (a) Is SA provided for protection? (b) Whether healthiness of SA is monitored? (c) Whether reading of SA counter changed during failure?	:	Yes/No Yes/No Yes/No
34.	Lightning Impulse and Switching Impulse Withstand Voltage of the bushings of all voltage level	:	
35.	Lightning Impulse and Switching Impulse Withstand Voltage of the winding of all voltage level	:	
36.	Type of fire protection provided (Emulsifier system/ N ₂ Injection based fire protection system/ foam based protection etc.)	:	
37.	Weather conditions at the time of failure (clear sky/rainy/thunderstorm etc.)	:	

38.	Storage condition of equipment at site before commissioning: (a) Period of storage (b) Idle charged or uncharged (c) Dry air filled/Nitrogen filled/ oil-field illed	:	
39.	Whether short circuit test was carried out on this transformer or same design transformer/reactor or short circuit withstand capability was verified on the basis of calculation?	:	
40.	Number of through faults the equipment was subjected to before failure	:	
41.	Attach the following: (a) Single Line Diagram of the substation (b) Photographs of the failed equipment (c) Disturbance Recorder/Even Logger Data (d) Reports of tests conducted after failure (e) failure (f) Factory test results (g) Pre-commissioning test results (h) Protection schematic diagram	:	

(Signature and name of Manager/

Executive Engineer of the installation)

Contact details (Address /Mobile No./Phone No./Email)

To,

The Secretary

Central Electricity Authority

Sewa Bhawan, R .K. Puram

New Delhi-110066

Part-B

Form for reporting failure of towers of 220 kV and above voltage class transmission lines

[See sub-regulation (8) of regulation (48)]

1. Name of Transmission line with voltage level:
2. Date and time of occurrence/discovery of failure:
3. Length of line (km):
4. Type of configuration: (S/C, D/C, M/C, S/C strung on D/C towers, narrow base and the like):
5. Number of Towers and Type of Towers failed:
[Suspension/ tension/ dead end/ special tower/ river crossing tower/ Power line crossing/ Railway Crossing etc., with/ without extension (indicate the type & length of extension)]
6. Tower location no. with reference to nearest substation (indicate Name):
7. Name and size of conductor:
8. No. of sub-conductors per bundle and bundle spacing:

9. Number and size of earth wire/ OPGW (if provided):
10. Type of insulators in use (Porcelain/ Glass/ Polymer):
11. Configuration of insulators (I/ V/ Y/ tension):
12. No. of insulators per string and no. of strings per phase:
13. Year of construction/ commissioning:
14. Executing agency:
15. Weather condition on the date of failure:
16. Terrain category:
17. Reliability level:
18. Wind zone (1/2/3/4/5/6) and velocity of wind:
19. Details of earthing of tower (pipe type/ counter poise):
20. Line designed as per IS:802 (1977/1995/2015 any other code):
21. The agency who designed the line:
22. Any special consideration in design:
23. Details of last maintenance activity along with date:
24. Power flow in the line prior to failure:
25. Any missing member found before/ after failure of towers:
26. Condition of foundation after failure:
27. Brief description of failure:
[Along with photographs (if available), other related information like tower schedule, newspaper clipping for cyclone / wind storm etc.]
28. Probable cause of failure:
29. Details of previous failure of the line/ tower:
30. Whether line will be restored on ERS or spare tower will be used:
31. Likely date of restoration:
32. Present status:
33. Details of any tests carried out after failure (attach test reports):
34. Wind speed data of date & time of failure from nearby authorised observatory:
35. Location of failed tower:
 - a. Location Coordinates:
 - b. Nearest Airport:
 - c. District and State:
36. Single line diagram/ clearance diagram of failed tower(s) with all dimensions (horizontal & vertical dimensions including base width of tower):
37. Tower weight:
38. Tower spotting data:
39. Tower schedule of affected section:
40. Sag-tension calculation considered for design of tower:
41. Design document of failed towers:
42. Any other relevant information:

Date:

(Signature and name of Manager/Executive Engineer/ Incharge of the installation)

Contact details (Address /Mobile No./Phone No./Email)

To,

The Secretary

Central Electricity Authority

Sewa Bhawan, R.K. Puram

New Delhi-110066

Schedule VIII A

Minimum clearance in air above ground and across road surface of Highways or roads or railway corridors or navigational or non-navigational rivers for lowest conductor of an alternating current overhead lines, including service lines of nominal voltage system.

[See sub-regulation (1) of regulation (60)]

Nominal voltage of system	Clearance above ground			Clearance between conductor and road surface across Highway (m)	Clearance between conductor and rail level across Railway Corridor (m)		Clearance above HFL for River crossing	
	Across Street (m)	Along Street (m)	Elsewhere (m)		Normal OHE (where no double stack containers are to be run on railway tracks.)	High rise OHE for running of double stack containers on railway tracks.	Navigational river (m)	Non-navigational river (m)
Up to 650 V	5.80	5.50	4.60	U/G Cable	U/G Cable	U/G Cable	16.50	5.80
11 kV	6.50	5.80	4.60	U/G Cable	U/G Cable	U/G Cable	19.00	6.50
22 kV	6.50	5.80	5.20	U/G Cable	U/G Cable	U/G Cable	19.00	6.50
33 kV	6.50	5.80	5.20	11.60 or U/G Cable	U/G Cable	U/G Cable	19.00	6.50
66 kV	6.50	6.10	5.50	11.60 or U/G Cable	U/G Cable	U/G Cable	19.00	6.50
110 kV	6.50	6.10	6.10	11.60	15.56	17.56	19.00	6.50
132 kV	6.50	6.10	6.10	11.60	15.56	17.56	19.22	6.50
220 kV	7.02	7.02	7.02	12.52	16.46	18.46	20.10	7.02
400 kV	8.84	8.84	8.84	14.00	18.26	20.26	21.90	8.84
765 kV	18.00*	18.00*	18.00*	18.80	21.86	23.86	25.55	18.00
1200 kV	24.00*	24.00*	24.00*	30.00	25.46	27.46	29.90	24.00

For navigable rivers, clearances shall be fixed in relation to the tallest mast in consultation with the concerned navigational/port authorities.

* Higher clearance due to predominantly induction effects and time varying electric field (ICNIRP limit: 10kV/m for occupational exposure) at voltage exceeding 400 kV.

Schedule VIII B

The minimum clearance in air above ground and across road surface of Highways, or Minimum clearance between conductor and Rail Level or navigational or non-navigational rivers for lowest conductor of high voltage direct current overhead line of nominal voltage system [See sub-regulation (2) of regulation (60)]

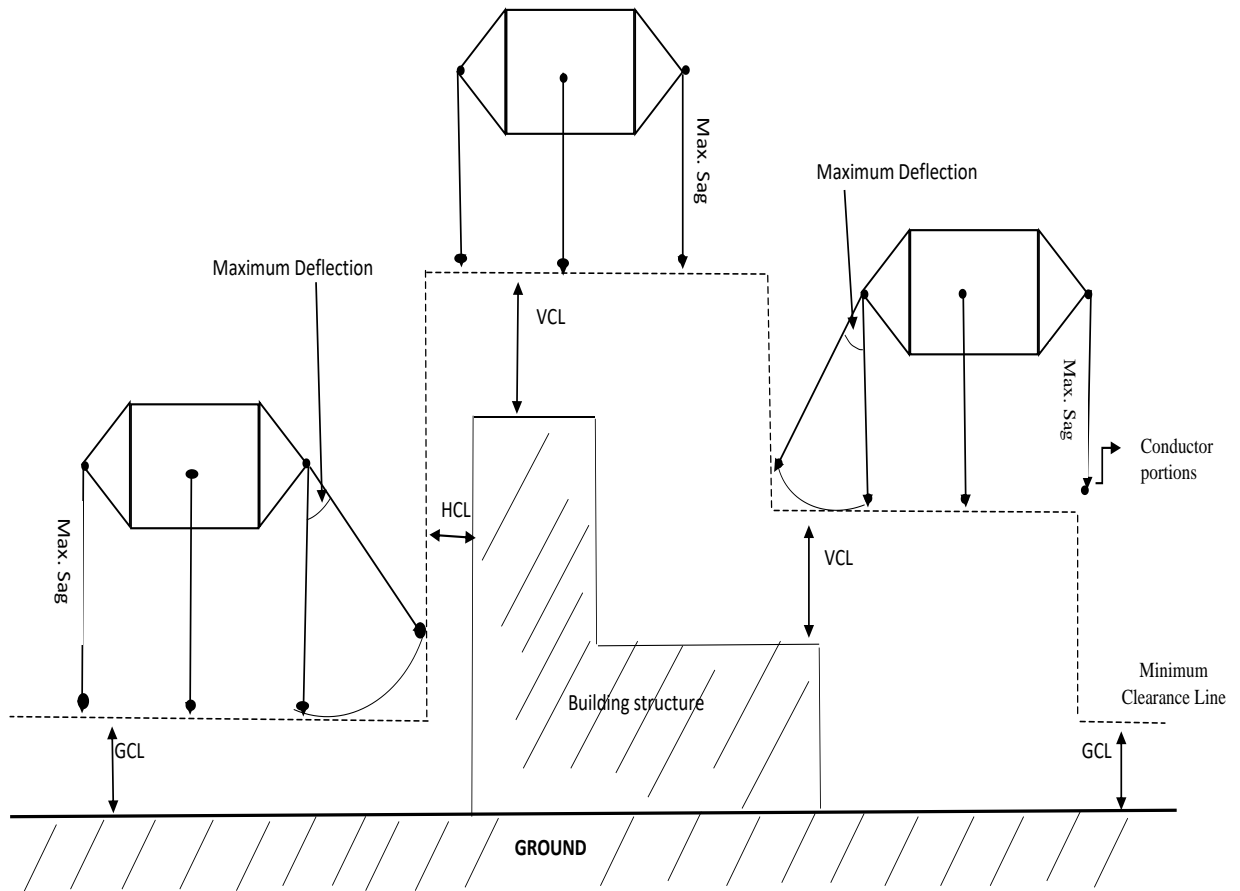
Sl. No.	DC Voltage	Ground Clearance (m)	Clearance between conductor and road surface across Highway (m)	Minimum clearance between conductor and Rail Level (m)	Clearance above HFL for River crossing	
					Navigational River (m)	Non-navigational River (m)
1.	100 kV	6.50	11.25	#	19.00	6.50
2.	200 kV	7.30	12.05	#	19.90	7.30
3.	300 kV	8.50	13.25	#	20.90	8.50
4.	400 kV	9.40	14.15	#	21.90	9.40
5.	500 kV	12.50	17.25	21.23	22.90	12.50
7.	800 kV	18.00	22.75	25.74	25.90	18.00

1. Highway clearances required 4.75 m higher than ground clearances (considering the vehicle height is 4.75, as mentioned in the Indian Road Congress documents, 1983).
2. # Railway clearances required 10% higher value than HVAC values (HVAC values are mentioned in Indian Railway document: IRSOD, 2004).
3. Navigational River clearances as mentioned in the Regulation of Inland Waterways Authority of India (Classification of Inland Waterways in India), Regulation, 2006.

Schedule VIII C

Ground, Vertical and Horizontal clearances

[See sub-regulation (1) of regulation 60, sub-regulation (5) of regulation 62 and sub-regulation (5) of regulation 63]



GCL: Ground Clearance as per regulation 60

VCL: Vertical Clearance as per regulation 62 and 63

HCL: Horizontal Clearance as per regulation 62 and 63

Schedule IX

FORM OF ANNUAL RETURN FOR MINES

[See sub-regulation (1) of regulation 98]

This form must be correctly filled up by the owner, agent, manager or engineer and sent to the Electrical Inspector of mines not later than the first day of February every year.

Part A

Year ending: ____

Name of Mine:

State:

Situation of Mine:

District:

Postal address of Mine:

Name and address of owner:

Name of agent:

Name of manager:

Name of engineer:

Name of Electrical Supervisor:

Part B

(1) System of supply (whether direct current or alternating current):

Voltage of supply:

Periodicity (if alternating current):

Source of supply:

(2) Voltage at which electricity is used for: -

Lighting:

Power:

(3) Particulars of motor etc.: -

POWER**(a) On Surface**

Type of Motor (HP/KW)/ apparatus and voltage	Type of control gear	Location	Purpose for which used

(b) In Mine

Type of Motor (HP/KW)/ apparatus and voltage	Type of control gear	Location	Purpose for which used	Ventilation	Percentage of inflammable gas or vapour

(c) Lighting

Type of light fitting	Wattage	Location	Percentage of inflammable gas or vapor

Schedule X**FORM OF ANNUAL RETURN FOR OIL-FIELDS****[See sub-regulation (1) of regulation 98]**

This form must be correctly filled up by the owner, agent, manager or engineer and sent to the Electrical Inspector of mines not later than the first day of February every year.

Part A

Year ending: ____

Name of Oil-field:

State:

Situation of Oil-field:

District:

Postal address of Oil-field:

Name and address of owner:

Name of agent:

Name of manager:

Name of engineer:

Name of Electrical Supervisor:

Part B

(1) System of supply (whether direct current or alternating current):

Voltage of supply:

Periodicity (if alternating current):

Source of supply:

(2) Voltage at which electricity is used for: -

Lighting:

Power:

(3) Particulars of motor etc.: -

(a) On wells

No. or other identifying mark of well	Drilling or pumping	Type and H.P of motor	No. of lamps and type	Other electrical appliances
1	2	3	4	5

(b) Not on wells

Type and rating of motor	Purpose for which used	Identifying mark on map
1	2	3

(4) Other electrical appliances, not including in item 3, in use on the field: -

Appliances type and size in KW	Purpose for which used	Identifying mark on map
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Schedule XI

LOG SHEET FOR MINES AND OIL-FIELDS

[See sub-regulation (9) of regulation 112, sub-regulation (9) of regulation (117)]

Daily log sheet for:

(1) Name of Electrical Supervisor

(2) Report as to:-

- (a) Condition of the insulation of the system.
- (b) Specified defects of insulation (particulars of each failure of apparatus should be given).
- (c) Accidents or dangerous occurrence (including any cases of electric shock and any cases of open sparking in apparatus in use in places where regulation 112 applies).
- (d) Disconnection and reconnection of supply as required by sub-regulation (9) of regulation 112.
- (e) Examination of earth fault detectors or recorders as provided by sub-regulation (3) of regulation 102.
- (f) Examinations of apparatus as provided by regulation 117.

- (i) Routine examinations as required by of sub-regulation (9) of regulation 117.
- (ii) Special examination* as required by of sub-regulation (9) of regulation 117.
- (3) Remarks: -
Signed
Examined by

Electrical Supervisor:

Engineer:

Manager.

*State which apparatus has been examined or tested and its result.

Note: - This log sheet should be filled in as completely as possible. If, for instance, there are no defects of insulation to report, the word 'none' should be written in the vacant space.

RAKESH GOYAL, Secy.

[ADVT.-III/4/Exty./154/2023-24]