

Electrical Safety Audit

Electricity does not recognise any one !!!!

Why Electrical Safety Audit ?

Electric shock is sudden and accidental stimulation of the body's nervous system by electric current and contraction of muscles. Current will flow due to voltage difference. In order to meet the safety and statute requirement and to have a healthy electrical safety management system in place to prevent electrical accident which is normally fatal. In order to monitor the Electrical Safety performance and to prevent the electrical breakdown and electrical accidents the best tool is to have annual Electrical Safety Audit from an external competent consulting agency. Here we can help the industry to conduct a national accepted standard of Electrical Safety Audit. We have very senior electrical engineers who have more than 48 yrs experience in the Electrical field in the area of Power generation, distribution, maintenance, inspection and audit.



SCOPE OF WORK - ELECTRICAL SAFETY AUDIT

1. Electrical layout system in the plant – General arrangement of power supply & distribution system in the plant.
2. Equipment suitability with respect to hazardous area classification.
3. Maintenance work practices – planning schedules, type of maintenance carried out.
4. Test schedules / Instruments / Inspection & test reports.
5. Operating Work Practices – Safe Operating Procedures.
6. Work Permit system and authorizing systems & procedures.
7. New equipment integration – Safety features during construction & commissioning.
8. Cable trench / layouts / excavations and other construction activity.
9. New Equipments – System to include Operation & Maintenance, Safety features while making specifications.
10. Portable Electrical Equipment – Suitability & condition of hand tools.
11. Personal Protective Equipment & First – Aid – Type & condition of PPE, First – Aid facilities during electric shock.
12. Electrical Safety Training Programme – such as Electrical Hazards & their control, prevention of fire due to electrical faults etc.,
13. Interaction with employees- with respect to First – Aid, Work Permit, and Electrical Hazard.
14. Compliance of Indian Electricity Rules, Factories Act. Petroleum Rules O.I.S.D – 137, 144, 145-09, & I.S.I specification etc.,
15. Electrical Accidents, Recording, Investigation & Preventive action.
16. Contractors Safety while carrying out electric arc welding, using portable electrical tools etc.,
17. Protection system – Adequacy of Primary & back up protection & their co-ordination.
18. Compatibility & Safety of Electrical Installations including Cabling, Junctions & Terminals etc.,
19. Back feeding arrangement to MCC from D.G.Set.
20. Random check of Earth resistance at few point of the installation.
21. Random check of insulation value at a few points of the installation.
22. Lightning arrestors / static Electric charge & discharge system.

* * * * *



400 K.V Electric Switch Yard



Electric Switch Yard - Fire



World's First 1200 KVA Transformer

SCOPE OF WORK - Cont ELECTRICAL SAFETY AUDIT

ANNEXURE – I.

1. Electrical layout system in the plant – General arrangement of power supply & distribution system in the plant.
2. Equipment suitability with respect to hazardous area classification.
3. Maintenance work practices – planning schedules, type of maintenance carried out.
4. Test schedules / Instruments / Inspection & test reports.
5. Operating Work Practices – Safe Operating Procedures.
6. Work Permit system and authorizing systems & procedures.
7. New equipment integration – Safety features during construction & commissioning.
8. Cable trench / layouts / excavations and other construction activity.
9. New Equipments – System to include Operation & Maintenance, Safety features while making specifications.
10. Portable Electrical Equipment – Suitability & condition of hand tools.
11. Personal Protective Equipment & First – Aid – Type & condition of PPE, First – Aid facilities during electric shock.
12. Electrical Safety Training Programme – such as Electrical Hazards & their control, prevention of fire due to electrical faults etc.,
13. Interaction with employees- with respect to First – Aid, Work Permit, and Electrical Hazard.
14. Compliance of Indian Electricity Rules, Factories Act. Petroleum Rules O.I.S.D – 137, 144, 145-09, & I.S.I specification etc.,
15. Electrical Accidents, Recording, Investigation & Preventive action.
16. Contractors Safety while carrying out electric arc welding, using portable electrical tools etc.,
17. Protection system – Adequacy of Primary & back up protection & their co-ordination (Relay coordination & records).
18. Compatibility & Safety of Electrical Installations including Cabling, Junctions & Terminals etc.,
19. Back feeding arrangement to MCC from D.G.Set & protection system.
20. Lightning arrestors / static Electric charge & discharge system.

* * * * *

Documents & Information required for Electrical Safety Audit.

~~~~~

1. Lay out Plan of the Factory duly approved by the Chief Inspector Factories.
2. Latest inspection report of the Electrical Inspector and Factory Inspector.
3. Electrical layout drawing showing the electrical distribution system of the entire plant.
4. Test report of Transformer Oil Test, Electric earth resistance test, and periodical inspection reports carried out by the plant maintenance Dept., and by authorised external agencies.
5. Accident Register.
6. Work Permit (Electrical as per I.E Rules) – Blank & filled.
7. Operating Manual – Safe Operating Procedures.
8. Register showing periodical inspection of all electrical installation and Equipment, and healthiness of the electrical equipment.
9. Register showing Safety Training Programme conducted for employees at various level on Electrical Safety & First-Aid & list of Participants.
10. Factory Licence issued by the Factory Inspector.
11. Equipment manufacturers Original Certificates.
12. Documents submitted to Electrical Inspectorate & Certificates obtained.
13. Record on major Electrical faults & failures corresponding relay actions in the past five years.
14. Maintenance schedules of Electrical equipments & record on type of maintenance carried out.
15. Details of Hazardous area classification.
16. Power sanction order and permission for installation of D.G set issued by the Electricity authority.
17. Consent letter issued by Pollution Control Board for air emission for D.G set.
18. List of Licenced Electricians & Supervisors employed in the Factory with details.
19. Wiring diagram of protection system.
20. Periodical Inspection by the Inspector of Electricians and his report and compliance report sent.

\* \* \* \* \*

**YOU MAY KNOW ELECTRICITY BUT ELECTRICITY DOES NOT KNOW YOU.**

