

**Non-NRTL (Nationally Recognized Testing Laboratory)  
Equipment Inspections  
Frequently Asked Questions (FAQ)**

**Why are we conducting these inspections? Will this effort enhance safety?** The inspections are required by NEC, OSHA, and DOE regulations, as shown at the end of this FAQ. These regulations are reflected in the ANL ES&H Manual, Section 9.3.2. Not only are these inspections a requirement, they will enhance safety. For example, last year a subcontractor at Hanford received an electrical shock from a non-NRTL piece of equipment. The equipment had an improperly terminated ground wire due to poor design. Inspection by a qualified, trained inspector would have uncovered this design deficiency.

**Do other National Labs have non-NRTL inspection programs?** Yes, Los Alamos, Brookhaven and SLAC all have similar inspection programs. Other labs are in the process of setting up their programs.

**What devices need or do not need to be inspected?**

- **Equipment that does not need to be inspected:** Electrical equipment and devices such as computers, lamps, tools, etc. that bear a listing mark or label from an OSHA recognized Nationally Recognized Testing Laboratory (NRTL) do not need to be inspected. Examples of such laboratories include UL (Underwriters Laboratory), CSA (Canadian Standards Association), and FM (FM Global Technologies). A full list of OSHA recognized laboratories appears at: <http://www.osha.gov/dts/otpca/nrtl/index.html#nrtls>. Additionally, equipment that is rated less than 50 volts and has power consumption of under 1 kilowatt does not need to be inspected. Equipment rated 50 volts or greater with current less than 5 milliamps and stored energy less than 10 joules also does not need to be inspected.
- **Equipment that does need to be inspected:** All other electrical/electronic equipment, including unlisted office equipment and equipment that was built at the Lab, must be inspected by a Designated Electrical Equipment Inspector. If the device has no identified markings from any of the labs appearing on the OSHA list, the equipment requires inspection, even if listed by another testing laboratory not on the list. If a piece of NRTL listed equipment is modified, the listing is voided and the equipment must be inspected.

**Who may perform these inspections?** Inspections must be performed by a Designated Electrical Equipment Inspector who has taken the appropriate training and who has sufficient electrical/electronic background. This Electrical Equipment Inspection class constitutes the required training.

**Can several separate devices be grouped into one device to be inspected, documented and tagged? (For example a relay rack with numerous separate devices).** Yes, as long as the grouped device is always used in that same identical configuration. If parts are added or removed, the device needs to be re-inspected.

**My division does not have many non-NRTL devices and we do not have anyone able to be trained to inspect them. What do I do?** Once the inspection program is operational, please contact Joe Zurad, PME, who will assist you in making arrangements to provide an inspector for a minimal charge. The exact mechanism for these arrangements will be formulated within the next month or two.

**We have numerous, identical electrical devices (for example, identical power supplies at the APS). Does each one need to be inspected, documented and tagged?** This situation will be addressed in the class. Lloyd has specifically handled this type of scenario at Los Alamos. After observing some of our typical facilities, he will provide appropriate suggestions for handling these identical devices here at ANL. Most likely for identical equipment, only one or a small sample will need to be fully inspected with the remaining equipment only inventoried, quickly reviewed, and labeled, unless the sample inspection identifies a concern or problem.

**Our division has literally tens of thousands of non-NRTL devices. It will take a full-time person years to inspect all of them. What do I do?** We realize the burden this requirement places on your division. However, the inspections are required. There is no other choice, unless all such devices are removed from service and replaced with NRTL equipment. There will be a 5 year grace period to inspect all existing unlisted electrical equipment. However, for both inspections and replacements, progress consistent with a 5 year completion date must be evident.

**How long do I have to get my existing equipment inspected and what should I do first?** There will be a 5 year grace period (until September 1, 2010) to complete the inspections. Equipment should be prioritized for inspection. Equipment with a higher level of hazard, older age, or more frequent use should be assigned a higher priority for inspection. Formulating a division inventory of equipment requiring inspection will be an important early step in the process.

**What about new equipment being ordered?** Plans are being drafted to revise the appropriate contracts adding requirements that only NRTL listed equipment be purchased when such listed equipment is available. The PARIS system will be modified to track unlisted equipment and the division ES&H Coordinator will be notified about the procurement of such equipment in order that he/she make arrangements for an inspection here at ANL before the equipment is placed into use. **In the procurement process, NRTL listed equipment should be purchased whenever possible.**

**Regulation References:**

Regulations and codes specifying that electrical equipment and devices have an NRTL listing or undergo substantial inspection:

OSHA: 29CFR1910.303(a) and 29CFR1910.303(b)(2)

NEC (NFPA 70): 110.2 and 110.3

NFPA 70E: 400.2 and 400.3.