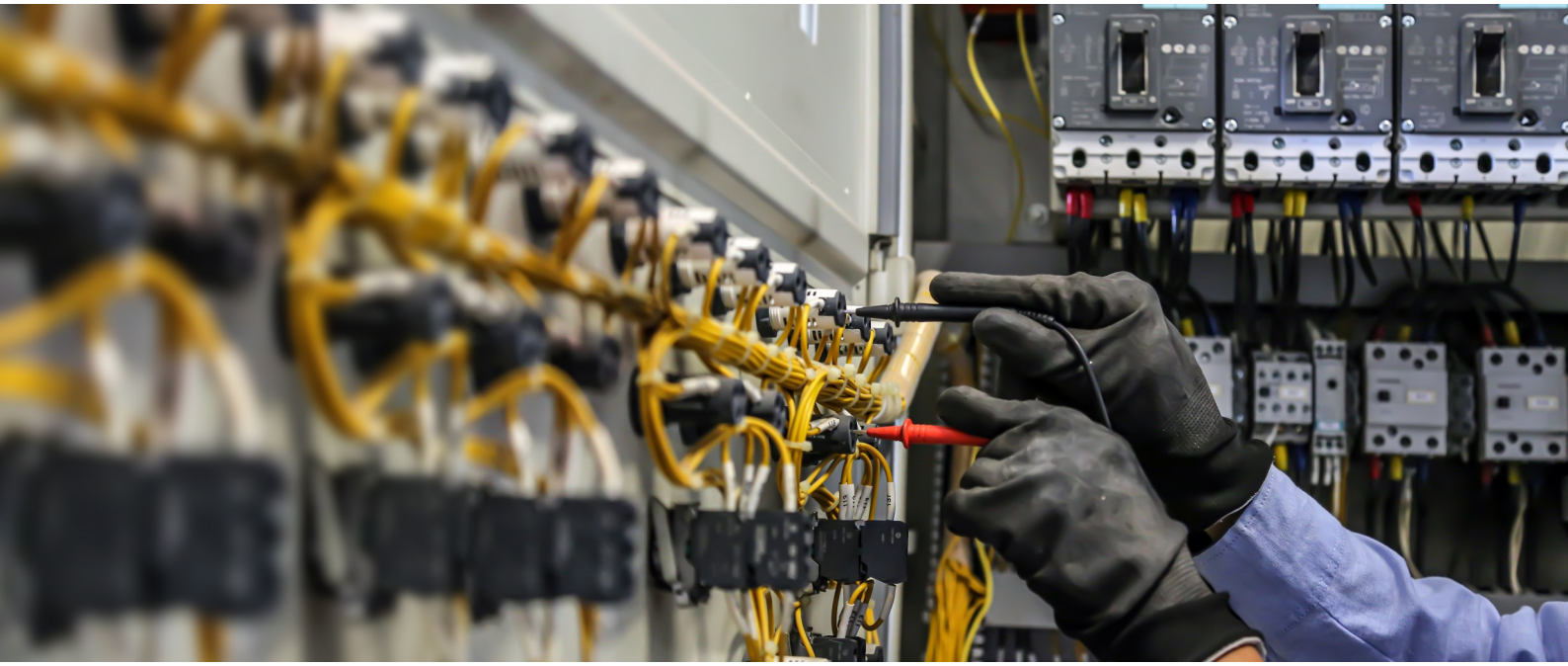
Electrical Safety and reliability adequacy study

Industrial and commercial installations

Every electrical installation shall be designed and installed in such a way that it offers safe and reliable operation for a minimum of 20 years. Initial verification and the rectification of mistakes is necessary to start with. Periodic audits are necessary to take proactive measures for safe, reliable, and long life of the electrical installation.



Methods followed in India

Electrical audits are often conducted in Industrial, Commercial and Residential buildings in India. These safety audits generally include earth electrode resistance measurements, checking of PPE's, danger boards etc. Some industries also make thermography and arc flash study in Low voltage installation.

The traditional ways of electrical safety audits in LV system, unfortunately are not going to help any industry. In the modern safety and reliability standards, the earth electrode resistance measurements are removed since the earth electrode have no role in safety and reliability of a low voltage electrical installation. Similarly, Thermography and Arc flash studies are not recognised in the Indian standards as the basic safety requirements for LV system.

Methods recommended in IS code of practices or IEC standards are rarely followed in India. Most often the experience and marketing skills of the auditor convince the users.

Modern methods to improve safety and reliability in an electrical installation.

Globally IEC 61936 and IEC 60364 make the basic requirements for electrical safety in an industrial and commercial installation. For reliability recommendations from several standards shall be followed.

SOLVE as a PARTNER IN ELECTRICAL SAFETY.

SOLVE the intelligent digital platform, brings the safety and reliability methods for a modern installation, a reality. Solve the safety and reliability issues in industrial and commercial installations and equip your industry to handle the challenges by own maintenance / HSE team. SOLVE offers knowledge based on the modern international standards and an easy process to adopt it.

Electrical Safety and reliability adequacy study

For Industrial, Commercial and Residential installations Safe Operation of Low Voltage Electricity

1. Complete evaluation of electrical installation including sources, distribution, connected devices and application, methods of automation and mode of communications.
    a. Type of sources / distribution,
    b. Type of apparatus used, ratings,
    c. Sequence of operation,
    d. Verification of test certificates, compliance to product and system standards,
    e. Verification of compliance to Installation rules.
2. Testing of critical systems for compliance to installation standards. The tests include
    a. Disconnection time,
    b. Touch voltage,
    c. Floor and wall resistances, efficiency of protective equipotential bonding.
    d. Protective conductor currents, circulating current, current loops
    e. Calculation of Temporary over voltages due to HV fault,
    f. Reliability checks of functional earthing system for electronics and communication
3. Training of client's maintenance team for periodic tests.
4. Verification of the periodic test results.
5. Analysis of the test results.
6. Preparation of improvement plan.
7. Preparation of reports.
8. Clarification of the improvement plan to various stake holders such as equipment vendors / maintenance engineers, management etc.
    Note: The improvement proposal will have short term, medium term and long-term plans, with an aim to develop a system which can provide a possible failure / accident well in advance.
9. Finalizing the guarantees and assurances of CAPE as "PARTNER IN ELECTRICAL SAFETY" for long term operation of the electrical system.

- Initial and Periodic Verifications of LV system (IS 732, IEC 60364-6 and NEC of India).
- EMC analysis (IEC 61000-5-1).
- Verification of Special installations (Hospitals and Medical locations, Automation & Sensitive electronic installations, DATACENTER & ICT, MESH-BN networks, EMP protected buildings, Static Electricity).
- Initial and Periodic Verifications of HV system (IEC 61936-1).
- Compliance verification of connected equipment and apparatus to the respective product standards.