

Electrical Equipment Inventory Training

APS



Inventory of Non-NRTL Electrical Equipment at APS

DOE has mandated that ANL will produce an inventory of all non-NRTL listed electrical equipment by December 15th 2006.

APS will examine all hardwired or cord & plug equipment >50 volts AC to determine NRTL listing.

All identified non-NRTL listed equipment will be added to the APS Non-NRTL Equipment Spreadsheet. (Available on APS Safety page)

Additional manpower → may ← be made available to the Non-APS, Non-ANL beam lines.

This is the beginning of a 4 year process to examine all electrical equipment at ANL to assure compliance with NRTL listed standards.

THIS DOES NOT NRTL CERTIFY THE EQUIPMENT



Why Do We Need an Inventory?

- A Designated Electrical Equipment Inspector (DEEI) must inspect all existing equipment within the next five years (by June 9, 2011).
- We need a list of what needs to be inspected
- We need the list to monitor progress toward the five year deadline
- We need to establish priorities for the inspection process
- All of these are facilitated by the inventory



Inventory of Non-NRTL Electrical Equipment at APS

For today, lets focus on the **INVENTORY**



Identification of Equipment That Must Be Looked at for NRTL Listing

- Basically all electrical equipment including anything that is/can be plugged into or is directly connected to building electrical power.
- This includes laboratory equipment, test equipment, light fixtures, office equipment, power strips, machines, power supplies, desktop computers, instrumentation, etc.
- We need to identify this equipment needing inspection and enter into the inventory (**THE INVENTORY**)
- For the Experiment Floor this is a SNAPSHOT of what is on the floor at the time of the inventory
- THIS IS A BEST ESTIMATE EFFORT



Identification of Equipment That Must Be Included in the Inventory

- Some areas of APS such as hutches have limited access do to experiments
- APS Technical Groups will request access to hutches to inventory their equipment
- Make a best effort at identifying equipment
- “7 pieces of rack mounted equipment” is ok
- “EVERYTHING IN HUTCH XX-ID-C” is too broad
- OK to identify “systems” for initial inventory
 - Laser system
 - Sample handler




EXCEPTIONS

- First major exception is Listed Equipment = Equipment that is listed by a Nationally Recognized Testing Laboratory (NRTL) such as Underwriters Laboratory (UL) does not need to be included in the inventory as long as it has not been modified.



NRTL Listing

- NRTLs are recognized by OSHA
- They are independent labs that evaluate and test equipment and products
- Some common NRTLs include: UL, CSA, TUV
- An NRTL marking is applied to equipment that is listed
- Note that the marking must appear on equipment and/or in the users manual to be considered listed
- More information about NRTLs is available on the OSHA web site
 - <http://www.osha.gov/dts/otpca/nrtl/index.html>
- IMPORTANT NOTE: CE  is not an NRTL mark



Examples of NRTL Markings



How Can You Determine if Equipment is NRTL Listed?

- One or more of the NRTL markings on the previous slide appears on the equipment
 - Front of equipment
 - Back of the equipment
 - An especially good place to look is near where the power cord enters the equipment
 - The NRTL marking may also appear in the users equipment or operating manual

- Special for desktop computers:
 - Often the marking is inside on the power supply and hard to view
 - If the computer is from Dell, Gateway, Sun, IBM, or Apple, you may assume it is NRTL listed
 - Otherwise the computer should be included on the inventory



Another Exception

- Equipment that is not in use and in storage need not be included in the inventory. Old, unused equipment should be evaluated for possible moving to storage. To exclude from the inventory, this label must appear on the equipment or in the storage area. Some of these labels have been provided to you.

OUT OF SERVICE
ELECTRICAL EQUIPMENT

MUST BE APPROVED
BEFORE USE



Other Exceptions

- Runs only on batteries (less than 50 volts and less than 1000 watts)
 - Common battery operated flashlights, calculators, portable battery operated electric tools, radios, cell phones, laptop computers, etc. are not to be inventoried
 - However, any charger that plugs into an electrical receptacle must be NRTL listed
 - For more unusual items or if you have any questions about the voltage, inventory it.
- Equipment that already has one of the green equipment inspection labels on the next slide is not to be inventoried



Inspection Labels

■ Approved

- Only issued to DEEIs
- Applied after equipment passes inspection by a DEEI



■ Unlisted Approval Not Required

- May be applied to any unlisted equipment not requiring inspection due to voltage and power factors previously discussed (Use optional)



■ NRTL Approved Electrical Equipment

- Applied to the front of an unmodified NRTL listed piece of equipment to readily identify it as NRTL listed and not requiring inspection. (Use optional)



Adding Equipment to Your Inventory

Use of the Excel spreadsheet

- Leave the *No.* and *Date Inspected* fields blank
- The *Priority* field is optional, use one of High, Moderate, or Low
- Other fields should be filled out
- *In Use* field is “Yes” unless it has been moved to storage or labeled with an out of service tag or is thrown out
- *Model Number* should be filled out if available



Sample Equipment Inventory

Energy Systems Non-NRTL Inventory											Total Items=	1024
Passed Inspection												
Rejected - May Use												
Rejected - Do Not Use												
No.	Bldg.	Room	Specific Location	Occupant	Manufacturer	Model #	Qty	Description	Priority	In Use	Date Inspected	
53	202	B354	Cleanroom	Yershov, C	Oriel	Rack/Cu stom	1	UV Light	Moderate	Yes		
95	371	HiBay	West corridor	Shimcoski, D	ERLAB, Inc.	Toxicap 1324	1	Ductless Fume Hood	Moderate	Yes		
96	371	HiBay	West corridor	Shimcoski, D	Tripp-Lite	PR-20	1	DC Power Supply	Moderate	Yes		
97	371	HiBay	West corridor	Shimcoski, D	Clayton Indust.	CPE-50	1	Twin-Roll Emissions Ch	Moderate	Yes		
98	371	HiBay	West corridor	Shimcoski, D	ANL-APRF Custom		3	Warning Beacon Encl.	Moderate	Yes	(1) 4/27/06, (1) 5/02/06, (1) 5/03/06	
99	371	HiBay	West corridor	Shimcoski, D	ANL-APRF Custom		1	FuelScale e-stop Relay E	Moderate	Yes		
100	371	HiBay	West corridor	Shimcoski, D	Luxor		3	A.V. Equip. Cart	Moderate	Yes		
101	371	HiBay	West corridor	Shimcoski, D	ANL-APRF Custom		1	Oper/Driver Safety Alert	Moderate	Yes		
102	371	HiBay	West corridor	Shimcoski, D	EconOLine		1	Media Blaster	Moderate	Yes		
103	371	HiBay	West corridor	Shimcoski, D	ANL-APRF Custom		1	Patch Panel/Pwr. Supply	Moderate	Yes	4/21/2006	
104	371	Vehicle Soak Rm		Shimcoski, D	Hartzel-ANL Custom	22S-49- AVS3	1	Vehicle Air Velocity Simu	Moderate	Yes		
105	371	4WD Mezz	Mechanical Room	Shimcoski, D	Speedaire	6Z948B	3	AIHO-Elec. Drain Valve	Moderate	Yes		
106	371	4WD	Test Cell 6	Shimcoski, D	Tripplite	PR-60	1	12 vdc Power Supply	Moderate	Yes		
107	371	4WD	Test Cell 6	Shimcoski, D	Tenma	72-6152	1	DC Power Supply	Moderate	Yes		
108	371	4Wd	Test Cell 6	Shimcoski, D	Airgas		1	Hydrogen Distrib. System	Moderate	Yes		
109	371	4WD	Test Cell 6	Shimcoski, D	Hartzell Custom Blt		1	Vehicle Cooling Fan	Moderate	Yes	4/13/2006	
110	371	4WD	Test Cell 6	Shimcoski, D	Tripplite	PV1000FC	1	12 VDC, 1000 Watt Inver	Moderate	Yes		
111	371	4WD	Test Cell 6	Shimcoski, D	Tripplite	PR-20	1	12 vdc Power Supply	Moderate	Yes		
112	371	4WD	Test Cell 6	Shimcoski, D	Luxor		2	A.V. Equip. Cart	Moderate	Yes		
113	371	4WD	Test Cell	Shimcoski, D	B&K Precision	1689	2	DC Power Supply	Moderate	Yes		
114	371	LL	Attached to table	Bihari, B.	Temp. Controllers	Barber- Colman	2	Heater Supply & Control	Moderate	Yes	(2) 4/27/2006	
115	371	LL	Optical table	Bihari, B.	Continwire	PowerLight	1	Nd Yag Laser & Power S	Moderate	Yes		
116	376	Hi-Bay	NW Corner	Longman, D.	L&R UltraSonic	650H	1	Parts Washer	Moderate	Yes		

Action Items

- Now – Start your inventory
- By December 8th , 2006 – complete your inventory and e-mail me a copy of your inventory spreadsheet jwl@aps.anl.gov
- Thank you in advance for your assistance



Helpful Information and Contacts


- Inventory info is available on the APS Safety Page
 - Download the inventory spreadsheet from this page. (Please use this current form it is more APS specific)
 - Copies of this presentation
 - List of ANL approved non-NRTL companies
 - Access to DEEIs (via Bruce Glagola) for incoming experimental equipment
 - Updates on information pertaining to the Inventory and Inspections
 - Contact numbers
- For 9-5 info and access to DEEIs contact jwl@aps.anl.gov
- Hotline for problem solving jwl@aps.anl.gov



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Advanced Photon Source
A U.S. Department of Energy, Office of Science,
Office of Basic Energy Sciences national synchrotron x-ray research facility

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APS Safety and Training Information

"At the Advanced Photon Source, highest priority will be given to assuring the health and safety of employees, users, and visitors, as well as to protecting the environment"
- from the Advanced Photon Source Mission Statement.

Experiments

- [Experiment Safety Assessment Form \(ESAF\)](#)
- [APS Experiment Hazard Classes](#)
- [APS Beamline Experiment Safety Review User Policy and Procedure](#)
- [MSDS Resources](#)
- [MSDSs: ANL-East Chemical Management System](#)
- [User Safety FAQs](#)
- [User Safety Updates](#)
- [Biosafety at APS and ANL](#)
- [User Electrical and Electronic Equipment Inspections](#)
- [Request an Electrical Equipment Inspection](#)

Environmental Issues

- [Battery Recycling Procedures \(pdf\)](#)
- [Transparency Recycling Program \(pdf\)](#)

Safety Information

- [##ANL-East ES&H Division Home Page](#)
- [##ANL-East ESH/QA Information & Assistance](#)
- [Tornado Drill Information](#)
- [Safety Topics](#)
- [LOM Shop Usage](#)
- [Electrical Equipment Inventory and Inspection Information](#)

APS Safety Tools

- [#ACIS Certified Personnel](#)
- [#APS Integrated Action Tracking System \(COATS & PANTS\)](#)
- [#Life Safety Inspection Form](#)
- [#LOTO Monthly Audit Form \(LOTO Custodians Only\)](#)
- [#Safety Management Records Tool \(SMART\)](#)

APS Safety Forms (MS Word Format)

- [Work Project Checklist](#)
- [Job Safety Analysis](#)
- [Work Project Procedure-Managing Minor Work Projects](#)

Done



Electrical Equipment Inventory and Inspection Information - Microsoft Internet Explorer

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Address http://www.aps.anl.gov/Safety_and_Training/Electrical_Equipment_Info/electrical_eqpt_info.html Go Links

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Electrical Equipment Inventory and Inspection Information

- [APS Non-NRTL Electrical Equipment Inventory Spreadsheet](#)
- [ANL Recognized Reputable Electrical Equipment Manufacturer List as of 6/13/2006](#)

For DEEI input or inventory information email Jim Lang at jwl@aps.anl.gov

last updated 10/24/06

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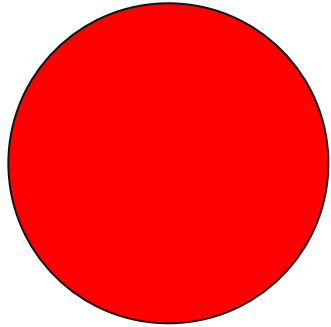
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Electrical Equipment Inspection

Identify electrical equipment that does not have a NRTL label



Itty Bitty Red Dots, stick them on the stuff you've inventoried/examined

Add the equipment to the spreadsheet

Best Effort Inventory

Return the Spreadsheet to jwl@aps.anl.gov by
December 8th 2006

