

# SLAC EEIP Survey Guidelines

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## Introduction

OSHA 29 CFR 1910.303(b), NFPA 70/NEC, and NFPA 70E Article 350 specify that electrical equipment is acceptable for use only if it has been approved by the Authority Having Jurisdiction (AHJ, at SLAC the Electrical Safety Officer (ESO)). Equipment that has been listed or labeled by a Nationally Recognized Testing Laboratory (NRTL) is considered to be acceptable to the AHJ. Equipment that has NOT been listed or labeled by an NRTL is not acceptable to the AHJ unless it has satisfactorily passed a documented safety inspection (i.e. “Field Evaluated”). Listed or labeled electrical equipment that has been modified or is being used in a manner other than intended by the manufacturer or the listing agency also requires inspection. In order to meet these requirements SLAC has established the Electrical Equipment Inspection Program (EEIP). The ***purpose of this survey*** is to develop an inventory of legacy electrical equipment that requires inspection under the EEIP.

SLAC EEIP surveyors will identify and document electrical equipment that requires inspection under the EEIP (“unapproved” equipment). EEIP surveyors do not perform equipment inspections. After the survey is complete, a plan to perform legacy equipment inspections will be developed.

## Survey Overview

- The survey IS NOT a comprehensive list of all electrical equipment.
- The survey IS a list of all unapproved electrical equipment.

### DO NOT SURVEY:

- Standard office equipment; copy machines, fax machines, plug strips, etc.
- Consumer appliances; refrigerators, coffee makers, fans, heaters, lamps, etc.
- Personal computers, printers, or other IT equipment
- Power distribution panels, MCCs, switchboards, switchgear, or disconnect switches unless the equipment has been modified in a way that may conflict with code or manufacturer instructions
- Common electrical construction devices: fittings, conduit, receptacles, switches, boxes, etc.
- Low energy battery-powered equipment that does not connect to facilities power or to energized lab equipment (e.g. SLAC-made test equipment, flashlights, battery powered tools, etc.).

### DO SURVEY:

- All commercially built programmatic scientific equipment
- All custom made electrical equipment
- All lab-built electrical equipment
- Conventional facilities electrical equipment that has been modified or is being used in a way that may conflict with code or manufacturer’s instructions

The survey should include both installed equipment and portable or mobile equipment (such as SLAC-made test equipment or mobile test carts). The survey also includes electromagnets, electromechanical equipment, and electrically-connected instruments, controllers, and similar devices.

## Definitions

**Authority Having Jurisdiction (AHJ) (electrical)** – An organization, office, or individual responsible for enforcing the requirements of a code or standard, or approving equipment, materials, an installation, or a procedure. At SLAC the Electrical Safety Officer (ESO) is the (electrical) AHJ.

**Approved** – Acceptable to the AHJ, in this case consisting of: 1) NRTL-listed equipment being used in accordance with its listing or labeling for the manufacturer's intended purpose; or 2) equipment that is approved by an EEIP Inspector as safe for its intended purpose.

**EEIP** – Electrical Equipment Inspection Program

**EEIP Inspector** – A person qualified by training and experience to perform EEIP field evaluations. The inspector performs field evaluations and approves, labels, and documents electrical equipment inspections.

**Field Evaluation** – The process for inspection and approval of unapproved electrical equipment. At SLAC field evaluations are performed under the Electrical Equipment Inspection Program (EEIP).

**Labeled** – Equipment that has been evaluated, certified, and labeled by a Nationally Recognized Testing Laboratory (NRTL) with the NRTL's symbol or other identifying mark. The label indicates that the equipment meets specific safety standards and has been found to be suitable for use in specified operations.

**Listed** – Equipment that has been evaluated and certified by a Nationally Recognized Testing Laboratory (NRTL) and has been listed by the NRTL as meeting specific safety standards and found to be suitable for use in specified operations.

**Modified Equipment** – NRTL-listed or Approved electrical equipment that has been modified or is being used for a purpose other than intended by the manufacturer/builder. Modification means that a change has been made that affects the safety of the equipment or is not in accordance with the manufacturers/builders installation use or maintenance instructions.

**Nationally Recognized Testing Laboratory (NRTL)** – An organization which is recognized by OSHA and which tests for safety, and lists or labels or accepts, equipment based on established Standards.

## Surveyor Qualification

Surveyors need not be fully qualified EEIP inspectors. The minimum surveyor qualifications are: Course 251 (Electrical & General Safety Awareness for R&D) or Course 274 (Electrical Safety-Low/High Voltage); a familiarity with the hazards in the survey area; and general familiarity with the equipment to be surveyed. The following personnel would typically possess the knowledge and training necessary to perform equipment surveys: EEIP inspectors, qualified electrical workers, accelerator operators, maintenance workers, and safety coordinators.

## Electrical Hazards

**CAUTION:**

**Surveyors should not open doors or remove panels of electrical enclosures to obtain access to equipment, if doing so could expose them to an electrical hazard.**

All surveys should be performed in a manner that does not expose the surveyors to electrical hazards. Surveyors are not expected to open doors or remove panels to enclosures that contain live electrical parts. If electrical equipment is out of service and enclosures are open for other reasons, then the surveyor may proceed to inspect equipment, provided that all safe electrical work practices are followed. This includes joining the lockout of any equipment that has been deenergized under CoHE/LOTO procedures.

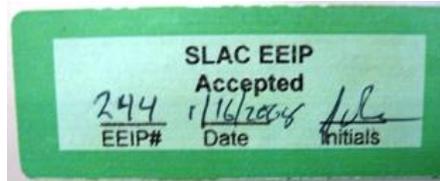
**CAUTION:**

**Imminently hazardous conditions (e.g. exposed energized parts) require immediate corrective action; use barriers or equivalent means to restrict access to the hazard until the hazard can be mitigated.**

## Survey Guidelines

For each piece of electrical equipment perform the following:

1. Determine if the equipment is **approved** or is already in the SLAC EEIP:
  - 1.1. If a SLAC EEIP label (of any type) is found the equipment is in the SLAC EEIP; no further action is required:



**SLAC EEIP Accepted Label**

**Note:** Equipment that has passed inspection at another DOE lab is also acceptable for use at SLAC.

- 1.2. If an acceptable NRTL mark (see Appendix A) is found and the equipment is not modified the equipment is **approved** and no further action is required. If the NRTL mark is not readily visible, the surveyor may place a green NRTL label on the equipment (optional):



**Green NRTL Label Options**

Note: The green NRTL label may be used as a convenience to the surveyor and the equipment custodian or owner, since the NRTL marking may not be readily visible. By attaching this label the surveyor is indicating that a valid NRTL mark appears somewhere on the equipment and others do not need to look for it.

2. If the equipment is **not approved** and is not in the SLAC EEIP:
  - 2.1. If the equipment does not have a unique inventory ID, then attach an inventory ID label.
  - 2.2. Record the required information on the equipment survey worksheet.

3. Equipment assemblies:

- 3.1. Equipment assemblies that are an integrated unit and are not likely to be reconfigured may be treated as a single piece of equipment. If the equipment does not have a unique inventory ID then attach an inventory ID label to the assembly and record the required information on the survey worksheet.
- 3.2. Equipment assemblies that are likely to be reconfigured (e.g. a rack with multiple power supplies) require inspection and approval of individual components as well as the overall assembly. If the equipment does not have a unique inventory ID then attach an inventory ID label to each subassembly (including the rack, frame, or main enclosure), and record the required information on the survey worksheet. The surveyor should be careful to distinguish between individual pieces of equipment, and overall equipment assemblies.

4. Equipment not in use (whether or not permanently installed): Attach a red out of service label. Do not attach an inventory ID label. The red label informs users that an EEIP inspection is required before use.



**EEIP Out of Service Label Examples**

**Note:** Since out of service equipment is not included in the inventory, labeling of such equipment is not subject to the June 1, 2011 deadline for completion of the inventory.

## How to Determine if a NRTL Mark is Acceptable

Some NRTLs have both U.S. and non-U.S. marks. A non-U.S. mark means that the product may not comply with U.S. standards. Therefore, **a non-U.S. mark is NOT considered to be an NRTL-certified product.**

**Note:**

If you are unsure about a particular NRTL mark it is better to log the equipment for EEIP inspection than to mistakenly classify it as **approved**.

NRTL marks are acceptable only if they are an exact match of the OSHA approved mark. Unacceptable marks (below left) are often very similar to the acceptable marks (below right):

Unacceptable	Acceptable
<p>The CSA label is only acceptable if accompanied by the US, C-US, NRTL, or NRTL/C markings. The plain CSA marking is NOT acceptable. It indicates that the product has only been investigated for compliance with Canadian standards.</p>	
	
<p>The ETL label is not acceptable if only marked with the C (Canada). It indicates that the product has only been investigated for compliance with Canadian standards. The plain ETL label and the ETL label with the C and US markings are acceptable.</p>	
	

Unacceptable	Acceptable
The UL label is not acceptable if accompanied only by a C, CLASSIFIED C, AR, BR, GS, EU, or MX. The plain UL mark or a UL mark accompanied by LISTED, C US, or C US LISTED is acceptable.	
	

The **Entela** label, if only accompanied by a C is NOT acceptable. Entela labels accompanied by a US or, C and US, are acceptable.

**TUV** labels only accompanied by a C or marked with ISO 9001 are NOT acceptable. TUV labels accompanied by C US, US, NRTL, or NRTL LISTED are acceptable.

**MET** labels only accompanied by a C are NOT acceptable. MET labels accompanied by NRTL LISTED are acceptable.

### UL Recognized Component



The  mark is used by Underwriters Laboratories to identify a **Recognized Component**. A Recognized Component does not go through the same degree of testing as a finished product; therefore the **Recognized Component** mark is not an acceptable NRTL label. If a product displays only the **Recognized Component** mark, it must be included in the EEIP inventory.



CE is NOT an NRTL mark. It is NOT an acceptable label.

## Appendix A

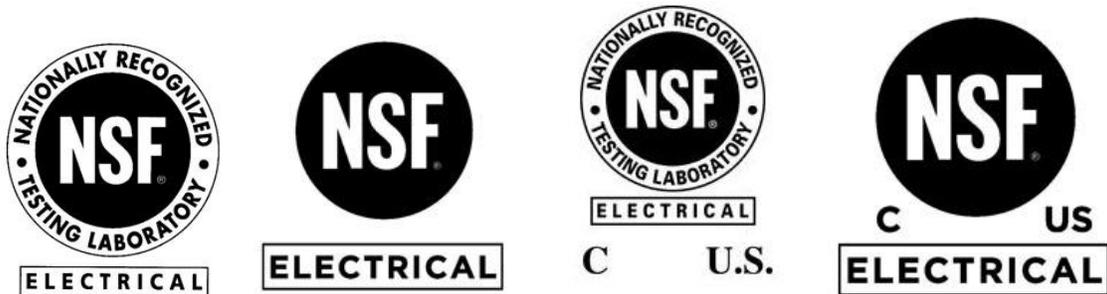
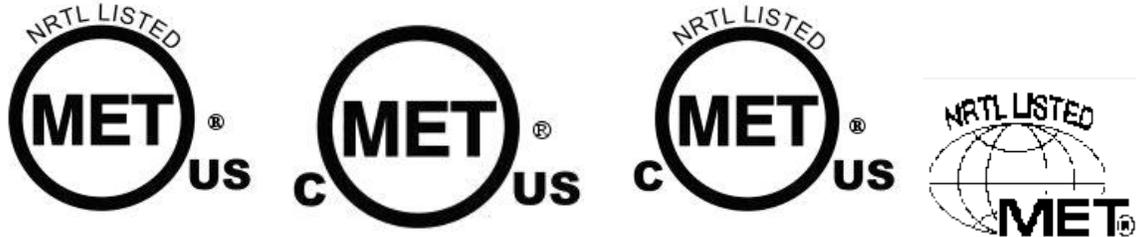
## All Acceptable NRTL Marks

[source <http://www.osha.gov/dts/otpc/nrtl/nrtlmrk.html> March 2011]



Appendix A

All Acceptable NRTL Marks



Appendix A

All Acceptable NRTL Marks

