

ADVIKA

Automation and Engineering Solutions

Electrical Audit Team in association with SES

Presents

ELECTRICAL SAFETY AUDIT

Presentation updated on : 24th Oct. 2024 Version - 01

Electrical and Fire safety Audit

Audit carried out to review health of system as per customer's specific requirement or as per Industry standards to improve Industry's /Commercial Building's / Office's reliability from safety aspect point of view

Benefits to Customer

- ✓ Electrical and Fire Safety Audit as per client requirement or as per Industry Standards.
- ✓ Improves system reliability by identification and taking corrective action both.
- ✓ Identify, Mitigate Risks and Reduces or eliminates Risk/ hazards by physical examination.
- ✓ Compliance to Statutory requirements
- ✓ Improved Operational Efficiency, Reduce Downtime, extend Equipment Lifespan and Improves Documentation practices.
- ✓ Improvement of Employee morale by incubating Safety Culture and Enhances Emergency Preparedness.
- ✓ Improves brand value of Industry / Commercial Building / Offices and Protect Company Assets.
- ✓ Creation of positive cycle of Safety Improvement and Improvement of Management Awareness of problems

Why Carry Out an Electrical Safety Audit in Manufacturing Industries

 Ensure Compliance with Regulations and Standards

 Enhance Safety and Prevent Accidents

 Improve Operational Efficiency

 Minimize Downtime and Disruptions

✓ Extend Equipment Lifespan

 Identify and Mitigate Risks

→ Enhance Emergency Preparedness

✌ Promote a Culture of Safety

💡 Protect Company Assets and Reputation

🤝 Support Continuous Improvement

We Conduct,

- Arc Flash study
 - Load flow and Short circuit analysis
 - Relay Coordination study
 - Lightening arrestor adequacy study
 - Thermography study
 - Hazop Study
 - Area Classification study for Flameproof areas
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- More than 70% Organization are Not Able to provide As Build Single Line Diagram and Load List before Electrical Safety Audit.
 - A Survey of Safety Audits Showed that Lack of Documentation Leads to 25% more Repeated Issues

SCOPE OF ELECTRICAL SAFETY AUDIT

- ✓ Standards Used
- ✓ IS Standards for Earthing, Lightning arrestors,
- ✓ CEA Standards
- ✓ Electricity Grid Codes
- ✓ National Building Codes
- ✓ Good Engineering Practices

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- Complete review of Incoming Power Supply System.
 - Complete review of Low-Tension supply system which includes all feeders, starters, etc.
 - Complete review of electrical connections such as motors, portable equipments, etc.
 - Risk Identification and Mitigation methods
 - Earthing system review
 - Accident/Incident records
 - Electrical Inspection/Testing records review
 - Electricity Energy Bill review

"Unlocking the Importance of Power Quality Assessments in Addressing Summer Season Challenges".

As we gear up for the summer season, it's crucial for businesses to be proactive in addressing potential power quality issues. Rising temperatures can significantly impact the reliability and efficiency of power systems, leading to operational disruptions and safety concerns. Here are some key challenges businesses may face with summer power quality:

- ✓ **Overheating Equipment:** The summer heat can push electrical components like transformers and capacitors to their limits, resulting in inefficiencies or failures that jeopardize operations and safety.
- ✓ **Increased Load on Power Systems:** With air conditioning and cooling systems ramping up, power systems face heightened stress. This can manifest as voltage sags, fluctuations or even outages, impacting business continuity.
- ✓ **Thunderstorms and Power Surges:** Summer storms bring the risk of power surges, which can wreak havoc on sensitive equipment and cause costly downtime if not properly managed.

“Unlocking the Importance of Power Quality Assessments in Addressing Summer Season Challenges”.

Utility Grid Strain: High electricity demand during peak summer months strains utility grids, potentially leading to brownouts or blackouts that disrupt operations. To effectively tackle these challenges, a comprehensive power quality assessment is essential. This involves analyzing your power system's capacity to handle increased loads and identifying vulnerabilities that could compromise power quality. By investing in a thorough power quality assessment, you can:

- ☐ Identify and address potential issues before they escalate.
- ☐ Ensure equipment efficiency and longevity by mitigating risks of overheating and overloads
- ☐ Enhance system reliability to handle peak summer demands seamlessly
- ☐ Safeguard sensitive equipment against surges and electrical noise, minimizing the risk of costly damage.

Summer presents a prime opportunity to fortify your power systems against seasonal challenges. By prioritizing a power quality assessment, you can proactively safeguard your operations, minimize downtime, and optimize efficiency, ultimately driving cost savings and enhancing safety.

When any short circuit happens between two live conductors in an electrical network either by direct contact or indirect contact, it will lead to a fault in the electric network. This fault will generate an electric arc which in turn leads to a flash which is generally known as electric arc flash.

The temperature of an arc flash can reach 35,000 degrees Fahrenheit – which is up to four times hotter than the sun. This means to maintain a safe workplace it is important to analyze the system properly. **Statistics indicate that based on hospitalization records, Arc flash accidents that involve a fatality or serious injury to an employee occur frequently in India.** Those incidents most often occur when personnel is required to work on electrical equipment while it is in an electrically energized condition.

Importance of Electrical Safety Audits

Electrical safety audits are essential in identifying and mitigating risks associated with electrical systems. Here's how they add value to any organization:

- **Risk Identification and Mitigation:** Audits help identify potential electrical hazards that could lead to fires, such as faulty wiring or overloaded circuits. Recommendations from audits can be implemented to prevent such hazards from materializing.
- **Regulatory Compliance:** Ensuring compliance with safety standards (e.g., NFPA 70E, OSHA, IEC) avoids legal penalties and ensures the facility operates within the legal framework. Regular audits help maintain adherence to the latest safety regulations.
- **Enhanced Safety:** Identifying and addressing electrical hazards reduces the risk of electrical accidents, protecting employees and visitors. Proper safety measures and equipment can be put in place to respond effectively in case of an emergency.
- **Operational Efficiency:** Regular audits can detect inefficiencies in the electrical system, leading to optimized energy use and reduced operational costs. Preventive maintenance based on audit findings can enhance the reliability of electrical systems.
- **Minimized Downtime:** Detecting issues before they cause equipment failure or downtime ensures continuous operation. Preventive actions can reduce unexpected outages, ensuring smooth business operations.

Importance of Electrical Safety Audits

Extended Equipment Lifespan: Regular maintenance and addressing wear and tear identified during audits can prolong the lifespan of electrical equipment. This reduces the frequency and cost of replacements and repairs.

Emergency Preparedness: Evaluating emergency systems and procedures ensures they are functional and effective. Properly maintained systems help the facility respond efficiently to electrical emergencies.

Cultivation of Safety Culture: Regular audits reinforce the importance of safety within the organization. They encourage employees to adopt safe practices and foster a culture of safety awareness and responsibility.

Regular and thorough electrical safety audits can prevent such disasters, protecting lives and property. Call to Action Ensure the safety and reliability of your facilities by scheduling a comprehensive electrical safety audit.

What to expect from ARC Flash Study



IDENTIFY PPE
REQUIREMENT



ESTIMATED ARC
FLASH INTENSITY (
INCIDENT ENERGY
RELEASE)



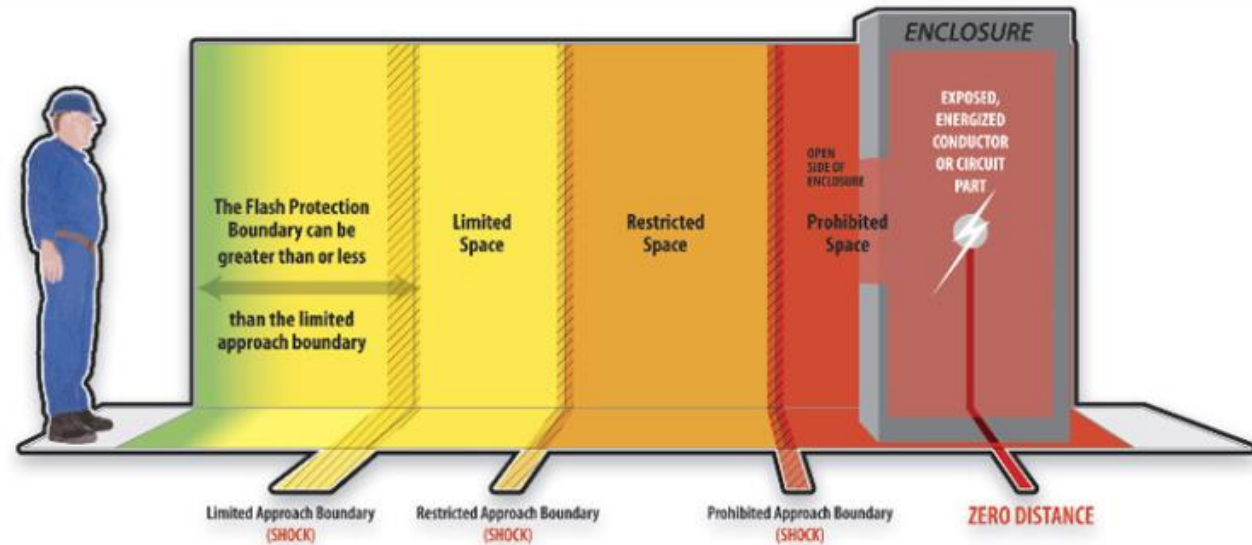
CLASSIFIED ARC
FLASH
BOUNDARIES (SAFE
DISTANCE) FROM
WHERE A PERSON
WILL NOT BE
HARMED BY ARC
FLASHES.



DEFINE ELECTRICAL
SHOCK SAFETY



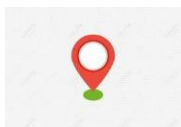
WARNING LABELS
PROVIDING OF PPE
AND APPROACH
BOUNDARY



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Be a Part of Sustainable Change

Thank you.