

Title: APS Policies and Procedures - User Shop Access

APS Policy and Procedure Number: X.3.1.13

Revision: 1

Effective Date: 1 September 2005

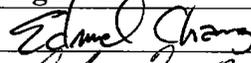
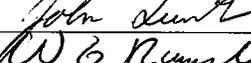
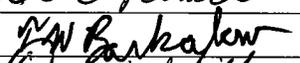
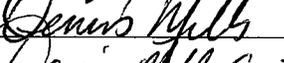
Review period: 1 year

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Supersedes revision: NA, date _____

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APS Policies and Procedure for User Shop Access

Policy for User Shop Access

To reduce the risk of personal injury, adverse environmental impact, and damage to equipment, the APS has established controls for the use of the machine shops located in the APS Lab Office Modules (LOM) and user managed spaces. For the purposes of this policy and procedure the following definitions are used:

- **User Shop:** Any location where machine tools are available to CAT/XOR/User personnel including the shared, central pentagon LOM shops and CAT/XOR managed areas.
- **Shop User:** Any person who uses machine tools in a user shop.
- **Machine Tools:** Stationary, as opposed to hand-held, material forming tools.
- **Shop Coordinator:** Appointed by CAT/XOR management to represent/oversee its interest in user shop operations
- **Machine Shop Certifier:** A person knowledgeable of machine tool operation/training and appointed by the APS, to determine, via hands-on demonstration and/or written tests, if a shop user candidate has sufficient experience and skills to use the machine(s) in a proper, safe manner.

No one is allowed to use a User Shop until they have been authorized to do so according to the requirements of this policy.

(Note: From the date of the approval of this policy until 1 February 2006, users may be authorized to use the shops by either the previously established process or the process defined by this policy and procedure. After 1 February 2006 authorization will be granted only according the process described in this policy and procedure.)

There are a number of options at the APS for users to obtain machining services: a full line of machining services are available to APS Users through the ANL machine shops, the APS may be able to provide some limited machining support, and a CAT/XOR personnel may also be able to provide support.

This Policy and Procedure define the APS site-specific program that is consistent ANL standards for machine shop safety, as defined in the ANL *ES&H Manual*.

Authorization to use machine shop tools will be on a tool-by-tool and shop-by shop basis.

Responsibilities

Shop Users

Shop users shall:

- Obtain the required certification and authorization before using machine tools in any user shop.
- Inspect machine tools before each use of the tool to verify that the tool has the required guarding and is operating properly.
- Inspect any hand tools and portable power tools used in a User Shop before each use to check that the condition of the tool is safe for use.
- Promptly report any unsafe condition to a Floor Coordinator.
- Not use any defective tools. Machine tools having deficiencies will be locked out and will not be returned to service until the problems have been corrected.
- Inform the Shop Coordinator, in advance, of the desire to machine toxic or hazardous material and shall not proceed until a review has been completed and authorization has been granted by the APS Operations Division (AOD) ES&H Coordinator.
- Shall clean up after each use of the User Shop.

Shop Coordinator

Shop Coordinators shall:

- Provide User Shop Orientation (refer to Appendix A).
- Maintain a User Shop Access List (refer to Appendix A) for the user shops they manage, or share in the management of. The list will include: 1) the names of authorized users who have received the User Shop Orientation and have completed the machine-specific skills assessments and 2) the specific tools that each person has been authorized to use.
- Post User Shop Access List at the entrance to and in the User Shop.
- Notify a Floor Coordinator of updates to User Shop Access list.
- Ensure that all machine tools are in a lockable area or have administrative controls to limit shop use to only authorized users.
- Conduct and record the results of monthly machine shop inspections (the LOM Shop Monthly Inspection Record or similar checklist shall be maintained, refer to Appendix A).

- Notify a Floor Coordinator in the planning stage of proposals to install machine tools (and other equipment and furnishings) in a user shop. (No equipment may be installed without an APS/ANL review and approval of equipment.)
- Inspect tools prior to their use at the CAT/XOR facilities.
- Remove any defective machine tools from service until the problems are corrected.
- If lead machining is allowed in the User Shop, manage lead certification, per APS/ANL procedures.
- Inform Floor Coordinator of requests to machine toxic materials in their User Shop and participate in safety review.
- Assist users in clean up procedures.

Floor Coordinator

Floor Coordinators Shall:

- Arrange for certification examinations to be administered by the Machine Shop Certifier.
- Forward notice of changes in authorized access to the APS User Administration Office if the shop access is to a shop controlled with APS-managed card readers.
- Update APS/ANL shop training records.
- When notified of an unsafe condition, ensure that the equipment is safely secured, ensure that the Shop Coordinator is notified, and arrange for a safety review.
- Coordinate lockout/tagout procedures for User Shops.
- Provide temporary badges to authorized users, as needed, to access the machine shop during off hours, weekends/holidays.
- Arrange safety reviews for machining hazardous materials.
- Perform safety checks for CAT/XOR personnel working after hours or during weekends/holidays.
- Arrange for APS/ANL review and approval of equipment that a CAT/XOR seeks place in a User Shop.
- Coordinate installation of machine tools (and other equipment and furnishings) in a User Shop.
- Arrange for an inspection, by the AOD ES&H Coordinator (or his designee), of each new machine to be added to the shop.
- Arrange for inspections of machinery to verify conformance with applicable standards.

- Ensure that APS-provided equipment meets ANL standards.
- Perform a general shop walk through as part of their monthly Life Safety Inspection.
- Arrange for maintenance on APS-provided machine tools and assist in installation, dressing or replacement of grinding wheels.
- Assist in clean up procedures in case of leak or spill.

CAT/XOR Director

The CAT/XOR Director shall

- Assign a Shop Coordinator and ensure that the Shop Coordinator listed in the APS CAT HR Database is kept up to date.

Machine Shop Certifier

The Machine Shop Certifier Shall:

- Administer and evaluate hands on and/or written tests to assess if a candidate has the ability to use specific machine tools in a proper, safe manner.
- Document the assessment of candidates providing the records to a Floor Coordinator.

AOD Division Director

The AOD DD Shall:

- Have line management responsibility for the implementation of this policy including the designation of a Machine Shop Certifier.

Authorization of Personnel

Earning Authorization

Anyone wishing to use a User Shop should have the appropriate training and experience for the tools they are seeking to use prior to requesting the access. Individuals who lack the appropriate skills and authorization will need to have their machining done for them by others.

To obtain the authorization to use specific machine tools in the User Shop, the candidate must receive a Shop Coordinator provided general orientation to the User Shop, and must pass machine-specific examination(s) to demonstrate that the

candidate can use the specified machine tools properly and safely. The examinations are administered by the Machine Shop Certifier (or designee) and can be arranged through the Floor Coordinators.

A person who has completed only the general orientation is allowed only access to the shop for the use of clamping devices and hand tools only.

A person is considered an authorized user if they have:

- completed the general orientation,
- been certified by the Machine Shop Certifier (or designee) that they can properly use specified machine tools properly, **and**
- had their name added to the shop-specific, machine-specific User Shop Access List by the Shop Coordinator, **and** this list has been posted on the outside entryway and inside the User Shop.

If the candidate does not pass the machine specific test(s), the Shop Coordinator can refer the candidate to training classes or the APS may help to locate training classes in the vicinity of Argonne.

Shop Access

The user's APS badge will allow the authorized user access to the LOM shop. When a person is added to the User Shop Access List, the APS User Administration Office will update the database that controls the LOM card readers.

Access to other User Shop areas controlled by the CAT/XOR will be managed by the appropriate Shop Coordinator.

Loss of Authorization

User Shop Orientation and User Shop Authorized Operator Certification expire after two years.

Any APS Floor Coordinator, CAT Director, CAT Safety Officer, or Shop Coordinator of the sectors assigned to a particular User Shop may suspend or revoke for cause a person's authorization to use that User Shop or the machine tools located therein. Defeating or circumventing installed guarding is, by itself, sufficient cause for revocation of a person's authorization to use a User Shop. Other causes for revocation include, but are not limited to, failing to use appropriate personal protective equipment, using unsafe shop practices, continuing to use tools improperly after being shown the proper usage, failing to clean up work area before leaving the shop, failing to use proper machine-shop etiquette, and allowing an unauthorized person access to the machine tools in the user shop.

If a person's authorization to use a User Shop is revoked, a Floor Coordinator will assure that the person's name is removed from **all** User Shop Access Lists at APS. Persons who continue to use a User Shops after losing their User Shop Authorization Certification may lose their access privileges to the APS.

User Shop Rules

- The User Shop Rules will be posted on the wall in the User Shop.
- Authorized Operators must adhere to the principles of the User Shop Rules to maintain authorization to use the User Shop.
- The User Shop Orientation contains a copy of the User Shop Rules.

Procedure for User Shop Access

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1 Introduction

1.1 Purpose

To reduce the risk of personal injury, adverse environmental impact, and damage to equipment, the APS has established controls for the use of the machine shops located in the Lab Office Modules (LOM) and User managed spaces.

1.2 Scope

This procedure defines the process by which a person seeking to use User Shop machine tools can become certified (i.e., confirmed that they have the knowledge and skills to safely operate the tool) and authorized to use the tools.

1.3 Applicability

This procedure shall be followed by any person, CAT member, General User, XOR member, or other person acting as an agent of the user, seeking to use a User Shop.

2. Hazardous Conditions - Precautions and Limitations

Failure to meet the requirements set forth in this policy and procedure may result in injury to personnel, damage to the environment, and/or damage to equipment.

3 Preparation - Prerequisite Actions

Persons wishing to use a User Shop should already have the appropriate skills before coming to the CAT/XOR facilities. (Individuals who lack the appropriate shop skills will need to have their machining done for them by others.) The CAT/XOR Shop Coordinator will provide experienced machine tool operators with a general orientation to the User Shop and a copy of the general APS machine shop rules. Completion of the shop orientation enables access to the shop for the use of clamping devices and hand tools only. To gain certification to use a particular machine tool, the testing by the Machine Shop Certifier must be arranged through a Floor Coordinator and access to the machine tool must be arranged in advance.

4 Acceptance Criteria

Authorization requires:

- Certification by APS assigned tester, the Machine Shop Certifier and
- Authorization by CAT Shop Coordinator.

5 Procedure Action Steps - Performance

Certification Procedure

- The candidate contacts the area Shop Coordinator to request authorization to use the shop and specific machine tools.
- The Shop Coordinator conducts an interview to assess the candidate's need for shop access and for the use of specific machine tools.
- If the Shop Coordinator decides that the candidate needs access to the shop, the shop Coordinator gives to the candidate the package "User Shop Orientation." The candidate reads the package and fills out the top section of the "User Shop Authorization Certification Form" (certification form).
- The Shop Coordinator provides the candidate with an orientation to the machine shop and notes the date on the certification form.
- For User Shop access only, no machine tool use, after completing shop orientation, the Shop Coordinator may add the candidate to the list of authorized users.

- If the Shop Coordinator decides that the candidate needs access to specific machine tools, the Shop Coordinator indicates, on the certification form, on which machines the candidate seeks to be certified.
- The Shop Coordinator signs and dates the certification form.
- If machine-specific certification is required, the candidate takes the certification form to the Floor Coordinator.
- The Floor coordinator will arrange for examinations to be administered by the Machine Shop Certifier.
- The Machine Shop Certifier administers the test for each machine specified by the Shop Coordinator, and writes down the result (passed/not passed) and the date of the test.
- The Machine Shop Certifier signs and dates the certification form
- The candidate takes the certification form to the Shop Coordinator.
- The Shop Coordinator adds the candidate's name to the User Shop Access List for those machine tools for which the candidate passed the certification test and updates the User Access List in the CAT HR Administration database.
- The Shop Coordinator posts the updated User Shop Access List on the shop entry and in the shop.
- The Shop Coordinator files the certification form and forwards a copy to the local Floor Coordinator.
- The Floor Coordinator updates the user training records
- If the authorized user has been granted access to a User Shop with an APS-managed card reader, the Floor Coordinator notifies the User Administration Office, and the User Office updates the card reader database to activate the User APS badge for the specific shop.

6 Closeout - Post Performance Activity

Daily Inspections

As appropriate to individual machines, the Shop Coordinator will ensure that a description of the guarding is attached to or posted near each machine tool. Before each use of the machine, the shop user will ensure that the guarding is in place.

Monthly Inspections

The Shop Coordinator will conduct monthly machine shop and machine tool inspections, using the attached LOM Shop Monthly Inspection Checklist, which incorporates machine guarding criteria.

Deficiencies

The Floor Coordinator will assist in lockout/tagout for deficient machines. Machine tools having deficiencies will not return to service until the problems have been corrected.

7 References – Source Requirements

Environment, Safety, and Health Manual - ANL - East

8 Appendixes

Appendix A

The orientation and record forms listed below are available through:

- the APS Facility/Safety and Training Web page
URL: http://www.aps.anl.gov/Safety_and_Training/Safety_Guides

and

- the searchable APS electronic document library
URL: <http://icms.aps.anl.gov/>.

1. **User Shop Orientation**
2. **User Shop Authorization Certification Form**
3. **User Shop Access List**
4. **LOM Shop Monthly Inspection Record**

User Shop Orientation

August 17, 2005

This orientation is intended for experienced machine-tool operators. By itself, this orientation will not provide the knowledge and experience required to use machine tools properly.

By reading, signing, and returning the attached signature page to the Shop Coordinator, you will have completed the User Shop Orientation. You will need additional machine-specific certification to become authorized to use the various machine tools in the User Shop.

No one is allowed to use a User Shop until they have been authorized to do so according to the requirements of this policy.

DEFINITIONS

- **User Shop:** Any location where machine tools are available to CAT/XOR personnel, including the shared, central pentagon LOM shops and CAT/XOR managed areas.
- **Shop User:** Any person who uses machine tools in a user shop.
- **Machine Tools:** Stationary, as opposed to hand-held, material forming tools.
- **Shop Coordinator:** Appointed by CAT/XOR management to represent/oversee its interest in user shop operations
- **Machine Shop Certifier:** An independent party appointed by the APS, to determine, via hands-on demonstration and/or written tests, if a shop user candidate has sufficient ability to use the machines in a proper, safe manner.

RESPONSIBILITIES

- Shop Users shall obtain the required authorization before they are permitted to use portable power tools or machine tools in a User Shop. Shop User shall report to their Shop Coordinator any unsafe usage of hand tools, portable power tools, or machine tools as soon as it comes to their attention.
- Hand tools and portable power tools shall be inspected before each use to check that the condition of the tool is safe for use. Defective tools must not be used. A Shop User shall inspect machine tools before each use of the tool to verify that the tool has the required guarding and is operating properly. Machine tools having deficiencies will be locked out by the Shop Coordinator or by an APS Floor Coordinator and will not be returned to service until the problems have been corrected.
- Injuries incurred from machine tools are most often caused by unsafe work practices or improper procedures. Poor training and inadequate supervision are often contributing causes. Using proper safeguarding on machines, good housekeeping in the work area, and good work habits help to reduce injuries and accidents.

AUTHORIZATION OF PERSONNEL

Only authorized Shop Users are allowed access to the User Shop for use of the machine tools located within the Shop.

List of Authorized Operators

The Shop Coordinator maintains a User Shop Access List of the names of personnel who have received the general orientation to the User Shop and of the machine tools in the shop that each person has been authorized to use. *A copy of this list is posted on the outside of the door to the User Shop and on the bulletin board inside the shop. For shops with APS supplied card readers, badge numbers are added by the User Office to the electronic lock database.*

Earning Authorization

It is not possible to provide in-depth training for every person who might want to use a User Shop. Consequently, most persons wishing to use these shops should already have the appropriate skills before coming to the CAT/XOR facilities. Individuals who lack the appropriate shop skills will need to have their machining done for them by others. The Shop Coordinator will provide experienced machine tool operators with a User Shop Orientation and with a copy of the User Shop Rules. Completion of the shop orientation enables access to the shop for the use of clamping devices and hand tools only.

To earn authorization to use specific machine tools in the User Shop, you must complete this orientation, and you must pass machine-specific examination(s) to demonstrate that you can use the specified machine tools properly and safely. These examinations are administered by the Machine Shop Certifier (or designee) and can be arranged through the Floor Coordinator. Obviously, some of the machine tools (e.g., lathe, milling machine) in the LOM Shop will require the operator to have more experience and greater in-depth knowledge than will others (e.g., pedestal grinder, sander). The judgment regarding whether or not you possess the experience to operate a particular machine tool properly will be made by the Shop Coordinator (or designee), who will then refer you to the Machine Shop Certifier (or designee) for machine-specific examination(s).

After you have completed the User Shop Orientation and have demonstrated to the Machine Shop Certifier (or designee) that you can use specified machine tools properly, the Shop Coordinator will add your name to the User Shop Access List in the User Shop, and you will be considered to be an authorized operator of the specified machine tools. Your APS User badge will allow you access to the LOM Shop.

The Shop Coordinator (or designee) for each of the CATs/XOR assigned to the LOM Shop is responsible for authorizing members of his/her CAT/XOR to use specified machine tools in the User Shop, following the procedure described above.

Loss of Authorization

Any APS Floor Coordinator or any CAT/XOR Director, CAT on-site manager, Safety Officer, or Shop Coordinator of the sectors assigned to the User Shop may suspend or revoke for cause a person's authorization to use that User Shop or the machine tools located therein. Defeating or circumventing installed guarding is, by itself, sufficient cause for revocation of a person's authorization to use a User Shop. Other causes for revocation include, but are not limited to, repeatedly failing to use appropriate personal protective equipment, repeatedly using unsafe shop practices, continuing to use tools improperly after being shown the proper usage, repeatedly failing to clean up work area before leaving the shop, and repeatedly failing to use proper machine-shop etiquette. Allowing an unauthorized person access to the machine tools in the User Shop is also a cause for revocation of privileges.

If a person's authorization to use the User Shop is revoked, that person's name will be removed from all User Shop Access Lists. Persons who continue to use a User Shop after losing their Authorization may lose their site access privileges to the APS.

USER SHOP RULES

The User Shop Rules are posted on the wall in the User Shop. You must adhere to these rules to maintain your authorization.

The safety standards set in the following should be also be observed:

- The safe use of tools is discussed in Chapter 7-12 in the ANL-E ES&H Manual,
- OSHA regulations that pertain to the safe use of hand tools, portable power tools, and other hand-held equipment can be found in 29 CFR 1910, Subpart P, and
- the safe use of machine tools/machine guarding is discussed in Chapter 7-15 in the ANL-E ES&H Manual.

Appendix A contains a copy of the LOM shop rules.

HOUSEKEEPING

As an authorized Shop User, you are responsible for maintaining your work area in a safe and reasonable condition. Plan and conduct your work in a manner that does not create tripping hazards, and complete the cleanup of your work area before you leave the shop.

DEMARCATED AREAS

Keep demarcated aisles free of equipment and materials. Maintain routes of egress clear at all times.

MACHINE GUARDING

Only specifically authorized personnel (e.g., machine-maintenance personnel, APS Floor Coordinators, and Shop Coordinators) may remove machine guards. The casual operator of the machine tool is not authorized to remove machine guards. *Machine guards shall not be removed unless necessary for repair, adjustment, oiling, or other maintenance, and must be replaced before the unit is put back in service.*

Before each use of a machine tool, the authorized Shop User will ensure that the machine guarding is in place. If a machine guard interferes with your work, report the problem to your Shop Coordinator or to an APS Floor Coordinator. *The use of machine guards does not mitigate the requirement for proper eye protection.*

MACHINE MAINTENANCE

All maintenance of APS-provided machine tools (i.e. pedestal grinder, sander, drill press, and lathe) in a LOM Shop must be arranged through the APS Floor Coordinator.

LOCKOUT/TAGOUT

Lockout/tagout procedures must be coordinated through an APS Floor Coordinator. Notify your Shop Coordinator if you feel you need to engage in User Shop activities that require lockout and tagout. Be sure to notify your Shop Coordinator immediately after any equipment that has been locked out.

WASTE

Dispose of wastes such as metal chips, oily rags, and other dirty rags in the containers provided. Use brushes to brush off chips and shavings from machines; do not use your bare hands or an air hose.

EMERGENCY POWER CUTOFF

You must know the location of the emergency power cutoff prior to operating any power equipment, and you must have ready access to this switch during operation of the equipment. *Learning about the locations of the emergency power cutoff will be included in the operator-authorization process for each machine tool in the User Shop.*

SPILL CONTROL

Shields or splash guards will be used on machines where cutting oils or coolants are used. To minimize the danger of slipping, floors around machinery should be kept dry and clear of refuse. In the event of leakage or a spill, use a spill-control absorbent immediately to control the leakage or spill, and then be sure to clean it up. You should also notify your Shop Coordinator or an APS Floor Coordinator in a timely fashion about the leakage or the spill – especially if you have been unsuccessful in conducting a thorough clean-up.

MACHINE CONTROLS

You must be aware of the various machine controls (start button, stop button, speed-change control) for each machine you are authorized to operate. These controls must be accessible and unobstructed at all times during operation of the equipment. *Learning about the locations and functions of the various machine controls will be included in the operator-authorization process for each machine tool in the User Shop.*

USING HAND TOOLS AND PORTABLE POWER TOOLS SAFELY

The misuse and improper maintenance of hand tools and portable power tools cause injuries to even "experienced" workers. Consequently, the following policies and procedures have been adopted to minimize the hazards associated with the use of such equipment at the APS. These guidelines apply to all use of hand tools and portable power tools by Shop Users while performing maintenance or installation activities at the APS.

Hand-Tool and Portable-Power-Tool Safety Training

If you have not had formal training in the use of common hand tools and portable power tools, attend ANL ESH Course #141 Portable Hand- & Power-Tool Safety.

Requirements for Portable Cord-Connected Electrically Powered Tools

All portable cord-connected electrically powered tools must be either double-insulated or grounded through a polarized grounding plug (3-wire, in most cases) **and** must be listed by Underwriters' Laboratories or another recognized listing agency. These electrically powered tools -- even if double insulated -- should be powered through GFCI-protected receptacles. However, **all cord-connected electrically powered hand-held tools must be powered through GFCI-protected receptacles** (see Chapter 9-2 in the ANL-E ES&H Manual).

- The ANL-E ES&H Manual requires only cord-connected electrically powered *hand-held* tools to be powered through GFCI-protected receptacles, but it is prudent to power all portable cord-connected electrically powered tools through GFCI-protected receptacles.
- *Portable* cord-connected electrically powered tools used in the vicinity of sinks and wet environments must comply with the grounding requirements of Title 29 CFR Part 1910, Subpart S. In addition, ***all portable cord-connected electrically powered tools used in the vicinity of sinks and wet locations must be powered through GFCI-protected receptacles*** (see Chapter 9-2 in the ANL-E ES&H Manual).

General Guidelines for the Safe Use of Hand Tools and Portable Power Tools

- Be sure to read, understand, and follow the instructions the manufacturer has provided for each tool you use.
- Use proper personal protective equipment.
- When tools are not in use, they should be stored in appropriate storage facilities.
- Electrically powered tools should be disconnected from the source of power before accessories are changed.

Routine Inspections of Portable Cord-Connected Electrically Powered Tools

All portable cord-connected electrically powered tools belonging to the CAT/XOR will be inspected upon receipt and at least annually thereafter. The ANL-E ES&H Manual requires annual inspections only for cord-connected electrically powered hand-held tools, but it is prudent to include all portable cord-connected electrically powered tools in this inspection program. If a portable electrically powered tool is found to be defective, it will be removed from service immediately to be repaired or discarded. If a portable cord-connected electrically powered tool passes the inspection tests (including proper operation), it will be labeled with the inspection date and the name of the inspector. Unless they are included in the ANL/APS portable power-tool inspection program mentioned above, all portable cord-connected electrically powered tools which belong to and are brought to the CAT/XOR facilities by a CAT/XOR member, collaborator, or General User – even if for only the duration of an experiment – must be appropriately inspected and labeled by the Shop Coordinator prior to their use at the CAT/XOR facilities. The following routine inspections shall also be conducted:

- Before each use, electrically powered portable tools and ancillary equipment such as cords, plugs, and GFCIs shall each be inspected for signs of chafing, cracking, wear, or other forms of faulty insulation; for evidence of faulty grounding conductors; for cracked plugs or receptacle housings; for bent or missing plug or connector pins; for presence of dead-front plugs, receptacles, or connectors; for missing, bent, or otherwise abused switches; for improperly functioning trigger locks (i.e., dead-man switches); and for the date of the tool's last inspection, where applicable.
- Any portable power tool that has an out-of-date inspection label (or no inspection label at all) should be inspected and tested by qualified personnel before it is used. *Consult your Shop Coordinator.*
- Signs of a defect shall require the retirement of the power tool/equipment from service and the return of the power tool/equipment to your Shop Coordinator for repair.
- While in use, power tools and ancillary equipment should be observed for improper operation, including any signs of overheating or excessive sparking. Indications of improper operation should be reported to your Shop Coordinator.

Controlled Materials

When planning on machining lead, please refer to the APS lead machining procedure.

Other toxic materials which will be reviewed on a case-by-case basis include:

Arsenic, Cadmium, Ceramic Fibers, Chromates, Manganese, Selenium, Silica, crystalline (quartz, cristobalite, tridymite), Tellurium, Vanadium, other materials of similar toxicity, organic solvents unless approved by the AOD ESH Coordinator.

If the CAT/XOR authorized personnel need to machine the above toxic items they must submit a plan for safety review to the Shop Coordinator. The Shop Coordinator and the Floor Coordinator will arrange for a safety review meeting to approve the operation. Machining Beryllium and Asbestos is prohibited.

REFERENCES

- 29CFR1910
- Chapter 7-12, Safe use of Tools, the *ANL-E ES&H Manual*
- Chapter 7-15, General Requirements for All Machines, the *ANL-E ES&H Manual*
- Chapter 9-2, Ground Fault Circuit Interrupters, the *ANL-E ES&H*
- Chapter 13.2, Compressed Gas Cylinders, the *ANL-E ES&H*

APPENDIX A

USER SHOP RULES

- Shop door must be propped open when working in the shop.
- Notify the Floor Coordinator before starting work in the shop after hours or during weekends/holidays.
- Machine tools and power tools shall be operated only by personnel trained and authorized to operate that equipment.
- Do not engage in horseplay.
- Plan each job well in advance and ensure that the proper tools are available; choose appropriate tools that will provide the best efficiency and maximum safety for the task at hand.
- Use the correct tool for the job. If the correct tool is not available or in proper working condition, inform your Shop Coordinator
- Tools must be kept in good working condition. Immediately report to your Shop Coordinator or to an APS Floor Coordinator all malfunctions and deficiencies in the User Shop.
- Proper Attire
 - Wear ANSI-approved safety eyewear with side shields whenever in the machine shop. Use appropriate head and face protection as required by working conditions.
 - Do not wear jewelry or loose fitting clothing while operating machines. Remove neckties, tuck in shirt tails, and roll up and secure shirt sleeves.
 - Sturdy leather shoes (safety shoes preferred) are required. Athletic shoes, sandals, etc., do not satisfy this requirement.
 - Restrain, (i.e., cover or tie back) long hair that could get caught in moving parts.
- Use only brushes, vacuum tools, or other special tools to clean debris from work pieces and machines. Do not use your bare hands to brush away chips and **DO NOT USE COMPRESSED AIR TO BLOW CHIPS AND DUST FROM WORK WHERE A BRUSH CAN BE USED FOR THIS TASK.**
- Compressed air shall not be used for cleaning clothing. The air jet tends to drive particles into the fabric where they can cause skin irritation.
- Do not tamper with or modify the "blow guns" that are commonly used in shop areas to dispense compressed air. The design of these blow guns is such that, for a specific inlet pressure, the outlet pressure is less than 30 psig so the stream of gas will not penetrate the skin.
- Use tongs or other remote-handling tools to keep hands away from pinch points and moving parts.
- As appropriate, use vises and clamps to hold work pieces.
- Do not manually adjust work pieces or use calipers to measure work pieces while the machine is running.

- Do not use the grinding wheels on the pedestal grinder in the LOM Machine Shop to grind non-ferrous materials (e.g., aluminum, brass, plastics, or wood).
- Contact the Shop Coordinator or an APS Floor Coordinator if you need to have a grinding wheel installed, dressed, or replaced.
- Proper machine guards must be in place on machine tools such as drill presses, lathes, grinders, sanders, and saws while these tools are being used. Do not remove or circumvent any machine guarding.
- Inspect tools before use.
 - Cutting tools must be kept sharp in order to operate efficiently and safely.
 - Before use, check the security of the head attachment on a hammer. Check that the handle is not loose or broken.
 - Do not use a chisel or other tool which has a mushroomed or spalled head.
 - All files shall be provided and used with proper handles.
- Tools must be used properly. Use hand tools for their intended use.
 - Do not hammer with a wrench.
 - Do not use screwdrivers or files for prying.
 - If a wrench is required, select a wrench of the proper size and type for the task at hand. If it is necessary to hit a wrench with a hammer or mallet, use a wrench designed for that purpose (i.e., a "striking wrench").
- If it is necessary to leave heated work unattended, "Hot Hazard" signs should be posted, and a barrier should be erected around the hot materials to protect passersby from accidental contact with the hot materials.
- Do not leave machines running unattended.
- Do not leave the work area without completing cleanup.
- Tools should be kept in a safe place. Tools should not be placed where they may cut or fall on someone, into a machine or where they may cause a tripping hazard. Sharp-edged or pointed tools should be sheathed or stored safely in tool boxes.

User Shop Authorization Certification Form

Building _____ Room/Column # _____

After reading the "User Shop Orientation," the undersigned certifies that: 1) he/she understands and will comply with the requirements and regulations either stated or referenced therein; and 2) he/she is competent to operate the following machines:

	Yrs. Experience	Last time used		Yrs. Experience	Last time used
Lathe			Band Saw		
Mill					
Drill Press					
Grinder					
Sander					

Signature: _____ Date: _____

Print Name: _____ Badge #: _____

To be completed by the Shop Coordinator: NOTE: Orientation expires after 2 years.

User Shop Orientation completed on _____.

Shop Access only _____ Authorized to machine lead _____

Machine Shop Certification required for the following machines:

Lathe Mill Drill Press Other: _____ Other: _____
 Grinder Sander Band Saw Other: _____ Other: _____

Shop Coordinator Signature: _____ Date: _____

Print Name: _____

To be completed by the Machine Shop Certifier: NOTE: Certification expires after 2 years.

General Safety Written Test	Passed / Not Passed	Date:
Lathe	Passed / Not Passed	Date:
Mill	Passed / Not Passed	Date:
Drill Press	Passed / Not Passed	Date:
Grinder	Passed / Not Passed	Date:
Sander	Passed / Not Passed	Date:
Band Saw	Passed / Not Passed	Date:
Other:	Passed / Not Passed	Date:
Other:	Passed / Not Passed	Date:
Other:	Passed / Not Passed	Date:

Machine Shop Certifier Signature _____ Date: _____

Print Name: _____

Please return this page only to the sector Shop Coordinator

