



WORK ENVIRONMENT MONITORING

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AGENDA

- Overview of Work Environment Measurement
- Principle of Industrial Hygiene
- Monitoring Methods

RULE 1070 , OSHS

OCCUPATIONAL HEALTH AND ENVIRONMENTAL CONTROL

- Establishes the threshold limit values for toxic and carcinogenic substances and physical agents which may be present in the atmosphere in the work environment.
 - Airborne contaminants
 - Physical agents –noise, illumination
 - General ventilation –Air supply, Air movement
 - Work environment measurement



RULE 1077, OSHS

WORK ENVIRONMENT MEASUREMENT (WEM)

- The employer shall maintain and control the working environment in comfortable and healthy conditions for the purpose of maintaining and promoting the health of his workers
- WEM shall mean sampling and analysis carried out in respect of the atmospheric working environment for the purpose of determining actual conditions therein
- WEM shall include temperature, humidity, pressure, illumination, ventilation, concentration of substances and noise
- The employer shall carry out the WEM in indoor or other workplaces **where hazardous work is performed** and shall keep a record of such measurement which shall be made available to enforcing authority.
- Safety and health personnel shall have adequate training and experience in WEM
- The employer shall commission the BWC / OSHC / Regional Offices or other accredited institutions

EO 307: ESTABLISHING THE OCCUPATIONAL SAFETY AND HEALTH CENTER

Section 2: Powers and Functions

- –To monitor the working environment by the use of Industrial hygiene, field and laboratory equipment



LABOR ADVISORY IN THE CONDUCT OF WEM

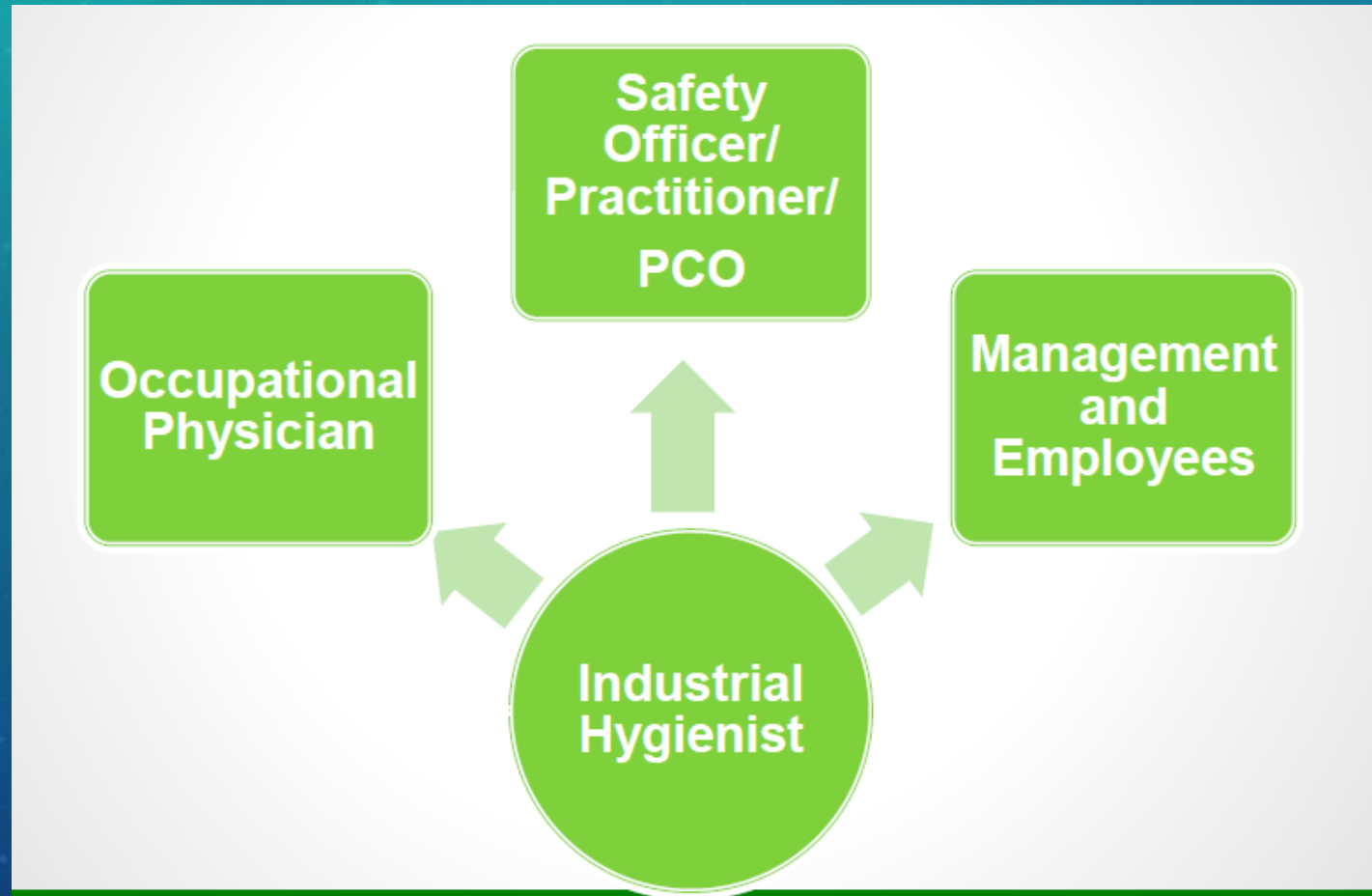
- If the WEM is conducted by the employer, the LLCO will validate the credentials of the person who performed the WEM and the calibration of the equipment.
- If the WEM is conducted by the accredited WEM provider, the OSHC will validate the reliability of the results.
- Refer to the TLVs in the OSHS in evaluating the results of WEM



ELEMENTS OF INDUSTRIAL HYGIENE

- Anticipation
 - Review of potential risk
- Recognition of WE Hazards
 - Industry/process/materials/environment
- Evaluation
 - Potential hazards, methods, equipment/calibration
- Control Measures
 - Results of measurements/Existing controls/feasible controls

INDUSTRIAL HYGIENIST WORKS WITH...



APPROACH OF INDUSTRIAL HYGIENE

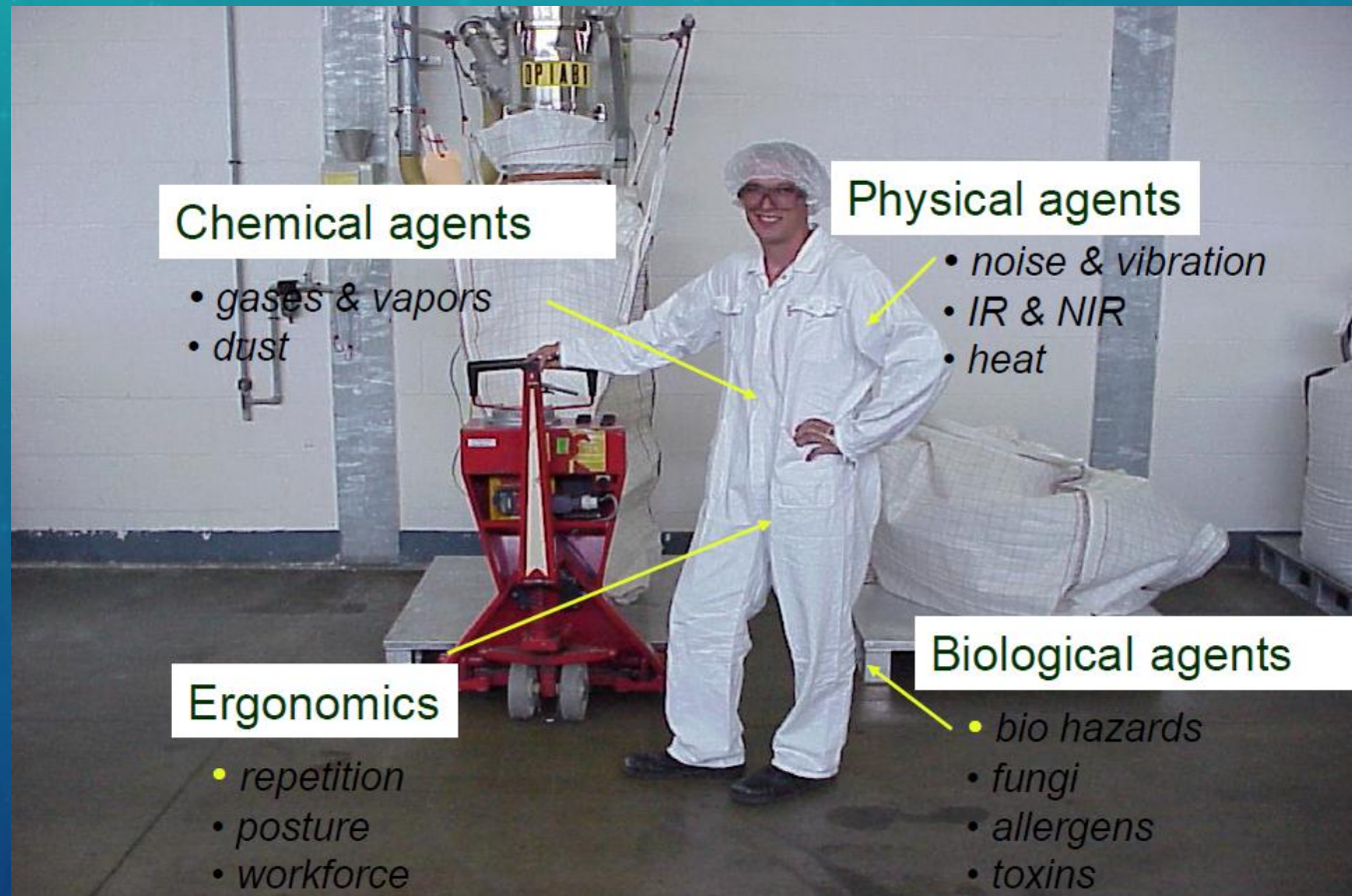


ANTICIPATION

- Review of chemicals (i.e. SDS)
- Review of chemical and physical characteristics
- Review of work practices and work conditions

RECOGNITION

- Identification of workplace health hazards



WORKPLACE HAZARDS

- Biological
- Mechanical
- Electrical
- Chemical



EVALUATION

- Determine the magnitude or extent of the health hazards
- Evaluation methods
 - Qualitative
 - Plant “walk-through” survey
 - Quantitative
 - “Sampling and analytical” program
 - Use of industrial hygiene measuring instruments

PLANT “WALK-THROUGH” SURVEY

- Sample Checklist
 - Plant Layout
 - Operation (Production/Service Processes)
 - Raw materials
 - Machines
 - Workers
 - Health hazards
 - Existing control measures
 - Safety facilities
 - OH Programs

INDUSTRIAL HYGIENE MEASUREMENTS - WEM PROCEDURES IN THE CONDUCT OF WEM

- Plant “walk-through” / Ocular Survey
 - Identify the parameters / work environment hazards to be measured
 - Decide on the need for measurement
 - Identify the subject worker and workplace
 - Select the areas for measurement
- Calibration of Equipment
- Conduct of actual WEM
- Analysis of samples and evaluation of results
- Evaluate the existing control measures and recommend measures to improve the work environment efficiently and economically

MONITORING METHOD

- Work Environmental / Area Monitoring
- Exposure / Personal Monitoring
- Biological Monitoring

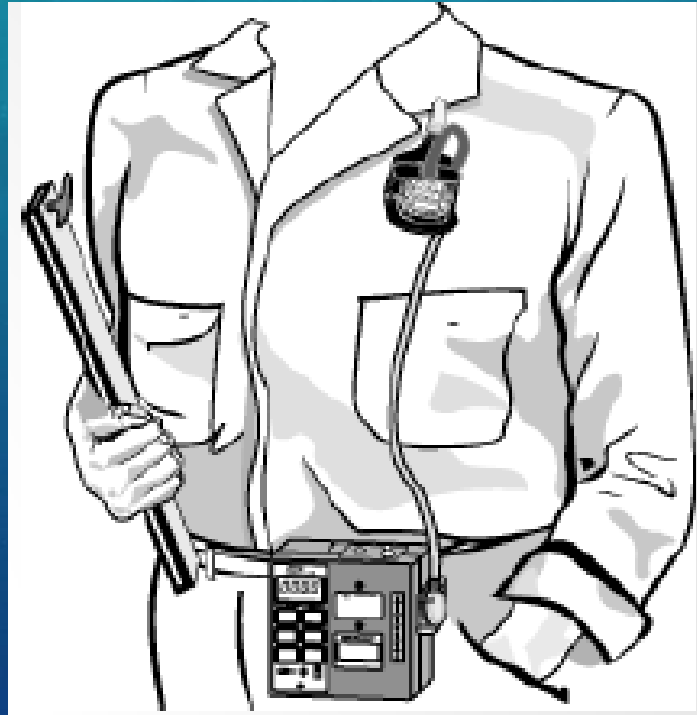
WORK ENVIRONMENT / AREA MONITORING

- is the measurement of contaminant in the workroom. This helps pinpoint work areas with high or low exposure levels of contaminants.



EXPOSURE / PERSONAL MONITORING

- Preferred method of evaluating worker exposure to airborne chemicals
- Worker wears sampling device that collects airborne contaminants wherever he goes, whatever he does.



BIOLOGICAL MONITORING

- involves the measurement of changes in the composition of body fluids, tissue or expired air to determine absorption of a potentially hazardous material.



TO DECIDE WHAT CONSTITUTES A REPRESENTATIVE SAMPLE,
THE IH MUST ANSWER THESE BASIC QUESTIONS:

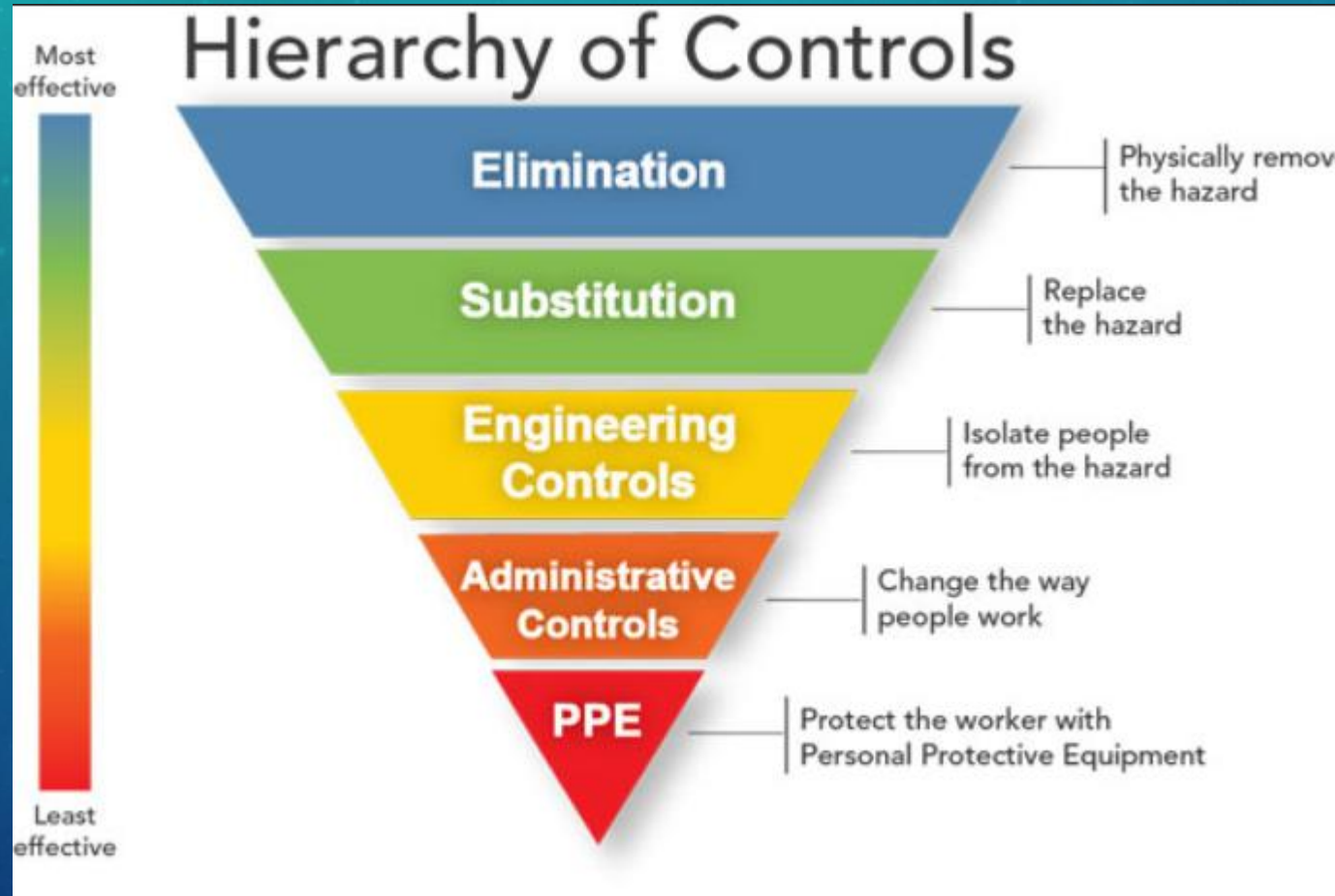
- What to sample
- Where to sample
- Whom to sample
- When to sample
- How long to sample
- How many to sample

WHAT WILL YOU DO WITH THE RESULTS OF MEASUREMENTS?

- The measurement data will be compared with existing standards / guidelines:
 - Threshold Limit Values (TLVs)
 - Permissible Exposure Limits (PELs)
 - Occupational Exposure Limits (OELs)
 - Recommended Exposure Limits (RELs)
 - Maximum Allowable Concentrations (MACs)

CONTROL

- a process of conception, education, design and implementation of beneficial interventions and changes carried out that reduces, minimizes, eliminates, decreases or downgrade hazardous conditions.
- The correct recognition and careful evaluation of the hazards are extremely important and will constitute the basis of appropriate control measures.



PREPARATION OF REPORT

1. Company Profile

- name, address, nature of industry, no. of workers, working time, safety and health programs and personnel

2. Conditions at Sampling

- date of measurement, parameters measured, workers activities, description of work area, existing control measures, etc

3. Results of Measurement

- data and corresponding measuring point

PREPARATION OF REPORT

4. Evaluation

- comparison with TLVs, permissible levels

5. Control Measures

- Evaluation of existing controls
- Recommend appropriate and feasible controls

6. Points of Measurement

- Layout, report details

SUMMARY

- WEM is an exposure assessment process of measuring the magnitude, frequency and duration of exposure to physical and chemical hazards.
- Industrial Hygiene focuses essentially on a preventive approach through the minimization of exposure to work environment hazards thereby preventing an occupational disease.



QUESTIONS





First Aid

Thank You

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