

Form-IV

Form of Inspection/Test Report

(Under Regulation 43)

1. Name and address of the Chartered Electrical Safety Engineer

2. Name and address of the consumer (or) Owner(or) supplier:

Contact No:

E-Mail:

3. Address of installation:

i. Office/Head Office (or) both:

Contact No:

E-Mail:

ii. Factory/works:

Contact No:

E-Mail:

4. Details of the Installation:

- a. Production activities
- b. Voltage level
- c. Transformer Capacity
- d. Generator Capacity
- e. Other details

5. Grade 'A' Licensed Contractor Name & Address:

Lic No.: Permit No: Valid from to

6. Date of approval of Drawings from concerned electrical Inspector:

7. Short circuit fault level of the installation

8. Date of test of installation:

9. Results of tests conducted:

S.No	Equipment	Test Conducted
1.	Isolators	DP structure provided at point of commencement with RS joist Poles 185X75 mm as per standards 11 KV-3.05 mtrs (i) Mechanical operation (ii) Measurement of contact resistance (iii) IR Values

		(iv) Open condition Ph-Ph, Ph-E (v) Closed condition
2.	LAs Rating Voltage	Rupturing Capacity
3.	HV Cable Size- Length-	IR Values
4.	Circuit Breaker Sl.No. ----- Make: Rating Type Voltage	1) IR Values 2) Open condition 3) Close condition 4) Contact Resistance : 5) Mechanical operation: 6) Remote operation:
5.	Circuit Breaker Control Circuits	1) Alarm and Trip for 2) OTI/WTI/Buchholz/PRV 3) Earth Fault Relay : 4) Over current Relay: 5) Under Voltage Relay: 6) SF6 pressure alarm and trip operation test
6.	Transformer Sl.No. ----- Make: Rating Voltage	(A) Insulation Resistance Values: 1. HT to LT : 2. HT to Earth: 3. LT to Earth: (B) Break down Voltage Test Oil Sample – I(Top) Oil Sample – II (Bottom) (C) Vector Group Test: (D) Polarity Tests: (E) Magnetizing Balance: (F) Tan Delta Test (as per capacity) (G) Oil level in conservator Tank: (H) Oil level in breather cup: (I) OTI/WTI settings : (J) OTI/WTI alarm and trip operation (K) Operation of Buchholz relay : (L) Operation of PRV (M) Oil leakage (N) Interlock of door switch for dry transformer (O) Clearances for Side clearance : Between two Transformers: (P) Body earth resistance Neutral earth resistance
7.	DG Set Sl.No. ----- Make: Rating Voltage For 1. Alternator: 2. Engine :	(A) Interlocking with other Supply Sources: (B) Body earth resistance Neutral earth resistance
8.	Cables Size: Sq. mm	(A) Insulation Resistance Values: 1. Ph - Ph : 2. Ph – Earth : 3. Ph – Earth + other Ph : (B) Bending Radius:
9.	Earthing :	(A). Metal and Size of Earth Strips:

		<p>(B). Type of Earthings: (1) Plate Earthing: (2) Pipe Earthing:</p> <p>(C). Values of Earth resistances of earth electrodes for (1) Reactor Neutral: (2) LAs : (3) Structure: (4) Transformer (5) Generator (6) Busduct (7) PCC (8) MCCB (9) MLDBs (10) Motor with Capacity (11) VVF/VDF Drives (12) Cables (13) Capacitors: (14) Cable Trays :</p>
10.	Potential Transformer	(i) Ratio test (ii) Polarity test (iii) BDV of oil (iv) IR test
11.	Current Transformer	(i) Ratio test (ii) Polarity test (iii) BDV of oil (iv) IR test
12.	Transmission line	(i) Physical condition of conductor/tower (ii) Check of tower accessories (iii) Tower footing resistance (iv) Conductor continuity test (v) Check of ground clearance
13.	General Observations :	(i) Check of required phase to phase, phase to ground and sectional clearance. (ii) Check of equipment lay out and over all installation details. (iii) Test of resistance of earth mat or earth electrodes as applicable. (iv) Check of consumer's pre-commissioning test Reports of individual equipment. (v) Check of manufacturer's routine/type test reports of individual equipment. (vi) Whether Inspector's approval if applicable is obtained? (vii) Whether owner's self-certification about compliance with the Regulations is obtained? (viii) General observation and views (specific deviation from the requirements of the Regulations shall be clearly brought out).

10. The following observations:

Sl. No	Regulation Nos	Requirements	Report
1.	Regulation-3	Is the register of the designated persons properly made and kept up to date duly attested?	

2.	Regulation-12	(xi) 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? (xii) Are there deficiencies in construction with reference to Indian Standard requirements? Please specify.	
3.	Regulation-13	Give report on condition of service lines, Cables, wires, apparatus and such other fittings placed by the supplier or owner of premises. If not satisfactory give details.	
4.	Regulation-14	Whether suitable cut-outs provided by the supplier at the consumer's premises are within enclosed fire proof receptacle?	
5.	Regulation-15	(i) Whether switches are provided on live conductors? (ii) Whether indication of a permanent nature is provided as per Regulation so as to distinguish neutral conductor from the live conductor?	
6.	Regulation-16	General visible condition of the earthing arrangement	
7.	Regulation-17	i) Are bare conductors in building inaccessible? (ii) Whether readily accessible switches have been provided for rendering them dead?	
8.	Regulation-18	Whether "Danger Notice" in Hindi and the local language of the district and of a design as per relevant Indian Standard is affixed permanently in conspicuous position?	
9.	Regulation-19	i. Whether insulating floor or mats conforming to IS-15652:2006 have been provided? ii. Whether identification of panel has been provided on the front and the rear of the panel?	
10.	Regulation-21	Whether flexible cables used for portable or transportable equipment covered under the Regulation, are heavily insulated and adequately protected from mechanical injury?	
11.	Regulation-24	Whether the circuits or apparatus intended for Operating at different voltage(s) are distinguishable by means of indication(s) of permanent nature?	
12.	Regulation-26	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?	
13.	Regulation-27	i. In the case of generating stations and enclosed sub stations, whether fire-	

		<p>buckets filled with clean dry sand have Been conspicuously marked and kept in convenient situations in addition to fire-extinguishers suitable for dealing with electric fires ?</p> <p>i. Whether First Aid Boxes or cupboards conspicuously marked and properly equipped are provided and maintained?</p> <p>i. Is adequate staff trained in First Aid Treatment and fire fighting?</p>	
14.	Regulation-28	<p>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” ?.</p> <p>ii. Are the designated persons able to apply instructions for resuscitation of persons suffering from electric shock?</p>	
15.	Regulation-34	<p>Leakage on premises: State insulation resistance between conductors and earth in Mega Ohms.</p>	
16.	Regulation-35	<p>i. Whether a suitable linked switch, or circuit breaker, or 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?</p> <p>ii. Whether suitable linked switch or a circuit breaker to carry and break the full load current on the secondary side of a transformer?</p> <p>iii. Whether every distinct circuit is protected against excess electricity by means of a suitable circuit breaker or cut-out?</p> <p>iv. Whether linked switch or circuit breaker or emergency tripping device is provided near the motor or other apparatus at voltage exceeding 650V but not exceeding 33kV for controlling supply to the motor or apparatus?</p> <p>v. Whether adequate precautions are taken to ensure that no live parts are so exposed as to cause danger?</p>	
17.	Regulation-44	<p>(i) Whether all conductors and apparatus Including live parts thereof are inaccessible?</p> <p>(ii) Whether all windings of motors or other apparatus are suitably protected?</p> <p>(iii) State in case of transformers or reactors or switches or static condensers</p>	

		<p>involving the use of more than 2,000 litres of oil in one chamber, if suitable oil soak pits are provided?</p> <p>iv) Whether trenches inside sub-station Containing cables are filled with non-inflammable material or completely covered with non- inflammable slabs?</p>	
18.	Regulation-45	Whether protections and interlocks have been provided? If not, give details	
19.	Regulation-48	<p>i) Have the frames of every generator, stationary motor, and so far as practicable portable motor and metallic parts not intended as conductors of all transformers and any other apparatus used for regulating or controlling electricity and all electricity consuming apparatus at voltage exceeding 650V but not exceeding 33kV been earthed by two separate and distinct connections with earth ?</p> <p>(ii) Is the earth wire free from any mechanical damage?</p> <p>(iii) Has the neutral point at the transformer and generator been earthed by two separate and distinct connections with earth?</p> <p>(iv) Whether earthing has been properly executed and has been tested. If yes, give value of earth resistance</p>	
20.	Regulation-49	Is the outdoor (except pole type) sub-station efficiently protected by fencing not less than 1.8 metres in height?	

