

Management Instruction

Electrical Work Plan

This Management Instruction (MI) establishes policy and requirements for an Electrical Work Plan (EWP).

This MI applies to electrical work performed during the installation, operation, maintenance, modification, repair, and servicing of electrical equipment that is permanently or temporarily installed in Postal Service facilities.

The following United States Postal Service™ Headquarters authorities have jurisdiction over these policies:

- Safety and Environmental Performance Management.
- Maintenance Policies and Programs.

Policy


The Postal Service is committed to providing a safe and healthy work environment for all employees and in compliance with all electrical safety regulations established by the Occupational Safety and Health Administration (OSHA), including:

- 29 Code of Federal Regulations (CFR) 1910.147, The Control of Hazardous Energy.
- 29 CFR 1910.137, Electrical Protective Equipment.
- 29 CFR 1910.331, Scope.
- 29 CFR 1910.332, Training.
- 29 CFR 1910.333, Selection and Use of Work Practices.
- 29 CFR 1910.334, Use of Equipment.
- 29 CFR 1910.335, Safeguards for Personnel Protection.

To ensure that these goals are met, the Postal Service has established the following minimum policy principles:

- Mail processing systems and building equipment must be de-energized and locked out, where feasible, before any maintenance task is performed on the equipment.
- Work on energized electrical components is permitted for troubleshooting, testing, and performing other limited maintenance tasks when it is not feasible to de-energize the equipment.
- Work on energized systems rated 601 volts AC and above must be performed by qualified contractors.
- Dead-front operation and monitoring of switchgear components rated 601 volts AC and above is permitted.

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- Maintenance of switchgear components 601 volts AC and above must be performed by a qualified contractor.
- Employees must be qualified to perform any electrical work on a mail processing system or building-type equipment before they are assigned to install, modify, repair, service, or maintain such equipment. (See [Qualifications](#), page 15)
- Employees shall be provided with the personal protective equipment (PPE), training, and tools appropriate for the work and the conditions to which they are exposed.
- Managers must adhere to the minimum qualification and training requirements of this MI (pages 15–19).
- Managers must adhere to the minimum PPE-level requirements established by this MI (page 22).

This policy does not apply to the following:

- Non-Postal Service employees (e.g., contractors) working in the Postal Service work environment to install or maintain electrical components, maintain electrical utilities, or perform related services. Contractors are expected to comply with all applicable local, state, and federal requirements, including those related to safe electrical work, in accordance with Handbook EL-800, *Managing Contract Environmental, Safety, and Health Compliance*.
- Operation of electrical switches that supply power when such switches are enclosed or incorporated into equipment or the building (e.g., on/off switches, pull cords for lighting receptacles, computer power buttons, other push buttons or wall switches).
- Use of approved connectors, such as cords with attachment plugs for wall receptacles and other cord and/or plug-connected equipment (e.g., lamp fixtures, corded hand tools, control devices, and processing equipment).
- Switching circuit breakers, located in lighting distribution panels, on or off.

Roles and Responsibilities

Table 1
Roles and Responsibilities for the Electrical Work Plan

Functional Organization or Position	Responsibility
Headquarters	
Safety and Environmental Performance Management, Employee Resource Management	<ul style="list-style-type: none"> ■ Establishing policies and procedures for complying with OSHA safety and health standards. ■ Providing guidance to Headquarters functional areas, field managers, and support functions with respect to electrical work.
Maintenance Policies and Programs, Engineering, or Delivery Vehicle Operations, Delivery and Retail	<ul style="list-style-type: none"> ■ Establishing procedures, in accordance with Postal Service policy, for maintenance personnel with respect to electrical work.
Facilities	<ul style="list-style-type: none"> ■ Establishing policies and practices for facilities personnel, contract architect/engineers, construction contractors and design-build entities to be applied to: <ul style="list-style-type: none"> – Postal Service-owned facilities and new construction, whether owned or leased. – Repair, alteration, and expansion of any existing Postal Service facilities, whether leased or owned.
Areas	
Managers, Safety	<ul style="list-style-type: none"> ■ Monitoring facilities for compliance with Postal Service policy and OSHA standards. ■ Providing guidance and support for compliance with the EWP.
Managers, Maintenance Operations	<ul style="list-style-type: none"> ■ Ensuring that the EWP is implemented and followed in Postal Service facilities. ■ Providing guidance and support for compliance with the EWP.

Functional Organization or Position	Responsibility
Districts	
Installation Heads/ Postmasters	<ul style="list-style-type: none"> ■ Ensuring that all policies and procedures relating to electrical work are implemented and followed. ■ Designating an EWP Coordinator.
Electrical Work Plan Coordinator	<ul style="list-style-type: none"> ■ Administering the local EWP. ■ Preparing, reviewing, revising, and distributing the local written EWP. ■ Assisting with the continuing development and documentation of local EWP policy. ■ Advising the maintenance manager and/or senior postal official regarding EWP compliance issues and national Postal Service policy decisions concerning EWPs. ■ Monitoring facilities for compliance with the EWP through document reviews, discussions with supervisors and craft employees, and personal observations. ■ Annual evaluation of EWP.
Maintenance and Operations Managers and Supervisors	<ul style="list-style-type: none"> ■ Identifying electrical hazards within their operations. ■ Ensuring that electrical hazards are assessed and that a plan is developed to address the hazards. (These may include off-site hazards, as appropriate.) ■ Ensuring that employees are properly trained to perform electrical work safely. ■ Working with safety personnel to select the appropriate PPE. ■ Ensuring that appropriate PPE is provided and that PPE is properly worn and maintained. ■ Ensuring that employees are properly trained on the use and maintenance of PPE.
District and Plant Safety Personnel	<ul style="list-style-type: none"> ■ Monitoring compliance with the EWP at large offices, bulk mail centers, national distribution centers, processing and distribution centers, vehicle maintenance facilities, delivery units, and other facilities that require employees to work on energized equipment. ■ Advising and assisting Collateral Duty Facility Safety Coordinators in administering the EWP.
Collateral Duty Facility Safety Coordinators	<ul style="list-style-type: none"> ■ Administering the EWP, as appropriate, in smaller offices and facilities with no full-time safety person. ■ Working with district plant and safety personnel to ensure compliance with the EWP.

Electrical Work Plan

Definition and Elements of an Electrical Work Plan

The *Electrical Work Plan* is a written document containing specific policies, procedures, and practices designed to protect Postal Service employees who perform electrical work from serious injuries or incidents that could result from electrical shock and arc flash hazards. For detailed information on implementing an EWP, consult Maintenance Management Order (MMO) 002-09, *Electrical Work Plan* (or the latest revision) available on the Maintenance Technical Support Center Web site at <http://www.mtsc.usps.gov>.

An Electrical Work Plan must include the following elements:

- Designation of an EWP Coordinator.
- Definitions.
- Electrical work assessment.
- Energized and de-energized work.
- Exposed and non-exposed work.
- Prohibited, permissible, and permit-required work.
- Determination of work category and PPE level.
- Qualifications.
- Training.
- Personal protective equipment.
- Work practices.
- Labeling.
- Annual evaluation.
- Effective dates.

Determining Which Facilities Require a Written Electrical Work Plan

Each installation head must determine if his or her facility requires a written EWP. For assistance in determining if a written EWP is required, consult MMO-002-09, *Electrical Work Plan* (EWP MMO), or the latest revision.

Guidance is also available from the following:

- District Safety Specialist.
- Plant Safety Specialist.
- Maintenance Managers.

A written EWP is required only in Postal Service facilities in which employees may be exposed to energized electrical components while performing maintenance work on mail-processing and building equipment. Such facilities include processing and distribution centers, bulk mail centers, national distribution centers, and other facilities in which maintenance supervisors or maintenance employees are permanently assigned.

A written EWP is not required if all electrical work at a facility is performed by outside contractors or visiting postal maintenance personnel.

When a Written Electrical Work Plan Is Required

If a written EWP is required, the facility must develop procedures in accordance with the requirements of this MI and the latest EWP MMO. The installation head is responsible for ensuring that the EWP is developed, implemented, updated, and enforced. Each facility must designate an EWP Coordinator. The coordinator must be an Executive and Administrative Schedule (EAS) employee who will be responsible for administering the EWP.

For facilities with no on-site EAS maintenance supervisor, the EWP Coordinator or other appropriately qualified employee will assist the installation head and Collateral Duty Facility Safety Coordinator in complying with EWP requirements.

For facilities where the electrical work is performed on-site by Postal Service employees from other facilities, the Installation Head will only need to perform an electrical work assessment and document the findings for record-keeping purposes. The installation head is not required to maintain employee qualifications, work practices, PPE, or labeling. Instead, the requirements of this MI are the responsibility of the EWP Coordinator at the maintenance employees' home facility.

For installations where senior mail processors (SMPs) perform maintenance tasks that include electrical work on components rated at 49 volts or less, a written EWP is not required if all other electrical work at the facility is performed on-site by Postal Service employees from other locations, performed on-site by outside contractors, or performed off-site.

When a Written Electrical Work Plan Is Not Required

If an installation head determines that a written EWP is not required, he or she must document the reasons the EWP is not needed in a "Memorandum for the Record" that is kept on file for future reference. No further action is required, except to reassess whether an EWP is needed when equipment or maintenance activities change.

Electrical Work Plan Coordinator

The EWP Coordinator oversees the local EWP. The coordinator may delegate specific duties to other appropriate employees with the concurrence of the maintenance manager or, if there is no maintenance manager at the facility, the installation head.

The EWP Coordinator must complete and pass the current National Center for Employee Development (NCED) course(s) for EWP Coordinators as identified in [Training](#) (page 18). For detailed information about the EWP Coordinator's duties, see [Roles and Responsibilities](#) (page 3).

For specific information about methods the EWP Coordinator employs to fulfill responsibilities, consult the latest EWP MMO.

Definitions

The definitions presented are for the purposes of this MI and intended to provide greater clarity. Thus, the specific definitions may differ from the definitions from other sources.

Contractor. Individual or group of individuals that perform services for the Postal Service under an express or implied agreement and that retain the right to control the means, method, and manner of performing the agreed upon services. A contractor is not an employee of the Postal Service.

De-energized work. Electrical activities that are performed on equipment that: (1) is not connected to an energy source; and (2) does not contain residual or stored energy.

Dead-front. Electrical components with no live parts exposed to a person on the operating side or exterior of the equipment.

Energized work. Electrical activities performed on equipment that: (1) is connected to an energy source; or (2) contains residual or stored energy.

Exposed work. Conductor and circuit components (such as uninsulated or bare wires, terminations, bus bars, coils, connectors, fuses, or fuse holders) that are capable of being touched inadvertently. (Work on electrical components that incorporates a fingersafe design is not considered to be exposed work.)

Fingersafe. Electrical components that are designed to prevent accidental or inadvertent contact with exposed components and conductors.

Live electrical work. Electrical activities performed on equipment from which the power has not been removed.

Lockout. The isolation of hazardous energy sources by the means of the appropriate lockout device and lock.

Maintenance. Performing tasks to keep equipment in proper working condition (e.g., assembling, setting up, installing, adjusting, inspecting, repairing, replacement, modifying, and servicing equipment).

Operation. The utilization of equipment to perform its intended function. These functions that are typically performed with electrical component covers secured in place, thus ensuring that there is no direct exposure to energized components (e.g., switching, using key interlocks, and reading instruments, indicators, or flags).

Permissible work. Select maintenance activities that may be performed on energized equipment and circuits rated at or below 600 volts when it is not feasible to de-energize the equipment or circuit.

Permit-required work. Select maintenance activities that may be performed, at the discretion of the maintenance manager and local safety professional, on energized equipment and circuits rated at or below 600 volts, provided: (1) it is not feasible to de-energize the equipment or circuit; (2) the work to be performed is not specifically

listed as permissible work; and (3) the work to be performed is also not considered prohibited work. An Energized Electrical Work Permit form must be completed prior to the work being performed.

Personal protective equipment (PPE). Equipment worn by an individual to provide physical protection or reduce exposure by providing a barrier between the individual and the workplace environment. (Examples include hand, eye, face, head, and body protection.)

Prohibited work. Maintenance activities performed on electrical components rated 601 volts and above. The operation and monitoring of dead-front switchgear is not considered prohibited work.

Qualified. An individual who has completed classroom training, on-the-job training (OJT), or both, and who meets all the requirements specified in the [Training](#) section (page [18](#)).

Electrical Work Assessment

Each facility must assess the types of electrical work performed by Postal Service employees to determine the work categories and respective PPE levels that will be identified in the facility's EWP. The assessment is used to identify which requirements in this MI will apply to each facility. For more detailed information on performing an electrical work assessment, consult the latest EWP MMO.

Energized and De-energized Work

Two general types of electrical work are performed in Postal Service work environments: energized and de-energized. Most Postal Service electrical work is performed on equipment that has been de-energized. However, a limited number of activities require work to be performed while a circuit, component, or other piece of the equipment is energized. This MI provides guidelines for performing energized work.

Energized Work

In the Postal Service electrical work environment, it is not always feasible to lock out equipment; in some situations, equipment must be energized in order to perform maintenance work. Postal Service employees are allowed to perform only certain limited types of energized electrical work. These allowable maintenance tasks fall under permissible work or permit-required work as discussed on page [10](#). All permissible activities are identified in this MI and the latest EWP MMO.

These situations require Postal Service employees to take additional precautions as a result of the increased potential for electrical incidents. Subsequent sections of this MI discuss assessments of energized electrical work, employee training and qualifications, and PPE requirements. Additional detailed information on energized work is provided in the latest EWP MMO.

De-energized Work

Generally, Postal Service policy requires equipment and circuits to be de-energized and locked out before preventive, predictive, and corrective maintenance are performed. This requirement has been Postal Service policy for more than 20 years and is a major reason why the number of electrical incidents at Postal Service facilities is so low. For more information on Postal Service policy for de-energizing and locking out equipment, consult MMO-033-05, *Hazardous Energy Control* (or the latest revision).

Exposed and Non-exposed Work

Energized work in the Postal Service work environment is performed on either exposed or non-exposed electrical components.

Exposed Work

Exposed work is work performed on energized circuits or components where there is a potential for direct or inadvertent contact with the energized parts. Exposed maintenance work is common on older equipment because fingersafe design characteristics may not have been incorporated into the equipment.

Exposed work is assessed as having a higher PPE level than non-exposed tasks, because of the higher potential for electrical incidents.

If equipment that was originally designed to limit contact with exposed components is altered, modified, partially disassembled, or damaged in any way that compromises its design characteristics, work on such equipment is considered to be exposed work.

Non-exposed Work

The term *non-exposed work* is used to indicate work on electrical components that presents no risk of inadvertent contact with energized components. Non-exposed work reduces or eliminates the potential for electrical incidents. Such work is commonly performed on electrical components that incorporate fingersafe design characteristics (e.g., recessed or shielded terminal strips, connections, or test points). These characteristics are typically found on newer equipment. The term “fingersafe designs” is used throughout this MI to refer to non-exposed work.

Eliminating potential for electrical incidents through the use of fingersafe design characteristics also reduces the Postal Service PPE level.

If equipment originally designed to limit contact with exposed components is altered, modified, partially disassembled, or damaged in any way that compromises its design characteristics, then work on that equipment is no longer considered to be non-exposed. However, if the fingersafe design characteristics are restored, then work on that equipment will be considered to be non-exposed.

Prohibited, Permissible, and Permit-required Work

Energized work in Postal Service work environments is performed on exposed or non-exposed electrical components. In addition, energized work has three classifications: prohibited, permissible, and permit-required work.

Prohibited Work

Prohibited work refers to work that Postal Service employees are not permitted to perform.

Postal Service policy does not permit employees to work on electrical components rated 601 volts and above, regardless of its amperage, except for the operation and monitoring of dead-front switchgear rated at 601 volts and above. Because of its specialized nature, prohibited work on such equipment should be performed by a qualified contractor.

Permissible Work

Permissible work refers to the specifically identified tasks that may be performed by Postal Service employees on equipment and circuits rated 601 volts and below, when it is not feasible to de-energize the equipment or circuit.

Permissible tasks are identified in [Table 2](#) (page [12](#)), under the “energized activity limitations” column. These tasks must be performed by qualified employees using the appropriate PPE as identified in the [Personal Protective Equipment](#) section (page [20](#)).

Some examples of permissible work include (but are not limited to): programming or testing programmable logic controllers (PLCs), adjusting variable frequency drives (VFDs) and servo drives, or operating switchgear.

To simplify the electrical assessment process, permissible work tasks have been broken down into five work categories. Each of the work categories has specific requirements for employee qualifications, training and corresponding PPE requirements. Each of the respective categories and levels is based on the potential hazards associated with the tasks. See [Determination of Work Category and PPE Level](#) (page [11](#)) for further information about determining work categories and PPE levels for permissible work.

Permit-required Work

Permit-required work refers to all energized work that is not specifically identified in this MI as permissible or prohibited work.

Infrequently, it may be necessary to perform tasks on energized electrical components that fall outside the boundaries of permissible work. Due to the infrequent occurrence of these activities, Postal Service employees may not have the task-specific skills necessary to perform the work safely and effectively. To ensure the safety of its employees in these situations, each facility has the discretion to use

qualified contractors for this type of work when appropriate. Refer to Handbook EL-912, Article 32, and *Administrative Support Manual* (ASM) 535, Maintenance Service Contracts, when evaluating the need to contract this work.

In certain situations, an installation head or maintenance manager, at his or her discretion, may permit Postal Service employees to perform work on energized electrical components rated at or less than 600 volts even though the task assigned is not listed as a permissible task. Postal Service employees must be qualified and properly equipped to perform the work, which will be classified as permit-required work.

The need to perform permit-required work should be rare. Permit-required work can usually be avoided by carefully considering various options and looking for alternatives that will allow the circuit or equipment to be de-energized and locked out.

Permit-required work is not discussed specifically in this MI. A local hazard assessment should be performed to determine the necessary safety precautions for such work. This MI also provides a good foundation for determining the guidelines that should be applied to permit-required work.

Useful resources for assessing the PPE necessary for permit-required work include:

- MMO-002-09, *Electrical Work Plan* (or most recent revision).
- MI EL-810-2009-4, *Personal Protective Equipment and Respiratory Protection Programs* (or most recent revision).
- MMO-025-04, *Personal Protective Equipment* (or most recent revision).

Determination of Work Category and PPE Level

Methodology

The five work categories and five PPE levels correspond to the potential hazards to which Postal Service employees may be exposed when performing electrical work. Each work category and PPE level has specific safety-related requirements. These requirements include PPE types, training, labeling, and general work practices. These topics are discussed further in this MI and in the latest EWP MMO.

[Table 2](#) (page [12](#)) lists the five work categories, the permissible work allowed under each category and the corresponding PPE levels. The table also distinguishes between the PPE required for exposed and non-exposed tasks.

To determine the work category and PPE level for an activity, use [Table 2](#) as follows:

1. Determine the supply voltage and supply amperage of the equipment on which work will be performed. You will use this to determine which work category is appropriate.
2. Determine if the activity requires energized or de-energized electrical components.
3. If the activity involves only de-energized electrical components, then there are no PPE requirements, except for tasks that involve the operation and monitoring of dead-front switchgear.
4. If the activity involves energized equipment, then determine if the circuit components will be exposed or non-exposed.
5. If the activity involves energized and exposed electrical components, then the PPE level is indicated in the “Exposed Work” column of [Table 2](#).
6. If the activity involves energized but non-exposed electrical components, then the PPE level is indicated in the “Non-Exposed Work” column of [Table 2](#).
7. Once you have determined the PPE level, use [Table 5](#) (page 21) to determine PPE requirements.

Regardless of PPE level and work category, all permissible work is limited to the tasks listed in the “Energized Activity Limitations” column of [Table 2](#).

The voltage and amperage information included in [Table 2](#) is based on nominal system voltage and amperage.

Table 2
Permissible Energized Electrical Activities

Work Category	Voltage Range	Standard System Voltages ¹	Amps	Examples of Equipment	Energized Activity Limitations	PPE Level	
						Exposed Work	Non-exposed Work
1	0 to 49	5 12 24	All	Alarm and communication equipment	No limitations.	1	1
2	50 to 250	120 208 240	All	Outlet receptacles, DBCS, CSBCS, portable conveyors, scissor lifts	<ul style="list-style-type: none"> ■ Troubleshooting energized circuits. ■ Electrical adjustments within a power cabinet or circuit (VFDs, time-delay relays, etc.). 	2	1
3	251 to 600	277 480	400 and Less	Lighting panels, Motor Control Centers, and mail processing equipment such as APPS and robots	<ul style="list-style-type: none"> ■ Troubleshooting energized circuits ■ Electrical adjustments within a power cabinet or circuit (VFDs, time-delay relays, etc.) 	3-L	2
			401 to 999	Large Lighting/ Distribution Panels, Motor Control Centers, Large Chillers	<ul style="list-style-type: none"> ■ Troubleshooting energized circuits ■ Electrical adjustments within a power cabinet or circuit (VFDs, time-delay relays, etc.) 	3-H	2 ²

Work Category	Voltage Range	Standard System Voltages ¹	Amps	Examples of Equipment	Energized Activity Limitations	PPE Level	
						Exposed Work	Non-exposed Work
4	251 to 600	277 480	1,000 and above	Switchgear	Operation/monitoring of dead-front switchgear	4	2 ³
					Maintenance/work activities: <ul style="list-style-type: none"> ■ Racking breakers in/out on switchgear. ■ Replace fuses (switch or breaker must be open). ■ Checking relay trip status that requires opening the breaker cubicle door. 	4	4
				Large electrical panels, large motor control centers	Troubleshooting energized circuits.	4	2
5	601 and above	All	All	High voltage switchgear, large transformers, large chillers	Operation/monitoring of dead-front switchgear. ³	5 Prohibited ³	2
					All electrical work is prohibited. ⁴	5 Prohibited ⁴	5 Prohibited ⁴

1. Voltage ranges in this table are nominal system voltages, not measured voltages.
2. Work must be performed with all covers, doors, or panels in place and properly secured with all fasteners in place.
3. All operating or monitoring of switchgear shall be performed with all covers, doors, or panels of all individual modules of the switchgear in place and properly secured and with all fasteners in place.
4. Postal Service policy does not permit employees to work on electrical components operating at 601 volts and above, except that employees may perform operation and monitoring tasks on dead-front switchgear.

How to Determine a Work Category and PPE Level: Example

This example illustrates the importance of performing an electrical work assessment and how one variable can affect the outcome of the assessment.

For the purpose of this example, an EWP Coordinator is performing an electrical work assessment of an electrical panel with a nominal voltage of 480 volts and nominal amperage of 400 amps. This assessment will help the coordinator to determine the work category and PPE level necessary for permissible activities performed in this electrical panel.

After determining the voltage and amperage, the coordinator must determine if there is a need to perform any electrical work (such as troubleshooting, making adjustments, racking a breaker, or replacing a fuse) inside the panel while it is energized. Since this particular panel is a power distribution panel, it likely that some maintenance work must be performed inside this panel while the panel is energized.

The coordinator now has the voltage and amperage ratings for energized work and can identify the appropriate work category. The coordinator must now determine if the work is specifically listed as permissible work under the Energized Activity Limitations column in [Table 2](#). In this case, the work is considered permissible work.

If this work were not permissible work and is on electrical components rated at 600 volts or less, the coordinator should consult with the maintenance manager and local safety professional to assess whether: (1) the work could be performed as permit-required work by a qualified Postal Service employee or (2) the work must be completed by a contractor.

If this work were not permissible work and is on electrical components rated at 601 volts and above, the work should be completed by a contractor.

In this case, the work to be performed is permissible work. Therefore, the next step is to determine if this permissible work will be performed in exposed or non-exposed working conditions.

Keep in mind that if any fingersafe design characteristic within this panel has been altered, modified, partially disassembled, or damaged in any way, then the panel is considered to be compromised and the work is considered to be exposed work. For instance, if this panel is disassembled and then partially reassembled without a cover or a terminal with a partially exposed conductor, then the work is considered exposed. Until the cover is reinstalled or the exposed conductor is corrected, all subsequent work must be treated as exposed work.

Table 3 presents the possible PPE levels and the work category for energized work in this power distribution panel.

- Line 1 corresponds to non-exposed components or a fingersafe design.
- Line 2 corresponds to exposed components or equipment not constructed with fingersafe designs.

Table 3

Determination of a Work Category and PPE Level

Service Voltage	Amps	Work Category	Fingersafe	PPE Level
480 volts	400	3	Yes	2
480 volts	400	3	No	3-L

When determining the work category and PPE level for a task, it is important to understand and correctly interpret the available equipment information. Table 3 illustrates how one variable, fingersafe design, can change the PPE level.

Once the work category (first column of Table 2) and PPE category (respective PPE Level columns of Table 2) have been determined, the EWP Coordinator can identify the qualifications, training, and PPE required for the employees who will work in this panel.

When the PPE level shown in [Table 2](#) is applied to the PPE Table, [Table 5](#) (page [21](#)), then the EWP Coordinator can determine the PPE necessary for the particular work activity.

Qualifications

OSHA considers an employee to be qualified when he or she has undergone appropriate training and has demonstrated the ability to perform his or her assigned duties safely.

The Postal Service considers an employee to be qualified for energized electrical work when he or she has met the OSHA qualifications listed in the paragraph above and has completed the requisite training shown in [Table 4](#) (page [19](#)).

Employees who have received the appropriate training are qualified to perform permissible energized electrical activities in the specific work category for which they have been trained. Employees are expected to apply the knowledge, skills, and abilities acquired from their training to similar situations that may be encountered while working within a particular work category. Employees are not required to complete NCED equipment-specific training before performing permissible energized electrical work, provided they are qualified for this work category.

SMPs must receive the appropriate electrical work training for the systems on which they are assigned to work. They are only allowed to perform electrical work on components rated at 49 volts or less.

Current Maintenance Employees

All maintenance employees required to work on energized equipment must be qualified for the work that they might perform. Employees must have the knowledge, skills, and abilities to perform the work safely and discuss the safe work practices applicable to the task to be performed.

Employees must also have documentation that illustrates the type and scope of training received. A copy of this documentation must be maintained in the NCED Learning Management System (LMS) and at the employee's permanent duty station, preferably by maintenance management.

Although an employee may have received training in the past from the Postal Service, a previous employer, or an educational institution, maintenance employees must receive appropriate training under the MI. The [Training](#) section (page [18](#)) describes the training required to ensure that employees' knowledge of specific Postal Service policies and work practices is current.

If a maintenance employee has demonstrated the ability to maintain electro-mechanical mail-processing or building-type (or equivalent military) equipment safely for at least 6 months, then that employee need only take the courses applicable to the work categories in which he or she performs activities.

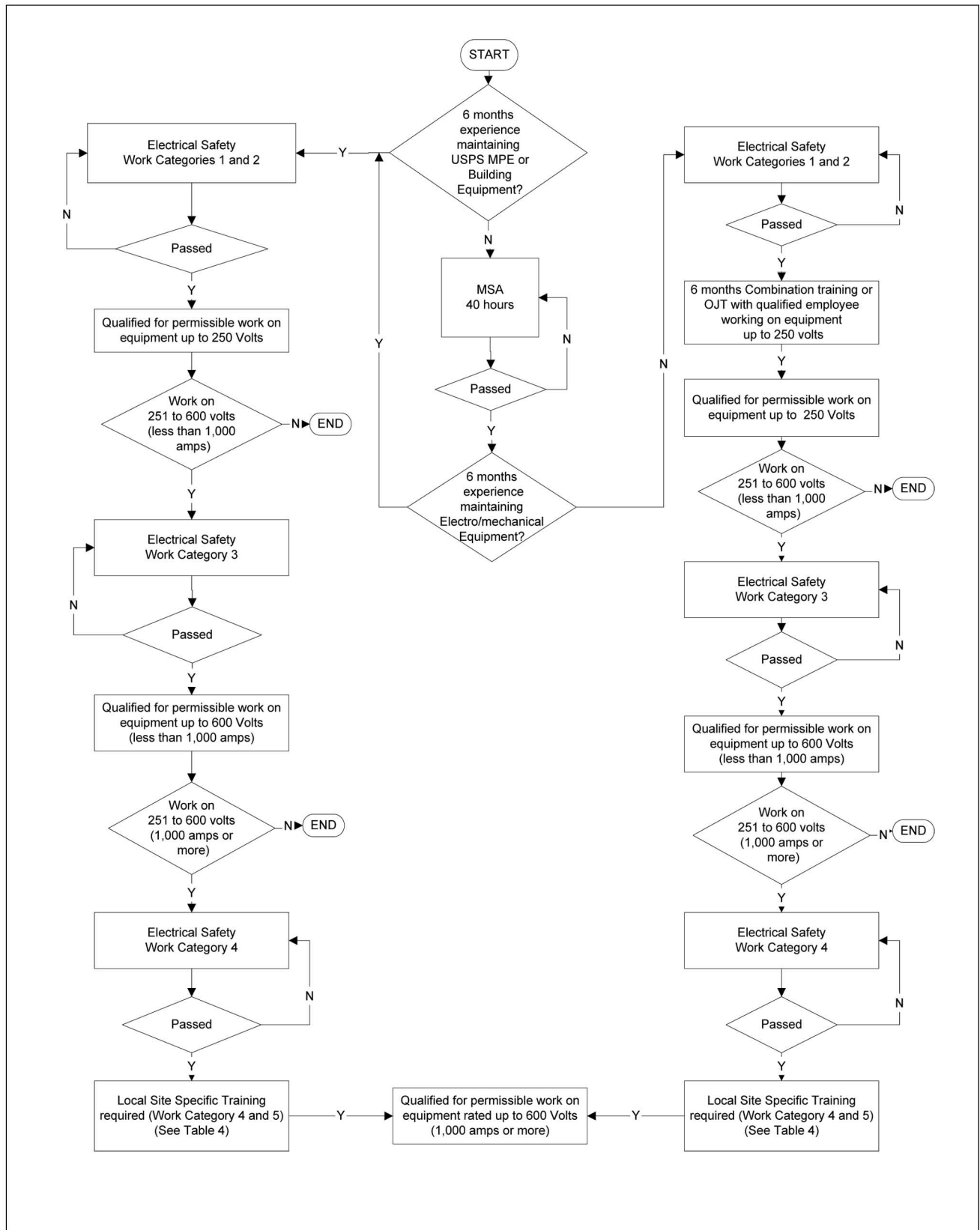
New Maintenance Employees

New maintenance employees who can provide documentation that they have maintained electro-mechanical industrial or building-type (or equivalent military) equipment safely for at least 6 months need only take the appropriate courses applicable to the work categories to which they will be exposed, as identified in [Table 2](#) (page [12](#)). The Postal Service will retain a copy of this documentation in the appropriate files.

New maintenance employees who have no previous experience working on electro-mechanical industrial equipment must receive the training applicable to the work categories to which they will be exposed and 6 months OJT with a qualified employee. The 6 months of OJT may be a combination of (1) hands-on work with a qualified employee and (2) training on specific Postal Service equipment provided by the NCED or other authorized vendor.

The flowchart below illustrates the requirements and training that employees must complete successfully to be deemed qualified for the work categories to which they will be exposed. Once employees have been deemed qualified, they are subject to the provision of the [Refresher Training](#) section (page [18](#)).

Flowchart



Training

Maintenance employees permitted to work on energized equipment must complete the specific training described in this MI. This training must be documented such that it is available via NCED/LMS. In addition, these employees must have demonstrated the ability to perform the work in a safe manner and be capable of discussing the safe work practices applicable to the tasks they will perform.

Refresher Training

Refresher training (retraining) reestablishes employee proficiency and introduces new or revised work practices and procedures, as necessary. Retraining must be conducted when equipment, procedures, and/or practices change or when management otherwise reasonably believes such training is needed, such as when deviations from the applicable work practices are observed.

Training Responsibilities

Installation heads must ensure that all employees receive training appropriate to their jobs. Maintenance managers are not responsible for ensuring that non-maintenance employees receive electrical work training or for documenting that training. The non-maintenance employee's immediate supervisor is responsible for scheduling and documenting the training of these employees. However, upon request, maintenance managers may provide instructions for training non-maintenance employees.

The local site shall provide and document electrical safety training for permissible or permit-required work in Category 4 — i.e., work on equipment rated at less than or equal to 600 volts and greater than 1,000 amps. The trainer should be identified locally, but training may be obtained through a vocational school, community college, equipment manufacturer or distributor, OJT program, or another equivalent source.

Use [Table 4](#) (page [19](#)) in conjunction with the [Flowchart](#) (page [17](#)) to determine the training requirements for each maintenance employee who performs electrical work.

Table 4
Training Requirements

Employee Position	Title of Course	Type of Work	Material Covered
All Employees	Video – <i>Electrical Safety and You</i>	All	Awareness-level topics.
EAS-level employees ¹	Electrical Work Plan Coordinator	Responsible for local EWP	Local program requirements.
Maintenance Supervisors ²	Electrical Safety for the Maintenance Supervisor	Oversight of employees who perform electrical work	Postal Service policies related to electrical work practices for work categories 1 to 5.
New Postal Service Maintenance Employees ³	Maintenance Safety Awareness (MSA) ⁴	General maintenance	General maintenance topics, including electrical.
Postal Service Maintenance Employees	Electrical Safety Work Categories 1 and 2	Working on 0 to 250 volts	Postal Service policies related to electrical work practices and PPE required for 0 to 250 volts.
	Electrical Safety Work Category 3	Working on 251 to 600 volts and less than 1,000 amps	Electrical work practices and PPE required for 251 volts to 600 volts and less than 1,000 amps.
	Electrical Safety Work Category 4	Working on 251 to 600 volts and 1,000 amps or more	Electrical work practices and PPE required for 251 volts to 600 volts and 1,000 amps or more.
	Local Site Specific (Work Categories 4 and 5)	Working on 251 to 600 volts and 1,000 amps or more and 601 volts or more	Electrical work practices for site-specific equipment PPE, and tools. Operating dead-front switchgear rated at 251 to 600 volts 1,000 amps or more and 601 volts or more.

1. EWP Coordinators must also complete any courses required for employees in their facility.
2. Maintenance supervisors must also complete all of the courses required for their employees.
3. New employees must also take the applicable courses listed under Postal Service Maintenance Employees.
4. Only a portion of this 40-hour course deals with electrical work

Work Practices

Employees and managers need to understand the importance of supporting a safe and healthy work environment. In the Postal Service work environment this is accomplished by using *work practices*. Generally, work practices are based on the assessment of a number of the risk factors in the Postal Service work environment and the practical ability to reduce risk exposures by applying these work practices.

Electrical work practices are based on an assessment of the risk conditions observed for the voltage and current potentially present when working on energized electrical components located within Postal Service facilities.

Electrical work practices are discussed at length in the latest EWP MMO. Some key points from the electrical work practices section include the following:

- Employees must wear the appropriate clothing and footwear for their position. Employees who perform energized electrical

activities should wear all natural fiber long sleeved shirts and long pants, and footwear with leather uppers.

- Employees must remove conductive items such as watches, necklaces, earrings and rings while performing energized electrical activities.
- Employees must choose the appropriate tools for the work to be performed.
- Employees must inspect each tool for damage to insulation as well as general damage (for example, pliers that do not close properly).
- Employees must not use damaged tools, but replace them before performing a task.
- Employees must not substitute tools of lesser quality or tools not appropriate for a task.
- Maintenance management at each facility must provide tools of sufficient quantity and quality to perform electrical work safely.
- Each facility must have sufficient quantities to ensure that the appropriate tools are available to replace damaged tools.

Personal Protective Equipment

The PPE levels are based on the risk factors present in the Postal Service's electrical work environment. These designations are based on an assessment of the Postal Service's ability to provide safe and healthy working conditions despite the voltage and current potentially present when employees work on energized electrical components.

Installation heads must provide sufficient funding to ensure that required PPE is available for EWP compliance. Managers must ensure that each qualified employee has access to the required PPE and a secure storage location. Under the provisions of this MI, Postal Service employees are not permitted to perform tasks in work categories at PPE levels that require PPE without the appropriate protective equipment.

Employees who are issued PPE shall use it only when they are performing tasks on electrical components. Employees are responsible for the care and custody of their PPE, and they are not permitted to acquire their own PPE from outside sources.

Additional information on general PPE not related to electrical work (such as eye, face, foot, and head protection) can be found in:

- MI EL-810-2009-4, *Personal Protective Equipment and Respiratory Protection Programs* (or the most recent revision).
- MMO-025-04, *Personal Protective Equipment* (or the most recent revision).

For more information on PPE for electrical work, such as appropriate gloves, insulated gloves, flash suits, and double-switching hoods, consult the latest EWP MMO.

After using [Table 2](#) on page [12](#) to determine the category of work to be performed and the PPE level, then use the PPE level and [Table 5](#) (page [21](#)) to determine the types of PPE required.

Table 5

Personal Protective Equipment

PPE Level	Part of the Body to Be Protected				
	Hands	Eyes	Face	Head	Body
1	NR ¹	NR ¹	NR ¹	NR ¹	NR ¹
2	Appropriate gloves (See EWP MMO.)	Prescription glasses or safety glasses ²	NR ¹	NR ¹	Lab coat, smock or jacket (minimum FR rated @ 8 cal/cm ²) ³
3-L	Appropriate gloves (See EWP MMO.)	Prescription glasses or safety glasses ²	Face shield ⁴	Hard hat ⁵	Lab coat, smock or jacket (minimum FR rated @ 8 cal/cm ²) ⁶
3-H	Appropriate gloves (See EWP MMO.)	NR ¹	Arc flash hood ⁷	Hard hat ⁵	Lab coat or coveralls (minimum FR rated @ 25 cal/cm ²) ⁸
4	Appropriate gloves ⁹ (See EWP MMO.)	NR ¹	Arc flash hood ⁷	Hard hat ⁵	Flash suit and foot protection (minimum FR rated @ 25 cal/cm ²) ¹⁰
5 Prohibited ¹¹	Voltage rated gloves	NR ¹	Arc flash hood ⁷	Hard hat ⁵	Flash suit and foot protection (minimum FR rated @ 25 cal/cm ²) ¹⁰

1. Not required under the provisions of this MI.
2. Eyeglasses must provide clear color, clarity, and interpretation. Due to visual field distortions, safety goggles are not permitted.
3. Employees performing energized electrical work should wear a long-sleeved shirt of all natural material, such as cotton, or they must wear a lab coat or smock with a minimum FR rating @ 8 cal/cm².
4. Face shield must have a minimum FR rating of 8 cal/cm².
5. Typically arc flash hood and face shield manufacturers require the use of a hard hat for proper fit of the arc flash hood.
6. Lab coat or smock must have a minimum FR rating @ 8 cal/cm².
7. The arc flash hood must be worn in place of safety glasses, but prescription corrective lenses may be worn under the hood. The hood must have an arc rating equal to that of the flash suit. The arc flash hood must have a minimum FR rating of 25 cal/cm².
8. Lab coat or coveralls must have a minimum FR rating of 25 cal/cm².
9. Work on switchgear requires voltage-rated gloves.
10. Foot protection does not include dielectric or steel-toe shoes, but footwear of an arc rating equal to that of the flash suit.
11. Postal Service policy does not permit employees to work on electrical components operating at 601 volts and above, except that employees may perform operation and monitoring tasks on dead-front switchgear.

Labeling

The latest EWP MMO identifies the labels related to electrical shock and arc flash hazards that are authorized for application to electrical equipment located in Postal Service facilities. The MMO also provides guidelines for selecting appropriate labels for specific electrical installations.

Annual Evaluation

An annual evaluation of each written EWP must be completed every 12 months from the date of implementation.

Effective Dates

Training

- Effective the end of the third quarter of fiscal year 2010.

Personnel Protective Equipment

- *Level 2, 3-L, 3-H, and 4 Hand Protection:* No later than 4 months after the effective date of this MI.
- *Level 2 and 3-L Eye Protection:* No later than 4 months after the effective date of this MI.
- *Level 3-L, 3-H, and 4 Face Protection:* No later than 4 months after the effective date of this MI. Face protecting shields should be worn until the face protecting hoods are available.
- *Level 3-L, 3-H, and 4 Head Protection:* No later than 4 months after the effective date of this MI.
- *Level 2, 3-L, 3-H, and 4 Body Protection:* No later than 4 months after the effective date of this MI.

Work Practices (Tools)

- No later than 3 months after the effective date of this MI.

Labeling

- No later than 4 months after the effective date of the MI.
- Effective January 1, 2010, labeling will be implemented on new mail processing equipment procured by Headquarters.

Acronyms

APPS	Automated Package Processing System
ASM	Administrative Support Manual
CFR	Code of Federal Regulations
CSBCS	Carrier Sequence Bar Code Sorter
DBCS	Delivery Bar Code Sorter
EAS	Executive and Administrative Schedule
ELM	Employee and Labor Relations Manual
EWP	Electrical Work Plan
FR	Flame Resistant
LMS	Learning Management System
MI	Management Instruction
MMO	Maintenance Management Order
MSA	Maintenance Safety Awareness
NCED	National Center for Employee Development
OJT	On-the-Job Training
OSHA	Occupational Safety and Health Administration
PPE	Personal Protective Equipment
SMP	Senior Mail Processor
VFD	Variable Frequency Drive