**[Company Name]**

**Electrical Safety Plan**

Plan last updated: **[date]**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Table of Contents** | | | | | | | | | | | | | |  |  |
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| [**Personal Protective Equipment**](%5Cl%20%22_Toc520728001%22) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  |
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|  |  | [Job Hazard Analysis](%5Cl%20%22_Toc520728002%22) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | [JHA)](%5Cl%20%22_Toc520728002%22) | | | | | | | | | | | | | | | | | | | | |  |
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|  |  | [Storage](%5Cl%20%22_Toc520728005%22) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  |
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|  |  | [Conductive Apparel](%5Cl%20%22_Toc520728007%22) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  |
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|  |  | [Emergency Removal of Tag and Lock](%5Cl%20%22_Toc520728009%22) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  |
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| [**Electrical Code Compliance**](%5Cl%20%22_Toc520728010%22) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  |
|  |  | [Inspectors](%5Cl%20%22_Toc520728011%22) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  |  |  |  | | | | | |  | | | | | | | | | | | | | | | [19](%5Cl%20%22_Toc520728011%22) |  |
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|  |  | [Utilization](%5Cl%20%22_Toc520728013%22) | | | | | | | | | | | | | | | | | | | | | [Eq](%5Cl%20%22_Toc520728013%22) | | | | [uipment](%5Cl%20%22_Toc520728013%22) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  |
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| [**Training**](%5Cl%20%22_Toc520728014%22) | | | | | | | | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  |
|  |  | [Qualified persons](%5Cl%20%22_Toc520728015%22) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | [20](%5Cl%20%22_Toc520728015%22) |  |
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|  |  | [Unqualified persons](%5Cl%20%22_Toc520728016%22) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  |
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|  |  | [Recordkeeping](%5Cl%20%22_Toc520728018%22) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | [21](%5Cl%20%22_Toc520728018%22) |  |
| [**In**](%5Cl%20%22_Toc520728019%22) | |  |  | |  |  | | | |  | | | | | | |  | | |  |  | |  | | | |  | | |  | | |  | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | [**22**](%5Cl%20%22_Toc520728019%22) |  |
| [**jury Recordkeeping**](%5Cl%20%22_Toc520728019%22) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  |
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| [**Su**](%5Cl%20%22_Toc520728020%22) | [**pp**](%5Cl%20%22_Toc520728020%22) | | | [**orting Materials**](%5Cl%20%22_Toc520728020%22) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  |
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**Policy Statement**

It is the policy of **[Company Name]** to protect all employees from electrical hazards, including shock, electrocution, arc flash, arc blast, and fires. All electrical work will be conducted in a manner consistent with existing regulations and with recognized safe work practices. This Plan establishes safe work practices for routine operations. Operations that involve high voltage (i.e., above 600 volts, nominal) and other unique hazards will need additional procedures for the specific situation.

**Authority and Scope**

***Authority***

This Plan complies with OSHA electrical safe work practice regulations at 29 CFR 1910.331 to 1910.335 **[replace with the state regulations if applicable.]**

***Scope***

The Electrical Safety Plan covers electrical safe work practices for qualified persons (i.e., persons trained to avoid the electrical hazards of working on or near exposed energized parts) and unqualified persons (i.e., persons with little or no training) who work on or near machines, equipment, or circuits that have not been placed in an electrically safe work condition (i.e., not locked/tagged out). It applies to:

* Premise wiring (i.e., installations of electric conductors and equipment within or on buildings or other structures and on other premises such as yards, parking and other lots, and industrial substations)
* Wiring for connection to supply
* Installations of other outside conductors on the premises
* Installations of optical fiber cable where such installations are made along with electric conductors

This Plan does not apply to electrical generation, transmission, and distribution systems.

**Program Administration**

Table **[number]** provides the employees and contact information for the administration of the electrical safety program.

Table **[number]**

Program Contact Information

**[Modify the table and job descriptions that follow the table as applicable to your organization.]**



|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Function |  | Name, job title, or |  | Contact Information | |
|  |  | department |  |  |  |
| Plan Administrator |  | **[Name]** |  | Work phone: |  |
|  |  |  |  | Cell phone: | |
| Supervisor(s) |  |  |  | Work phone: |  |
|  |  |  |  | Cell phone: | |
| Maintenance |  |  |  | Work phone: |  |
| Manager |  |  |  | Cell phone: | |
| Purchasing |  |  |  | Work phone: |  |
| Manager |  |  |  | Cell phone: | |
| EHS Manager |  |  |  | Work phone: |  |
|  |  |  |  | Cell phone: | |
| Training Manager |  |  |  | Work phone: |  |
|  |  |  |  | Cell phone: | |
| Safety Committee |  |  |  | Work phone: |  |
| Chairperson |  |  |  | Cell phone: | |
| **[Other]** |  |  |  | Work phone: |  |
|  |  |  |  | Cell phone: | |

**Plan Administrator.** The Electrical Plan Administrator will provide safe workprocedures and permits for electrical work as required, and provide and implement other critical procedures such as lockout/tagout, testing, and safety-related work practices as required by regulation. Specifically, the Administrator will:

* Ensure that employees who work or who may potentially work near exposed energized parts are trained and qualified.
* Ensure that approved, maintained, and tested personal protective equipment (PPE) and other electrical safety equipment are provided, available, and used properly.
* Establish, implement, and maintain procedures that will ensure electrical safe work practices.
* Establish and maintain records as required.

The Administrator will also ensure that workers of all disciplines and their immediate supervisors working with, or in proximity to, electrical equipment receive:

* Electrical safety awareness training
* General and job-specific training in safe electrical work practices
* Training in NFPA and ANSI codes and standards

**Supervisor(s).** Supervisors will:

* Complete applicable training.
* Ensure that employees follow all electrical safety practices and procedures.
* Ensure that employees receive required training at the prescribed times.

**Maintenance Manager.** The Maintenance Manager will develop and institute anelectrical safety maintenance program, provide qualified persons, and review and approve live work permits to work on or near energized parts.

**Purchasing Manager.** The Purchasing Manager will specify that only electricalequipment and appliances that are listed by a nationally recognized testing laboratory (NRTL) such as Underwriters’ Laboratories, Inc. (UL) are purchased.

**EHS Manager.** The EHS Manager will facilitate the administration of the ElectricalSafety Plan, including performing periodic program audits.

**Training Manager.** The Training Manager will develop and oversee electrical safetytraining courses, including any site-specific electrical safety training courses, as required, and assist other managers with their employee training responsibilities.

**Safety Committee Chairperson.** The Safety Committee Chairperson and other SafetyCommittee members will assist the Plan Administrator with interpreting electrical codes and regulations.

**Employees.** All employees, including employees of contractors working at **[Company Name]** work sites, are responsible to comply with all safety rules and policies as directedby **[Company Name]** management that apply to their own actions and conduct, including immediate reporting to management of unsafe and unhealthful conditions.

***On-Site Contractors and Subcontractors***

All references in the Plan to “employees” or “workers” apply to the employees of on-site contractors and subcontractors.

All on-site contractors and subcontractors will ensure that they and their employees:

* Have received electrical safety training corresponding to each employee’s work requirements, and that such training is documented
* Report all electrical hazards to **[name or department]**.
* Report all electrical injuries, including but not limited to shocks, burns and arc flashes to **[name or department].**
* Read, understand, and follow applicable electrical safety-related operating

procedures prescribed by electrical safety regulations and by **[Company Name]**.

* Adopt and implement safe electrical work practices.
* Use appropriate PPE and electrical safety equipment
* Communicate electrical safe work practices with **[name, job title, department,** **or safety committee representatives]**.

***Program Review and Update***

This Plan will be reviewed and updated periodically and whenever:

* New types of electrical utilization systems or equipment are introduced into the workplace
* Evaluations of workplace hazards, injuries, and near-misses demonstrate that the current plan is outdated or not effective.
* When regulatory or national consensus standards change that require this Plan to be updated

**Definitions**

*Circuit breaker (600 volts nominal, or less)*—a device designed to open and close acircuit by nonautomatic means and to open the circuit automatically on a predetermined overcurrent without injury to itself when properly applied within its rating.

*Circuit breaker (over 600 volts, nominal)*—a switching device capable of making,carrying, and breaking currents under normal circuit conditions, and also making, carrying for a specified time, and breaking currents under specified abnormal circuit conditions, such as those of short circuit.

*Certified equipment*—equipment that (a) has been tested and found by a nationallyrecognized testing laboratory to meet nationally recognized standards or to be safe for use in a specified manner, or (b) is of a kind whose production is periodically inspected by a nationally recognized testing laboratory, and (c) it bears a label, tag, or other record of certification.

*Electrically safe work condition*—a state in which the conductor or circuit part to beworked on or near has been disconnected from energized parts, locked/tagged in accordance with established standards, tested to ensure the absence of voltage, and grounded if determined necessary.

*Equipment*—material, fittings, devices, appliances, fixtures, and apparatus used as partof, or in connection with, an electrical installation.

*Ground*—a conducting connection, whether intentional or accidental, between anelectrical circuit or equipment and the earth, or to some conducting body that serves in place of the earth.

*Ground-fault circuit-interrupter (GFCI)*—A device whose function is to interrupt theelectric circuit to the load when a fault current to ground exceeds some predetermined value that is less than that required to operate the overcurrent protective device of the supply circuit

*Qualified person*—a person that has received training in and has demonstrated skills andknowledge in the construction and operation of electric equipment and installations and the hazards involved, and has training to avoid the electrical hazards of working on or near exposed energized parts.

*Buddy*—a person whose specific duties are to observe workers and operations thatinvolve electrical work.

*Unqualified person*—an employee with no familiarization with or training in theconstruction and operation of the electrical equipment and hazards involved. *Utilization equipment*—utilizes electric energy for mechanical, chemical, heating,lighting, or similar useful purpose, and includes laboratory and shop equipment, appliances, or other devices that operate from an electrical energy source.

**Hazard Assessment**

**[Name]** has conducted an assessment of electrical hazards at this facility. See the **Job Hazard Analysis Worksheet** attached to this Plan.

***Arc Flash and Shock Risk Assessments***

Before work is started on or near equipment that exposes workers to an electrical hazard, the specific hazards will be identified, the risks or likelihood of exposure to arc flash and shock will be assessed, and the hierarchy of risk control methods will be implemented to protect workers, including the use of PPE.

**Hierarchy of risk controls**. The most effective single measure or combination ofmeasures to eliminate or reduce risk of arc flash and shock will be implemented, in the order of most (1) to least (6) effective:

1. Elimination of the hazard (e.g., electrically safe work condition)
2. Substitution (e.g., replace control circuitry to reduce energy)
3. Engineering controls (e.g., guard conductors)
4. Awareness (e.g., hazard signs and other alerting techniques)
5. Administrative controls (e.g., job plans and procedures)
6. PPE

**Accident Investigations**

All electrical incidents that result in injury to workers, as well as near misses, regardless of their nature, will be reported and investigated. Investigations will be conducted by **[Name]** or other competent person as soon after an incident as possible to identify thecause and means of prevention to eliminate the risk of reoccurrence.

In the event of an incident that results in serious injury, this Plan will be reevaluated by **[Name]** to determine if additional controls, practices, procedures, or training is necessaryto prevent similar future incidents.

**Safe Work Practices**

***Electrically Safe Working Condition***

Exposed energized equipment and parts will first be deenergized, locked/tagged out, and tested by a qualified person to verify that an electrically safe work condition exists. Only a qualified person will deenergize, lock/tag out, and test electrical parts and equipment. See the **Electrically Safe Working Condition Checklist** form attached to this Plan.

***Energized Electrical Work Permit***

If it is not feasible to deenergize, a written energized electrical work permit is required that establish the safe work practices that must be followed. Only a qualified person will work on or near exposed live parts following the requirements of the work permit. See the **Energized Electrical Work Permit** form attached to this Plan.

***General Safe Work Practices***

All employees working on or near electrical equipment will follow general safe work practices, including:

* Maintain good housekeeping procedures.
* Plan and analyze for safety in each step of a project.
* Document work.
* Use properly rated test equipment and verify its condition and operation before and after use.
* Practice applicable emergency procedures.
* Become qualified in cardiopulmonary resuscitation (CPR) and first aid and maintain current certifications.
* Always wear appropriate PPE when working on or near electrical equipment.
* Refer to system drawings and perform system walkdowns.
* Maintain electrical equipment in accordance with the manufacturer’s instructions.
* Plan work projects through an approved work control process.

**Housekeeping Duties**

Where live parts present an electrical contact hazard, employees may not perform housekeeping duties at such close distances to the parts that there is a possibility of contact, unless adequate safeguards (such as insulating equipment or barriers) are provided. Electrically conductive cleaning materials (including conductive solids such as steel wool, metalized cloth, and silicon carbide, as well as conductive liquid solutions) may not be used in proximity to energized parts unless procedures are followed which will prevent electrical contact.

**Conductive Materials and Equipment**

Conductive materials and equipment that are in contact with any part of an employee’s body will be handled in a manner that will prevent them from contacting exposed energized conductors or circuit parts. If an employee is expected to handle long dimensional conductive objects (such as ducts and pipes) in areas with exposed live parts, the following work practices will be implemented to minimize the hazard:

* Insulate the conductive objects
* Provide guarding against contact
* Implement material handling techniques

**Portable ladders.** Portable ladders will have nonconductive siderails if they are usedwhere the employee or the ladder could contact exposed energized parts.

**Flammable or Ignitable Materials**

Where flammable materials are present only occasionally, electric equipment capable of igniting them will not be used, unless measures are taken to prevent hazardous conditions from developing. Such materials include, but are not limited to: flammable gases, vapors, or liquids; combustible dust; and ignitable fibers or flyings.

**[Electrical installation requirements for locations where flammable materials are present on a regular basis are contained in 29 CFR 1910.307.]**

**Illumination**

Adequate illumination will be provided to work areas that contain exposed energized parts to enable workers to perform their tasks safely.

**[Modify or delete the following overhead lines and confined space subsections as applicable to your facility.]**

**Alerting Techniques**

**Safety signs and tags.** Safety signs, safety symbols, or accident prevention tags will beused where necessary to warn employees about electrical hazards which may endanger them. Such signs and tags will be designed and used in accordance with regulations (29 CFR 1910.145).

**Barricades.** Barricades will be used in conjunction with safety signs where it isnecessary to prevent or limit employee access to work areas exposing employees to uninsulated energized conductors or circuit parts. Conductive barricades may not be used where they might cause an electrical contact hazard.

**Attendants.** If signs and barricades do not provide sufficient warning and protectionfrom electrical hazards, an attendant will warn and protect employees.

**Portable Equipment and Extension Cords**

Portable equipment will be handled in a manner that will not cause damage. Flexible electric cords connected to equipment may not be used for raising or lowering the equipment. Flexible cords may not be fastened with staples or otherwise hung in such a fashion as could damage the outer jacket or insulation.

**Inspection.** Portable cord and plug-connected equipment and flexible cord sets(extension cords) will be visually inspected before use on any shift for external defects (such as loose parts, deformed and missing pins, or damage to outer jacket or insulation) and for evidence of possible internal damage (such as pinched or crushed outer jacket). Cord and plug connected equipment and flexible cord sets (extension cords) which remain connected once they are put in place and are not exposed to damage need not be visually inspected until they are relocated.

If there is a defect or evidence of damage that might expose an employee to injury, the defective or damaged item will be removed from service, and no employee may use it until repairs and tests necessary to render the equipment safe have been made.

When an attachment plug is to be connected to a receptacle, the relationship of the plug and receptacle contacts will first be checked to ensure that they are of proper mating configurations.

**Grounding-type equipment.** A flexible cord used with grounding-type equipment willcontain an equipment grounding conductor. Attachment plugs and receptacles may not be connected or altered in a manner that would prevent proper continuity of the equipment grounding conductor at the point where plugs are attached to receptacles. Additionally, these devices may not be altered to allow the grounding pole of a plug to be inserted into slots intended for connection to the current-carrying conductors. Adapters which interrupt the continuity of the equipment grounding connection may not be used.

**Conductive work locations.** Portable electric equipment and flexible cords used inhighly conductive work locations (such as those inundated with water or other conductive liquids), or in job locations where employees are likely to contact water or conductive liquids, will be approved for those locations.

**Connecting attachment plugs.** Employees’ hands may not be wet when plugging andunplugging flexible cords and cord and plug connected equipment, if energized equipment is involved. Energized plug and receptacle connections may be handled only with insulating protective equipment if the condition of the connection could provide a conducting path to the employee's hand (if, for example, a cord connector is wet from being immersed in water). Locking type connectors will be properly secured after connection.

**Test Instruments and Equipment**

Only qualified persons may perform testing work on electric circuits or equipment.

**Visual inspection.** Test instruments and equipment and all associated test leads, cables,power cords, probes, and connectors will be visually inspected for external defects and damage before the equipment is used. If there is a defect or evidence of damage that

might expose an employee to injury, the defective or damaged item will be removed from service, and no employee may use it until repairs and tests necessary to render the equipment safe have been made.

**Rating of equipment.** Test instruments and equipment and their accessories will be ratedfor the circuits and equipment to which they will be connected and will be designed for the environment in which they will be used.

**Electric Power and Lighting Circuits**

**Routine opening and closing of circuits.** Load rated switches, circuit breakers, or otherdevices specifically designed as disconnecting means will be used for the opening, reversing, or closing of circuits under load conditions. Cable connectors not of the load break type, fuses, terminal lugs, and cable splice connections may not be used for such purposes, except in an emergency.

**Reclosing circuits after protective device operation.** After a circuit is deenergized by acircuit protective device, the circuit may not be manually reenergized until it has been determined that the equipment and circuit can be safely energized. The repetitive manual reclosing of circuit breakers or reenergizing circuits through replaced fuses is prohibited. Note: When it can be determined from the design of the circuit and the overcurrent devices involved that the automatic operation of a device was caused by an overload rather than a fault condition, no examination of the circuit or connected equipment is needed before the circuit is reenergized.

**Overcurrent protection modification.** Overcurrent protection of circuits and conductorsmay not be modified, even on a temporary basis, beyond that allowed by the installation safety requirements for overcurrent protection. **[See regulation 29 CFR 1910.304(e) for** **more information about safe work practices for overcurrent protection.]**

**Interlocks**

Only a qualified person may defeat an electrical safety interlock, and then only temporarily while he or she is working on the equipment. The interlock system will be returned to its operable condition when this work is completed.

**Overhead Lines**

If work will be performed near energized overhead lines, either adequate clearance distance must be maintained, the lines must be deenergized and grounded, or other safety measures must be taken to protect all employees from electrical hazards. Protective measures may include:

* Keep vehicles, mechanical equipment, and unqualified persons at least 10 feet from overhead lines, adding 4 inches for every additional 10,000 volts. Qualified

personnel must maintain approach distances as per OSHA Table S-5 (located in

29 CFR1910.333(c)(3)).

* Guard or place barriers between the lines and work areas.
* Have the lines insulated with brush guards by the company that supplies the power, and follow the company’s requirements for working near the insulated lines.

**Confined Spaces**

**[Company Name]** will provide and employees will use approved protective shields,protective barriers, or insulating materials to protect employees from contact with energized parts when working in confined spaces. Doors, hinged panels, and other moveable objects that may move and push a person towards electrical hazards need to be secured.

See the **Confined Space Plan** and confined space permits.

***Electrical Maintenance and Repair Operations***

**[Modify, add to, or delete the following list of safety practices as applicable to your facility.]**

Only qualified persons will perform repair or maintenance work on electrical conductors or circuits. If an electrical hazard is discovered while repairs or maintenance work is performed, any further work must be suspended until the hazard is addressed and corrective actions instituted.

Qualified persons performing such tasks as electrical repairs, modifications, and tests on energized conductors and circuit, parts, and equipment will comply with the following work practices.

**Energized Parts and Equipment**

* All circuits and equipment are considered energized until opened, locked/tagged out, and tested by a qualified person who verifies with an approved testing device that it is deenergized.
* Energized parts to which an employee might be exposed will first be deenergized and locked/tagged out unless **[Company Name]** can demonstrate that deenergizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations. If live work is demonstrated, the live work permit needs to be completed.
* **[Optional policy]** Operation of circuit breakers by employees is prohibited exceptin case of personal emergency.

**Lockout/Tagout**

Before repair or maintenance work is performed on electrical equipment, the electrical energy isolating device will be turned off, and locked/tagged. See the **Lockout/Tagout** **Plan** for information about lockout/tagout procedures used at the facility.

**[Insert the lockout/tagout procedures to this Plan, or add the LO/TO Plan to this document as an attachment.]**

**Tools**

* Electrically insulated-rated tools and insulated protective equipment, such as gloves, blankets, sleeves, and mats, will be used while working on energized circuits. Employees will use tools and protective equipment with the proper rating for the task (see NFPA 70E standard). Tools will be inspected and tested according to the manufacturers’ specifications.
* Electrical tools will be plugged into ground fault circuit interrupter (GFCI) receptacles.
* Extension cords are for temporary use with portable appliances, tools, and similar equipment that are not normally used at one specific location. Extension cords will not to be used as a substitute for fixed wiring. **[Name, job title, or** **department]** will install receptacles when needed for new equipment.
* Any employee who is unsure if a hazard exists will contact **[Name]** or a supervisor before using electrical tools or equipment.

***Reporting Injuries***

Any electrical injury, such as shocks and burns, will be reported immediately to a supervisor and to **[name, job title, or department]**.

**[Modify or delete the following subsection about safety watch employees as applicable to your facility.]**

**Preventive Maintenance**

The Maintenance Manager will establish an electrical preventive maintenance program to ensure safe and reliable operation of electrical wiring, protection devices, and operating equipment such as switches, circuit breakers, utilization equipment, flexible cords, and appliances. The manager will ensure that adequate resources are available to provide for compliance with applicable codes and standards. In addition, the manager will ensure that:

* Procedures are established for EPM intervals, inspections, tests, and servicing requirements.
* Records are maintained of all tests, inspections, servicing, and inventories.
* Documentation, tests, test intervals, and procedures are guided by the recommendations of NFPA 70B, manufacturer’s recommendations, industry standards, or **[Company Name]** -adopted standards or regulations.
* Copies of all manufacturer’s installation, operating, and maintenance instructions are maintained in a department file.
* Electrical preventive maintenance work is performed only by qualified persons.

**Personal Protective Equipment**

All managers and supervisors will ensure that adequate resources are available to provide employees with PPE in compliance with applicable codes and standards. Furthermore, they will ensure that employees use the appropriate PPE for their assigned task.

***Job Hazard Analysis (JHA)***

**[Name or department]** will conduct a JHA for each electrical task to determine the typeand level of PPE needed to adequately protect workers from shock, burns, or electrocution. JHAs will be conducted according to NFPA 70E Arc Flash and Shock Risk Assessments, or other JHA procedures.

***Selection and Use***

Personnel will wear or use PPE and protective clothing that is appropriate for safe performance of work. Qualified workers will use appropriate arc-rated PPE whenever they work near electrical equipment that could create an arc flash hazard.

Managers and supervisors will ensure that:

* Employees are trained in PPE use in accordance with documented procedures.
* Procedures are established and implemented for documented controls of PPE such as inventory, storage, maintenance, inspection, and testing.
* PPE requirements and usages are specified in the safe operating procedures.
* PPE is inspected prior to each use.
* Flame resistant clothing and other PPE rated for the specific arc flash category that will be worked in are inspected.
* Electrical insulating PPE and other protective equipment will be inspected before each use, and tested as per the manufacturers’ and OSHA requirements (29 CFR 1910.137).
* Specialized PPE for voltage equipment will be inspected prior to each use according to appropriate recognized standards

See the **Electrical Personal Protective Equipment Checklist** attached to this Plan.

***Inspection***

All PPE will be inspected by employees prior to initial use for a work task. Employees will visually inspect rubber-insulated PPE at the beginning of each workday prior to use and after any work performed that could damage the equipment.

**Other Electrical Equipment**

Grounding equipment, cables, clusters, and sticks will be inspected annually and prior to

each use.

***Storage***

Electrical insulating and protective clothing and equipment should be stored lying flat, undistorted, right-side out, and unfolded, as appropriate, in protective containers. Blankets may be stored rolled provided the inner diameter of the roll is at least 2 in. Rubber goods will be stored in a location as cool, dark, and dry as possible. The location must be as free as practicable from ozone, chemicals, oils, solvents, damaging vapors and fumes, and away from electrical discharges and sunlight. Rubber gloves should be stored cuff-down in a bag, box, or container designed for rubber glove storage. Rubber gloves may be kept inside of leather protectors.

***Cleaning and Electrical Testing***

Rubber-insulated PPE issued for use will receive periodic cleaning and electrical testing in accordance with the requirements of **[list the standard, e.g., ANSI/ASTM standards,** **used for cleaning and testing PPE]**. The intervals of retest for rubber goods issued forservice will not be more than 6 months for gloves and 12 months for sleeves and blankets. Gloves or sleeves that have been electrically tested but not issued for service will not be placed into service unless they have been electrically tested within the previous 12 months.

All testing methods, apparatus, and facilities shall meet the applicable ANSI/ASTM Standard. The method used and the results of such tests shall be documented and made available for inspection. Testing apparatus will be operated and maintained by personnel trained for such work.

Retested rubber-insulated PPE will be identified to indicate the date of the latest test or date of retest in accordance with the appropriate standard. Manufacturer’s recommendations will be followed on the type of paint or ink to be used.

***Conductive Apparel***

Conductive articles of jewelry and clothing (e.g., watch bands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread, or metal headgear) may not be worn if they might contact exposed energized parts. Such articles may be worn if they are rendered nonconductive by covering, wrapping, or other insulating means.

**Emergency Procedures**

In the event of a medical emergency, the person(s) requesting assistance will contact **[name, job title, or department]** by **[method, e.g., radio, intercom, or telephone]** at **[radio frequency, or phone number]**.

The emergency contact list is located **[location(s)]**.

See the **Emergency Services Personnel Contact Information** list attached to this Plan.

If there is a person nearby trained in first aid, he or she will be contacted immediately to give assistance.

***Emergency Removal of Tag and Lock***

In the event of an emergency in which the person responsible for removing the tag and lock cannot be located, **[Name]** may remove the device. Details for removal are provided in the **[name of lockout/tagout safety document]**.

**Electrical Code Compliance**

**[Name]** will ensure that **[Company Name]** complies with all applicable electricalrequirements of **[Company Name]** orders, the NFPA, ANSI C2, and the respective parts of 29 CFR 1910 and 29 CFR 1926.

***Inspectors***

Inspectors will be qualified in:

* National Electrical Code (NFPA 70)
* Standard for Electrical Safety in the Workplace (NFPA 70E)
* National Electrical Safety Code (ANSI C2)
* 29 CFR 1910, Subpart S

***Certified Equipment***

All electrical equipment and materials for facility wiring as defined by NFPA 70 will be certified and approved in accordance with **[name of applicable codes or code sections** **for your facility]**.

***Utilization Equipment***

Utilization equipment is subject to the same approval and acceptance requirements as that of electrical equipment. To be acceptable for installation and use, utilization equipment will be listed or labeled by a nationally recognized testing laboratory. Utilization equipment that is not listed or labeled will meet one of the requirements of 29 CFR

1910.399, Acceptable, (i)(ii), or (iii). Utilization equipment that is not listed or labeled will be examined, accepted, and documented by a qualified person. Utilization equipment will be used in accordance with its listing and labeling requirements.

**Training**

Qualified persons will be trained before they are permitted to perform work on electrical utilization systems or equipment. Unqualified persons will be trained before they work near electrical utilization systems or equipment.

***Qualified persons***

Electrical training for qualified persons will include on-the-job demonstrations, exercises, and classroom sessions. Qualified employees will be trained on:

* Safety-related work practices, including proper selection and use of PPE, that pertain to their respective job assignments
* Skills and techniques necessary to distinguish exposed live parts from other parts of electrical equipment
* Skills and techniques necessary to determine the nominal voltage of exposed live parts, clearance distances, and the corresponding voltages to which the qualified person will be exposed
* The clearance distances specified by regulation (29 CFR 1910.333(c)) **[insert** **state rule if applicable]** and the corresponding voltages to which the qualifiedperson will be exposed
* Procedures on how to perform their jobs safely and properly
* How to lockout/tagout energized electrical circuits and equipment safely

**[The following additional training topics are recommended; modify the list as applicable to the activities of workers at your facility.]**

* National Electrical Code (NFPA 70)
* National Electrical Safety Code (ANSI C2)
* NFPA 70E: Standard for Electrical Safety in the Workplace
* Use of temporary protective grounding equipment
* Use of testing equipment
* Work permit and work authorization procedures
* Use, inspection, and care of personal protective equipment
* Proper clothing and other PPE required for arc flash or arc blast protection
* First-aid, CPR, and AED training

**[29 CFR 1910.332 also requires training for persons other than qualified persons if their job assignments bring them close enough to exposed parts of electrical circuits operating at 50 V or more to ground for a hazard to exist.]**

Safety employees designated to support electrical safety programs will be knowledgeable and trained at levels commensurate with their duties.

***Unqualified persons***

Unqualified employees will be trained in and familiar with the safety-related work

practices that pertain to their respective job assignments.

Any employees who are at risk of electric shock but who are not qualified persons will be trained in:

* Electricity-related safety practices that pertain to their job and work area
* Any electricity-related safety practices not specifically addressed in the OSHA rule but that are necessary for their safety

***Refresher Training***

Refresher training will be given to qualified and unqualified persons at least once every **[interval in months or years]** to provide an update on new regulations and electricalsafety criteria. Additional training will be provided whenever:

* New types of electrical utilization systems or equipment are introduced to the workplace
* A new hazard is identified
* New electrical tasks are created
* Electrical injuries occur

***Recordkeeping***

Training for all qualified and unqualified persons will be documented. Training records will be kept **[location]** for **[duration]**.

**Injury Recordkeeping**

**[Name, job title, or department]** will maintain comprehensive accident/ injury recordsand will maintain records of all accident investigation reports and data for **[duration]**.

**Supporting Materials**

Attachment **[number]**—Job Hazard Analysis Worksheet Attachment **[number]**—Emergency Services Personnel Contact List Attachment **[number]**—Electrical Personal Protective Equipment Checklist Attachment **[number]**—Energized Electrical Work Permit Attachment **[number]**—Electrical Safe Work Practices

Attachment **[number]**—Electrically Safe Work Condition Checklist