RESPIRATORY PROTECTION PROGRAM

I. INTRODUCTION

A. Scope

The Uinta County School District No. Four Respiratory Protection Program was developed to ensure respirator safety. The established program meets or exceeds the standards established in the federal regulations 29 CFR 1910.134, 29 CFR 1926.58, and 29 CFR 1910.1001, and with the American Standard Institute, Respiratory Protection Standard (ANSI Z88.2[1980]).

The Respiratory Protection Program details the general policies and procedures of the respirator usage, outlines the medical monitoring requirements and describes the respirator fit testing protocols and provides field specific guidelines.

B. Purpose

The purpose of this program is to protect the health of all employees by preventing their exposure to harmful levels of air contaminants. Where feasible, exposure to air contaminants will be controlled by the application of engineering controls. In situations where engineering controls are not feasible, protection will be accomplished by the use of approved personal respiratory protective equipment.

II. POLICY

A. General Policy

1. Introduction. The general philosophy of Uinta County School District No. Four is to maximize the protection of the employee through adoption of stringent standards for respirator use. The standards adopted by Uinta County School District No. Four exceed the OSHA standards. This position is supported by OSHA's statement in the preamble to the OSHA Asbestos Standard that significant health risks exist from exposure to 0.1/cc (Code of Federal Register 6/20/86, Vol. 51, #119, p. 22680). This is also consistent with NIOSH's position that no safe exposure level to asbestos has been demonstrated.

2. Respirator Use and Selection. User Requirements. Both the Occupational Safety and Health Administration (OSHA) of the US Department of Labor (USDOL) and the Mine Safety and Health Administration (MSHA) of the US Department of Interior (USDI) have used ANSI Z88.2 as the source for respiratory protection programs. The OSHA regulation is contained in 28 CFR 1910.134.

While the basic concept is to remove contaminants from the workplace through the use of engineering controls, the use of respirators is permitted during the time such controls are being implemented or when it has been determined that such controls are not feasible.

OSHA and ANSI require a minimal acceptable program "to ensure sound respiratory protection practices". The requirements for a minimal acceptable program as contained in 29 CFR 1910.134 are:

- Written standard operating procedures to govern the selection and use of respirators shall be established;
- Respirators shall be selected on the basis of the hazards to which the worker is exposed;
- Instruction and training in the proper use of respirators and their limitations;
- Regular cleaning and disinfecting of respirators. Those used by more than one worker shall be thoroughly cleaned and disinfected after each use;
- Storage of respirators in a convenient, clean and sanitary location;
- Respirators used in a routine manner must be inspected during cleaning and worn or damaged parts replaced. Respirators for emergency use must be inspected thoroughly at least once each month and after each use;
- Maintenance of appropriate surveillance of work area conditions and degree of employee exposure and stress;
- There shall be regular inspection and evaluation to determine the continued effectiveness of the program;
- Persons should not be assigned to tasks requiring the use of respirators unless it has been determined that they are physically able to perform the work and use the equipment. The local examining physician shall determine what physical and psychological conditions are pertinent. (Consider psychological also.) The respirator user's medical status should be reviewed periodically (for instance, annually);
- Approved and accepted respirators shall be used. The respirator furnished shall provide adequate respiratory protection against the particular hazard for which it is designed in accordance with standards established by competent authorities. The Mine Safety Administration and the National Institute for Occupational Safety and Health are recognized as such authorities. Respirators listed by the Department of Agriculture are acceptable for protection against pesticides, however, the Mine Safety Administration is responsible for testing and approving pesticide respirators.

3. Respirator Selection. 29 CFR 1910.134 states that respirators shall be selected according to the guidance contained in ANSI Z88.2 [1969] (since amended in 1980).

   Generally, ANSI Z88.2[1980] states that the following should be considered in the selection of the proper approved respirator:

   - The nature of the hazard;

- Characteristics of the hazardous operation or process;
- The distance from the hazardous operation to a safe area having respirable ambient air;
- The period of time that respiratory protection must be used;
- The type of activity workers in the area are engaged in;
- The limitations of the various types of respirators;
- Respirator protection factors and respirator fit tests.

The joint NIOSH/OSHA Standards Completion Respirator Committee has devised a "Respirator Decision Logic Table" based upon these criteria to assist in respirator selection.

4. Respirator Capabilities and Limitations. Since air purifying respirators provide protection only against the material specified on their filter canister, e.p., HEPA filters on respirators approved protection against particulates, such as asbestos, offer no protection against other materials which may be present, such as vapors, (e.g., methylene chloride, toluene and gasses such as carbon monoxide). It may be necessary to use cartridges which have components that will absorb solvents or wear air supplied respirators with protection against other materials under these conditions. Proper evaluation of exposure conditions should dictate what additional protection may be used.

   Air purifying respirators also cannot be worn in an oxygen deficient atmosphere. Under these conditions, atmosphere supplying respirators must be worn.

5. Respirator Approval. 29 CFR 1910.134 and 30 CFR Part II require the use of approved respirators. Currently respirators are tested at the NIOSH Testing Laboratory and are jointly approved by MSHA and NIOSH if they meet requirements established in 30 CFR Part II.

   A MSHA/NIOSH approval indicates that the respirator in use is identical to the one submitted for approval. If the manufacturer changes any part of the respirator without resubmitting it for testing, the original approval is invalid. Likewise, any unauthorized changes made by the user invalidates the approval and guarantees implied with the approval.

   The Bureau of Mines (BOM) was the original respirator approval authority and was replaced by the Mining Enforcement and Safety Administration (MESA) which evolved into MSHA. Some older respirators still carry a BOM or MESA approval and are approved.

   Each approved respirator and cartridges or canisters must bear an approval number either on the equipment itself or on the container. Approval number

consist of a prefix TC (Testing and Certification), a schedule number (usually two numerals and a letter) followed by an approval number. For example, TC-13F-67 is a number for a SCBA. Thirteen is the schedule for SCBA, F is the latest revision to the schedule and 67 is the consecutive approval number. The respirator label will also show the certifying agencies.

NIOSH periodically publishes a "Certified Equipment List" which includes a listing of approved respirator assemblies. This listing should be consulted to determine if a respirator has been approved and whether or not the complete assembly (mask and filter media) have been tested and approved.

6. Respirator Standard for Asbestos. During sampling or inspection of materials suspected of containing asbestos or during renovation activities involving asbestos-containing materials, employees may be exposed to elevated concentrations of asbestos fibers for short periods of time. When an employee is exposed to concentrations of airborne toxic materials which are above the maximum standards established by OSHA, the law requires implementation of feasible engineering controls and/or administrative controls to reduce employee exposure. The employer must provide respiratory protection for employees conducting sampling, inspection or abatement work of asbestos-containing materials. In addition to providing respiratory equipment, the employer has the responsibility of 1) implementing respiratory protection programs and medical surveillance, and 2) training personnel. Initial and annual employee training includes the following topics (29 CFR 1926.58 and 1910.1001):

    - Health effects of asbestos exposure;
    - Relationship between smoking and lung cancer;
    - The quantity, location, manner of use, release and storage of asbestos and the specific nature of operations which could result in exposure to asbestos.;
    - The engineering controls and work practices associated with the employee's job assignment;
    - The specific procedures implemented to protect employees from exposure to asbestos such as appropriate work practices, emergency and clean-up procedures and personal protective equipment used;
    - The purpose, proper use and limitations of respirators and protective clothing;
    - The purpose and a description of the medical surveillance program;
    - A review of this standard, including appendices;
    - Access to information and training materials.

The OSHA 1926.58 standard for asbestos can be determined by the following table:

TABLE 1
OSHA RESPIRATORY PROTECTION STANDARD FOR ASBESTOS

AIRBORNE CONCENTRATION OF ASBESTOS	REQUIRED RESPIRATOR
Up to 2.0f/cc	Half-make air-purifying respirator equipped with high efficiency (HEPA) filters.
Up to 10f/cc	Full facepiece air-purifying respirator equipped with high efficiency (HEPA) filters.
Up to 20f/cc	Any powered air-purifying respirator equipped with high efficiency (HEPA) filters. Any supplied air-respirator operated in continuous flow mode.
Up to 200f/cc	Full facepiece supplied air respirator operated in pressure demand mode.
Greater than 200f/cc	Full facepiece supplied air respirator operated in pressure demand mode equipped with an auxiliary positive pressure self-contained breathing apparatus.

Historically, OSHA's action level of 0.1f/cc is the level which OSHA used to administratively require physicals under the old asbestos standard, and was the analytical detection limit for asbestos using the P&CAM 239 method of sample collection and analysis and a very large volume of air. The permissible exposure level (PEL) of 0.2f/cc is the level at which respiratory protection is required by OSHA. Half-mask respirator with high-efficiency filters will provide protection to ten times the PEL. This assumes the terms such as "10 times the PEL" and "50 times the PEL" intend that exposure inside the respirator will be rendered at 1/10 and 1/50th of the exposure level. It would then follow that, at least theoretically, an exposure to 0.02f/cc may still occur inside a half-mask respirator worn in a work area exposure at the current PEL, and that an exposure of 0.004f/cc may still occur inside a fitted full face respirator (this 50-fold protection factor for full face respirators must be demonstrated by quantitative fit testing of the respirator, only a 10-fold protection factor is to be used if the full face respirator is only qualitatively fit tested.)

It shall be school district policy to require respiratory protection for its personnel at any 8-hour time-weighted average (TWA) air sample results indicate fiber levels of 0.005f/cc or higher. Unless project specifications contain stricter procedures, or it is determined that more stringent requirements are necessary to protect personnel, the following table shall be used:

TABLE 2
UINTA COUNTY SCHOOL DISTRICT NO. FOUR
RESPIRATORY PROTECTION STANDARD FOR ASBESTOS

Airborne Concentration of Asbestos	Required Respirator
Not to exceed 0.05f/cc	1. Half-mask air-purifying respirator equipped with high-efficiency (HEPA) filters. 2. Full facepiece air-purifying respirator equipped with high efficiency (HEPA) filters.
Not to exceed .125f/cc	1. Any powered air-purifying respirator equipped with high-efficiency (HEPA) filters. P.F.=25, all types. 2. Any supplied-air respirator operated in continuous flow mode.
Not to exceed 5.0f/cc	1. Full facepiece, Type "C" supplied-air respirator operated in pressure demand mode.
Greater than 5.0f/cc	1. Full facepiece, Type "C" supplied-air respirator operated in pressure demand mode equipped with an auxiliary positive pressure self-contained breathing apparatus.

Types of Respirators: Uinta County School District No. Four shall provide workers with and require the use of respirators approved by MSHA/NIOSH for asbestos in accordance with the following table. Disposable single-use respirators are not acceptable. The minimum protection allowable shall be provided by an approved half-mask air-purifying respirator with HEPA (Type H) cartridges. When these respirators do not provide adequate protection as determined by the following table, full facepiece air-purifying, powered air-purifying respirators or supplied air systems shall be used. Supplied air systems shall supply Grade D breathing air conforming to OSHA Standard 29 CFR 1910.134. Asbestos removal and clean-up shall not be performed in less than a powered air-purifying respirator. Table 3 identifies specific tasks and the level of respiratory protection required for any school employee who may be required to work on or in the vicinity of asbestos-containing materials. A special team should be assigned and trained to deal with small scale/short duration asbestos activities and fiber release episodes. Each member of this team should be supplied with a personal respirator and be trained in its use and be regularly fit tested.

TABLE 3
TASK SPECIFIC RESPIRATORY PROTECTION

Tasks	Airborne Fiber Concentration	Required Respirator
Pre-Cleaning Plastic Installation Plastic Removal Loading Waste Bags Unloading Waste Bags Routine Maintenance near ACM	Not in excess of 0.05f/cc	Half-mask of full facepiece air-purifying respirator equipped with high efficiency filters.
Glove Bag Asbestos Removal	Not in excess of 0.125f/cc	Any powered air-purifying respirator equipped with high efficiency filters. (Note: This incorporates NIOSH's re-evaluation of Paprs from 100x protection factor to a 25x protection factor. Quantitative fit testing shall not be considered.)
	Not in excess of .25f/cc	Any supplied-air respirator operated in continuous flow mode.
	Not in excess of 5f/cc	Full facepiece supplied-air respirator operated in pressure demand mode.
	Greater than 5f/cc	Full facepiece air respirator operated in pressure demand mode, equipped with an auxiliary positive pressure self-contained breathing apparatus. (Auxiliary air bottles.)

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