

Electrical Equipment Procurement and Inspection Guide for Researchers

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All electrical equipment must be approved for use at LBNL through the [Electrical Equipment Safety Program \(EESP\)](#). The purpose of the EESP is to ensure the safe installation and use of electrical equipment. Unsafe electrical equipment can pose serious electrocution and fire hazards unless identified by qualified electrical inspectors and remedied by qualified electrical workers.

LBNL policy requires that all electrical equipment greater than 50 volts is listed by a Nationally Recognized Testing Laboratory (NRTL). NRTL-Listed equipment consists of any electrical equipment that has been accepted, certified, labeled, or listed by a [Nationally Recognized Testing Laboratory \(NRTL\)](#) recognized by OSHA.

NRTL-Listed equipment is automatically considered acceptable, and is approved for use provided the equipment is not modified and is installed and used within the manufacturer's listing intent. Common NRTL logos found on equipment data plates look like the following:



NRTL listing agencies include but are not limited to: Underwriters Laboratory (UL), CSA Group (CSA), TUV Rhineland (TUV), MET Laboratories (MET), and Intertek (ETL). **If there is a choice between a piece of equipment or brand that is available as NRTL vs. non-NRTL, only the NRTL version can be purchased.**

Some equipment will be marked as “CE” (European Conformity) and/or “RoHS” (Restriction of Hazardous Substances Directive) only and not include NRTL logos. These are European Union marks and are **NOT** considered equivalent to NRTL requirements.



Procurement

There are a number of ways that electrical equipment can be purchased and brought in to LBNL. The requestor is responsible for ensuring that the items being purchased are NRTL Listed. The Procurement Department also has internal processes to evaluate orders and to notify subcontractors of our NRTL requirements.

e-Buy

When purchasing electrical equipment through the e-Buy system, search the supplier site for the item desired. Select the item for additional details about the item. In many cases, technical data including NRTL listing information is given. Some items also include a link to the equipment manual. The equipment manual will contain information if it is NRTL listed.

Add the item to your cart and submit. An e-Buy requisition is generated and is submitted for approvals. Currently, the e-Buy system does not require any additional information regarding NRTL listing. However, it is the responsibility of the requestor to ensure that the item being ordered is NRTL listed. *Note: If the equipment is delivered and is not NRTL listed, it cannot be used until inspected. If the equipment fails inspection, it will require modification/repair in order to pass.*

e-Pro Requisition

When equipment is purchased through a e-Pro requisition, and a specific vendor has been identified, request a quote from the vendor. The quote should include information that the item is NRTL listed. If the quote does not contain information on the NRTL listing, contact the vendor and inquire prior to placing the requisition. If the item has an option for NRTL listing, you must request that option. If the item is not available as NRTL listed and there are no other comparable items available, request that the vendor include on a revised quote an itemized cost for having the equipment NRTL inspected by a third party at the equipment supplier site.

If the neither the requisition or quote includes information on NRTL listing, LBNL Procurement will need to verify the equipment is NRTL listed prior to placing the order. The order could be delayed while the listing status of the equipment is determined. In the event the equipment is not NRTL listed, and a comparable item is not available that is NRTL listed, then an internal inspection will be required. This process is detailed below.

P-Card

When equipment is purchased with a division P-card, check the equipment manual first prior to making a purchase to ensure the item is NRTL listed. Most equipment manuals are available on-line at the equipment supplier's website. When completing the P-card requisition form, there is a field for identifying electrical equipment and if it is NRTL listed.

If the electrical equipment field is selected as "non-NRTL," LBNL Procurement will need to verify equipment options prior to placing the order. The order could be delayed while the listing status of the equipment is determined. In the event the equipment is not NRTL listed, and a

comparable item is not available that is NRTL listed, then an internal inspection will be required. If the item fails inspection, it will require repair/modification in order to pass. This process is detailed below.

Gifted and Loaned Equipment

Equipment that is gifted or loaned to LBNL through another institution or company must follow the LBNL Procurement equipment loan process:

<https://drive.google.com/file/d/0BxS6mXnhBkLyWnBNV3pZbUpONmc/view>

When equipment is loaned from another institution, an Equipment Loan Agreement form must be completed. Your Division Safety Coordinator (DSC) must be notified by the End User and the equipment will be inspected to ensure it meets all LBNL safety requirements including NRTL Listing. The Equipment loan agreement procedure is available at:

<https://drive.google.com/file/d/0BxS6mXnhBkLyOVBRdzJQT0pnZIE/view>

When equipment is gifted to LBNL, an Equipment Gift Agreement form must be completed. Your Division Safety Coordinator (DSC) must be notified and the equipment will be inspected to ensure it meets all LBNL safety requirements including NRTL Listing. The request form for an equipment gift/loan agreement is found at:

https://drive.google.com/file/d/0B_SXHe_2oo1VlotQi1CbnoxZ3M/view

By signing the Equipment Loan/Gift Agreement forms, the End User certifies they are aware of the requirement for an equipment safety evaluation to be completed and documented. The Environment Health Safety (EHS) Division will provide qualified subject matter experts (SMEs) to conduct the safety evaluations as needed. It is the End User's responsibility to coordinate with EHS and/or Export Control prior to equipment use. In the event the equipment is not NRTL listed, an internal inspection will be required. If the item fails inspection, it will require repair/modification in order to pass. This process is detailed below.

Inspection

Inspections of non-NRTL equipment must be performed prior to the equipment being placed into service. The inspections are performed through a trained LBNL inspector designated by the Electrical Equipment Safety Program (EESP). To request an inspection, go to:

<http://electricalsafety.lbl.gov/electrical-equipment-safety-program/request-inspections/>

In the event that the non-NRTL equipment is complex and cannot be inspected by the LBNL inspector, a third-party certification vendor may be needed. The LBNL inspector is generally limited to cord and plug small chassis electronics equipment up to 208 volts. Contact your Division Safety Coordinator for assistance in obtaining a third-party certification. It is highly recommended that the certification is obtained through the equipment supplier while the equipment is still at their facility. Any needed modifications can be made at that time. There is usually an additional cost required by the equipment supplier. Ensure this cost is included in the purchase quote.

If a field evaluation is performed by the third-party certification vendor at the LBNL site, any required modifications or repairs become more difficult. This may include returning the equipment to the supplier for modifications. The costs associated with the third-party certification and needed modifications are the responsibility of the requestor.

Modification

In the event that non-NRTL equipment is brought to LBNL and inspected, there is a good possibility that modifications will be needed. Equipment that has failed the EESP inspection must be repaired by a Qualified Electrical Worker (QEW) repair technician. Repairs can be scheduled with the Engineering Division. To request repair/modification, go to:

<http://electricalsafety.lbl.gov/request-help/>

Costs for any modifications or repairs are the responsibility of the End User. Upon completion of the repairs, an independent EESP Inspector must perform a re-inspection. If the repaired equipment passes the re-inspection, the equipment is approved for use.

Approval

Unlisted equipment that has been inspected and approved for use will have a green “AHJ Approved” sticker affixed. Only qualified inspectors approved by the LBNL Authority Having Jurisdiction (AHJ) can apply the green “AHJ Approved” sticker after the equipment has passed inspection.



A green “NRTL LISTED” label (optional) is used for equipment that is NRTL Listed, unmodified, and used as intended by the manufacturer. This label communicates that the NRTL mark appears somewhere on the equipment so that others will not need to look for it in the future. LBNL personnel who have completed EHS0383 “Electrical Equipment Surveyor” training can survey equipment for NRTL listing and apply the green “NRTL Listed” sticker.



A yellow AHJ CONDITIONAL ACCEPTANCE label is used when equipment that has not passed the equipment inspection but that may be used under certain conditions. This includes situations where: (a) the equipment has not yet been inspected, (b) the equipment has failed inspection but is temporarily authorized for use pending repairs if the reason for the failure does not represent an immediate hazard, and (c) the equipment has passed inspection but has certain

limitations on its usage. It must be repaired and re-inspected within the date stipulated on the label.



A Red “AHJ FAIL” label is used when equipment has been inspected but has failed inspection. It cannot be operated until the required repairs are made and the equipment has been re-inspected by the EESP inspector.



Further Information

Further information on the LBNL Electrical Safety Program can be found at the LBNL Electrical Safety website: <https://electricalsafety.lbl.gov>

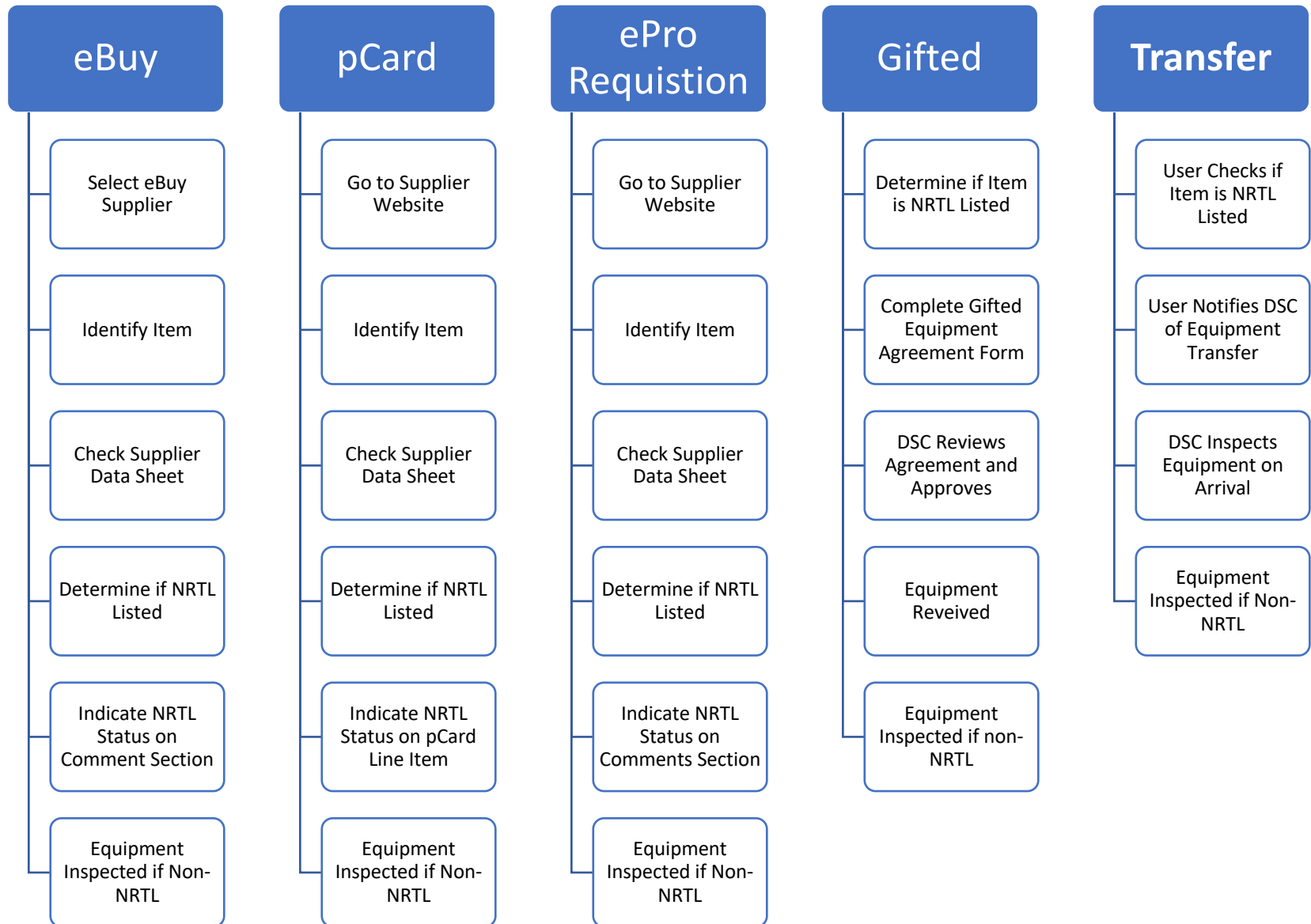
A useful field guide summarizing many of the requirements for electrical equipment requirements is available at: <https://electricalsafety.lbl.gov/resources/field-program-guides/>

Procurement procedures can be found at the following website: <https://procurement.lbl.gov/purchasing-guide-2/>

A Procurement Help Desk is also available: <https://procurement.lbl.gov/welcome-to-procurement-property/help-desk/>

AHJ- Authority Having Jurisdiction
DSC- Division Safety Coordinator
EESP- Electrical Equipment Safety Program
ESO- Electrical Safety Officer
NRTL- Nationally Recognized Testing Laboratory

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Equipment Procurement Flow Chart

