

Hierarchy of Hazard Controls

Adapted from USW Resource Handout

THE BEST WAY TO CONTROL A HAZARD IS TO ELIMINATE IT.

If a hazard cannot be eliminated altogether, there are several other ways to limit worker exposure to the hazard. Some of these ways are more effective than others. When all of these different hazard control methods are put in a chart, going from the most effective to the least effective way to control the hazard, the chart portrays the **"HIERARCHY OF HAZARD CONTROLS"**.

It is considered good occupational safety and health practice to follow the hierarchy of controls.

HIERARCHY OF HAZARD CONTROLS

- 1. Elimination** **Most Effective Control**
- 2. Substitution**
- 3. Engineering Controls (Safeguarding Technology)**
- 4. Administrative Controls (Training and Procedures)**
- 5. Personal Protective Equipment** **Least Effective Control**

EXAMPLES OF EACH STEP IN THE HIERARCHY OF HAZARD CONTROLS

1. Elimination

The best way to control a hazard is to eliminate it and remove the danger. This can be done by changing a work process in a way that will get rid of a hazard; substituting a non-toxic chemical for a toxic substance; having workers perform tasks at ground level rather than working at heights; and other methods that remove the hazard all together.

2. Substitution

The second best way to control a hazard is to substitute something else in its place that would be non-hazardous or less hazardous to workers. For example, a non-toxic (or less toxic) chemical could be substituted for a hazardous one.

3. Engineering Controls (Safeguarding Technology)

If a hazard cannot be eliminated or a safer substitute cannot be found, the next best approach is to use engineering controls to keep the hazard from reaching the worker. This could include methods such as using noise dampening technology to reduce noise levels; enclosing a chemical process in a Plexiglas "glove box"; using mechanical lifting devices; or using local exhaust ventilation that captures and carries away the contaminants before they can get in the breathing zone of workers.

4. Administrative Controls (Training and Procedures)

If engineering controls cannot be implemented, or cannot be implemented right away, administrative controls should be considered. Administrative controls involve changes in workplace policies and procedures. They can include such things as:

- Warning alarms
- Labeling systems
- Reducing the time workers are exposed to a hazard, and
- Training.

For example, workers could be rotated in and out of a hot area rather than having to spend eight hours per day in the heat. Back-up alarms on trucks that are backing up are an example of effective warning systems. However, warning signs used instead of correcting a hazard that can and should be corrected are not acceptable forms of hazard control.

5. Personal Protective Equipment

The use of personal protective equipment (PPE) is a way of controlling hazards by placing protective equipment directly on workers' bodies. Examples of personal protective equipment include: respirators, gloves, protective clothing, hard hats, goggles, and ear plugs.

Personal protective equipment is the least effective method for protecting workers from hazards. PPE should be used only while other more effective controls are being developed or installed, or if there are no other more effective ways to control the hazard.

This is because:

- The hazard is not eliminated or changed.
- If the equipment is inadequate or fails, the worker is not protected.
- No personal protective equipment is fool-proof (for example, respirators leak).
- Personal protective equipment is often uncomfortable and can place an additional physical burden on a worker.
- Personal protective equipment can actually create hazards. For example, the use of respirators for long periods of time can put a strain on the heart and lungs.

While there are some jobs, such as removing asbestos, where wearing adequate personal protective equipment is absolutely essential, there are many jobs where employers hand out personal protective equipment when in fact they should be using more effective hazard control methods.

A WORD OF CAUTION:

When planning for hazard controls, remember that the control selected must not eliminate one hazard while creating another.

For example, it is not acceptable to remove air contaminants from one area by venting them to another area where another group of workers will be exposed. Hazard control measures should eliminate or reduce hazards for all who are potentially exposed to them.

HAZARD CONTROL: WHOSE RESPONSIBILITY?

The ability and responsibility to design jobs safely in the first place, or redesign them when a hazard is detected, lies with management. It is the role of workers and unions to promote the use of the "Hierarchy of Controls", making sure those employers are providing the most effective methods for hazard control possible.