

HIRA

Group-3

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Definition – HAZARD

- “Source or situation or act with a potential for harm in terms of human injury or ill health or a combination of these”
- e.g. - Toxic or flammable substances, electric energy, working at heights etc.
- Hazard is something that cause harm or injury

Definition - RISK

- Combination of the likelihood of an occurrence of a hazardous event or exposure(s) and the severity of injury or ill health that may be caused by the event or exposure(s)
- Likelihood that a hazard will cause a specific harm or injury to person or damage property

Risk means the chance that someone will be harmed by the hazard.

Risk = Hazard effect x Probability (likelihood of Occurrence)

What is Risk Assessment?

- Risk Assessment is a systematic approach to identify hazards, evaluate risk and incorporate appropriate measures to manage and mitigate risk for any work process or activity.
- Risk assessment is the determination of quantitative or qualitative estimate of risk related to concrete situation or a recognized threat.

WHY we need to do RA?

- Protect Ourselves
 - RA is key to prevention of accident
 - Everyone deserve to go home safely at the end of the day
- Elevate safety awareness & ownership
 - Aware of hazards, risks and controls and practicing safe science
- University and Faculty Procedures
- Compliance with Regulations

RISK CONTROL

What can be done to control risks in the workplace ?
Some measures are : (from most to least preferred)

- Elimination – eliminate the hazard from the workplace
- Substitution - substituting a hazardous substance or process with a less hazardous one.
- Engineering controls - installing machine guarding or enclosing a noisy machine.
- Administrative controls - applying a permit-to-work system or lock-out and tag-out procedures.
- PPE - provision and use of these equipment, AND
- SWP – Safe Work Procedures

IDENTIFY POTENTIAL HAZARDS

The most important step in any Risk Assessment - hazards can only be controlled if they are identified



- Each step is analyzed for potential inherent hazards
- Decision on the relevance of any particular hazard come later in the risk assessment processes

Risk Evaluation

- Consider existing controls
 - Engineering controls (Fumehood, glovebox, chains for cylinder, others)
 - Administrative controls (Signage, training, SOPs, others)
 - Personal Protective Equipment
- Existing control will not change the severity but only likelihood
- Severity & likelihood is based on 3 by 3 matrix and the respective criteria specified
- Risk rating is the product of severity by likelihood
 - Refer to acceptability criteria on the recommended action for different risk rating
 - For medium & high risk, additional controls will be required

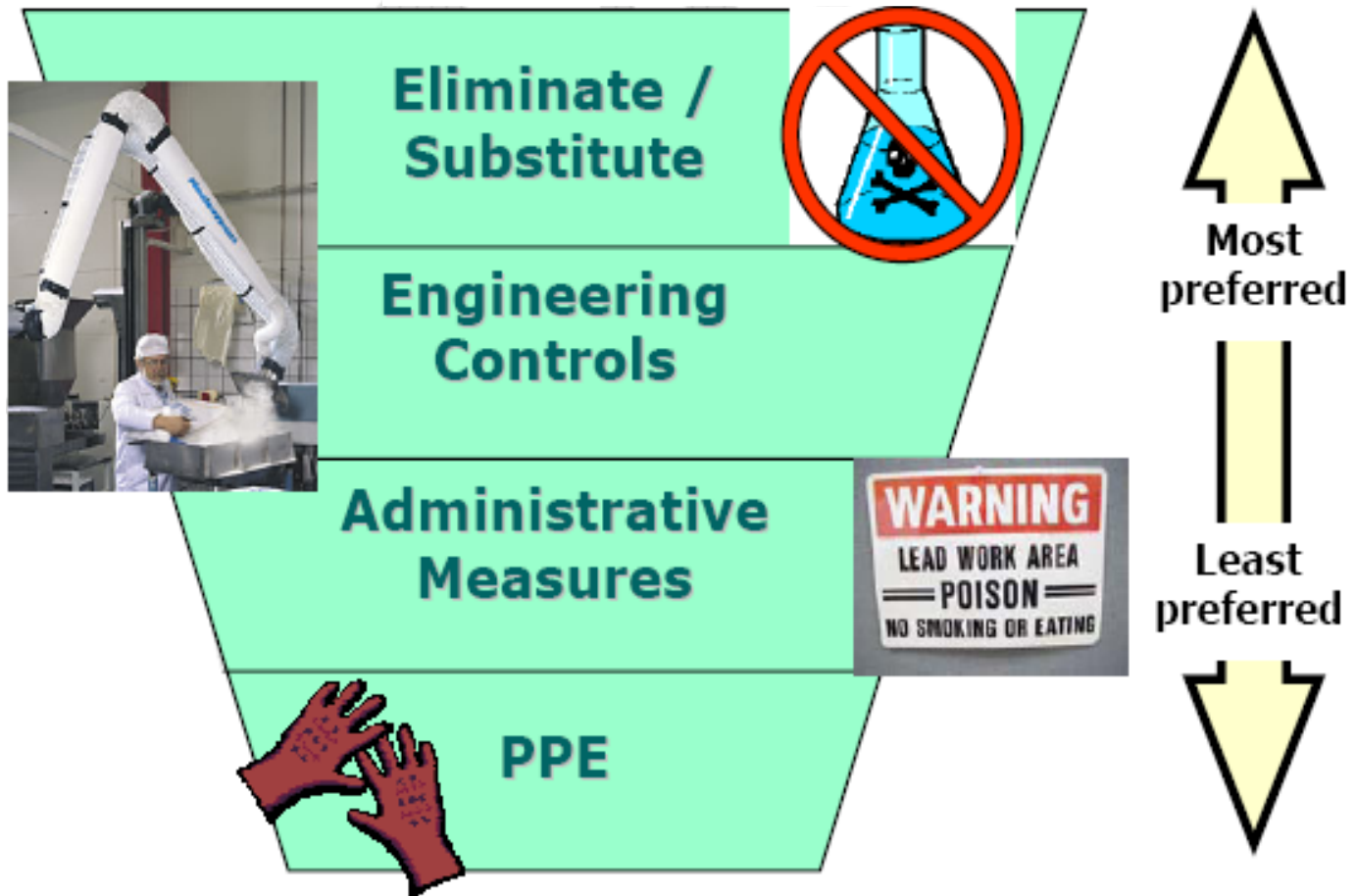
Risk Evaluation

Risk matrix to determine Risk Level

Likelihood Severity	Remote	Occasional	Frequent
Major	Medium Risk	High Risk	High Risk
Moderate	Low Risk	Medium Risk	High Risk
Minor	Low Risk	Low Risk	Medium Risk

Likelihood Severity	Remote (1)	Occasional (2)	Frequent (3)
Minor (1)	1	2	3
Moderate (2)	2	4	6
Major (3)	3	6	9

Hierarchy of Risk Control Measures



THANK YOU