STANDARD PRACTICE INSTRUCTION

DATE IMPLEMENTED: 04 April 2019

SUBJECT: Ground Fault Protection and Assured Equipment Grounding Conductors

REGULATORY STANDARD: OSHA - 29 CFR 1926.404

BASIS: Thousands of workers are injured every year due to improper grounding of portable powered tools. Serious injury or death can be the result of electrocution. OSHA estimates that most of these accidents can be prevented if proper safety precautions at job sites are initiated. This poses a serious problem for exposed workers and their employer. The Electrical Safety Standards establish uniform requirements to ensure that the hazards of using tools and electrical appliances at job sites are evaluated, safety procedures implemented, and that the proper hazard information is transmitted to all affected workers.

GENERAL: Nowland Associates, Inc. will ensure that tool hazards are evaluated. This best practice instruction is intended to address comprehensively the issues of; evaluating and identifying tool selection and use deficiencies, evaluating the associated potential electrical hazards, communicating information concerning these hazards, and establishing appropriate procedures, and protective measures for employees.

RESPONSIBILITY: The Company Safety Officer is solely responsible for all facets of this program and has full authority to make necessary decisions to ensure the success of the program. The Safety Officer is the sole person authorized to amend these instructions and is authorized to halt any operation of the company where there is a danger of serious personal injury.

Contents of the Ground Fault Protection Program

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Nowland Associates, Inc.
Ground Fault Protection Program

1. Written Program. Nowland Associates, Inc. will review and evaluate this best practice instruction on an annual basis, or when changes occur to 29 CFR 1926.404, that prompt revision of this document, or when facility operational changes occur that require a revision of this document. Effective implementation requires a written program for job safety, health, that is endorsed and advocated by the highest level of management within this company and that outlines our goals and plans. This written program will be communicated to all required personnel. It is designed to establish clear goals, and objectives.

2. General Requirements. Nowland Associates, Inc. and their designated competent person shall be responsible for the safe condition of electrical tools and equipment used by its employees, including tools and equipment which may be furnished by employees. Nowland Associates, Inc. will develop assured grounding operational procedures through the use of this document. After tool and equipment selection and evaluation, equipment will be used and maintained in a safe condition. Supervisors will ensure that equipment utilized at each job site is maintained in a safe condition.

3. Power Tool and Accessories Selection, Evaluation and Condition. The greatest hazards posed by power tools usually results from misuse and or improper maintenance. Tool selection sometimes is not considered a priority when arrangements are made to begin work. The following guides are to eliminate all injuries resulting from possible malfunctions, improper grounding, and/or defective tools. **GFCI's (ground-fault circuit interrupters) will be used whenever possible**. All employees will consider the following when selecting tools:

3.1 Use the correct tool for the type work to be performed.

3.2 Ensure grounding methods are sufficient when working in wet conditions.

3.3 Ensure the grounding terminal is present on the plug.

3.4 No grounded conductor can be attached to any terminal or lead which results in a reversed designated polarity.

3.5 Grounding terminals or grounding-type devices on receptacles, cord connectors, or attachment plugs must be used for the intended purpose.

3.6 Grounding terminals or grounding-type devices on receptacles, cord connectors, or attachment plugs must never be defeated in any way.

3.7 All receptacles and attachment caps or plugs must be tested for correct attachment of the equipment grounding conductor. The equipment grounding conductor must be connected to its proper terminal.

3.8 All 12 volt, single-phase 15 and 20-ampere receptacle outlets on construction sites, which are not a part of the permanent wiring of the building or structure equipped must be equipped with approved ground-fault circuit interrupters for worker protection.

3.9 Conductors used as a grounded conductor must be identifiable and distinguishable from all other conductors.

3.10 Each cord set, attachment cap, plug and receptacle of cord sets, and any equipment connected by cord and plug, must be visually inspected daily before use for external defects, such as deformed or missing pins or insulation damage, and for indications of possible internal damage. (Exception - cord sets and receptacles which are fixed and not exposed to damage).

3.11 Equipment found damaged or defective must be removed from service until repaired or replaced. This includes all electrical equipment utilizing cords.

3.12 Guards must be installed properly and in good condition.

3.13 All required tests must be performed:

3.13.1 Before first use;

3.13.2 Before equipment is returned to service following repairs;

3.13.3 Before equipment is used after an incident which can be reasonably suspected to have caused damage (for example, when a cord set is run over; and;

3.13.4 At intervals not to exceed 3 months, except that cord sets and receptacles which are fixed and not exposed to damage must be tested at intervals not to exceed 6 months.

3.13.5 All electrical testing must be performed by a designated competent person.

3.14 All required tests must be documented, maintained and include the following:

3.14.1 Identity of all equipment having passed the test.

3.14.2 The last date tested or the testing interval.

3.14.3 Test documentation must be maintained until replaced by a more current record.

3.15 Non-sparking tools must be considered when working around flammable substances.

3.16 Ensure cutting tools are sharp. Dull tools are more hazardous than sharp ones.

3.17 Use the tool on the proper working surface. Tools used on dirty or wet working surfaces can create a multitude of hazards.

3.18 Tools must be stored properly when not being used. Saw blades, and like sharp tools should be stored so that sharp edges are directed away from aisles and coworkers.

4. Power Tool Precautions. Power tools can be hazardous when improperly used, this company uses several types. The following precautions will be taken by employees of this company to prevent injury.

4.1 Power tools will always be operated within their design limitations.

4.2 Eye protection, gloves, and safety footwear are recommended during operation.

4.3 Tools will be stored in an appropriate dry location when not in use.

4.4 Tool work will only be conducted in well-illuminated locations.

4.5 Tools will not be carried by the cord or hose.

4.6 Cords or hoses **will not** be yanked to disconnect it from the receptacle.

4.7 Cords and hoses will be kept away from heat, oils, and sharp edges or any other source that could result in damage.

4.8 Tools will be disconnected when not in use, before servicing, and when changing accessories such as blades, bits, and cutters.

4.9 Observers will be kept at a safe distance at all times from the work area.

4.10 Work will be secured with clamps or a vice where possible to free both hands to operate tools.

4.11 To prevent accidental starting, employees should be continually aware not to hold the start button while carrying a plugged-in tool.

4.12 Tools will be maintained in a clean manner, and properly maintained in accordance with the manufacturer's guidelines.

4.13 Ensure that proper shoes are worn and that the work area is kept clean to maintain proper footing and good balance.

4.14 Ensure that proper apparel is worn. Loose clothing, ties, or jewelry can become caught in moving parts.

4.15 Tools that are damaged will be removed from service immediately and tagged "Do Not Use". They will be reported and turned over to the shop for repair or replacement. This includes all equipment utilizing electrical cords.

4.16 Cracked saws. All cracked saws will be removed from service.

5. Methods of Guarding. One or more methods of guarding shall be provided where required to protect the operator and other employees in the area from hazards such as those created by point of operation, in-running nip points, rotating parts, flying chips, and sparks. Examples of guarding methods are; barrier guards, two-hand tripping devices, electronic safety devices, etc. The guard shall be such that it does not offer an accident hazard in itself. Employee's will:

5.1 Inspect tools without guards for signs of guard removal. If it is evident that a guard is required. Tag-out the tool and obtain a replacement. Tools will not be energized during the inspection.

5.2 Inspect tools having guards for proper operation and maintenance prior to use. Tools will not be energized during the inspection.

5.3 Never remove a guard during use.

6. Initial Training. Training shall be conducted prior to job assignment. Nowland Associates, Inc. shall provide training to ensure that the grounding requirements, purpose, function, and proper use of tools to be used in the normal function of their jobs is understood by employees and that the knowledge and skills required for the safe application, and usage is acquired by employees. This best practice instruction shall be provided to, and read by all employees receiving training. The training shall include, as a minimum the following:

6.1 Grounding requirements for tools and associated site electrical equipment.

6.2 Types of tools appropriate for use.

6.3 Recognition of applicable electrical hazards associated with work to be completed.

6.4 Tool selection requirements.

6.5 Procedures for removal of an electrical tool/accessory from service.

6.6 All other employees whose work operations are or may be in an area where tools which could present a hazard to other than the user, will be instructed to an awareness level concerning hazards.

6.7 Tools identification. Tools having identification numbers will be checked for legibility.

6.8 Certification. Nowland Associates, Inc. shall certify that employee training has been accomplished and is being kept up to date. The certification shall contain each employee's name and dates of training.

7. Refresher Training. This best practice instruction shall be provided to, and read by all employees receiving refresher training. The training content shall be identical to initial training. Refresher training will be conducted on as required basis or when the following conditions are met, whichever event occurs sooner.

7.1 Retraining shall be provided for all authorized and affected employees whenever (and prior to) there being a change in their job assignments, a change in the type of tools used, or when a known hazard is added to the work environment.

7.2 Additional retraining shall also be conducted whenever a periodic inspection reveals, or whenever Nowland Associates, Inc. has reason to believe, that there are deviations from or inadequacies in the employee's knowledge or use of tools.

7.3 The retraining shall reestablish employee proficiency and introduce new or revised methods and procedures, as necessary.

7.4 Certification. Nowland Associates, Inc. shall certify that employee training has been accomplished and is being kept up to date. The certification shall contain each employee's name and dates of training.