SALISBURY ASSESSMENT SOLUTIONS

Electrical Engineering Services for a
Safe and Compliant Workplace

Honeywell
SALISBURY

YOUR SINGLE SOURCE FOR ELECTRICAL SAFETY

Salisbury Assessment Solutions (SAS) provides a wide range of services to assist you in ensuring your compliance with NFPA 70E and ASTM F18 standards as well as OSHA government regulations. Our goal is to assist you in the process of creating, implementing, and maintaining an electrical safety program.

Services

Keeping your employees safe involves a thorough assessment of your facility, its hazards, and potential risk levels. The purpose of an Arc Flash Risk Assessment is to evaluate potential risks and determine the type of electrical personal protective equipment (PPE) required to enhance t he safety of your workers.

An electrical safety program audit can help you determine the needs of your electrical safety program to meet the NFPA 70E, ASTM F18 standards, and OSHA regulations. Results of the audit enable you to create goals for the future state or development of your program. SAS can support and guide you toward meeting those goals through the numerous additional services offered. We can provide the tools you need to achieve the defined goals of your electrical safety program.

Safety Training

Our training offerings include NFPA 70E and OSHA compliance, certification for electrical worker qualification, PPE training, electrical safe work practices, and more. Our goal is to provide ongoing and continuous learning opportunities for you and your employees to ensure a safer working environment. We currently offer classroom , webinar and online training to give you more flexibility within your organization.

Resources

Salisbury Assessment Solutions provides a wide range of services, training opportunities, and resources for safety professionals seeking to create, implement, and maintain a written electrical safety program. We strive to provide safety leaders with relevant news, information, and resources.

Our goal is to support you with the knowledge, tools, and services you need to lead your team to complete electrical safety compliance. Available resources include videos, articles, news, literature, and more.

Did You Know?

- 2 of OSHA's top 10 most frequently cited standards are electrical.
- 97% of electricians have experienced electrical shock or injured on the job.
- Every 30 minutes during the work day, a worker suffers an electrically-induced injury that requires time off the job for recovery.
- Over the last ten years, more than 46,000 workers have been injured from on-the-job electrical hazards.
- Medical costs for severe electrical burns can exceed $4M per person.
- Work-related injuries can cost businesses well over $30M in fines, medical costs, litigation, lost business, and equipment costs.

HONEYWELL SALISBURY COMMITTED TO SAFETY

Honeywell Salisbury™ is the world leader in electrical safety PPE. For over 160 years, our products and services have helped keep electrical workers safer on the job. Our protective clothing and tools enable electrical workers to enhance safety in most hazardous conditions.

Many deaths and injuries occur each year due to shock and arc flash. Most of these tragic events are preventable. The NFPA 70E Standard for Electrical Safety in the Workplace provides guidelines and principles to follow to ensure worker and workplace safety. NFPA 70E is the guideline for compliance with OSHA 1910 Subpart S and OSHA 1926 Subpart K.

OSHA takes electrical safety seriously with nearly 100 standards that are deemed necessary for the practical safeguarding of employees in their workplaces.

We are committed to your protection, and that means more than head-to-toe personal protective equipment, or PPE. It means a safer workplace that mitigates risk.

It also means expert training, engineering services, safety audits, and a complete electrical safety program for your workplace aids in your compliance with OSHA, ASTM, and NFPA 70E standards and regulations.

Salisbury Assessment Solutions (SAS) offers a team of electrical engineers and safety experts that provides individualized services to meet your needs for electrical safety compliance and to help you achieve your electrical safety program goals.

SAS offers electrical hazard risk assessments, arc flash risk assessments, compliance support, electrical engineering, assistance, and support with written electrical safety programs and electrical training. SAS is a customized service that can meet the unique needs of each customer.

No matter what stage in the process of developing a safe and compliant workplace you are in, SAS can help.

Available Offerings

The best way to avoid compliance and regulation issues and protect your workers is to allow an experienced, qualified electrical engineering team complete the analysis and work with you on creating and maintaining an electrical safety program.

1. Arc Flash Risk and Shock Assessments
2. Electrical Engineering
3. Written Electrical Safety Program Assistance and Support
4. Thermography
5. Assistance with Personal Protective Equipment Selection
6. NFPA 70E Compliance Support
7. Mitigation
8. Training

1. Arc Flash Risk and Shock Assessment

An arc flash is an explosion of electrical energy that can cause substantial damage, injury, and death. Analyzing the arc flash hazards is critical to the worker and workplace safety. NFPA 70E calls for an arc flash hazard analysis and risk assessment procedure to maintain a safe workplace.

An arc flash risk assessment, per NFPA 70E, is a study investigating a worker's potential exposure to arc flash energy. This is conducted for the purpose of injury prevention as well the confirmation of safe work practices. The determination of the arc flash boundaries and the appropriate levels of personal protective equipment (PPE) needed are critical deliverables of an arc flash risk assessment.

There are three steps to completing an arc flash hazard analysis as outlined by NFPA 70E Article 130.5 (2018 Edition).

1. **Arc Flash Boundary:** The arc flash boundary shall be the distance at which the incident energy equals 1.2 cal/cm2 (5 J/cm2). For information on estimating the arc flash boundary, see NFPA 70E Informative Annex D.

2. **PPE for Application:** One of the following methods shall be used for the selection of arc flash PPE: (1) The incident energy analysis method in accordance with 130.5(G) (2) The arc flash PPE category method in accordance with 130.7(C)(15) Either, but not both, methods shall be permitted to be used on the same piece of equipment.

3. **Equipment Labeling:** Electrical equipment such as switchboards, panelboards, industrial control panels, meter socket enclosures, and motor control centers that are likely to require examination, adjustment, servicing, or maintenance while energized shall be marked with a label containing arc flash and shock information.

2. Electrical Engineering

An unsafe environment puts your workers and electrical equipment at risk. Electrical incidents can result in injury, costly repairs, penalties, and even death. Companies can enhance protection of their workers, equipment, and their bottom line by hiring an electrical engineering team like Salisbury Assessment Solutions to analyze their equipment.

SAS begins by performing a short circuit analysis and time current coordination study to evaluate your equipment and the risks it presents to your workplace. SAS will analyze the data to provide engineered solutions to improve the safety and efficiency of your electrical system.

Reliable equipment creates a safer and more efficient workplace and lowers operating costs. SAS has licensed electrical engineers who can find ways to make your electrical system more secure and effective.

3. Written Electrical Safety Program Assistance & Support

SAS has a dedicated team to assist you in developing and defining a corporate electrical safety program for your organization. Our goal is to help you establish a program that is manageable and enforceable so that you can ensure company-wide compliance as well as consistency in regards to safety across your entire business. Whether starting from scratch or looking to refresh your existing program, SAS can help.

4. Thermography

All electrical equipment is rated based on the maximum temperature that each component can safely be operated. As we know, electrical current flowing through any conductor or

component produces heat. Since the amount of heat produced varies, the ability of the conductor or component to dissipate that heat into the ambient environment is paramount. Electrical components operating at elevated temperatures will cause accelerated deterioration of both the component and the insulation protecting it. Thermographic scanning of electrical components can identify these elevated temperatures and indicate the necessity for corrective action before a failure.

Thermography uses infrared cameras to measure temperature or excessive heat build-up. This method is not only accurate, but costeffective and noninvasive. Maintenance personnel and engineers have long used thermography as it is very beneficial in detecting loose connections, damaged or overloaded components, and weak or poor wiring. These routine inspections and reporting can save a company from having to deal with emergency situations where equipment fails and production comes to a halt.

By combining your on-site data collection (done during the arc flash risk assessment) and thermal imaging, your costs per service are reduced as the panels only need to be accessed one time.

5. Assistance with Personal Protective Equipment Selection

The arc flash risk assessment allows for calculation of Arc Flash Incident Energy levels. The arc flash PPE categories (1 – Dangerous) determine the amount of protective clothing and personal protective equipment. Table 130.7(C)(15)(a) Arc-Flash PPE Categories for Alternating Current (ac) Systems in the NFPA 70E carefully outlines the requirements for each category.

Salisbury is the world leader in electrical safety PPE. Our SAS team understands the requirements and can help you with all aspects of PPE including:

PPE Selection: SAS and the Salisbury team are experts in electrical PPE and can assist and ensure the proper electrical PPE is selected.

Testing, Care and Maintenance: Helping you understand the equipment you need and how to care for it. PPE generally requires periodic testing and a maintenance plan for each piece to ensure that it will properly protect the worker.

Electrical Safety Training: PPE should be inspected prior to each use and tested regularly. SAS can educate your staff on PPE inspection, testing, and how to properly use their PPE.

6. NFPA 70E Compliance Support

SAS has a staff of highly experienced loss control and risk managers. They can assist you in avoiding OSHA fines and citations. If you have already been cited or are involved in a worker's compensation claim, the SAS staff can assist you in meeting all requirements to help mitigate penalties and reduce possible costs on claims.

7. Mitigation

The 2017 National Electric Code requires all circuits protected by an over-current device of 1,200 amps or more to have their clearing time reduce by one of their listed methods. SAS engineering expertise can not only help you identify critical mitigation opportunities but also to manage them into compliance.

8. Training

Training should always be a critical component of any Electrical Safety Program. Per NFPA70E-2018 all qualified workers must be trained no longer than every 3 years. SAS training offering includes on-site classes by our professional engineers or certified instructors, instructor-led webinars to manage multiple customer locations simultaneously or our online platform for increased user flexibility.

SAS Training

An essential element of any electrical safety program is professional training. When employersinvest in continuous education for their employees, the result is a safer workplace. Salisbury Assessment Solutions offers multiple training options to develop and enhance employee knowledge and confidence levels.

NFPA 70E Defines a Qualified Person as: One who has demonstrated the skills and knowledge related to the construction and operation of the electrical equipment and installations and has received safety training to identify the hazards and reduce the associated risk. Retraining in safety-related work practices and applicable changes in this standard shall be performed at intervals not to exceed 3 years.

Companies that have invested in Salisbury's educational trainings realize the benefits in having a workforce where employees are educated to better understand codes, standards, regulations and safe work practices.

Electrical safety courses are available for both qualified and unqualified electrical workers. SAS has expert trainers with the credentials and industry knowledge to provide training that ensures a safe workplace.

CLASSROOM OPTIONS

What You Will Learn

- How to keep one-lines up to date
- What is involved in performing an engineering study
- The differences of doing an arc flash risk assessment versus using the NFPA 70E tables
- Gain knowledge on how mitigation can reduce your arc flash PPE category levels to 1 - 2
- When existing arc flash labels need to be replaced
- How long an arc flash risk assessment is valid
- What to consider when adding a circuit or service entrance
- How to perform an arc flash risk assessment in accordance with the latest codes and standards

Arc Flash and Shock Hazard for Non-Maintenance Personnel: 2 Hours #AFT1002

The purpose of this session is to provide training on NFPA 70E Article 130. This training is for personnel who are required to function near or interface with electrical equipment but are not qualified to be within the approach boundaries specified in NFPA 70E.
Webinar and Spanish options are available upon request.

Arc Flash and Shock Hazard for Maintenance Personnel: 4 Hours #AFT1004

The purpose of this session is to provide training on NFPA 70E Article 130. This training is for personnel who are required to examine, adjust, service or maintain electrical equipment while it is energized and meet the standards required for qualified personnel as defined in NFPA 70E.
Webinar and Spanish options are available upon request.

OSHA 10-Hour for the Electrical Industry: 10 Hours #OSHA10

The purpose of this multi-day session is to provide a safer work environment and protect electrical workers by keeping them informed about OSHA's latest standards, regulations and best practices. This 10- hour program is OSHA's basic safety outreach class and is designed to introduce workers to a variety of general industry guidelines and requirements with an emphasis placed on those sections of 29 CFR 1910 which are appropriate for workers who work on or near electrical power systems. After completion, participants will receive an OSHA 10 hour card. The OSHA 10 card may be a requirement of your facility or one of your customer's facilities (i.e., steel mills, utility power plants, heavy industrials, etc.)

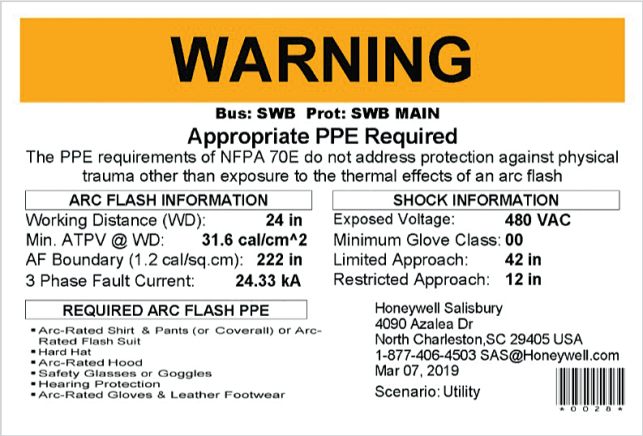
Online Training

The purpose of the variety of courses (over 10 courses- including OSHA10) is to allow anyone to learn from the basics of Electrical Safety, Arc Flash and Electrical risks, to the advanced principles on how to implement an Electrical Safety program utilizing the latest NFPA 70E edition guidance.

Please visit for a free demo and course overview
www.HoneywellSalisburyOnlineUniversity.com

Are Your Arc Flash Labels Up To Date?

Your electrical assessment must be updated every 5 years per NFPA 70E, or when there is a major modification to your distribution system. This would include updating labels to the current standard. Please contact Salisbury for more information.



WARNING

Bus: SWB Prot: SWB MAIN

Appropriate PPE Required

The PPE requirements of NFPA 70E do not address protection against physical trauma other than exposure to the thermal effects of an arc flash

ARC FLASH INFORMATION		SHOCK INFORMATION	
Working Distance (WD):	**24 in**	Exposed Voltage:	**480 VAC**
Min. ATPV @ WD:	**31.6 cal/cm^2**	Minimum Glove Class:	**00**
AF Boundary (1.2 cal/sq.cm):	**222 in**	Limited Approach:	**42 in**
3 Phase Fault Current:	**24.33 kA**	Restricted Approach:	**12 in**

REQUIRED ARC FLASH PPE

- Arc-Rated Shirt & Pants (or Coverall) or Arc-Rated Flash Suit
- Hard Hat
- Arc-Rated Hood
- Safety Glasses or Goggles
- Hearing Protection
- Arc-Rated Gloves & Leather Footwear

Honeywell Salisbury
4090 Azalea Dr
North Charleston,SC 29405 USA
1-877-406-4503 SAS@Honeywell.com
Mar 07, 2019
Scenario: Utility

Contact Us:
To get a free quote or request more information, please email us at SAS@Honeywell.com or call +1 630-343-3756
For more information visit: https://explore.honeywell.com/SAS

Honeywell Industrial Safety
9680 Old Bailes Road
Fort Mill, SC 29707
Phone: 1-877-406-4501
Fax: 1-866-824-4922
www.honeywell.com

SASCAT | 11/19

THE FUTURE IS WHAT WE MAKE IT

Honeywell