

Manual Section 7	Issue Date 02/06/13	Revision Date 06/15/21	Policy Number LLCP-072
	Ground Conductor Program		

### **Purpose**

The purpose of this program is to:

- Demonstrate the Company's compliance with OSHA electrical safety requirements necessary for the practical safeguarding of employees involved in construction work, found in Subpart K of 29 CFR 1926; 404
- Establish specific written procedures to protect the health and safety of all employees.

### **Scope**

All LLC Companies including, Blanchard Industrial, LLC, GIS Engineering, LLC, Grand Isle Shipyard, Inc., and GWIS, Mack Steel, NuWave, Sun Industries; hereafter identified as “Company”.

### **Equipment Grounding Conductor Program**

This written plan is intended to establish and implement specific procedures for equipment grounding conductor program covering:

- All cord sets,
- Receptacles which are not a part of the building or structure, and
- Equipment connected by cord and plug which are available for use or used by employees.

This part of the written plan complies with the requirements of 1926.404(b)(1)(iii).

### **Equipment Grounding Conductor Inspection**

Each cord set, attachment cap, plug and receptacle of cord sets, and any equipment connected by cord and plug, except cord sets and receptacles which are fixed and not exposed to damage, are visually inspected by tool-room foreman before being sent out on a job for:

- External defects, such as deformed or missing pins or insulation damage, and
- Indications of possible internal damage.

Equipment found damaged or defective is to be tagged DO NOT USE, and is to be removed from service immediately by the person finding it and handed over to the tool room for inspection and/or destruction. The employer shall designate one or more competent persons (as defined in 1926.32(f)) to implement the program.

### **Equipment Grounding Conductor Testing**

The following tests are performed on all cord sets, receptacles which are not a part of the permanent wiring of the building or structure, and cord- and plug-connected equipment required to be grounded:

- All equipment-grounding conductors are tested for continuity with meters or in-line connections and are electrically continuous.
- Each receptacle and attachment cap or plug is tested by meters for correct attachment of the equipment-grounding conductor. The equipment-grounding conductor is connected to its proper terminal.

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All required tests are performed:

- Before first use.
- Before equipment is returned to service following any repairs.
- Before equipment is used after any incident which can be reasonably suspected to have caused damage (for example, when a cord set is run over).
- At intervals not to exceed 3 months, except that cord sets and receptacles which are fixed and not exposed to damage will be tested at intervals not exceeding 6 months.

The Company does not provide or permit employees to use any equipment, which has not met the requirements of this program.

### **Recordkeeping**

Tests performed as required in this program are recorded. The test records:

- Identify each receptacle, cord set, and cord- and plug-connected equipment that passed the test, and
- Indicate the last date it was tested or the interval for which it was tested.

The Corporate HSE Department is responsible for maintaining these records. This record is kept by means of filing system and is maintained until replaced by a more current record.

The record is made available on the job site for inspection by OSHA and any affected employee.

### **Lockout and Tagging of Circuits**

This portion of the plan has been created to maintain a written copy of procedures to be followed during work on or near enough to exposed de-energized parts of conductors and electric equipment to expose employees to any electrical hazard they present. The requirements apply to all of the Company's construction job sites.

This written procedure includes procedural steps for each one of the following:

- De-energizing equipment,
- Application of locks and tags,
- Verification of de-energized condition, and
- Re-energizing equipment.

While any employee is exposed to contact with parts of fixed electric equipment or circuits which have been de-energized, the circuits energizing the parts will be locked out or tagged or both according to the requirements of this written plan.

Conductors and parts of electric equipment that have been de-energized but have not been locked out or tagged according to these procedures will be treated as energized parts.

The requirements must be followed in the order in which they are presented.

The Company maintains this written copy of procedures and makes it available for inspection by employees and the Assistant Secretary of Labor (the head of OSHA) and his or her authorized representatives.

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### **De-energizing Equipment**

The supervisor in charge will determine safe procedures for de-energizing circuits and equipment before circuits or equipment are de-energized.

The circuits and equipment to be worked on will be disconnected from all electric energy sources. Control circuit devices, such as push buttons, selector switches, and interlocks, may not be used as the sole means for de-energizing circuits or equipment. Interlocks for electric equipment may not be used as a substitute for lockout and tagging procedures.

Stored electric energy, which might endanger personnel, will be released. Capacitors will be discharged and high capacitance elements will be short-circuited and grounded, if the stored electric energy might endanger personnel.

If the capacitors or associated equipment are handled in meeting this requirement, they will be treated as energized.

Stored non-electrical energy in devices that could re-energize electric circuit parts will be blocked or relieved to the extent that the circuit parts could not be accidentally energized by the device.

### **Application of Locks and Tags**

A lock and a tag will be placed on each disconnecting means used to de-energize circuits and equipment on which work is to be performed. Employees can obtain these locks and tags from the tool room.

The lock will be attached so it prevents persons from operating the disconnecting means unless they resort to undue force or the use of tools.

Each tag will contain a statement prohibiting unauthorized operation the disconnecting means and removal of the tag.

If a lock cannot be applied or if an employee can demonstrate that tagging procedures will provide a level of safety, equivalent to that obtained by the use of a lock, a tag may be used without a lock if a MOC is obtained.

If a tag is used without a lock, the tag will be supplemented by at least one additional safety measure that provides a level of safety equivalent to that obtained by the use of a lock. Examples of additional safety measures include the removal of an isolating circuit element, blocking of a controlling switch, or opening of an extra disconnecting device.

A lock may be placed without a tag only under the following conditions:

- Only one circuit or piece of equipment is de-energized, and
- The lockout period does not extend beyond the work shift, and
- Employees exposed to the hazards associated with re-energizing the circuit or equipment is familiar with this procedure.

Use of either of these exceptions must be approved by supervisor in charge.

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### **Verification of De-energized Condition**

The following requirements must be met before any circuits or equipment can be considered and worked as de-energized:

- A qualified person will operate the equipment operating controls or otherwise verify that the equipment cannot be restarted.
- A qualified person will use test equipment to test the circuit elements and electrical parts of equipment to which employees will be exposed and will verify that the circuit elements and equipment parts are de-energized. The test will also determine if any energized condition exists as a result of inadvertently induced voltage or unrelated voltage back feed even though specific parts of the circuit have been de-energized and presumed to be safe. If the circuit to be tested is over 600 volts, nominal, the test equipment will be checked for proper operation immediately before and immediately after this test.

### **Re-energizing Equipment**

The following requirements will be met, in order given, before circuits or equipment are re-energized, even temporarily:

- A qualified person will conduct tests and visual inspections, as necessary, to verify that all tools, electrical jumpers, shorts, grounds, and other such devices have been removed, so that the circuits and equipment can be safely energized.
- Employees exposed to the hazards associated with re-energizing the circuit or equipment will be warned to stay clear of circuits and equipment.
- Each lock and tag will be removed by the employee who applied it or under his or her direct supervision. However, if this employee is absent from the workplace, then the lock or tag may be removed by a qualified person designated to perform this task provided that the employee who applied the lock or tag is not available at the workplace, and the employee is aware that the lock or tag has been removed before he or she resumes work at that workplace.
- There will be a visual determination that all employees are clear of the circuits and equipment.

### **Training**

Training is provided to ensure that employees are familiar with the requirements of this plan. This training is provided to employees upon initial employment and every three years thereafter unless otherwise directed due to employee request or incident.

The training program addresses the required written elements for electrical safety for:

- The assured equipment grounding conductor program.
- Lockout and tagging procedures to be used when working on exposed de-energized parts.