

ADMINISTRATIVE PROCEDURES



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County Administrator

SUBJECT: **RESPIRATORY PROTECTION PROGRAM**

DEPARTMENT RESPONSIBLE: Risk Management

I. PURPOSE

To establish procedures to minimize health risks for Pima County employees through a comprehensive Respiratory Protection Program.

This program is mandated by the Occupational Safety and Health Act (OSHA) part 29CFR 1910.134 which states that occupational diseases shall be controlled by preventing employees from breathing air contaminated with harmful dusts, fumes, mists, gases, or vapors. This shall be accomplished when possible by accepted engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation and substitution of less toxic materials). When effective engineering controls are not feasible, or while they are being instituted, appropriate respiratory protection shall be worn.

II. PROCEDURE

Pima County shall endeavor to protect the health and safety of its employees by ensuring that personnel whose jobs entail the risk of breathing airborne contaminants shall be protected by a respirator designed for that specific exposure.

Department Directors are responsible for surveying their respective departments to determine if any of their employees are affected. If employees are affected, department directors shall comply as outlined by this directive, including appointing a qualified program administrator.

III. PROGRAM OPERATION

A. **Affected Personnel** - Any employee of Pima County who, in the daily performance of their job, may be exposed to a toxic or hazardous atmosphere must be included in this program. Compliance with all elements of the program is mandatory for continued employment with Pima County.

B. Medical Requirements

Each affected employee must comply with the medical requirements for respirator use. These requirements are necessary to further safeguard employee health.

All examinations, including the examination of health questionnaires, shall be performed by the County Physician or an assigned licensed health care professional, legally able to perform said examinations. These examinations shall be at no cost to the employee.

Preplacement

All employees shall be required to complete the medical questionnaire and have a physical examination including a pulmonary function test prior to beginning work in an environment that would require the use of respiratory protection. The examination may include additional diagnostic procedures necessary to arrive at a conclusion regarding the individual's ability to use a respirator.

Periodic

At a minimum, all employees shall complete a medical questionnaire on an annual basis. The medical questionnaire shall be presented to the County Physician for review and the employee shall be given the opportunity to discuss the questionnaire with the physician or licensed health care professional. After review of the questionnaire, the employee may be required to be examined by the County Physician if a positive response is given to OSHA delineated questions.

Additionally, complete exams will be required in the following circumstances:

- 1) Employees working with hazardous substances which pose a respiratory hazard
- 2) Wearers of full face piece respirators
- 3) Wearers of SCBA's who have musculoskeletal complaints
- 4) Employees who wear respirators and who must perform heavy physical work while wearing heavy protective clothing or impervious clothing.

Special Medical

The employing department must request a special medical evaluation under the following circumstances:

- 1) The employee reports medical signs or symptoms that are related to inability to wear a respirator

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- 2) Upon the recommendation of a professional licensed health care professional
 - 3) If observations during program evaluation or fit testing indicate a need for follow-up
 - 4) A change in workplace conditions, resulting in a substantial change in the physiological burden placed on the employee.

Requirements

Department shall provide the examining physician with a completed "Physical Description Questionnaire". This form can be obtained from Risk Management.

- 1) A description of the workplace exposure conditions that require a respirator
- 2) The substances to which the employee may be exposed
- 3) The weight and type of the respirator to be worn by the employee
- 4) The duration and frequency of the respirator use.

County Physician shall provide a written statement to the employee regarding:

- 1) Whether the employee is/is not medically eligible for respirator use
- 2) Any limitations on respirator use
- 3) Recommendations regarding need for follow-up examinations
- 4) An acknowledgment that employee has been given a copy of the results and has been given an opportunity to discuss the results.

Risk Management shall be the liaison between the department and the County Physician for the scheduling of all medical examinations. The results of all medical examinations shall be maintained confidentially in accordance with the record keeping requirements.

Procedure for periodic evaluation of Medical Questionnaires - Employees Requiring Questionnaire only - The questionnaire will be sent to the employee through the departmental designated program administrator.

Included with the questionnaire will be directions regarding how to contact the LHCP (licensed health care professional) for answers to any questions.

A pre-addressed sealable envelope will be included with the questionnaire allowing return of the completed form while ensuring confidentiality.

The completed form will be sent to the Occupational Medical Manager at Risk Management, who will send the envelope, intact, to the County Physician.

Upon completion of the examination of the questionnaire, the Physician will complete the certification form and forward the employee and employer copy to Risk Management.

Risk Management will notify the department of the results of the exam, send the employee's copy to him/her and maintain one copy as required by law.

Employees Requiring Complete Examination:

The examination should be scheduled through Risk Management by the departmental designee. The questionnaire will be completed at the time of the examination and reviewed by the LHCP. The employee shall be given an opportunity at that time to have any questions answered.

Upon completion of the examination, the LHCP shall give the employee a copy of the certification form. A copy shall also be forwarded to Risk Management, who will notify the department of the results of the exam.

C. Program Administration

The director of each department shall assign a program administrator. The name of the individual appointed shall be forwarded to Risk Management. This individual must be qualified, by experience or training, to administer or oversee the Respiratory Protection Program and conduct the required evaluations of program effectiveness in their department. The program administrator is responsible for:

1. Determining the feasibility of engineering or work practices that could eliminate the need for respirators
2. Guidance in respirator selection and the purchase of fit testing, NIOSH approved equipment
3. Employee training and issuance of respirators
4. Storage, maintenance, repair and inspection of respirators
5. Work area surveillance
6. Providing employees requiring corrective lenses, who wear full face piece respirators, with purchase vouchers for prescription lenses.

- D.** The Risk Management Department shall assist the program administrator as required i.e. technical advice, training and consultation.

IV. GENERAL**A. Exposure Levels**

1. Wherever possible, the departments shall institute engineering controls and work practices to reduce and maintain employee exposure below the OSHA permissible exposure limit. Where necessary, exposure shall be measured by air monitoring, otherwise, objective data from similar settings shall be employed to estimate expected exposure levels.
2. Where engineering controls or work practices are not feasible or adequate to reduce exposure to below the permissible exposure limits, employees shall use respirators appropriate for the exposure level. Respirators are provided at no cost to the employee.
3. In summary, the County will utilize three steps in control of respiratory hazards:
 - a. Assess the hazard via air-monitoring or the use of objective data
 - b. Reduce or eliminate the hazard via engineering controls and work practices
 - c. Provide appropriate respiratory protective equipment under Pima County's Respiratory Protection Program.
4. In all cases, the County shall provide more than the OSHA defined minimum protection for measured or estimated levels of exposure.

B. Respiratory Hazards

1. Oxygen Deficiency - to be considered when working in confined spaces or areas where oxygen may be deficient (less than 19.5% oxygen content of the air) such as boilers, mechanical chases, manholes, underground storage tanks, or in the case of chemical releases.
2. Toxic Contaminants - those likely to be encountered by County personnel, even though it may be on an infrequent basis.
 - a. Particulates (e.g. asbestos fibers)
 - b. Gaseous materials (e.g., carbon monoxide, chlorine, hydrogen sulfide)
 - c. Organic vapors (e.g. methylene chloride, solvents)
 - d. Combinations of particulates and vapors.
3. Biological Contaminants - i.e. Tuberculosis.

C. Selection of Respirators

1. Respirator selection shall be based upon the type of hazard and the concentration of hazard with the guidance of the program administrator.
2. All respirators purchased and used by Pima County shall be approved by the National Institute for Occupational Safety and Health (NIOSH) as designated through:
 - a. An assigned identification number associated with each unit
 - b. A label identifying the type of hazard the unit is designed to protect against.
3. Additional label information identifies the unit's limitations and the component parts approved for use with the basic unit. Only the specified manufacturer's replacement parts and filters shall be used with each brand name and type of respirator. When possible, each affected employee shall be issued a respirator mask for their exclusive use.

D. Categories of Respirators

1. Air-Purifying Disposable Particulate Respirators: N - Non-Oil (N-95, N99, N100)
R - Oil Resistant (R 95, R99, R100) P - Oil Proof (P95, P99, P100)
2. Air-Purifying Half Mask
3. Air-Purifying Disposable Half-Mask
4. Air-Purifying Full-Face
5. Powered Air Purifying Respirator
6. Airline Respirators with Auxiliary Self-Contained Air Supply
7. Self-Contained Breathing Apparatus (SCBA).

E. Training

1. Each affected employee shall receive respirator training upon hire. Instruction shall include:
 - a. Why the respirator is necessary and how improper fit, usage or maintenance can compromise the protective effect of the respirator
 - b. The limitations and capabilities of respirator use

- c. How to use the respirator effectively in emergency situations, including situations when the respirator malfunctions
 - d. How to inspect, put on and remove, use and check the seals of the respirator
 - e. The procedures for maintenance, storage and cleaning the respirator.
2. Each employee shall receive "refresher training" annually. This shall include a review of the initial training with emphasis on regular inspections and care of the respirator.

F. Respiratory Equipment Fit-Testing and Fit-Checking

1. Employees must be fit tested prior to initial use of the respirator, whenever a different respirator face piece (size, style, model or make) is used, and at least annually thereafter.
2. Fit testing shall be in accordance with 29CFR1910.134, as part of the respirator selection process. Fit checking will be performed by the employee before entering a hazardous atmosphere.
3. Additional fit testing must be performed if observations by the program administrator, supervisor or PLHCP warrant it, or if there are physical changes in the employee such as facial scarring, dental changes, change in body weight or cosmetic surgery.
4. Fit testing of tight fitting atmosphere supplying respirators or PAPR shall be accomplished by performing fit testing in the negative pressure mode. Employees required to wear a full face respirator who wear corrective lenses to see must be issued frames by their department. A voucher issued by Risk Management will be given to them for lenses through the department program administrator. Contact lenses may be worn with full face respirators.
 - A. Qualitative test conducted by qualified personnel.
 - (1) Irritant smoke (stannic chloride or titanium tetrachloride), isoamyl acetate (banana oil), saccharin test or Bitrex.
 - (a) The test can only be administered for air purifying respirators if the negative and positive pressure checks have been successfully passed (see subparagraph G - Fit Checking Procedures)
 - (b) Process
 - (i) A challenge test is performed, in accordance with manufacturer's

instructions to determine if employee can detect the challenge agent

- (ii) Respirator wearer enters a test enclosure (a plastic hood or sufficient substitute), unless irritant smoke is being used
- (iii) The challenge substance (Bitrex or alternative) is sprayed or squeezed into a hole in the enclosure
- (iv) The wearer mimics several worker activities during the test
- (v) If wearer detects the substance inside the respirator, it indicates a poor fit; the mask fails the test.

NOTE: If irritant smoke is used, this test must be administered with caution because the smoke is highly irritating to the eyes, skin, and mucus membranes. The eyes must be kept tightly closed when testing a half face air purifying respirator.

- (c) Quantitative test determines a respirator's protection factor.

G. Fit Checking Procedures: These checks are to be performed by the wearer each time the respirator is used.

1. **Negative pressure check:** Wearer closes off inlets of filters/cartridges by covering with palms. Wearer inhales so that face piece collapses slightly and holds his/her breath for ten seconds. Mask passes if there is no inward leakage and face piece remains slightly collapsed.
2. **Positive pressure check:** Wearer closes off the exhalation valve of the respirator and gently exhales in mask. Proper fit is obtained if a slight positive pressure can be built up inside the mask without evidence of outward air leakage around the face piece.

H. Respirator Use

1. Employees are prohibited from entering all contaminated/hazardous areas without the appropriate protective equipment.
2. Employees shall wear protective equipment at all times while exposed to contaminated atmospheres. Employees may exit the work site as they deem necessary for rest and relaxation.

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3. Facial hair between the sealing surface of the mask and the face, or which may interfere with valve function, is prohibited. **NOTE: Facial hair is not allowed during fit testing or when the employee is performing tasks requiring a respirator. At any other time, the employee may be allowed to have facial hair, beard, etc. However, when the employee is assigned a task requiring respirator use, the individual must shave prior to donning the respirator.**
 4. Continuing respirator effectiveness.
 - a. Appropriate surveillance of work area conditions and degree of employee exposure must be performed. When there is a change in work area, conditions or employee exposure or stress, that may affect respirator effectiveness, the supervisor/program administrator will reevaluate the continued effectiveness of the respirator.
 - b. Supervisors will ensure employees leave the respirator use area:
 - (1) To wash their faces and respirator face pieces as necessary to prevent skin irritation
 - (2) If breakthrough of vapor or gas, changes in breathing resistance or leakage of face piece is detected
 - (3) To replace the respirator or the filter, cartridge or canister elements.
 - c. IDLH (Immediately Dangerous to Life and Health) Atmosphere Procedures:
 - (1) For each employee working in an IDLH atmosphere, another employee trained and equipped to provide emergency rescue, must be standing by outside the IDLH atmosphere
 - (2) Visual, voice or signal line communication must be maintained between employees in the IDLH atmosphere and those stationed outside
 - (3) The employees stationed outside the IDLH atmosphere must be equipped with a SCBA or SAR, and retrieval equipment.

I. **Maintenance of Respirators**

1. Routine inspection must be performed before and after each use. The following checks for defects will be included.
 - a. Negative pressure air purifying respirators (half-mask and full face piece).

- (1) Rubber face piece shall be checked for:
 - (a) Excessive dirt
 - (b) Cracks, tears, holes
 - (c) Distortion from improper storage
 - (d) Cracked, loose or scratched lenses (full face piece)
 - (e) Broken or missing mounting clips.
 - (2) Head straps shall be checked for:
 - (a) Breaks or tears
 - (b) Loss of elasticity
 - (c) Broken or malfunctioning buckles or attachment.
 - (3) Inhalation and exhalation valves shall be checked for:
 - (a) Detergent residue, dust particles or dirt on valve seal
 - (b) Cracks, tears, or distortion in the valve material or valve seal
 - (c) Missing or defective valve covers.
 - (4) Filter elements shall be checked for:
 - (a) Proper filter for the hazard
 - (b) NIOSH approval #'s
 - (c) Worn threads
 - (d) Cracks or dents in filter housing.
2. Power air purifying respirators shall be inspected for:
- a. Face piece, head straps, valve and breathing tube, as above
 - b. Hood or helmet (if applicable), headgear and suspension
 - c. Cracks or breaks in face shield (if applicable)
 - d. Battery adequately charged.

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3. Supplied Air Respirators
 - a. Face piece, head straps and valves shall be checked as above
 - b. Breathing tube shall be checked for:
 - (1) Cracks
 - (2) Missing or loose hose clamps
 - (3) Broken or missing connectors.
 - c. Hood, helmets and suits shall be checked for:
 - (1) Proper headgear suspension
 - (2) Cracks or breaks in face shield
 - (3) Rips or torn seams.
 - d. Air supply system
 - 1) Airline respirators shall be checked for:
 - (a) Breaks or kinks in air supply hoses and end fitting attachments
 - (b) Tightness of connections
 - (c) Proper setting of regulators and valves per manufacturer's recommendation
 - (d) Correct operation of air purifying elements and equipment malfunction alarms.
 - 2) Self contained breathing apparatus (SCBA) - consult manufacturer's instructions and literature.

J. Routine cleaning

Each affected employee shall be provided with a respirator that is clean, sanitary and in good working order. Respirators shall be cleaned and disinfected as follows:

1. Respirators issued for exclusive use by an employee must be cleaned and disinfected as often as necessary to be maintained in a sanitary condition.
2. Respirators used by more than one employee must be cleaned and disinfected before being worn by different individuals.

3. Respirators for emergency use must be cleaned and disinfected after each use.
4. Respirators used in fit testing and training must be cleaned and disinfected after each use.
5. Cleaning and disinfection of respirators must be done in accordance with OSHA regulations 1910.134 (h).

K. Respirator Repair

1. Repair must be performed by a qualified individual, usually at the manufacturer's accredited repair facility. The wearer may replace inhalation and exhalation valves if replacement parts are available.
2. Parts replacement must be with the specific manufacturer's items (different producer's parts are not interchangeable).
3. The program administrators are responsible for maintaining a record of all repairs documented by type of respirator and specific repair facility.

L. Storage

1. Each respirator shall be stored in the manufacturer's plastic bag and/or stored according to their instructions.
2. The storage area(s) shall not be exposed to dust, sunlight, extreme temperatures, excessive moisture, contamination or damaging chemicals. They shall be stored to prevent deformation of the face piece and exhalation valve.
3. A sufficient supply of cleaning agents, replacement filters and canisters shall be available.
4. Emergency respirators shall be kept accessible in work areas, and be stored in containers or compartments marked "emergency respirators".

M. Respirator Program Evaluation

1. The program shall be reviewed annually to determine if provisions of this written program are being used effectively.
2. Employees will be consulted regularly for their views on the effectiveness of the program and to identify any problems.
3. Adjustments shall be enacted based upon relevant air sampling data, changes in federal and state laws and the effectiveness of the program.

N. Record keeping

Written information must be maintained by the departments for the following:

1. Results of medical evaluations;
2. Fit testing, must include:
 - a. Employee's name
 - b. Type of fit test performed
 - c. Make, model, style and size of respirator
 - d. Date of test
 - e. Pass/fail results
 - f. These must be kept until next fit test
3. Training records

V. SUMMARY

The Respiratory Protection Program is designed to ensure the health and safety of all affected employees with respect to particular work site conditions and circumstances. The County shall provide frequent surveillance and training to ensure all protective equipment is within the OSHA specifications and NIOSH recommendations and is used according to manufacturer's specifications.

Employees are encouraged to submit recommendations to increase the usefulness and effectiveness of this Program. All requests, opinions and comments should be directed to the program administrator. Copies of this program will be submitted to all affected employees.

VI. RESPONSIBILITY FOR REVIEW

Risk Management shall review this directive annually or as necessary to comply with changes in the regulations.