SAFETY MEETING TOPIC

This form shall be completed and kept on file

Job Name _____ Location _____ Job No. _____

Meeting Leader _____ Title _____

Date Held _____ Place _____ Time _____

Subject of Meeting RESPIRATORY HAZARDS

One of the most important pieces of personal protective equipment used in the construction industry is the respirator. Respirators are designed to protect against oxygen deficient air or air containing hazardous contaminants. It is critical that the correct respirator be selected.

If the air does not contain enough oxygen, the respirator must supply air with correct oxygen levels. Confined spaces may be oxygen deficient, or the operation being performed in the space might reduce the oxygen level. The level of oxygen should always be measured in confined spaces or poorly ventilated areas. Even rust can reduce the level of oxygen.

If the air contains a contaminant, you will need a respirator which cleans the air, or provides you with clean air. Air purifying respirators will filter the air of some contaminants, but only up to a certain point. Air supply respirators provide clean air to breath. When exposed to contaminants you must determine their identity, the type of hazard(s) they present and their physical state. Certain types of building materials used by construction workers release harmful vapors, fumes, particulates or mists to the air.

Vapors are similar to gases. They are formed by the evaporation of liquid substances. Examples include acetone and trichloroethylene. Particulate contaminants are tiny particles or droplets of hazardous material in the air. They are classified as dusts, mists, and fumes. Dusts are solid. They can be created by grinding, sanding or mixing. Mists are liquid droplets. They are given off by the spraying or mixing of liquids. Fumes are very small metal particles. They are given off as metals are heated, welded, brazed, etc.

Contaminants are also classified by their effect on the body. You should receive training on chemical health hazards, asphyxiants, irritants, toxins, etc. Contaminants often occur together and may be present in particulate and gaseous form.

HAZARD EVALUATION

Once hazards have been identified, a Hazard Evaluation must be performed. It should include identification of employee groups, processes, or environments that may require respirators and the degree of hazard present. The degree of hazard is based on the toxicity of the substance and the concentration. Toxicity is based on the way a substance enters the body, the affect on the body and the quantity needed to hurt the body. Exposure limits are set to prevent injury.

Material Safety Data Sheets (MSDSs) can help to identify exposure limits as well as respiratory protection needed. Special methods and instruments are needed to measure the concentration of airborne contaminants. Trained and qualified technicians are needed to use this testing equipment and interpret results.

Depending on the toxicity and concentration, some substances present atmospheres which are Immediately Dangerous to Life and Health, and IDLH condition. IDLH means that severe injury or death may occur in a short time or serious delayed effects may occur. Carbon monoxide or hydrogen sulfide exposures can result in death within a short period. Carcinogens may have delayed effects.

The hazard evaluation must consider other hazards present. Contaminants may be absorbed through the eyes or skin. The contaminants may have no warning properties. Warning properties are factors which allow the worker to recognize the presence of the substance before serious injury or death results. Examples of warning properties are odor, taste and irritation.

SELECTING RESPIRATORS

Once all factors are considered, the respirator is ready to be selected. Only approved respirators may be used. Approved respirators have been tested by the National Institute of Occupational Safety and Health (NIOSH) and Mine Safety and Health Administration (MSHA). All NIOSH approved respirators contain:

- An assigned identification number which begins with "TC" such as TC-21C-101.
- A label with the identity of the type of hazard the respirator is approved for.
- The respirator's limitations and parts which can be used with the basic unit.

You should be offered more than one style of respirator to choose from. This is necessary to insure proper fit. Every user is different. Some styles will fit you better than others.