

Chapter 8: [Electrical Safety](#)

# Unlisted / Unlabeled Electrical Equipment Acquisition Requirements

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URL: <https://www-group.slac.stanford.edu/esh/eshmanual/references/electricalReqEquipUnlistedProcure.pdf>

## 1 Purpose

The purpose of these requirements is to ensure that electrical equipment, either new or modified, that is not *listed* or *labeled* complies with electrical safety standards.

They cover the acquisition of unlabeled/unlisted equipment and the modification of existing electrical equipment and provide required language for purchase requisitions and statements of work

They apply to requestors, equipment owners and project managers, manufacturers and vendors, Purchasing, and the SLAC electrical safety officer.

### 1.1 Definitions

*electrical equipment.* Equipment that uses electrical energy for electronic, electromechanical, heating, lighting, or similar purposes. Electrical equipment includes equipment used in laboratory research and development (R&D) as well as utility, facility, and shop equipment.

*field evaluation.* A process whereby products that do not have a certification acceptable to the *authority having jurisdiction (AHJ)* can be evaluated to the applicable product safety standard(s) for the specific application and location where the product is being utilized. The process includes construction inspection for use of components, assembly, and limited non-destructive testing to complete the assessment.<sup>1</sup>

*field evaluation body (FEB).* An organization or part of an organization that performs field evaluations of electrical or other equipment ([NFPA 70](#), Article 100) ([NFPA 790](#))

*labeled.* Equipment or materials to which has been attached a label, symbol, or other identifying mark of an organization that is acceptable to the authority having jurisdiction and concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials, and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.

*listed.* Equipment, materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equipment, material, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose.

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1 Underwriters Laboratories (UL). [Understanding Field Evaluations](#)

*nationally recognized testing laboratory (NRTL)*. Organizations that the Occupational Safety and Health Administration (OSHA) recognizes as qualified to perform independent (that is, third-party) product safety testing and certification.<sup>2</sup>

## 2 Requirements

Before first energization and use at SLAC, all new or modified *electrical equipment* must be

- *Listed or labeled* by a [Nationally Recognized Testing Laboratory](#) (NRTL), or
- *Field evaluated* in accordance with [NFPA 791](#) by a NRTL or a [NFPA 790](#) accredited *field evaluation body (FEB)*, or
- Inspected, approved, and labeled by a SLAC [Electrical Equipment Inspection Program](#) (EEIP) inspector

**Important** When specialized, highly complex, or high-cost unlisted/unlabeled electrical equipment is acquired, and the complexity of the equipment exceeds the training, knowledge, and skills of SLAC EEIP inspectors, the equipment must be field evaluated in accordance with this document. EEIP inspection of such equipment is not an option.

### 2.1 Acquisition of Unlisted / Unlabeled Equipment

When selecting commercially available equipment, whenever feasible ensure that the selected equipment has been listed or labeled by a NRTL before acquiring the product. If listed or labeled equipment is not available, then unlisted/unlabeled equipment may be procured. The equipment must be field evaluated by a third-party or by a SLAC EEIP inspector.

When specialized unlisted/unlabeled equipment not suitable for SLAC EEIP inspection is being acquired, the requestor must include the language in [Electrical Safety: Unlisted / Unlabeled Electrical Equipment Purchase Requisition](#) in the purchase request.

If the manufacturer is unable or unwilling to allow the field evaluation before shipment, then the purchaser or project manager must arrange for field evaluation at SLAC.

One electronic (PDF) copy of each field evaluation report must be provided to SLAC. The SLAC purchaser/project manager will forward the report to the SLAC electrical safety officer for review and acceptance.

The field evaluation must be complete and approved by the SLAC electrical safety officer before first energization of the equipment.

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<sup>2</sup> Occupational Safety and Health Administration (OSHA). OSHA Instruction, “NRTL Program Policies, Procedures, and Guidelines” ([CPL-01-00-004](#), October 1, 2019). Text excerpted from Chapter 2 (I).

## 2.2 Modification of Labeled / Listed Equipment

When it is necessary for a third-party to modify labeled/listed equipment,<sup>3</sup> the statement of work must include the language in [Electrical Safety: Electrical Equipment Modification Scope of Work](#).

One electronic (PDF) copy of each field evaluation report must be provided to SLAC. The SLAC purchaser/project manager will forward the report to the SLAC electrical safety officer for review and acceptance.

The field evaluation must be complete and approved by the SLAC electrical safety officer before first energization of the equipment.

## 2.3 Field Evaluation Organizations

The following NRTLs have been used at SLAC for field evaluations of unlisted equipment:

- CSA Group. [North American Field Evaluation Services](#)
- Intertek. [Field Labeling and Field Evaluations](#) and [Field Labeling Process](#)
- QPS America. [On-site Field Evaluation of Electrical Equipment](#)
- TUV. [Field Evaluations: Field Evaluation and Labeling Overview](#)
- Underwriters Laboratories (UL). [Understanding Field Evaluations](#)

Additional accredited field evaluation bodies are listed by these accreditation services:

- American Association for Laboratory Accreditation (A2LA). [Field Evaluation Body \(FEB\) Accreditation Program](#)
- International Accreditation Service (IAS). [Field Evaluation Body Accreditation](#)

**Note** The names and links above are provided as an aid to SLAC purchasers, project managers, and equipment owners and do not represent an endorsement of any specific company or organization. These lists are not comprehensive.

## 3 Forms

The following forms and systems are required by these requirements:

- [Electrical Safety: Unlisted / Unlabeled Electrical Equipment Purchase Requisition](#) (SLAC-I-730-0A11J-004). Text for inclusion in purchase request when specialized unlisted/unlabeled equipment not suitable for SLAC EEIP inspection is being acquired
- [Electrical Safety: Electrical Equipment Modification Scope of Work](#) (SLAC-I-730-0A11J-003). Text for inclusion in statement of work when it is necessary for a third-party to modify labeled/listed equipment (to upgrade obsolete devices or to add new functions or features, for example)

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<sup>3</sup> To upgrade obsolete devices or to add new functions or features, for example.

## 4 Recordkeeping

The following recordkeeping requirements apply for these requirements:

- None

See the [Electrical Equipment Inspection Program](#) (EEIP) for recordkeeping requirements specific to the EEIP program.

## 5 References

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 8, “Electrical Safety”](#)
  - [Electrical Safety Manual](#) (SLAC-I-730-0A11A-002)
  - [Electrical Equipment Inspection Program](#) (SLAC-I-730-0A11A-001)
  - [Electrical Safety Program Site](#) (SharePoint)

### Other Documents

- Title 29, *Code of Federal Regulations*, “Labor” , Subtitle B, “Regulations Relating to Labor (Continued)”, Chapter 17, “Occupational Safety and Health Administration, Department of Labor” (Continued), Part 1910, “Occupational Safety and Health Standards”, Subpart A, “General”, Section 7, “Definition and Requirements for a Nationally Recognized Testing Laboratory” ([29 CFR 1910.7](#))
- Occupational Safety and Health Administration (OSHA), Directorate of Technical Support and Emergency Management. [Nationally Recognized Testing Laboratory Program](#) (NRTL)
- Occupational Safety and Health Administration (OSHA). OSHA Instruction, “NRTL Program Policies, Procedures, and Guidelines” ([CPL-01-00-004](#))
- National Fire Protection Association (NFPA) 70, *National Electrical Code (NEC)* ([NFPA 70](#))
- National Fire Protection Association (NFPA) 70E, “Standard for Electrical Safety in the Workplace” ([NFPA 70E](#))
- National Fire Protection Association (NFPA) 790, “Standard for Competency of Third-Party Field Evaluation Bodies” ([NFPA 790](#))
- National Fire Protection Association (NFPA) 791, “Recommended Practice and Procedures for Unlabeled Electrical Equipment Evaluation” ([NFPA 791](#))
- Underwriters Laboratories (UL) 508A, “Industrial Control Panels” ([UL 508A](#))
- Underwriters Laboratories (UL). [Understanding Field Evaluations](#)