

| | | | |
|-----------|---|------------|---|
| PPPL | PRINCETON PLASMA PHYSICS LABORATORY ES&H DIRECTIVES | |  |
| | ES&HD 5008 SECTION 8, Chapter 13 ES&H Review of Procurements | | |
| Approved: | Date: 09/25/02 | Revision 1 | Page 1 of 10 |

CHAPTER 13 ES&H REVIEW OF PROCUREMENTS

13.1 INTRODUCTION

Almost all equipment, supplies, and construction activities can be hazardous to some degree. It is not uncommon for a product to have different degrees of hazard according to the circumstances of its use. A review and evaluation of all chemicals, items which could have an adverse affect on safety, health or the environment, and items pertinent to improving safety are necessary to:

- preclude the introduction of unnecessary hazards into the Laboratory environment.
- allow the Laboratory to meet the requirements of federal and state laws governing the use of toxic substances by employees.
- assure that equipment used is proper and safe for the job to be performed.

13.2 POLICY

13.2.1 Chemicals

A. All chemicals coming into the Laboratory, regardless of the source, shall receive the evaluation required by this chapter. For the purposes of this chapter, a chemical shall include substances in any form (gas, liquid, or solid), and shall include metals and alloys of a toxic nature which are to be melted, cut, ground, welded, soldered, etc. (e.g. beryllium alloys, lead, or cadmium-containing solders, etc.). For further information, refer to Section 8, Chapter 12, "Hazard Communication," for the nature of chemicals.

B. Procurement of chemicals may not proceed until an appropriate Material Safety Data Sheet (MSDS) has been reviewed by the Industrial Hygienist (IH). The MSDS must contain either a listing of hazardous components (by chemical name) or a statement to the effect that there are no hazardous components present. An MSDS, which contains neither or lists components as "trade secret" only, must be reviewed by the Environmental Restoration/Waste Management Division (ER/WM) to determine if the material can be disposed of properly. An inability to obtain either an MSDS or the appropriate information for an MSDS will result in the delay or cancellation of the requisition. Chemicals for which the manufacturer has determined that an MSDS is not required must be documented (refer to IH Directive 5008, Section 8, Chapter 12.)

13.2.2 Non-Chemicals

Procurement of items which could have a direct impact on safety and health of personnel, or that are to be used to provide protection from safety and health hazards shall be reviewed by IH or other cognizant personnel to ensure that proper precautions will be taken when using the item to avoid adverse effect. Items for which there is a lack of supporting information describing compliance with appropriate standards, or which do not meet those standards will have the procurement process slowed or canceled. Materials listed in Appendix A are examples of those items for which this review is required.

13.2.3 Contract Services

All contractual services for construction, alteration, or maintenance shall also be reviewed for safety impacts. Any materials brought on site by contractors which meet the definition of a chemical, as above, shall be reviewed by IH prior to the introduction of those materials on-site.

13.2.4 Implementation

IH shall coordinate the implementation of this Chapter and serve as the central point of contact for these environment, safety and health reviews.

13.3 RESPONSIBILITIES & PROCEDURES (SEE APPENDICES B & C)

13.3.1 Requisitioners and Cost Center Managers

Shall take the following actions for acquisitions covered by this Chapter:

- A. Complete the upper portion of Form 8.13-1 for chemical materials or Form 8.13-2 for non-chemical materials and oil-filled equipment. [Note: Forms are available on-line for electronic filing.]
- B. Forward the appropriate form to IH with the purchase requisition (if applicable).
- C. Ensure that a Form 8.13-1 or Form 8.13-2 is completed and approved by IH before obtaining materials or equipment by any means [purchase requisition, University stores, by personal purchase, credit card purchase, free samples, an open (Y) order, etc.].
- D. Ensure that an MSDS is available to IH with the Form 8.13-1 for the chemical being purchased.
- E. Provide additional information regarding the chemical and its use to Industrial Hygiene if available or upon request. This information could include: a written procedure, a completed Job Hazard Analysis (JHA), vendor supplied usage or operating instructions.

13.3.1.1 Reorder Approved

When the user has an approved Form 8.13-1 or 8.13-2 with the "Reorder Approved" block checked and initialed by IH, and when none of the information on the requisition review sheet has changed, then another Form 8.13-1 or 8.13-2 is not required. The requisitioner should forward a copy of the previously approved Form to Procurement with the requisition and the review sheet marked "Reorder Approved." If any of the conditions of use have changed, a new Form 8.13-1 or 8.13-2 is always required to be processed through IH. Stockroom items previously approved by the IH for disbursement from the C-Site Stockroom do not require Form 8.13-1 or 8.13-2 to place reorders.

Regardless of the source of chemicals, the user shall have an MSDS on hand in the work area prior to use of a chemical (refer to Chapter 12) and an approved Chemical Requisition Review Sheet (Form 8.13-1) on file.

13.3.1.2 Pre-Approved List

A list of commonly used chemicals shall be published and maintained by IH. The chemicals on this list are considered to be "pre-approved" and may be purchased without further approval forms or requirements. The requisitioner need only review the list to determine if the desired material is on it, and then indicate "pre-approved" on the requisition (if appropriate). [Note: This list is available on-line for electronic access.]

13.3.1.3 Non-Chemical Requisitions (see Appendix C)

In addition to steps A. through C. in paragraph 13.3.1 above, copies of supporting data, such as catalog information which specifically describes the item and its conformance to various standards (OSHA, ANSI, EPA, etc.) or provides additional information (e.g., on safety features, devices, or guards, or describes oil-filled equipment enclosures), shall be provided when required by IH or other cognizant personnel. Only the item, brand, and/or model specifically described is being reviewed; therefore, substitution for the item after approval will require reevaluation.

13.3.2 Responsible Line Managers (RLM) or Accountable Technical Individuals (ATI) is responsible for:

- A. Considering conducting a peer review as per procedure ENG-033 for new processes involving hazardous chemicals (including situations where a previously used hazardous chemical will be used in a new way) to aid in identifying previously unrecognized hazards and identifying the appropriate controls.
- B. Utilize the information gained from the peer review and other sources for input into a Job Hazard Analysis (JHA) as per procedure ESH-004.

13.3.3 Industrial Hygiene (IH) is responsible for the following:

- A. Reviewing requests for chemicals and supporting data, such as Material Safety Data Sheets (MSDS), to ensure that potentially hazardous items or services that could cause undue risk to the Laboratory, its employees, or equipment are not introduced without adequate safeguards.
- B. Suggesting the substitution of less hazardous compounds or processes, when possible.
- C. Obtaining an MSDS when none is available, or obtaining additional information when the MSDS is inadequate to judge the hazards for the chemical to be purchased, from the supplier.
- D. Perform a field inspection for planned uses of extremely or unusually hazardous chemicals prior to permitting use of the chemical.
- E. Forwarding the MSDS to ER/WM, when the chemical components are not specifically listed on the MSDS, for review and approval of the purchase with respect to potential disposal difficulties.
- F. Forwarding the Chemical Requisition Review Sheet and supporting information to the Environmental Engineer for review of ozone depleting or other environmentally hazardous materials. Ozone depleting materials must be approved by the Environmental Engineer as well as the Industrial Hygienist.
- G. Comparing materials which are to be used in Radiologically Controlled Areas (RCA) against the approved list supplied by ER/WM. Materials which are not on the list must be approved by ER/WM as well as IH.
- H. Completing the bottom section of the Chemical Requisition Review Sheet (Form 8.13-1), indicating approval or disapproval, any precautions to be followed, and signing the form.
- I. Forwarding the original to Procurement (if appropriate), a copy to the requisitioner, and a copy of review sheets along with related MSDS's for new toxic substances to be brought on site to Occupational Medicine.
- J. Notifying the Site Protection Division Head of the impending purchase of unusually hazardous materials such as flammable solids, pyrophoric or explosive materials.
- K. Notifying Health Physics of the purchase of Deuterium.
- L. Forwarding Non-Chemical Requisition Review Sheets (Form 8.13-2) to the cognizant individual for completion as appropriate.
- M. Maintaining, updating and periodically publishing the "Pre-Approved" List of chemicals to allow for simplified purchasing of commonly used, low hazard chemicals.

13.3.4 The Environmental Engineer is responsible for:

- A. Determining status of potential ozone depleting substances in accordance with the Clean Air Act (CAA).

- B. Recommending substitute products or processes for which more environmentally friendly materials are available.
- C. Reviewing contracts for service or other activity which involve ozone depleting substances to determine compliance with the CAA.

13.3.5 Other cognizant personnel are responsible for:

- A. Reviewing requests accompanied by Non-Chemical Requisition Review Sheets (Form 8.13-2) which apply to their area of specialization.
- B. Suggesting less hazardous substitute materials, equipment, or processes as appropriate.
- C. Completing the bottom section of the Form 8.13-2, indicating approval or disapproval and any comments or precautions to be followed.
- D. Forwarding the original to Procurement (if appropriate) and a copy to the requisitioner.

13.3.6 Procurement Division

- A. Procurement Personnel shall take the following actions for acquisitions covered by this Chapter when an approved Form 8.13-1 or 8.13-2 has been received:
 - 1. Chemical Requisitions
 - a. After award of purchase order, complete the Procurement section of the Chemical Requisition Review Sheet (Form 8.13-1) and forward it to IH. In cases where a requisition is submitted with a completed Form 8.13-1 previously approved for reorder, it should be forwarded to IH in lieu of a new form.
 - b. Obtain an MSDS from the vendor or manufacturer when required by IH.
 - 2. Non-Chemical Requisitions
 - a. After award of purchase order, complete the Procurement section of the Non-Chemical Requisition Review Sheet (Form 8.13-2) and forward it to IH.
 - b. Obtain IH approval prior to substituting brand, model, style, etc., of an item that has already been reviewed and approved.
 - c. Obtain certificates of proof test and conformance with standards (OSHA, ANSI, NEC, etc.) when required.
 - d. Requisitions for wood which has not been treated to be fire retardant shall only be processed when approved by the Head of Engineering and Technical Infrastructure, or by the Head of Environment, Safety & Health and Infrastructure Support when appropriate.
- B. If no Requisition Review Sheet was received with a Purchase Requisition for a chemical or materiel requiring a non-chemical review sheet, the purchase requisition shall be returned to the requisitioner with a cover letter indicating the cause of the return.

13.3.7 Materiel Control Division

A. Warehouse

Warehouse personnel shall notify Health Physics (HP) upon their receipt of radioactive materials and ionizing radiation producing equipment. Warehouse personnel shall notify Industrial Hygiene (IH) upon receipt of non-ionizing radiation producing equipment. Other notification for receipt of hazardous materials will be specified by IH on the Form 8.13.1 or 8.13.2. Cognizant personnel shall authorize the release of the material or equipment after review. In cases where the purchase order indicates an MSDS is required, Materiel Control may not release a chemical from Receiving unless an MSDS has been supplied or approval is obtained from IH. If material is received without the proper authorization, warehouse personnel will alert IH to the problem and will not release the material until authorized by IH.

B. Stockroom

Stockroom personnel shall obtain Chemical and Non-Chemical Reviews for all new products being added to the Stockroom inventory which fall under the scope of this Chapter. All persons withdrawing materials from the Stockroom will be notified of the availability of an MSDS when applicable.

13.3.8 Maintenance and Operations Division

This division shall obtain IH review and comment on all major construction projects (such as those contracted out) as determined by the Manager of Maintenance and Operations. They shall require that all construction contractors and subcontractors be familiar with and abide by all PPPL safety policies, procedures, and rules. For any activities where contractors or subcontractors will be bringing chemicals on site, copies of the MSDS's for these chemicals shall be provided to the IH at least 24 hours in advance.

13.3.9 Environmental Restoration/Waste Management Division (ER/WM)

ER/WM shall review any MSDS forwarded to them by IH due to lack of sufficient component listing or trade secret listing. Approval of the MSDS shall then be communicated to IH for further processing of the requisition. If analysis of the compound is required to determine components, requisitioner shall be responsible for the costs incurred for analysis before the chemical is brought on site.

13.4 REFERENCES

13.4.1 Orders of the Department of Energy

- A. DOE 231.1 Environment, Safety and Health Reporting
- B. DOE 420.1 Facility Safety
- C. DOE 440.1 Worker Protection Management for DOE Federal and Contractor Employees.

13.4.2 Occupational Safety and Health Administration - Title 29, Part 1910 and Part 1926 - Occupational Safety and Health General Industry and Construction Standards

13.4.3 Factory Mutual Engineering Corporation (FMEC) - Loss Prevention Data sheet 5-4/14-18 - Transformers

13.4.4 National Fire Protection Association (NFPA) - National Fire Codes

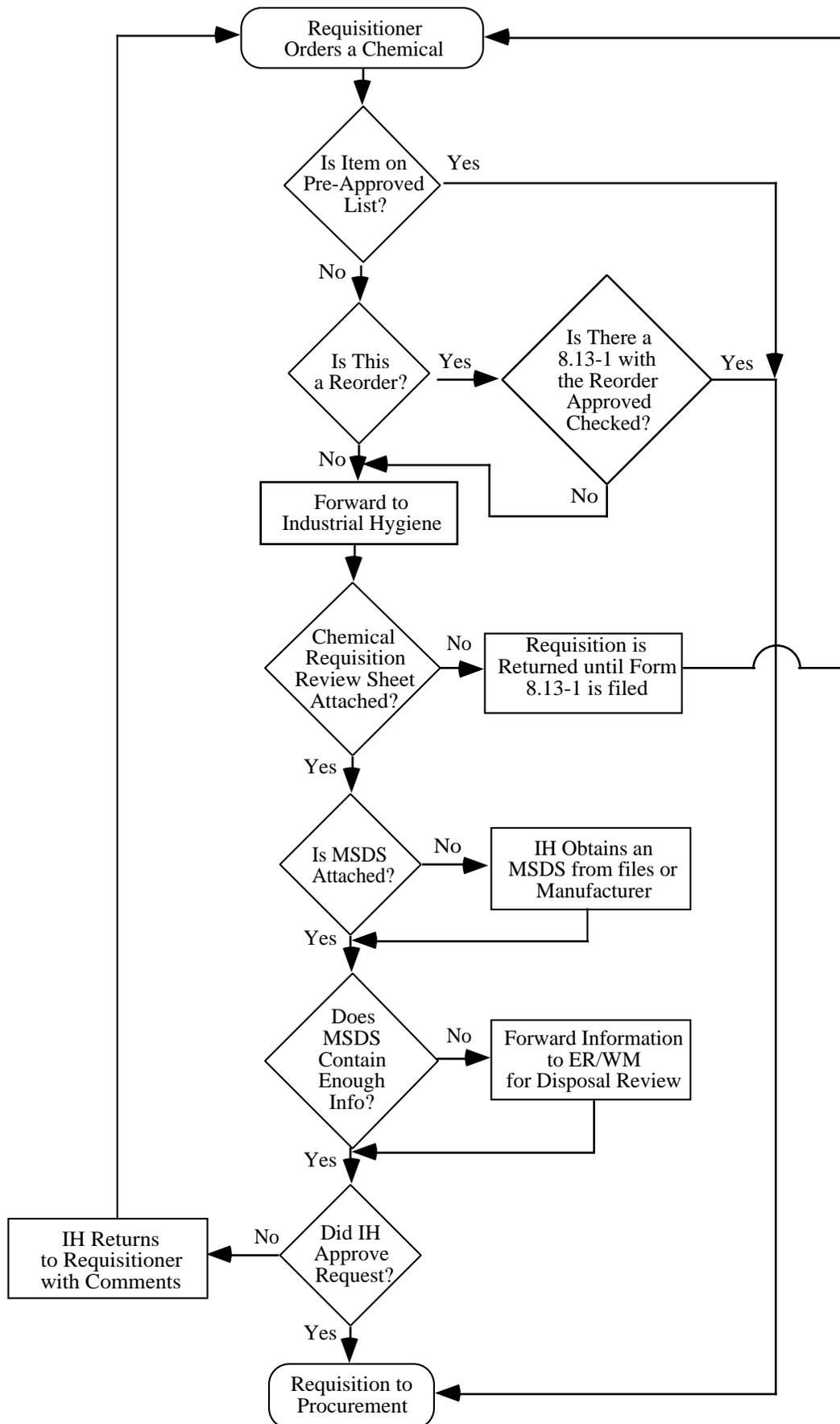
13.4.5 National Safety Council (NSC) - Data Sheet 1-598 - Flexible Insulating Protective Equipment for Electrical Workers

APPENDIX A

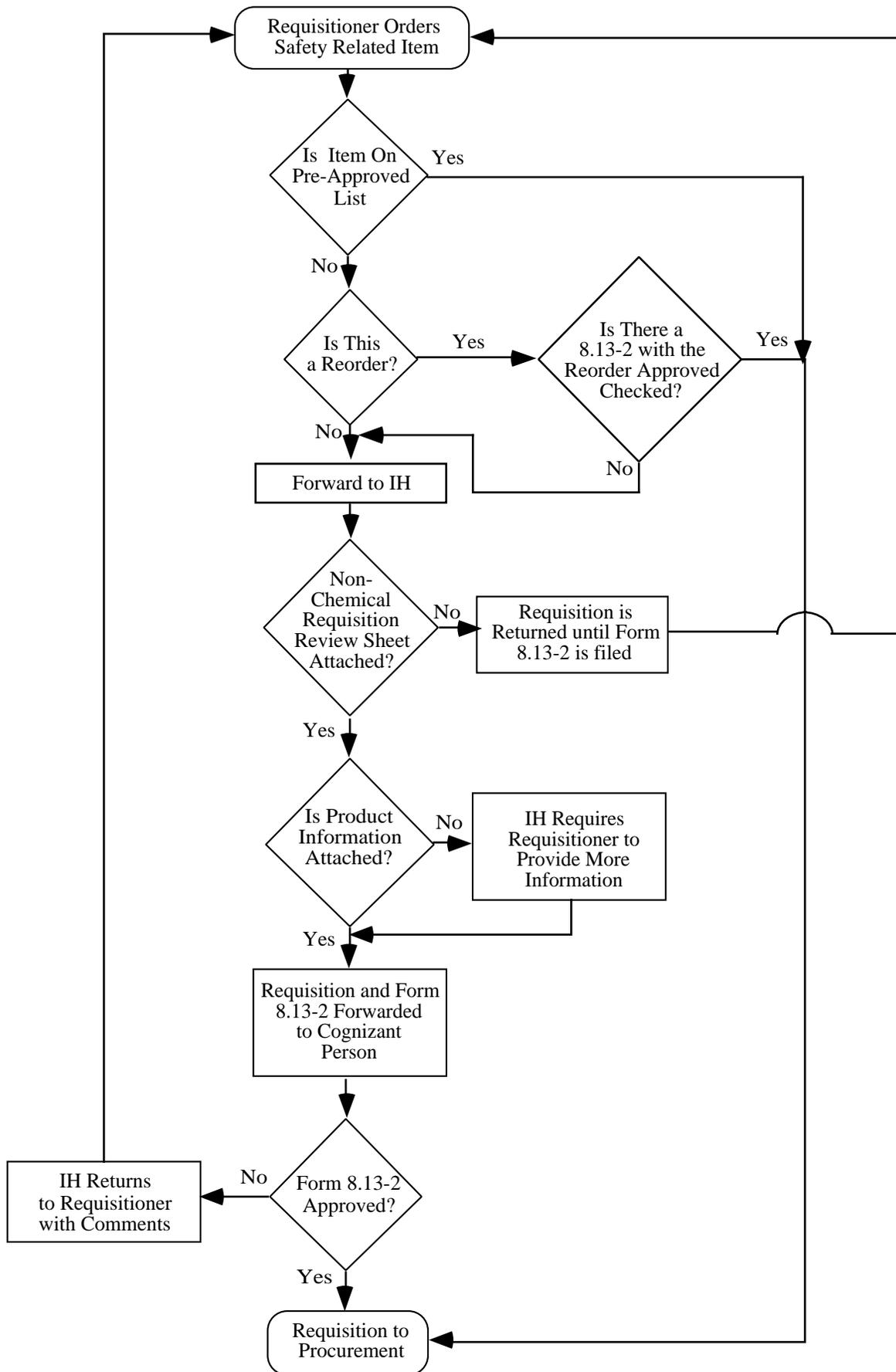
Categories of Non-Chemical Items which may have a direct impact on safety are listed below. This listing is not a comprehensive list and should not be used exclusively to determine the need for review. Questions as to the applicability of this Chapter for any item should be referred to IH for determination of status.

1. Fire Protection Equipment - (extinguishers, smoke/fire detectors, etc.)
2. Lifting Equipment and Devices - (hoists, slings, cranes, jacks, etc.)
3. Power Hand Tools - (drills, saws, power actuated tools, riveting tools, etc.)
4. Heavy Shop Equipment - (presses, saws, grinders, shears, etc.)
5. Ventilation Equipment - (exhaust systems, hoods, vents, booths, etc.)
6. Health Testing/Sampling Equipment - (explosive atmosphere detectors, oxygen deficiency detectors, etc.)
7. Personal Protective Equipment - (safety glasses, safety belts, gloves, etc.)
8. Respirators - (air purifying, self contained breathing apparatus, airline respirators, dust masks, etc.)
9. Ladders/Scaffolds - (portable or fixed)
10. Radioactive Materials or Radiation Producing Machines/Devices (Ionizing and Non-ionizing) (Microwave/RF equipment, Lasers, Calibration sources, etc.)
11. Pressure Vessels
12. Cryogenic Equipment
13. Personnel Safety Interlocks (Kirk - Key)
14. Electrical apparatus operating at voltages in excess of 600 volts which are not listed or rated by UL, IEEE, NEMA or ANSI as appropriate.
15. Personal protective equipment for electrical hazards (rubber gloves, mats, blankets, and hot sticks.)
16. Oil filled equipment or apparatus having a total free-fluid capacity and/or volume of three or more gallons.

Appendix B: Chemical Requisition Review Process



Appendix C: Non-Chemical Requisition Review Process



Princeton Plasma Physics Lab
CHEMICAL REQUISITION REVIEW SHEET



•THIS SPACE TO BE FILLED OUT BY REQUISITIONER•

Requested by: Ext.: Dept.: Date:

Fax Number: Email Address:

Type of Purchase: Requisition Number:

Item trade name and description:

.....

Number of Containers: Size of Containers:

How will this item be used?:

.....

Where will this item be used and/or stored? (Include room and cabinet number if applicable):

.....

Will this item be used in a Radiologically Controlled Area (RCA)?:

Is the MSDS available?: List MSDS ID Number (upper right corner or electronic MSDS ID):

•FORWARD TO INDUSTRIAL HYGIENE•

•THIS SPACE TO BE FILLED OUT BY INDUSTRIAL HYGIENE•
The Following Information Applies Only To The Use Specified Above

HAZARDS

- Flammable
- Corrosive
- Reactive
- High Toxicity
- Special Hazard

PERSONAL PROTECTIVE EQUIPMENT

- Apron
- Face shield
- Coveralls
- Gloves
- Safety Glasses
- Chemical splash goggles
- Respirator
- Other

SPECIAL REQUIREMENTS

- Air Monitoring
- Training
- Medical Surveillance
- Other

Comments: **Contact Industrial Hygiene, Ext. 2533 for Inspection Before Use**

.....

.....

All users of this material must be informed of the contents of this form, and must be trained on the MSDS and any applicable Job Hazard Analysis (JHA).

APPROVED
for use Specified

APPROVED ONLY
with Requirements
indicated above

REORDER APPROVED
IF no changes

NOT APPROVED
(see Comments above)

Signature:
(Cognizant Person)

INDUSTRIAL HYGIENE

.....
Approval Number Date

9/25/02...

•THIS SPACE TO BE FILLED OUT BY PROCUREMENT•
(If Applicable)

Requisition No. _____ Purchase Order No. _____

Name and phone number of supplier: _____

Princeton Plasma Physics Lab
NON-CHEMICAL REQUISITION REVIEW SHEET



•THIS SPACE TO BE FILLED OUT BY REQUISITIONER•

Requested by Ext. Dept. Date

Fax Number: Email:

Purchase Type Req. Number/Comments:

Item trade name, model and/or catalog number (Attach copy of catalog cut-sheet, brochure, etc.):
.....

Does this item meet appropriate safety standards? Yes No N/A

Which standards (OSHA, ANSI, NFPA, FM, etc.)?

Are all safety guards and features designed for safe use of this item part of the Purchase Requisition?

yes no If no, why?

Will this item require personal protective equipment? yes no

If yes, what type and will it be available for use upon receipt or installation of the item?
.....

Does this item contain:

Any chemical or chemical-like substances? yes no

Any source of ionizing or non-ionizing radiation? yes no

Oil-Filled electrical or mechanical equipment (>3 Gal.)? yes no

Please explain if you have checked "yes."

Where will this item be used?

How will this item be used?

•THIS SPACE TO BE FILLED OUT BY ES&H REPRESENTATIVE•

Comments:
.....
.....
.....

APPROVED **APPROVED ONLY** **REORDER APPROVED** **NOT APPROVED**
for use specified with Equipment/ If No Changes See Comments Above
Requirements indicated

Signatures:

(Cognizant ES&H Rep.)

(Approval Number)

(Date)

Industrial Hygiene

Electrical

Nuclear/Environmental

Industrial/Construction

Health Physics

Environmental

Fire & Life Safety

Mechanical

Other: _____

•THIS SPACE TO BE FILLED OUT BY PROCUREMENT•

Requisition No. _____ Purchase Order No. _____

Name and phone number of supplier: _____