Integrated Safety Plan Preparation Process

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Radiological & Environmental Management (REM)
Integrated Safety Plan (ISP) Goal

- Ensure and improve the safety of students and employees by...
  - Fostering a culture of safety dedicated to continuous improvement
  - Evaluating, encouraging, and assisting with safety, regulatory, and policy compliance
  - Certifying and indemnifying safety programs that demonstrate a strong commitment to safety
ISP
Self-Audit Checklists
Laboratories and shops must be done one per checklist.

Offices, computer labs, storage areas, and common areas (i.e. kitchenettes, conference rooms), may be combined into one checklist per type area.
ISP Self-Audit Checklists

Required for ISP Certification

- 100% returned
- 100% completed within 6 months of audit
- 100% signed by “Responsible Individual” (i.e. the person with hire or fire authority)
  - PI or laboratory supervisor
  - Shop supervisor
  - Most senior person (e.g. department head) when like areas are combined onto one checklist
Safety committee must review and ensure deficiencies are corrected prior to REM audit.

If there are 15 or more checklist, make them available for REM to review before the audit date but after the safety committee review.

- Send REM electronic or physical copies

  or

- Schedule time for REM to come and review them (a safety committee member need not be present)
Checking “No” for an applicable question or section will normally indicate noncompliance.

Sections 1, 2, 3 and 6 will apply to everyone:

1. Emergency Preparedness and Fire Protection
2. Housekeeping
3. General Electrical Safety
4. \( \text{...} \)
5. \( \text{...} \)
6. Personal Protective Equipment (PPE) Policy
Common Deficiencies
Most Cited Items of Concern
Personal Protection
Personal Protective Equipment (PPE) Policy Requirements

- **ALL** areas require a hazard assessment and certification thereof
  - Where applicable (i.e. for offices, commons, storerooms), “**No hazards requiring PPE**” is acceptable on the certification form
  - Laboratories must post them prominently

- When PPE is required the following is also required:
  - Task or procedure specific training and documentation on the correct use, care, donning, doffing, and limitations of PPE

- Shorts and open toed shoes are unacceptable
  - Legs must be covered to ankles and the whole foot
Eyewashes and Safety Showers

Must have unimpeded access to eyewashes and showers
First Aid Kits

- Accurate inventory must be maintained
- Expired items must be replaced
- REM prefers you get rid of them
  - Call the fire department
Laboratory Information
Informational Postings

Door Posting

PPE Policy:
Hazard Assessment Certification

Incomplete, inadequate, or outdated information

Not signed
## Alphabetized Abbreviation and Chemical Formula Key

### Acceptable Labeling Key

<table>
<thead>
<tr>
<th>Container Labeled</th>
<th>Chemical Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHCl₃</td>
<td>Chloroform</td>
</tr>
<tr>
<td>CH₄</td>
<td>Methane</td>
</tr>
<tr>
<td>C₂H₆</td>
<td>Ethane</td>
</tr>
<tr>
<td>EtOH</td>
<td>Ethanol</td>
</tr>
<tr>
<td>dH₂O</td>
<td>Distilled water</td>
</tr>
<tr>
<td>ddH₂O</td>
<td>Double-distilled water</td>
</tr>
<tr>
<td>diH₂O</td>
<td>Deionized water</td>
</tr>
<tr>
<td>H₂O</td>
<td>Water</td>
</tr>
<tr>
<td>HCl</td>
<td>Hydrochloric acid</td>
</tr>
<tr>
<td>HNO₃</td>
<td>Nitric Acid</td>
</tr>
<tr>
<td>H₂SO₄</td>
<td>Sulfuric acid</td>
</tr>
<tr>
<td>HOAc</td>
<td>Acetic Acid</td>
</tr>
<tr>
<td>NaCl</td>
<td>Sodium Chloride</td>
</tr>
<tr>
<td>TBS</td>
<td>Tris-buffered saline</td>
</tr>
</tbody>
</table>

### Unacceptable Labeling Key

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Container Labeled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic Acid</td>
<td>HOAc</td>
</tr>
<tr>
<td>Benzene</td>
<td>CHCl₃</td>
</tr>
<tr>
<td>Chloroform</td>
<td>EtOH</td>
</tr>
<tr>
<td>Ethane</td>
<td>HCl</td>
</tr>
<tr>
<td>Ethanol</td>
<td>HNO₃</td>
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<td>H₂O</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td></td>
</tr>
<tr>
<td>Sulfuric acid</td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td></td>
</tr>
</tbody>
</table>
Electrical Safety
Minimum 36 inches must be maintained in front of a switchboard, breaker panel, or disconnect for combustible material.

Space is needed to...

- Provide immediate access to cut power in a hurry
- Prevent spread of fires that may be caused by
  - Faulty wiring
  - Heat buildup
  - Sparks
Power Cords

Damaged insulation, exposed wires

**Electrical tape repair is unacceptable**
Extension Cords

Must not be used as permanent wiring

- Grounded 1 outlet to 1 plug
- Temporary use only
- Unplug from power source when not in use

Household Use 3 to 1 Not Allowed
Daisy Chains

Extension cords and/or multiple outlet devices must not be connected in series.
Chemical Hygiene
Chemical Containers

- Open
- Labels missing, inadequate, or deteriorated
Fume Hood Use

Fume hood must be used for either work or storage exclusively

Dual use problems

- Incompatible chemicals too close together
- Ignition sources too close to flammables
- Custom shelving interferes with proper airflow
- Poor housekeeping
Compressed Gas Cylinder Storage

- OK
- not OK
- OK
- not OK
- OK
- not OK
- OK
- OK
Egress and Fire Protection
Egress

Aisles or routes of egress obstructed

- A tunnel or tape to cover a cord, cable, or hose is not acceptable in a normal work area
Do not obstruct sprinkler heads

- No combustibles within...
  - 18 inches of sprinkler head or
  - 24 inches of non-sprinkled ceiling

Storage along walls is ok as long as it is not directly below the sprinkler head.
Fire Extinguishers

Do not obscure or obstruct fire extinguisher access
Fire Doors Propped Open

- Fire doors shall not be blocked, obstructed, propped open, or otherwise made inoperable for any reason or any amount of time.*

- **Never** use a chock, wedge, hold open, or install a plunger stop on a fire door

*Exception: fire door equipped with an automatic closing device tied into the smoke and fire alarm system*
Heat Resistant Pads, Tiles, & Trays

Use under coffee pots, hot water heaters, hot plates, toasters, and toaster ovens or else a meltdown may result ...
Miscellaneous
Missing or inadequate guarding

PEDESTAL GRINDER

METAL LATHE

VERTICAL BAND SAW

A non-skid working surface is recommended at the operator’s position.
Housekeeping
What is REM checking for?

- A safety program that has...
  - Regular safety committee meetings with a frequency commensurate with hazards (or minimum twice a year)
  - Means of communicating safety issues to the organization in a timely manner
  - Upper administrative support for safety
  - Regulatory compliance and training documentation
  - Proper injury reporting and accident or near miss investigations (if applicable)
  - Emergency preparedness (i.e. Building Emergency Plans)
  - ISP Self-Audits Checklists* completed for all areas
  - Abated deficiencies found during the self-audits
  - Annual ISP certification audits by REM

* The self-audit checklists presented to REM at the walk-through should not be more than six (6) months old.
Any questions?