Identify, Evaluate and Control Meeting Kit

Risk management is the overall process used to eliminate or minimize the health and safety risks to people in the workplace, and involves the following three steps:

1. **Identify (the Hazards)** – what situation or thing has the potential to cause harm.
2. **Evaluate (the Risk)** – what is the possibility that harm (death, injury or illness) might occur when exposed to a hazard.
3. **Control (the Hazard)** – taking action to eliminate or minimize the hazards as far as is reasonably practicable.

IDENTIFY HAZARDS

One of the most important aspects of risk management is the identification of potential hazards. A hazard is anything that has the potential to cause harm, such as chemicals, electricity, working at height etc. It can be a specific thing or a situation.

Some tips to help identify hazards include:

- Checking manufacturer instructions for equipment.
- Checking safety data sheets (SDS) for chemicals.
- Consult with your co-workers or someone who has undertaken the task before and may have more knowledge of potential hazards.
- Review incidents and hazards reported previously.
- Consult relevant online resources.
- Consult industry groups and professional associations.

Evaluate and Control the Hazards: After identifying the hazards, the next steps are to properly evaluate and control the hazards. These steps may be very specific, so be sure to take your time and ask for help when needed.

Evaluate: Evaluating risks is a key step in working with hazardous materials, instrumentation, and equipment. A risk assessment will in part examine the probability that an adverse event will occur and the consequence of that event. Ultimately, this can help to determine the proper controls that will be needed to avoid the adverse event.

Control: After hazards have been identified and evaluated, all must be controlled to avoid exposure. Traditionally, a hierarchy of controls is used to determine how to implement feasible and effective controls for any hazard. Control methods at the top of the hierarchy are potentially more effective and protective than those at the bottom. This is why it is important to always follow the order when considering how to control any and all hazards. Following the hierarchy can lead to the implementation of inherently safer systems, where the risk of illness or injury can be substantially reduced. The sections below describe the individual portions of the hierarchy in order: elimination, substitution, engineering controls, work practices, and personal protective equipment.

A. **ELIMINATION:** Eliminating the hazard is the most effective method of minimizing an exposure to any hazard. However, elimination is not often a viable option.

Example:

- Dispose of an old hazardous chemical

A. **SUBSTITUTION**: Substitution replaces a hazard with an action or material that is less hazardous.

Examples: Replace ethidium bromide, a mutagen, with GelRed, SafeRed, or SYBR Safe.

However, be wary of marketing terms such as “natural”, “green”, etc. Carefully review the Safety Data Sheet of any replacement product.

A. **ENGINEERING CONTROLS:** Engineering controls are used to remove a hazard or place a barrier between the user and the

hazard. Engineering controls may be ducted and exhausted out of the building or may use a filter to capture aerosols, particles, etc. Well-designed engineering controls can provide highly effective protection to the user.

The initial cost of an engineering control can often be higher than the cost of administrative controls or personal protective equipment. However, over the long term, operating costs are frequently lower. Engineering controls often require some form of maintenance such as calibration of monitors and alarms, filter replacement, and/or specific airflow certifications upon installation or annually.

A. **WORK PRACTICES**

Work practices or "administrative controls" include altering the way procedures are monitored and/or restricted.

Examples:

- Using proper labeling and signage to communicate the hazard to others
- Conducting monthly self-inspections to regularly eliminate any noticeable hazards
- Instituting a "buddy system" when hazardous work is being performed
- Having an emergency plan: considering the "What if…." then train users before an emergency happens
- Relocating a piece of equipment so the flow of work can be done safely and more efficiently
- Restricting the length of time that a person is exposed to noise, a particular substance, or a specific activity
- Enforcing rules about daily housekeeping
- Performing regular equipment maintenance

A. **PERSONAL PROTECTIVE EQUIPMENT:** Personal protective equipment (PPE) is often referred to as the last line of defense. As a control method, PPE has proven to be less effective than other control measures, which is why it is generally used with some form of engineering and/or administrative control.

FINAL WORD

Conducting an effective risk assessment requires a meaningful dialogue and cooperative approach to hazard reduction in the workplace on the parts of both employers and employees.