



Establish Safe & Reliable Industrial Electrical Systems

An electrical system failure can lead to disrupted operations, costly maintenance or repairs, and environmental and personnel safety risks. Implementing a comprehensive electrical safety audit will improve operational reliability and comply with OSHA process safety management (PSM) requirements.

At Equity Engineering, we understand the importance of electrical safety and maintenance for industrial facilities. Our Instrumentation & Electrical Engineering team provides comprehensive electrical safety audits to help owner-operators meet NFPA 70 and NFPA 70E compliance while also improving the safety and reliability of your electrical systems. As an independent and impartial evaluator, our engineers will provide a fresh view of the facility's existing practices.

Service Areas

Electrical Safety Program

The goal of an electrical safety program is to promote safe work practices throughout the facility with personnel training, hazard identification, and compliance with relevant electrical safety standards and regulations. Our team will conduct field evaluations of written electrical safety programs to ensure compliance with codes requiring definition of roles and responsibilities, establish safe work practices and hazard identification, and train personnel.

Maintenance Program

Our team applies NFPA 70B's risk-based approach to established recommended electrical maintenance intervals. We will assess the risks associated with a facility's electrical systems to identify preventative maintenance tasks, establish inspection schedules, and provide practical corrective actions. We will also review third-party maintenance, testing, and inspection work and address any obsolete or abandoned electrical equipment.

Design Documents

Electrical suitability studies and up-to-date one-line diagrams are critical for maintaining system integrity and safety. We will assess the document storage and accuracy to ensure that electrical site personnel have updated and readily available information to support safe and efficient operations.

Field Installation

The safety and reliability audit includes inspection of field installations. Our electrical engineers will evaluate whether all major electrical equipment, cables/conduits, electrical distribution infrastructure, and grounding and ground grids comply with the National Electric Code (NEC).

Process Safety Management (PSM) Aspects

Our team is focused on all PSM aspects for electrical systems and equipment. We will help identify gaps or areas of improvement in written electrical safety programs, incident reporting and investigation best practices, management of change procedures, and hazardous area classification methods.

Case Study

Electrical Safety & Reliability Audit

Industry:
Chemical

Type of Asset:
Manufacturing Plant

Location:
USA

Issue:
Regulatory and corporate requirement for periodic review and evaluation of the facility's electrical safety program and electrical system reliability.

Solution:
We collaborated with the site personnel and corporate reliability engineers to facilitate an electrical safety & reliability audit. We reviewed the facility's electrical safety program, electrical system design documentation, and maintenance records; conducted interviews with site personnel; and evaluated the installation and condition of the major electrical equipment.

Result:
The current state was evaluated with respect to industry best practices and corporate requirements as well as NFPA 70 (National Electric Code), NFPA 70B (Standard for Electrical Equipment Maintenance), and NFPA 70E (Standard for Electrical Safety in the Workplace). We provided a gap analysis report that summarized best practices, progress from the prior audit, vulnerabilities, and deficiencies.

Benefits



Improve operational reliability of electrical systems



Comply with jurisdictional requirements



Apply risk-based approach to maintenance strategy



Identify gaps in electrical safety and maintenance program



EQUITY ENGINEERING WAS EXTREMELY RESPONSIVE TO OUR URGENT SITUATION, COMPLETED THE SCOPE OF WORK EXACTLY AS REQUESTED AND IN A TIMELY MANNER. **THE TEAM WAS VERY KNOWLEDGEABLE AND A PLEASURE TO WORK WITH.**

Electrical arc fault investigation, June 2024