



Section 6 - Standard Operating Procedures

Contents

A. STANDARD OPERATING PROCEDURES (SOPs)	2
B. SOP COMPONENTS	2
1. Process Identification	2
2. Chemicals and Hazards	2
3. Personal Protective Equipment (PPE)	2
4. Environmental / Ventilation Controls.....	6-2
5. Special Handling Procedures & Storage Requirements	6-2
6. Spill and Accident Procedures	6-2
7. Waste Disposal	6-2
8. Special Precautions for Animal Use (if applicable)	6-2
9. Approval Required	6-3
10. Decontamination	6-3
11. Designated Area	6-3
C. EXAMPLE SOPS	6-3
D. STEPS TO DEVELOP YOUR SOPS	6-3
1. Step 1 – Modify Existing SOPs	6-3
2. Step 2 – Identify Requirements.....	6-3
a. By Process	6-3
b. By Individual Chemical	6-4
c. By Class of Chemical	6-4
3. Step 3 – Complete the SOPs.....	6-4
4. Step 4 – File the SOPs	6-4
5. Distributing Copies of the SOPs	6-4
6. Update SOPs	6-4

Figures

Figure 6-1 Elements 1 - 8: Standard Operating Procedures (SOP) Form...3

A. STANDARD OPERATING PROCEDURES (SOPs)

Laboratories must provide employees with standard operating procedures (SOPs) to be followed when laboratory work involves the use of hazardous substances. The SOPs must address all requirements to perform the laboratory procedures safely. The requirements may either be given in a cover sheet (described below) attached to the laboratory protocol(s), or be integrated into a protocol.

Developing SOPs is also addressed in the EH&S *Laboratory Safety Standard Compliance* class, which is “required” for a laboratory’s Principal Investigator (PI) or laboratory supervisor/manager. Registration for this class is available online: <http://www.ehs.washington.edu/psotrain/corsdesc.shtm> or call EH&S at 206-543-7201 for more information. For advice in developing SOPs, call EH&S at 206-543-7388 or email ehsdept@uw.edu.

SOPs obtained from other organizations, and SOPs written in the form of step-by-step procedures, can be used as long as all the basic components are addressed and as long as the SOP accurately describes your laboratory’s safety requirements. If SOPs are provided by outside sources (such as equipment suppliers or another laboratory) or modified from a template, they must be carefully reviewed to ensure they describe your protective measures accurately, including describing specific types of PPE and control equipment you will use.

Feel free to attach additional information, such as Material Safety Data Sheets (MSDSs) or Safety Data Sheets (SDSs) to your SOP. Chemical-specific hazard information is available in the appendices of certain regulations (such as for arsenic and lead), the EH&S Web pages, other websites, and reference books.

B. SOP COMPONENTS

Descriptions of the components using a typical SOP design are shown in Figures 6-1 and 6-2 (below). An SOP template can be downloaded: <http://www.ehs.washington.edu/manuals/lsm/sop.docx>.

If a “particularly hazardous substance” is involved in the process, expanded requirements must be addressed. Particularly hazardous substances include substances that are extremely dangerous or toxic, are recognized carcinogens, or reproductive hazards. The list of substances meeting the criteria are available at: <http://www.ehs.washington.edu/manuals/lsm/lsmh.shtm>.

1. Process Identification

Identify the name of the process. This could include the chemicals or equipment involved, if that is needed, to differentiate the SOP from similar processes.

2. Chemicals and Hazards

Identify the stock chemicals, intermediates, final compounds, wastes involved, and such factors as use of catalysts or inert compounds. List the hazards, including physical hazards, such as heat, cold, and varied operating pressures which are involved in the process.

3. Personal Protective Equipment (PPE)

PPE includes gloves, lab coats, etc., and is the minimal method of protection if alternatives are available. However, when PPE is required, the PPE must be specified completely, such as the type of glove to be used and whether it is necessary for the entire process or at certain steps. A guidance document for PPE is available on the EH&S website: <https://www.ehs.washington.edu/fsosurveys/ppetool.docx> and PPE is described in this manual in Section 5.B Employee Health and PPE.

Figure 6-1 Explanation of Elements 1 – 8: Standard Operating Procedures (SOP) Form



Hazardous Chemicals SOP Template

[Enter text in the highlighted words in italics to include specifics for your laboratory.]

Note: Enter your specific chemical name or chemical class name in any "chemical" field and click elsewhere. All other "chemical" fields will then be populated with your specific chemical or chemical class name.

Standard Operating Procedures for <i>[chemical]</i>	
1. Chemicals/Hazards	<p><i>[Obtain specific chemical hazard information from SDS/MSDS.]</i></p> <p>Chemical: <i>[xxx]</i></p> <p>CAS number: <i>[xxx]</i></p> <p>Routes of exposure: <i>[xxx]</i></p> <p>How exposure might occur: <i>[xxx]</i></p> <p>Target organs: <i>[xxx]</i></p> <p>Signs/symptoms of exposure: <i>[xxx]</i></p>
2. Process	<p><i>[Describe or attach what is being done with chemical, including specific laboratory procedures and quantities used.]</i></p> <p>[➡ Click here to enter text ⬅]</p>
3. Preparation for Use	<p>See EH&S Laboratory Safety Manual, Section 2 for additional guidance.</p> <ul style="list-style-type: none"> • Purchase the smallest amount of <i>[chemical]</i> feasible for specific tasks, or purchase <i>[chemical]</i> diluted to the concentration for use. • Provide hazardous chemical and specific SOP training to personnel working with <i>[chemical]</i> and any other personnel authorized or required to be in the laboratory or shared space during work with the chemical. • Enter <i>[chemical]</i> into MyChem inventory, the online UW chemical inventory system. Attach SDS/MSDS in the process. • Ensure container is appropriately labeled according to UW Guidelines. <p>Special procedures: <i>[i.e., Are procedures needed because of agent volatility or if agent readily permeates PPE?]</i> [➡ Click here to enter text ⬅]</p> <ul style="list-style-type: none"> • Determine appropriate cleaning method(s) for <i>[chemical]</i>. Ensure supplies for cleaning/decontamination, such as <i>[cleaning solution]</i> are readily available. • Purchase or assemble supplies for a spill cleanup kit for <i>[chemical]</i>. Ensure the kit is maintained, anticipated users are trained in its use and the kit is readily available in the laboratory.
4. Environmental/ Ventilation Controls	<p>Preparation of and [➡ Click here to enter text ⬅] work with <i>[chemical]</i> will be performed in a [Select ventilation control from dropdown].</p>
5. Personal Protective Equipment (PPE)	<p>The following PPE will be worn when working with <i>[chemical]</i>: <i>[Customize list]</i></p> <ul style="list-style-type: none"> • One pair of re-useable butyl or nitrile gloves, or one to two pairs of disposable, powder-free nitrile gloves (minimum 6 mil thickness) [manufacturer and item #] • Safety glasses with side shields or, if working with a volatile agent, chemical safety goggles

	<ul style="list-style-type: none"> • Laboratory coat with buttoned front, long sleeves, and elastic or knit cuffs. Wear long pants or long skirt, and fully closed shoes. • If splash or exposure to vapors is possible, wear face protection, such as a face shield, and an impermeable apron with sleeves. • Respiratory protection may be needed if dust, aerosol or vapor hazard is present and work is conducted outside of the fume hood. If any procedure may pose an external hazard it should be eliminated or strictly isolated. If a potential exposure hazard cannot be eliminated, please contact the EH&S Respiratory Protection Program administrator to discuss respiratory protection or to enroll in the program. Program enrollment includes medical evaluation, training and fit testing for an appropriate respirator. For information see EH&S Respiratory Protection Program or email uwresp@uw.edu. <p>Gloves will be changed immediately if contaminated, torn, or punctured. Laboratory coats will be laundered if soiled or chemicals are spilled on them.</p>
<p>6. Special Handling Procedures & Storage Requirements</p>	<p>HANDLING <i>[Customize list]</i></p> <p>Work with [chemical] should only be done when there is someone else available to assist with procedures or accidents if needed.</p> <p><u>Weighing and Prep:</u></p> <ul style="list-style-type: none"> • For weighing or use, transport [chemical] from the storage area to [Select ventilation control from dropdown] in a labeled, sealed, non-breakable secondary container. Always remove [chemical] from its secondary container in a [Select ventilation control from dropdown] in order to safely vent any accumulated vapor. • All weighing and preparation of [chemical] will be performed over plastic-backed absorbent pads in a [Select ventilation control from dropdown]. Pads will be disposed of immediately upon contamination and after completion of tasks and labeled as 'hazardous waste'. • Wear one pair of re-useable butyl or nitrile gloves, or one to two pairs of disposable, powder-free nitrile gloves (minimum 6 mil thickness) for all procedures involving preparation and handling of [chemical]. • Change gloves after each use, or immediately when torn, punctured, or contaminated. Wash hands thoroughly. <p><i>[Describe how [chemical] will be weighed and prepared.]</i></p> <p>[➡ Click here to enter text ⬅]</p> <p><u>Use</u></p> <ul style="list-style-type: none"> • Only use [chemical] in designated areas [➡ Click here to enter text ⬅]. Store and/or label [chemical] so it will only be handled by those trained to use it. • If injecting or aspirating [chemical], use only needle locking (Luer-Lock type) syringes or disposable syringe units. • Do not work with [chemical] near sources of flame or ignition. • A sharps container will be in the immediate vicinity for safe sharps disposal. • Dispose of [chemical] appropriately and empty containers before they are removed from [Select ventilation control from dropdown].

	<ul style="list-style-type: none"> • Clean the [Select ventilation control from dropdown] upon completion of tasks with [cleaning solution]. • Clean all contaminated surfaces with [cleaning solution] and dry. • Place all contaminated disposable items in appropriate laboratory waste for disposal. • Non-disposable/re-usable utensils, glassware, and other surfaces contaminated with [chemical] must be decontaminated at the end of the laboratory work session. Complete this inside [Select ventilation control from dropdown] before removing any of the items. • When work completed, remove gloves and wash hands with soap and water. <p>STORAGE</p> <ul style="list-style-type: none"> • [chemical] will be stored in [select storage container from dropdown] in [room #]. • Keep away from heat, light, air, flames, and sources of ignition • Keep segregated from [incompatible chemical groups]; check chemical incompatibility chart. • Store [chemical] in labeled, sealed, non-breakable secondary container within storage area if potential for disturbance or breakage exists. <p>TRANSPORT</p> <ul style="list-style-type: none"> • [chemical] will be transported in labeled and sealed non-breakable secondary container.
<p>7. Spill and Accident Procedures</p> <p><i>[Specific cleaning and waste disposal procedures must be determined.]</i></p>	<p>Chemical spills must be cleaned up as soon as possible by properly protected and trained personnel. All other persons should leave the area. Spill response procedures must be developed based on the chemical and potential spill or release conditions. Clean up spills using contents of the laboratory spill kit. Do not attempt to clean up any spill if not trained or comfortable. Evacuate the area and call 911 on campus phone for help. If the spill is out of control, call 911. If a person is injured, exposed or suspected of being exposed, call 911.</p> <p>Follow EXPOSURE PROCEDURES (in section 8 below).</p> <p>Spills inside a fume hood or approved containment:</p> <ol style="list-style-type: none"> 1. Close hood sash, cordon off area 2. Notify supervisor 3. Contact EH&S 206-543-0467 or call 911: If you need advice or assistance, call EH&S during business hours (M-F/8-5); outside business hours, call 911 and tell them that “a [chemical] spill has occurred.” 4. Personnel must wear a lab coat or smock, safety goggles, one pair of non-disposable nitrile or butyl gloves (minimum 12 mil thickness), Silver Shield gloves, or two pairs of disposable nitrile gloves (minimum 6 mil thickness each) when cleaning up spills. 5. Liquids: Wipe up spilled liquids with absorbent pads 6. Powders: Gently cover powder spill with wetted paper towels or absorbent pads to avoid raising dust and then wipe up. 7. Clean the spill area thoroughly with [cleaning solution] followed by clean water; dry thoroughly.

8. If spill is extensive within the containment, clean all interior surfaces after completion of the spill cleanup.
9. Double bag all waste in plastic bags labeled with the 'contents' and store in fume hood away from incompatible chemicals or procedures. Submit request to EH&S for waste pickup.

Small Spills outside of containment:

1. Personnel must wear a lab coat or coveralls with closed front, safety goggles, shoe covers as needed, and one pair of non-disposable nitrile or butyl gloves (minimum 12 mil thickness), Silver Shield gloves, or two pairs of disposable nitrile gloves (minimum 6 mil thickness each) when cleaning up spills.
2. If needed, wear an N95 or equivalent respirator for either powder or liquid spills where airborne powder or aerosol is or has been generated. Spills of volatile agents require the use of an appropriate combination particulate/chemical cartridge-type respirator. Assess the volatility of the agent. Please contact the EH&S Respiratory Protection Program administrator to discuss respiratory protection or to enroll in the program. Program enrollment includes medical evaluation, training and fit testing for an appropriate respirator. For information see [EH&S Respiratory Protection Program](#) or email uwresp@uw.edu.
3. **Liquids:** Wipe up spilled liquids with absorbent pads
4. **Powders:** Gently cover powder spill with wetted paper towels or absorbent pads to avoid raising dust and then wipe up.
5. Clean the spill area thoroughly with detergent solution followed by clean water.
6. Double bag all waste in plastic bags labeled with the contents. Submit request to EH&S for waste pickup.

Large spills outside of containment:

1. Evacuate all personnel from the laboratory and restrict access.
2. As soon as possible, report the spill by notifying EH&S **206-543-0467** during business hours (M-F/8-5); outside business hours: call 911; tell them that "a spill has occurred, and that you need help managing the spill." EH&S will contact a spill cleanup contractor. Notify supervisor.
3. Be prepared to provide the following information:
 - Name and phone number of knowledgeable person that can be contacted
 - Name of agent spilled, concentration and amount spilled, liquid or solid type spill
 - Number of injured, if any (refer below to EXPOSURE PROCEDURES)
 - Location of spill

This information should also be reported to the Emergency Department (ED) after a potential exposure.

4. **Only if staff are trained, have the proper PPE and are comfortable with cleaning up the spill, may they proceed to clean it up.** Personnel must wear lab coat or coveralls with closed front, safety goggles, shoe covers as needed, and two pairs of nitrile gloves or one pair of non-disposable nitrile

	<p>or butyl gloves (minimum 10 mil thickness) or Silver Shield gloves when cleaning up spills.</p> <ol style="list-style-type: none"> 5. Wear an N95 or equivalent respirator when cleaning large spills. Spills of volatile agents may require the use of an appropriate combination particulate/chemical cartridge-type respirator. Assess the volatility of the agent. Please contact the EH&S Respiratory Protection Program administrator to discuss respiratory protection or to enroll in the program. Program enrollment includes medical evaluation, training and fit testing for an appropriate respirator. For information see EH&S Respiratory Protection Program or email uwresp@uw.edu. 6. Liquids: Wipe up spilled liquids with absorbent pads 7. Powders: Gently cover powder spill with wetted paper towels or absorbent pads to avoid raising dust and then wipe up. 8. Clean the spill area thoroughly with detergent solution followed by clean water. 9. Double bag all waste in plastic bags 'labeled with the contents'. Submit request to EH&S for waste pickup. <p>Any spill incident requires the involved person or supervisor to complete and submit the Online Accident Reporting System (OARS) form within 24 hours (8 hours if serious injury or hospitalization) of the incident to EH&S.</p> <p>For questions on spill cleanup, contact EH&S spill consultants at 206-543-0467.</p>
<p>8. EXPOSURE PROCEDURES In Case of Emergency</p>	<ol style="list-style-type: none"> 1. Provide First Aid Immediately <ul style="list-style-type: none"> • For inhalation exposure: move out of contaminated area; get medical help • For sharps injury (needle stick or subcutaneous exposure): scrub exposed area thoroughly for 15 minutes using warm water and sudsing soap. • For skin exposure: use the nearest safety shower for 15 minutes; stay under the shower and remove clothing; use a clean lab coat or spare clothing for cover-up. • For eye exposure: use the eye wash for 15 minutes while holding eyelids open. 2. Get Help <ul style="list-style-type: none"> • Call 911 or go to nearest Emergency Department (ED); provide details of exposure: <ul style="list-style-type: none"> ○ Agent ○ Dose ○ Route of exposure ○ Time since exposure • Bring to the ED the SDS/MSDS and this SOP • Notify your supervisor as soon as possible for assistance • Secure area before leaving; lock doors and indicate spill if needed 3. Report Incident to Environmental Health & Safety <ul style="list-style-type: none"> • Notify EH&S immediately after providing first aid and/or getting help <ul style="list-style-type: none"> ○ During business hours (M-F/8-5) call: 206-543-7262 ○ After hours call: 206-685-UWPD (8973) to be routed to EH&S staff on call

	<ul style="list-style-type: none"> For all incidents and near misses, the involved person or supervisor completes and submits the UW Online Accident Reporting System (OARS) form within 24 hours (8 hours if serious injury or hospitalization).
9. Waste Disposal and Cleaning	<p>Cleaning</p> <ul style="list-style-type: none"> Wipe down work space surfaces after completion of tasks with [cleaning solution]. Replace absorbent pads after completion of tasks or immediately if contaminated. <p>WASTE COLLECTION AND DISPOSAL</p> <p>Manage chemical and hazardous chemical waste separately from other waste streams such as biohazardous waste. Never autoclave chemical waste since it can produce hazardous chemical vapors, aerosols, and explosive reactions. According to the APS 11.2, the University of Washington Environmental Health and Safety Department has all responsibility for collection of hazardous waste for the University, all its campuses, and offsite locations. This means that you cannot contract with an outside vendor to collect your waste. Collect and dispose of chemical waste as detailed below.</p> <p>Can this chemical be treated and disposed of into the sanitary sewer? If “YES”: proceed to item 1 below If “NO”: proceed to item 2 below</p> <p>1. Chemical Waste Treatment and Disposal [Describe waste chemical treatment procedure if applicable. Contact EH&S Environmental Programs Office at 206-616-5835 or chmwaste@uw.edu for waste treatment procedures and questions.]</p> <p>2. Chemical Waste Collection</p> <p>Chemical Waste Collection rules:</p> <ul style="list-style-type: none"> Accumulate waste in a sturdy, [compatible container] with a screw-top lid Label with EH&S Hazardous Waste label that includes chemical name(s), PI name, and room number (label template available for download). Hazardous waste labels are also available for free from Campus Locations. Leave some headspace in container for temperature and vapor pressure changes Store container in secondary containment to contain spills and leaks Place container in a controlled area; not in hallways or areas of traffic Stay under ‘maximum accumulation limit’ Do not combine with other types of waste <p>Go online to schedule a One-Time Pickup or a Routine Chemical Waste Collection . Forms can also be printed out from the website and faxed, mailed, or sent in via email to chmwaste@uw.edu.</p>

		3. Contacts	
		For questions regarding chemical waste treatment, visit the EH&S Treatment Protocols website. For questions regarding chemical and hazardous chemical collection, visit the EH&S Hazardous Chemical Waste website or call 206.616.5835. Contact numbers for hazardous waste technologists are listed at webpage .	
10. Special Precautions for Use of [chemical] in Animals (if applicable)	Use of [chemical] in animals will be documented and approved by IACUC. [Give detailed procedures for safely completing tasks and any special disposal requirements.] [➡ Click here to enter text ⬅]		
Particularly Hazardous Substance Involved?		__ YES:	Blocks #11 to #13 are Mandatory
		__ NO:	Blocks #11 to #13 are Optional.
11. Approval Required	All staff working with [chemical] must be trained on this SOP prior to starting work. They must also review the [chemical] SDS/MSDS, and it must be readily available in the laboratory. All training must be documented and maintained by the PI or their designee.		
12. Decontamination	All surfaces and non-disposable equipment will be decontaminated with [cleaning solution].		
13. Designated Area	All work with [chemical] must be done in a designated laboratory, work space and [Select ventilation control from dropdown]. This work will be conducted in [room #]		
Name: (PI or Lab Manager)		Title:	
Signature:		Date:	

[Laboratory Name]		
Documentation of SOP Training		
Standard Operating Procedure for [chemical]		
Name	SOP Training Date	Signature
Click here to enter name.	Click here to enter date.	
Click here to enter name.	Click here to enter date.	
Click here to enter name.	Click here to enter date.	
Click here to enter name.	Click here to enter date.	
Click here to enter name.	Click here to enter date.	
Click here to enter name.	Click here to enter date.	
Click here to enter name.	Click here to enter date.	
Click here to enter name.	Click here to enter date.	
Click here to enter name.	Click here to enter date.	
Click here to enter name.	Click here to enter date.	
Click here to enter name.	Click here to enter date.	
Click here to enter name.	Click here to enter date.	
Click here to enter name.	Click here to enter date.	
Click here to enter name.	Click here to enter date.	
Click here to enter name.	Click here to enter date.	
Click here to enter name.	Click here to enter date.	
Click here to enter name.	Click here to enter date.	
Click here to enter name.	Click here to enter date.	
Click here to enter name.	Click here to enter date.	
Click here to enter name.	Click here to enter date.	
Click here to enter name.	Click here to enter date.	
Click here to enter name.	Click here to enter date.	
Click here to enter name.	Click here to enter date.	

4. Environmental / Ventilation Controls

Describe engineering controls to be used to minimize exposures, including fume hood, glove box, snorkel, or local exhaust ventilation systems. Describe ways to verify that the fume hood and other control system(s) are operating correctly, before using hazardous chemicals.

Provide additional details if “particularly hazardous substances” (highly toxic or dangerous chemicals, carcinogens, reproductive toxicants, or select toxins) are used. Refer to Appendix H for definitions and a partial list of “particularly hazardous substances.” These details should address using specific containment device(s), such as fume hoods or glove boxes.

5. Special Handling Procedures & Storage Requirements

Describe administrative controls, such as transportation in secondary containment within or outside the laboratory space, purchase of pre-formulated liquids instead of powders to be weighed and prepared. If not specified in general laboratory rules, identify procedures, such as keeping the fume hood sash as low as possible, hygiene practices (such as hand washing), and procedures for removal and disposal of contaminated PPE. Identify the best practices that would be used to minimize accidents, such as placing temporary signs warning of hazards when personnel may be absent.

Specify if there are “limits” to the amount of reactants during the process. This also provides guidance for chemical purchases. For example, purchase the smallest quantity necessary whenever possible. Describe storage requirements, such as the use of secondary containment or storage in locked cabinets.

*If “particularly hazardous substances” will be used,
please consider restricting non-essential personnel from the area.*

6. Spill and Accident Procedures

Describe how spills or accidental releases should be handled and by whom. Provide guidance as to limited capabilities, such as a spill of 100 ml in a fume hood may be easily handled by staff, whereas a spill of 10 ml outside the hood may not be safely handled.

7. Waste Disposal

Describe waste disposal procedures for all wastes. Be aware that many laboratory accidents happen from inadvertent disposal of incompatible wastes into the same waste container, so ensure that different waste streams are identified where appropriate. This includes describing procedures to neutralize or treat wastes to make handling safer or to reduce the amount of hazardous waste. EH&S has preferred treatment options on the web page concerning waste minimization <https://www.ehs.washington.edu/epohazreduce/index.shtml>.

Provide additional details if “particularly hazardous substances” (highly toxic or dangerous chemicals, carcinogens, reproductive toxicants, or select toxins) are used. Refer to Appendix H for definitions and a partial list of “particularly hazardous substances.” These additional details should address additional procedures for decontamination and safely handling contaminated waste materials.

8. Special Precautions for Animal Use (if applicable)

Annotate “N/A” if no animal exposure is involved. If chemicals are being administered to animals, describe how employees should protect themselves from contaminated animals and

animal waste. Include information about restricted access, administration of the chemical, aerosol suppression, protective equipment, and waste disposal.

9. Approval Required

Describe any requirements for obtaining authorization before being allowed to perform the procedure, operation, or activity. An example could be that a worker must have training documented before performing a certain procedure for the first time. Other required authorizations could include completing a medical examination before using a respirator when performing procedures involving certain hazardous substances (e.g., lead dust, pathological organisms). Authorizations are required before a person can independently perform a process using a particularly hazardous substance. Maintain written documentation with the SOP.

10. Decontamination

Describe decontamination procedures, including chemical decontaminant handling, for equipment meant to be reused.

11. Designated Area

Identify where the particularly hazardous chemicals may be used.

C. EXAMPLE SOPS

Example SOPs are available on the EH&S website:

<http://www.ehs.washington.edu/manuals/lsm/examplesoplincs.shtm>. If used by your laboratory, these examples must be modified and customized as necessary to make them specific to your laboratory conditions. If your laboratory generates an SOP and would like to make it available to other labs, please attach an electronic copy to an email addressed to ehsdept@uw.edu.

D. STEPS TO DEVELOP YOUR SOPS

To develop your laboratory SOPs, EH&S suggests the following steps:

1. Step 1 – Modify Existing SOPs

EH&S recommends you review and modify any generic SOPs that pertain to your laboratory. This allows you to become familiar with the required elements (as described above in Figures 6-1 and 6-2).

2. Step 2 – Identify Requirements

Identify if any particularly hazardous substances (see Appendix H) are in use in your laboratory, and identify which way of writing your SOPs will best cover your laboratory's chemicals or processes. SOPs can be written in one or more of the following ways:

a. By Process

By process, such as distillation, peptide synthesis, or gel electrophoresis.

Safety requirements could be noted, either by integrating them into the steps in the process or by using a "cover sheet" of safety requirements, for the process. If hazardous

intermediates are created, carefully consider if there are specific precautions which should be noted, such as how to tell if a release or spill occurs, what symptoms may develop if a person is exposed, and any special precautions for spill clean-up and waste disposal.

b. By Individual Chemical

By each individual chemical, such as acrylamide, formaldehyde, or toluene.

This approach may be most useful if a limited number of hazardous substances are used in the laboratory or if using a particularly hazardous substance.

c. By Class of Chemical

By class of chemicals, such as mineral acids, organic solvents, or peroxidizable chemicals.

This approach may be most useful if a number of similar procedures are performed using similar substances.

3. Step 3 – Complete the SOPs

After modifying generic SOPs and identifying which ways of writing are most useful in your situation, continue by developing SOPs for processes, chemicals and chemical classes not previously written. Ensure all elements of the SOPs are addressed if the SOP pertains to chemicals considered particularly hazardous (those that have a high degree of acute toxicity, those that are especially dangerous or are select carcinogens or reproductive toxins, such as those listed in Appendix H and similar substances).

4. Step 4 – File the SOPs

After completing the SOPs, file the master copies so that everyone can find them. If they are not physically filed in the laboratory-specific information section of your CHP, the laboratory-specific information pages should be annotated to identify where the SOPs are physically located.

5. Distributing Copies of the SOPs

If you provide working copies of your SOPs to your staff, keep track of how many copies you made and distributed. When you make changes, you will need to assure that the up-dated SOPs reach all those who perform the procedures.

If you develop an SOP which you believe can be used by other departments in the University, please forward a copy electronically to the University's Chemical Hygiene Officer at ehsdept@uw.edu.

6. Update SOPs as Needed

If you note changes to your process or chemical use, which impact an SOP or recognize improvements that can be made to the SOP, update it as soon as it is convenient. Note the revision date on the SOP.

Notify all lab personnel of the revised SOP. Replace the previous SOP in your files and anywhere else they may have been placed, including the work copies which would be referred to on a daily basis by your staff and those which may be kept at the lab benches or in individual staff members' files.

