1986 VCM/LEAD/NOISE/ASBESTOS/RESPIRATORY HEALTH TRAINING
-CLASS OUTLINE-

9/17/86

INSTRUCTORS: Safety Department Personnel

ATTENDEES: All Plant Personnel

LOCATION: Plant Auditorium

INTRODUCTION

MAIN SUBJECT: Employee Health Hazards and Their Control

EMPHASIS:
VCM
Lead
Noise
Asbestos
Respirators

SCOPE:
Where we stand
Where we go from here
Where you fit in

HAZARDS

VCM

* Colorless, sweet-smelling gas
* Has a low "flashpoint"
* Can cause "AOL," a finger bone disease
* A cancer-suspect agent. Over 100 cases of angiosarcoma
* Breathing high concentrations can make you pass out
* Touching liquid can cause frostbite
* Inhaling smoke from fires can cause severe lung damage
* May cause chromosome damage
* VCM FACTS PAMPHET

    - Pass out
    - Contains a good deal of information we won't cover

LEAD

* Fine, light powders used in Compound
* Uncontrolled overexposure can cause lead poisoning

    - Damage to:

        Nervous System
        Reproductive System
        Blood System
        Kidneys

    - Can be fatal

* Can enter body by inhaling or ingesting
* Warning Signs:

    Stomach pain
    Loss of appetite
    Nausea
    Metallic taste
    Constipation
    Tremors
    Irrational behavior
    Insomnia
    Convulsions
    Headaches

    - If you have any you think are related to work, see your supervisor and the Plant Nurse

NOISE

* Hearing loss is a natural part of aging
* It can not be repaired
* It can be made worse by excessive exposure to noise
* **The higher the noise, the less time is required to do harm**

ASBESTOS

* Still used in certain parts of the plant (encapsulated, e.g.: in Plasticizer Building)
* Very short fibers can lodge in the lung, causing long-term problems, including "**asbestosis**," the most common sickness
* Other illnesses are possible, including cancers of the digestive system

EXPOSURE GOALS AND SAFE LIMITS

PLANT GOAL: KEEP EXPOSURES TO ALL ENVIRONMENTAL HAZARDS AS LOW AS POSSIBLE

SAFE LIMITS

VCM
1 ppm, 8-hr TWA
5 ppm, averaged over any 15-minute period

LEAD
50 micrograms of lead per cubic meter of air, 8-hr TWA
- Lower for more hours in the work period

NOISE
90 dBA, 8-hr TWA
87 dBA, 12-hr TWA

ASBESTOS 0.2 Fibers per cubic centimeter (as of 6/20/86, replacing older limit of 2 fibers)

LEAK AND SPILL CONTROL

GENERAL

* Keep all materials contained!
* Use the correct container for each material
* Keep the container closed
* Keep the container properly labeled

VCM

* No VCM leak is acceptable
* Leak repair always has the top priority
* Indicators include: icing, hissing noises, condensation, odor, and measurements with instruments

LEAD

* Keep dusting to a minimum
* Avoid unecessary crushing of empty lead bags. Do near the ventilation hood, if possible
* Use vacuum cleaing methods to clean with. Use of compressed air with lead is illegal!

ASBESTOS

* Before handling asbestos
  - Rope off the area
  - Get Tyvek suit, rubber gloves, and a "high efficiency" Airhat
  - Bring plastic bags, open top drums, and plastic sheeting to the site
* During the work
  - Keep dusting to a minimum
  - Keep material wet at all times
  - Catch falling pieces of material with plastic sheeting
  - Make as few cuts as possible
  - Do not drop material, if possible
  - Place all scraps in plastic bags as work proceeds
* After the work
  - Put all collection bags and sheets in drums
  - Put Tyvek suits and gloves in drums
  - If outside, flush area with water
  - If inside, wet-wipe
  - Close drums and apply labels

PROTECTIVE CLOTHING AND EQUIPMENT

RESPIRATORS

FACIAL HAIR POLICY

* For all personnel who can be assigned emergency duties
* No facial hair permitted in area of respirator seal. It seriously decreases respirator effectiveness
* Medical certification required for all personnel who may have to use respirators
* No exceptions allowed for users

AIR-LINE RESPIRATORS

* Breathing air supplied to mask via a hoseline
* Good for any chemical, but used mostly with VCM (up to 1,000 ppm)
* Used for a variety of routine jobs associated with VCM
  - Hooking/unhooking VCM railcars
  - Changing VCM filters
  - Opening, depressuring, or isolating any VCM equipment
  - Working in the VCM compressor shed
  - All work, including maintenance, where VCM is present above 1 ppm

SCOTT AIR-PAKS

* Self-contained respirator
* Good for any chemical, but used mostly with VCM
* Used for emergencies
* Must be used for protection against VCM
  - Above 1,000 ppm
  - In unknown concentrations

SLING-PAKS

* Smaller version of the Scott, "2A" unit. Gives same degree of protection
* Five in the plant, all in Vinyl
* Used when finding leaks and during emergencies

BULLARD HOOD-TYPE RESPIRATOR

* A special type of air-line respirator
* Used for Dust Collector entry

3M AIRHAT (DUST, MIST, AND FUME)

* A battery-operated, air-purifying respirator
* Used when charging Compound blenders, working in the Color Weigh Room, or any other job involving lead
* Keep assigned Airhat clean
* Check airflows daily. Change filters if needed to keep good airflow
* Turn in for thorough cleaning and repair each month
* Report any problems immediately. **Do not use a bad Airhat**

3M AIRHAT (HIGH EFFICIENCY)

* 2 Airhats are being modified to become "high efficiency"
* For use when handling asbestos, per new OSHA standard

HEARING PROTECTION

* High noise areas are posted
* Can't depend on warning signs for warning in all cases
* Recognize high noise danger situations
* Wear ear plugs or muffs

Miscellaneous

* **Keep endangered parts of the body covered, especially when handling acids, caustics, and solvents**

* Head and eyes - Goggles, faceshields, glasses

* Arm and hand - Gloves, long sleeves (no cut-off sleeves)

* General body - Aprons, disposable clothing, rainsuits

A

VENTILATION

* Keep all vent fans and hoods running - each serves an important purpose
* Report inoperative or defective equipment
* Follow department procedures in Compound
    - Check Magnahelic guages
    - Keep Building Ventilation System hoppers cleaned out
    - Check airflows with the department velometer

EMERGENCIES

* Must be prepared to handle them

* Know what you are expected to do ahead of time

* Leave endangered areas when alerted unless your job is to stay and help handle the emergency

* Pre-plan what you will do under different circumstances

* Remember that everyone must be accounted for as quickly as possible during any emergency

DOSIMETRY

GENERAL

* We measure routine exposures to VCM, lead, and total particulates (dusts). Other exposures, including those involving unusual jobs, are measured when the need arises.

* Noise measurement is also done, but on a less frequent basis, and using outside help and special equipment

EQUIPMENT

REAL "MINIMONITOR" BADGES

* Used to monitor VCM exposure

* Wear the badges when assigned

  - Membrane facing out
  - Do not cover them with outer garments or protective clothing
  - Do not lay them about, on tables, desks, etc.

AIR PUMPS AND CASSETTE FILTERS

* Used to measure exposures to lead and dusts

* Wear at all times during work period

  - Wear filter on collar, pointed down
  - Report pump problems immediately

DOSIMETRY CARD

* Fill out card and turn in at guard house at end of work period

* Note respirator use

* Note anything you did, or was near, which you think might have caused an overexposure

RESULTS

* Examined carefully by supervision and management. No overexposure is considered acceptable to them.

* You will be notified of any overexposure as soon as the results are available

  VCM - Usually within 3 - 5 days
  Lead and Dust - Usually within 2 1/2 - 3 1/2 weeks

MEDICAL TESTING

* Done to see if any medically significant problems related to VCM, Lead, or other environmental agents exist

* Repeat testing, including blood-lead tests, will be done, as needed

* Take advantage of the program. Participate.

* Advise your supervisor of any problems you have with the service

* You will be given a copy of your exam results when the doctor has finished his work

PERSONAL HYGIENE

* There is no good substitute for good, consistent personal hygiene

* Avoid contact with materials unless necessary to do a job

* Always wash hands, face, arms before eating, drinking, smoking, or applying cosmetics. This is especially so with lead, and is a good practice for all materials

* Do not take food, drinks, cosmetics, or tobacco products into lead areas

* Remove contaminated, protective clothing before entering clean areas, particulary when dealing with lead.

RESPIRATOR TRAINING

CLASS OUTLINE

November 1, 1985

I. INTRODUCTION

A. Purpose of Class
B. Schedule of Class Events

II. GENERAL

A. Company Responsibilities

1. Maintain an on-going program to protect employees from respirable chemical hazards via a respiratory protection program.
2. Ensure that the program is carried out.
3. Conduct effective training in the use and care of respirators.

B. Employee Responsibilities

1. Use appropriate respirator whenever a respirable chemical hazard is present.
2. Inspect respirators before each use: e.g., elastomer parts, face-pieces, cleanliness, completeness (nothing missing), hoses, etc.
3. Fit-check respirators to test seal effectiveness.
4. Turn in respirators for cleaning and maintenance as specified.
5. Report respirator problems promptly to Safety.

III. REVIEW OF RESPIRATORS

A. Scott Pressure Pak IIa (Older 30-Min. Unit)

1. Self-contained breathing apparatus (SCBA).
2. Uses breathing quality air from supply bottle.
3. Used in VCM concentrations of 1000 ppm+ or unknown.
4. A "30-Minute" supply bottle.
5. Must be used only by trained personnel.
6. Selectable between "Demand" mode and "Pressure Demand" mode.
7. Must be used in "Pressure Demand" mode in VCM.
8. Provides the best face fit (best "Protection Factor").

B. Scott Pressure Pak 2.2 (Newer 30-Min. Unit)

Same device as "Pressure Pak III", except for improvements, including:

1. Fewer harness straps. Use of quick-opening belt.
2. In "Pressure Demand" mode at all times.
3. Improved weight distribution via backpack carrier.
4. Improved vision.
5. Fewer facepiece straps and use of hairnet - type harness.
6. Must use new type bottle with attachment clip.
7. Protection factor not as good as Pressure Pack IIa.

III. REVIEW OF RESPIRATORS - Continued

C. Scott Sling-Pak IIa (15-Min. Unit)

1. Same as Scott Pressure Pak IIa, except:

   a. 15-min. air supply - bottles are smaller versions of 2.2 bottle.
   b. Lighter.
   c. Quicker to use.
   d. Simplified strapping.

2. Offers same protection as Scott Pressure Pak II.
3. Used in short jobs in VCM concentrations of 1000 ppm+ or unknown.
4. Selectable between "Demand" mode and "Pressure Demand" mode. Must be used in "Pressure Demand" mode in VCM.

D. Air-Line Respirators

1. Fresh Air System Review
2. Used in plant most commonly for VCM atmospheres of no more than 1000 ppm.
3. Two facepiece sizes.
4. Two makes - you have a choice! Use what works best for your face.
5. Disconnect respirator supply tube from hose connector prior to connecting to air supply hose to blow line clear.
6. Facepiece fit is very important, although constant flow will tend to overcome minor leaks.
7. Adjust flow control valve to give slight excess of supplied air during rapid inhalation.

E. 3M Airhat

1. Battery operated.
2. Removes dusts from air.
3. Used in lead and asbestos work.
4. Offers head and eye protection.
5. Offers no protection against gases!
6. Does not supply oxygen! Do not use in confined spaces!
7. Must not be used by anyone without training!
8. Airflow checks - daily, before use!
9. Cleaning requirements (daily by owner/user, monthly by Safety).

F. Bullard System 999 Supplied Air Respirator

1. Breathable air supplied from breathing air system.
2. Head protection.
3. Face protection.
4. Hood type shroud.
5. "Loose Fitting Facepiece".
6. Used in dust collector entry.

IV. PRACTICAL EXERCISE

A. Air-Line Respirators

1. Proper fitting of facepiece, including seal check.
2. Proper connection to air supply.
3. Correct adjustment of flow control valve. (Deep, fast breath does not pull respirator against face--negative pressure condition).

B. Scott Air Paks

1. Pre-donning checks.
2. Donning of air supply cylinder and harness.
3. Proper fitting of facepiece, including seal check.
4. Connection to air supply.
5. Use of "Pressure Demand" mode.
6. Regulator failure procedure.
7. Low air supply alarm and procedure.
8. Removal of equipment.
9. Post-use of procedures.

C. 3M Air-Hat

1. Pre-donning inspection.
2. Airflow check, using Orifice plate.