



**ELECTRICAL SAFETY AUDIT (ESA) – 2019
FOR OFFICES / BRANCHES IN TAMILNADU & PONDICHERRY**

Conducted By : _____

Auditor Name & Contact no. : _____

Conducted On : _____



**SBI INFRA MANAGEMENT SOLUTIONS PVT. LTD.
CIRCLE TOP HOUSE, 4th FLOOR,
NO. 16, COLLEGE LANE,
CHENNAI – 600 006**



ELECTRICAL SAFETY AUDIT (ESA) – 2019
CHENNAI CIRCLE

1	BRANCH NAME	
2	BRANCH CODE	
3	REGION	
4	MODULE	
5	NETWORK	
6	TANGEDCO CONSUMER NUMBER	
5	TANGEDCO REGION & CIRCLE	
6	SANCTIONED LOAD	
7	CONNECTED LOAD	
8	BILLING DEMAND	
9	MAXIMUM DEMAND (MD) PREFERABLY OBSERVED IN APRIL / MAY / JUNE MONTHS	
10	ELECTRICAL SAFETY AUDIT CONDUCTED BY	M/s

Signature & Seal of the Auditor



ELECTRICAL SAFETY AUDIT (ESA) – 2019

CHENNAI CIRCLE

TANGEDCO MONTHLY ELECTRICITY BILL DETAILS

Billing month of	Maximum Demand KW	Units Consumed KWH	Power Factor	Penalty (if any) Rs.	Amount paid Rs.	COPY ENCLOSED
APR- 18						Yes / No
MAY- 18						Yes / No
JUN- 18						Yes / No
JUL- 18						Yes / No
AUG- 18						Yes / No
SEP- 18						Yes / No
OCT- 18						Yes / No
NOV- 18						Yes / No
DEC- 18						Yes / No
JAN- 19						Yes / No
FEB- 19						Yes / No
MAR- 19						Yes / No
TOTAL						

Signature & Seal of the Auditor

ELECTRICAL SAFETY AUDIT : HT SIDE

Sr. No.	Description	Details	Observation / Remarks	Proposed Rectification work
1	Whether the permission for Sub-Station and DG Set are available and copies of the same are available at Sub-station	YES / NO		
2	Whether Electric shock treatment charts Electrical and Fire safety Charts and Single line diagram are displayed?	YES / NO		
3	Whether emergency contact numbers of nearest Fire station, Hospital, TANGEDCO office, etc. are displayed at substation and control room	YES / NO		
4	Whether electrical danger plate (fig of skull & cross bones, 440V / 230V) is provided on Main Electrical Panel / electrical room / operating areas	YES / NO		
5	Safety equipment / materials like Fire extinguishers, Sand buckets, Rubber Mats, Hand Gloves, First aid box etc. are available in substation?	YES / NO		
6	Are Fire extinguishers mentioned refilled and inspected regularly? If yes, mention Date of last refilling	YES / NO		
7	Whether the inspection of sub-station / DG Set / Lifts is done by Electrical Inspectorate at least once in a year and inspection fees paid well in time?	YES / NO		
8	Whether the observations by Electrical Inspector during his last visit have been attended? (Copy of letters in this regard should be enclosed)	YES / NO		

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ELECTRICAL SAFETY AUDIT (ESA) – 2019
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Sr. No.	Description	Details	Observation / Remarks	Proposed Rectification work
9	Whether Preventive Maintenance of Breakers, Transformer, Panels etc. is carried out through respective original equipment manufacturer as per schedule? (Copy of service reports to be attached)	YES / NO		
10	Whether Annual Operations & Maintenance contract is provided for the sub-station 24 x 7?	YES / NO		
11	a) Whether the maintenance Contractor has “A” Class Electrical contractor’s license as per prevailing guidelines of the Concerned State/ Central Govt.? b) The Workmen/ Technicians possess the Supervisor / wireman / Electrician license? (Copies should be available with the concerned official)	YES / NO		
12	In case of outdoor substation, Whether the stone cities provided in substation yard? Whether the Substation structure fencing boundary is provided, painted and well maintained?	YES / NO		
13	Whether proper nomenclature and painting is done on Electric Panels and Earthing pits?	YES / NO		
14	Whether Earthing Test reports of sub-station are provided by the Electrical Maintenance contractor?	YES / NO		

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**ELECTRICAL SAFETY AUDIT (ESA) – 2019****CHENNAI CIRCLE**

Sr. No.	Description	Details	Observation / Remarks	Proposed Rectification work
15	Whether the Earthing pits are identified and free from obstruction for routine maintenance?	YES / NO		
16	Whether the Transformers, MV panels, HT panels, RMG, APFC panels, etc. are earthed from dedicated Earthing pits?	YES / NO		
17	Whether Transformer oil level and breather condition is checked at least once in a week?	YES / NO		
18	Check last date of transformer oil BDV test and confirm the BDV value whether it is permissible or not? (Copy of required test report can be attached)	YES / NO		
19	Whether mechanical and electrical interlocks of critical equipments are working or not?	YES / NO		
20	Operating manuals for critical equipments like transformer, breakers etc. are available on site or not?	YES / NO		
21	Whether Automatic Power Factor Control (APFC) Panel is provided and fully operational?	YES / NO		
22	Whether any penalty is being imposed in the Electricity bill for poor P.F?	YES / NO		
23	Whether the maintenance personnel are provided with good quality of protective gears (shoes, hand gloves, etc.), uniforms and measuring instruments, tool kits etc.	YES / NO		

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ELECTRICAL SAFETY AUDIT (ESA) – 2019
CHENNAI CIRCLE

Sr. No.	Description	Details	Observation / Remarks	Proposed Rectification work
24	Whether Some training / meeting with Maintenance Staff about safety challenges is arranged at least half yearly	YES / NO		
25	Whether the sub-station building is ventilated sufficiently.	YES / NO		

RISK STATUS	PROPOSED RECTIFICATION WORKS
High	
Medium	
Low	

Declaration : All the above readings were recorded by me in peak hour between (11.00 am and 3.00 pm) along with the observation. The above observations are true and actually recorded by me.

Signature & Seal of the Auditor

**ELECTRICAL SAFETY AUDIT (ESA) – 2019****CHENNAI CIRCLE****ELECTRICAL SAFETY AUDIT : LT SIDE**

Sr. No.	Description	Details	Observation / Remarks	Proposed Rectification work
1	Whether MCCB, MCB, RCCB, RCBO, etc. are provided & fully operational?	YES / NO		
2	Whether existing MCCB, MCB, RCCB, RCBO, etc. are with proper rating to cater the load?	YES / NO		
3	Whether lighting is provided in electrical rooms/operating areas is sufficient / adequate for easy operation & maintenance works?	YES / NO		
4	Whether Emergency light is provided in Electrical/UPS rooms, Server room, lobby, staircase, DG set area, etc.?	YES / NO		
5	Whether Pump room is maintained dry and in good condition?	YES / NO		
6	Whether Water Seepage is observed near any of the Electrical equipment and wirings?	YES / NO		
7	Whether Single line diagram is displayed I the Electrical/ UPS room of the Branch/office?	YES / NO		
8	Whether paper, old material or any other scrap are kept in electrical room/ UPS room or near DB, Panels, UPS/ Batteries, etc.?	YES / NO		
9	Whether proper arrangement for ventilation of panel room /electrical room/ UPS room, etc. is provided?	YES / NO		

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**ELECTRICAL SAFETY AUDIT (ESA) – 2019****CHENNAI CIRCLE**

Sr. No.	Description	Details	Observation / Remarks	Proposed Rectification work
9	Whether Total Load is within the limits of Sanctioned load/ Demand. If the available Load is more than the sanctioned load then the additional equipment's which are connected are to be ensured that the wiring / switches / MCBs provided is capable of withstanding additional load?	YES / NO		
10	Whether additional electrical load is required from TANGEDCO?	YES / NO		
11	Whether Load is distributed in all three phases to avoid unbalancing of phases?	YES / NO		
12	Whether Lightning Arrestor is provided for the Multi storied Building and connected to independent Earthing system?	YES / NO		
13	Whether loose electrical connections/haphazard wiring observed in the Branch premises?	YES / NO		
14	Whether isolating switches are provided for the switching-off of the non-essential loads (LDB & PDB) of premises during night?	YES / NO		
15	Whether electrical equipment's of Pantry etc. are properly connected to Iron socket box with MCBs.	YES / NO		
16	General condition of wiring, cables, termination, etc.	GOOD / BAD		

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**ELECTRICAL SAFETY AUDIT (ESA) – 2019****CHENNAI CIRCLE**

Sr. No.	Description	Details	Observation / Remarks	Proposed Rectification work
17	Whether Panel boards and distribution Boards were opened and checked for overheating, loose contact, blackening etc. Any Preventive maintenance undertaken?	YES / NO		
18	Whether the wires in the DB'S are properly dressed, terminated and covered?	YES / NO		
19	General Condition of main switch, electric Meter board and change over switch etc.	YES / NO		
20	Whether proper marking done for identifying the Electric Panels, DBs, switch boards, Earthing pits, etc.?	YES / NO		
21	Whether the branch has arrangement for periodical maintenance, if so name, contact no. and address of contractor?	YES / NO		
22	Whether Preventive Maintenance of equipment is carried out by skilled license holder electricians?	YES / NO		
23	Whether the Service contact numbers of Electricians, TANGECO office, Generator, Lift, UPS, etc. are available with guard and displayed at site?	YES / NO		
24	General Condition of Air conditioners, water coolers, water filters etc.	YES / NO		
25	Whether timers is provided for Signage Boards to make auto ON/OFF (for schedule timings)	YES / NO		

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ELECTRICAL SAFETY AUDIT (ESA) – 2019
CHENNAI CIRCLE

Sr. No.	Description	Details	Observation / Remarks	Proposed Rectification work
26	Whether electrical wires properly covered/ insulated to prevent exposure of wires?	YES / NO		
27	Whether wires properly attached to fixtures, plugs, circuit breakers, and other equipment?	YES / NO		
28	Whether electrical covers in place for junction boxes, Outlets, and panel boards?	YES / NO		
29	Whether power supply to Safe room, Locker room, Record room & Stationary room are made through disconnecting Plug and Socket arrangement?	YES / NO		
30	Whether water seepage is observed in the premises or dripping on electrical gadgets?	YES / NO		
31	Whether sticker related to fire safety, switching off power and energy saving etc. are pasted in the branch?	YES / NO		

Other Observations:

Declaration : All the above readings were recorded by me in peak hour between (11.00 am and 3.00 pm) along with the observation. The above observations are true and actually recorded by me.

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ELECTRICAL SAFETY AUDIT (ESA) – 2019
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DETAILS TO BE RECORDED AT SITE

Parameter	Test point	Reading	Normal range	Remarks
Voltage at incoming point	R-Y			
	Y-B			
	B-R			
	R-N			
	Y-N			
	B-N			
	N-E			
Current reading at incoming point	R phase			
	Y phase			
	B phase			
Frequency				
Power factor				
Observations :				

Whether Neutral to earth voltage is below permissible limits? **YES / NO**

Note: The following readings recorded in peak hour between (11.00 am and 3.00pm) along with the observation.

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ELECTRICAL SAFETY AUDIT (ESA) – 2019
CHENNAI CIRCLE

ELECTRICAL LOAD & CURRENT DETAILS

Phase - I (R)		Phase – II (Y)		Phase – III (B)	
Load	KW	Load	KW	Load	KW
Current	Amps	Current	Amps	Current	Amps

Whether Load is balance or unbalanced? : **YES / NO**

TOTAL ELECTRICAL LOAD OF THE BRANCH / OFFICE

Sr. No.	Description	Load Details (KW)
1.	Air-conditioning load (ACDB)	
2.	Power load (PDB)	
3.	Lighting load (LDB)	
4.	Ups load (UDB)	
5.	Capacitor bank	

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**ELECTRICAL SAFETY AUDIT OF CRITICAL EQUIPMENTS**

Sr. No.	Description	Details	Observation / Remarks	Proposed Rectification work
<u>EARTHING</u>				
1	No. of Earth pits for UPS			
2	Whether UPS is provided with separate Earthing?	YES / NO		
3	UPS Earthing value	Ohms		
4	No. of Earth pits for Raw power			
5	Whether Raw power is provided with separate Earthing?	YES / NO		
6	Raw power Earthing value	Ohms		
7	Whether Earthing values measured in earth pits is less than 1 ohm ?	YES / NO		
8	Whether immediate rectification required for Earthing?	YES / NO		
9	Whether Earthing is provided for LDB, PDB, UDB, LT panels, APFC, COS, etc.?	YES / NO		
10	Whether Earthing reports are provided by the Electrical Maintenance Contractor?	YES / NO		
11	Whether gland Earthing provide for all cables?	YES / NO		

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**ELECTRICAL SAFETY AUDIT (ESA) – 2019****CHENNAI CIRCLE**

Sr. No.	Description	Details	Observation / Remarks	Proposed Rectification work
<u>UPS & BATTERIES</u>				
1	UPS Capacity	KVA		
2	UPS Make			
3	UPS installation date			
4	UPS Type (1-phase or 3-phase)			
5	No. of Batteries			
6	Battery Rating	AH		
7	Whether SMF or Tubular?			
8	Battery bank installation date			
9	AMC period			
10	Whether AMC of UPS is carried out through original equipment manufacturer?	YES / NO		
11	Whether UPS room is properly ventilated with Exhaust fans 2 Nos. provided?	YES / NO		
12	Whether proper Earthing is provided to the UPS?	YES / NO		
13	Whether the MCCB / MCB provided for the UPS are of correct rating & fully operational?	YES / NO		
14	General condition of UPS DBs, UPS wiring, battery wiring, etc.	GOOD / BAD		

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**ELECTRICAL SAFETY AUDIT (ESA) – 2019****CHENNAI CIRCLE**

Sr. No.	Description	Details			Observation / Remarks	Proposed Rectification work
<u>AIR-CONDITIONERS (AC)</u>						
1	Type of AC	Make	Qty.	Tr.		
	Split /Cassette /Ductable /VRF					
a						
b						
c						
d						
e						
	TOTAL					
2	AC installation date					
3	AMC period					
4	Name of the AMC vendor					
5	Whether AMC of ACs is carried out through original equipment manufacturer or empanelled contractor?	YES / NO				
6	Whether proper Earthing is provided to the ACs?	YES / NO				
7	Whether the MCB & RCCB provided for the ACs are of correct rating & fully operational?	YES / NO				
8	General condition of AC power wiring, indoor-outdoor cable, insulation, etc.	GOOD / BAD				
9	Whether timers are provided for changeover of Air conditioners in server rooms?	YES / NO				

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**ELECTRICAL SAFETY AUDIT (ESA) – 2019****CHENNAI CIRCLE**

Sr. No.	Description	Details	Observation / Remarks	Proposed Rectification work
<u>DIESEL GENERATOR (DG) SET</u>				
1	DG set Capacity	KVA		
2	DG set Make			
3	DG set installation date			
4	No. of DG set Batteries			
5	DG set Battery Rating			
6	AMC period			
7	Whether AMC of DG set is carried out through original equipment manufacturer?	YES / NO		
8	Whether DG set room is properly ventilated with Exhaust fans?	YES / NO		
9	Whether proper Earthing is provided to the UPS?	YES / NO		
10	Whether DG set is safely placed in the premises?	YES / NO		
11	Fuel for the DG set is stored in closed container and placed at a safe location?	YES / NO		
12	At least two 6 kg ABC or CO2-3/ 4.5 kg capacity fire extinguisher is placed near the Diesel Generator.	YES / NO		

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Sr. No.	Description	Details	Observation / Remarks	Proposed Rectification work
13	Whether Diesel i.e. inflammable materials are safely stored?	YES / NO		
14	Whether the Earthing for connecting to Body and neutral are provided for the DG set?	YES / NO		
15	Whether Earthing reports of DG set are provided by the Electrical Maintenance contractor?	YES / NO		
16	Whether the DG set panels, instrument clusters, etc. are in good condition?	YES / NO		
17	Whether the DG set cabin and fuel tank are in lockable condition?	YES / NO		
18	Whether the AMC of DG set is with the authorized service provider of the original equipment manufacturer.	YES / NO		
19	Whether any water logging is observed near DG set during monsoon?	YES / NO		
20	General condition of DG set power cables, control cable, radiator, exhaust, insulation, acoustics, etc.	GOOD / BAD		
21	Whether the CEA approval for DG Set is available at the site?			



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SUMMARY OF PROPOSED RECTIFICATION WORKS

Risk Status	Proposed Rectification work		Item wise estimated cost for the rectification works
High			
Medium			
Low			
Branch Manager Name		Auditor's Name	
Branch Manager contact no.		Auditor's contact no.	
Branch Seal		Govt. issued Electrical License details	License No. : Valid till :
Branch Manager Signature		Name of the Firm	
Three (3) copies of this report and Electrical drawings in CAD A1 size, Thermal Images, necessary photographs are submitted at this Office / Branch in hard and soft copies are forwarded to the official email of the Branch / Office. Soft copy of the reports and the drawings is saved in our data base and shall be submitted when requested by the Bank.			

Signature & Seal of the Auditor