A Summary of Essential Competencies for Administering a Respirator Program
The AIHA Respiratory Protection Committee
Date: October 8, 2001

The AIHA Continuing Education Committee (CEC) recently requested that the Respiratory Protection Committee develop a list of Core Competencies for individuals involved with respiratory protection. The CEC hopes to use this listing of Core Competencies as a guide for professional development and a key to continuous improvement in PDC offerings. The competencies identified in this summary represent the information and knowledge a person would need to successfully develop and administer a respiratory protection program. These subjects are all relevant to an introductory course in Respiratory Protection Management even if the discussion in some areas may by necessity be somewhat superficial.   In-depth development of many of the topics identified in this listing, and many additional topics would best be considered for intermediate or advanced PDC offerings.

1. **Hazard Identification**: A respirator program administrator must be capable of identifying actual airborne contaminants, and processes that have the potential to cause respiratory hazards. This requires knowledge of the concepts listed below.
    -   Processes that generate air contaminants including abrasion, heat, evaporation, etc.
    -   Consideration of off-normal and emergency situations.
    -   Fundamental differences between the types of airborne hazards such as oxygen deficiency, particulates and vapors.
    -   Methods of inspecting and auditing worksites .
    A program administrator may only require specific knowledge of a few contaminants in order to develop and administer an effective respiratory protection program. However, in order to identify site specific hazards, the administrator must have at least a general knowledge of the listed concepts.

2. **Hazard Evaluation**: It is not enough to simply identify potential and actual respiratory hazards at a worksite. The program administrator needs to evaluate those hazards to determine what controls may be needed to adequately protect employees. This evaluation or risk assessment requires knowing the hazards, their toxicity, and the potential exposures. This assessment requires knowledge of the following:
    -   Toxicity characteristics of contaminants – organic solvents, heavy metals, acids and bases, toxic compounds, irritants, skin absorption, etc.
    -   Sufficient physiology to understand toxic reactions. Chronic vs. acute, synergistic reactions, lung diseases, carcinogens, fetotoxins, CNS inhibitors, etc.
    -   Methods of measuring or otherwise evaluating the concentration of airborne contaminants and/or potential for exposure including consideration of both short term and long term exposures.
    -   Knowledge of the applications and limitations of various monitoring methods including both passive and active monitoring

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- Methods of evaluating the results of measurements of airborne contaminants including some understanding of statistical methods.
- Regulatory limits and other standards used to evaluate the potential for harm due to exposure.
- Methods of risk assessment that use the available information to help rate the potential risks associated with the identified hazards.

3. **Risk Control**: All respiratory protection programs need to consider a variety of control strategies. A program administrator needs to consider all risk control alternatives with the goal being to minimize the need for respirator use. This requires sufficient knowledge of work processes and control strategies to effectively apply alternative controls. Required knowledge includes:
   - The various types and applications of ventilation controls including hoods, local exhaust and dilution.
   - Possible methods of eliminating hazards using alternative products or work practices.
   - Possible applications of engineering controls to reduce or eliminate the hazards.
   - Application of administrative controls to reduce the level of exposure.
   - The appropriate use of PPE to control the level of exposure.

4. **Respirator Programs:** If the need for PPE is established, then a respirator program must be established and administered. The respirator program administrator needs to be competent in the various aspects of a respirator program as identified in section 5.3 of ANSI Z88.2. The regulatory requirements of a respirator program are well established in 29CFR1910.134, in various state OSHA regulations and in the ANSI Z88 standards. The essential elements of a respirator program are identified in the audit discussion in paragraphs 2 and 3 of Section 5.3 of Z88.2. These elements are briefly expanded on below.
   - Program administration: a program administrator needs to maintain records, ensure adequate training, track changes in the workplace, develop site specific procedures, and perform various other functions. Assuming an administrator has the skills to do this, they need to know what is required for a respirator program, including the following aspects:
     o Required records
     o Essential elements of a written program
     o Developing site specific procedures
     o Methods of air quality monitoring
     o Methods of auditing a respirator program
   - Training is an essential component of any respirator program. The administrator must ensure the training meets regulatory requirements, addresses site specific concerns, and is effectively delivered. Areas of concern include:
     o Regulatory requirements
     o Methods of delivering effective training
   - Medical evaluations are a necessary part of a respirator program. The administrator needs to be familiar with:

- o Regulatory requirements and the medical questionnaire
- o Physical stressors associated with respirator use
- o Medical tests such as PFT's and EKG's
- Fit testing may not be a necessary element in all respirator programs, but all administrators need to have some knowledge of this element including:
  - o Regulatory requirements for fit testing
  - o Qualitative vs. quantitative fit testing
  - o Approved methods of fit testing
- Air sampling can be very extensive for some programs, and may not be necessary in others. The administrator needs to know when sampling is necessary to help classify or evaluate hazards, and how to evaluate air sampling results. This includes knowing:
  - o Regulatory requirements for air sampling including hazard specific regulations such as asbestos, arsenic, etc.
  - o Types of hazards; short term, long term, emergencies, skin absorption
  - o When air sampling may not be necessary
  - o The benefits and limitations of various air sampling methods
- Selecting appropriate respirators is a fundamental aspect of all respirator programs. The administrator must know:
  - o Types of respirators, what they are good for and what their limitations are
  - o Factors to consider when selecting respirators
- The program administrator needs to ensure respirators are used and maintained correctly. This requires having the knowledge and skills to:
  - o Develop site specific guidelines for respirator use, cleaning, maintenance, storage and inspection incorporating both manufacturers recommendations and regulatory requirements.
  - o Adequately audit these aspects of the respirator program
- Knowledge of breathing air supplies may not be needed for all respirator programs. Where it is a factor the administrator needs to know:
  - o Regulatory requirements for use of high pressure (bottled) compressed air
  - o ANSI/CGA standards for compressed air
  - o Use of air compressors and "factory" air
- The administrator may also need to consider emergency preparedness by:
  - o Anticipating emergencies
  - o Preparing guidelines for emergency use of respirators
- Any respirator program may have special considerations that require creative solutions. The program administrator should be able to apply these solutions without compromising the essential elements of the program.

5. **"People and Management Techniques":** This area deals with the more political and business issues a program administrator may encounter.
   - The people issues include:
     - o Many people do like wearing respirators and will do anything to get around wearing them or get around wearing them properly.
     - o Many supervisors will short cut proper respirator use because they believe the use of respiratory protection will reduce productivity

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- o Facial hair concerns.
- o Union concerns.
- Some of the business issues include:
  - o Proper budgeting for respiratory protection program components such as the respirators themselves, training direct costs and down-time, medical surveillance programs, etc.
  - o Productivity vs. respirator use - both sides of the balance sheet.
  - o Realization that respirator use may save workers compensation costs by reducing illness.
  - o Logistics of respirator maintenance, e.g., providing time for cleaning, ensuring there is an ample supply of spare parts and extra respirators if needed, etc.

Introductory courses in respiratory protection administration and program development should attempt to address the competencies identified in this summary.

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