



# Respiratory Protection Model Program



Public Employees Occupational Safety and Health Program

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# TABLE OF CONTENTS

	<u>Page No.</u>
Introduction .....	1
Checklists .....	6
Respiratory Protection Programs .....	7
Medical Evaluation .....	9
Fit Testing .....	11
Proper Use of Respirators .....	12
Respirator Maintenance and Care .....	13
Breathing Air Quality and Use .....	15
Training and Information .....	16
Program Evaluation .....	17
Recordkeeping .....	18
Sample Respiratory Protection Program .....	19
Appendix 1 Respiratory Protection Standard .....	34

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# **Respiratory Protection Model Program**

## **INTRODUCTION**

This respiratory protection model program is intended to help public employers and employees comply with the Respiratory Protection Standard (29 CFR 1910.134). It provides guidance only, and does not alter or determine compliance responsibilities, which are set forth in the Public Employees Occupational Safety and Health Act (PEOSHA).

The Respiratory Protection Standard specifies only the minimum requirements for an effective respiratory protection program. Employers are encouraged to exceed these minimum criteria if doing so enhances the safety and health of their employees.

### ***Who should read this respiratory protection model program?***

Employers and employees should read this model program if it is likely that a respiratory protection program will need to be established and implemented. Under the Respiratory Protection standard, the PEOSH Program may require the employer to establish a respiratory protection program when exposure to an airborne containment or low oxygen levels can cause illness or injury to a worker's health, and when these health effects can be prevented by the appropriate selection and use of a respirator.

### ***What information is found in this model program?***

This model program contains checklists, a sample respiratory protection program and a copy of the Respiratory Protection Standard (29 CFR 1910.134).

Page 19 contains a sample respiratory protection program. This sample program was written for a hypothetical public entity to provide an example of how the requirements of the Respiratory Protection Standard may be appropriately implemented. Keep in mind that there is often more than one way to implement certain requirements of the standard in a particular workplace setting.

### ***What is a respirator?***

Respirators are devices that protect workers from inhaling harmful substances. These substances can be in the form of airborne vapors, gases, dust, fogs, fumes, mists, smokes, or sprays. Some respirators also ensure that workers do not breathe air that contains dangerously low levels of oxygen.

## **Respiratory Protection Model Program**

There are two major types of respirators:

1. Air-purifying respirators, which remove contaminants from the air.
2. Atmosphere-supplying respirators, which provide clean air from an uncontaminated source.

Respirators provide protection from respiratory hazards only when they are used properly.

### ***What is a respiratory protection program?***

A respiratory protection program is a cohesive collection of worksite-specific procedures and policies that addresses all respiratory protection elements required by the standard. For example, a respiratory protection program must contain specific procedures describing how respirators will be selected, fitted, used, maintained and inspected in a particular workplace.

### ***When am I required to establish a respiratory protection program?***

Generally, whenever the employer or the PEOSH Program requires employees to wear respirators. For example, the establishment of a respiratory protection program may be needed:

- # If employees work in situations where the level of oxygen is insufficient, or potentially insufficient.
- # If employees are potentially exposed to harmful levels of hazardous gases or vapors.
- # If employees are exposed to other potential respiratory hazards, such as dust, mists, fumes, sprays, and other airborne particulates.

Employers need to supply workers with respirators when the preferred methods of protecting them from breathing contaminated air are insufficient to reduce the contamination to nonhazardous levels. These preferred methods include:

- # Engineering controls, such as ventilation.
- # Substituting non-hazardous materials for the materials that pose respiratory hazards.
- # Administrative controls, such as scheduling major maintenance for weekends or times when few workers are present.

## **Respiratory Protection Model Program**

Refer to the standard in Appendix 1, if there are questions about when to supply employees with respirators.

### ***What is the Respiratory Protection Standard?***

The Respiratory Protection Standard requires employers to establish and maintain a respiratory protection program to protect their respirator-wearing workers. The PEOSH Program has adopted a revised standard, which became effective on October 5, 1998. (The complete text of the revised standard is included in Appendix 1.)

The revised standard incorporates new scientific principles and technologies that have emerged since 1971. Because of advances in technology, many areas in the previous standard had become outdated.

The new standard is intended to:

- # Enhance the protection of worker health.
- # Promote more effective use of respirators.
- # Make it easier to comply with its provisions.
- # Make it easier to understand the policy and procedures to follow when implementing a respiratory protection program.

### ***How does the new standard differ from the old standard that it replaces?***

The new standard:

- # Contains new provisions that recognize the needs of small workplaces.
- # Requires written respiratory protection programs to include work-site specific procedures.
- # Requires that a qualified "program administrator" oversee the respiratory protection program.
- # Provides:
  - Definitions that will eliminate confusion about terminology and how these terms apply to respirators and their use.

## **Respiratory Protection Model Program**

- Criteria for selecting respirators.
- Clear language on the requirement for medical examinations of workers and the use of medical questionnaires.
- # Requires employers to perform a hazard determination to identify respiratory hazards and work conditions.
- # Requires annual fit testing for all tight-fitting respirators, and includes protocols for fit testing.
- # Addresses the use of respirators in situations that the PEOSH Program characterizes as Immediately Dangerous to Life or Health (IDLH).

### ***How does the new Respiratory Protection Standard recognize the needs of small workplaces?***

Among other things, the revised Respiratory Protection standard:

- # Allows the use of a medical questionnaire to screen for employee health conditions which could affect the ability to use a respirator. The questionnaire must be administered by a physician or other licensed health care professional.
- # Allows medical evaluations to be conducted either by a physician or by another licensed health care professional.
- # Requires medical evaluations to be conducted after the initial evaluation only when specific conditions indicate a need for a re-evaluation.
- # Minimizes the amount of paperwork required in connection with medical evaluations.
- # Establishes flexible requirements for cleaning and disinfecting respirators issued to individual employees.
- # Allows tags to be used to document respirator inspections rather than written records.
- # Allows the employer to obtain a certificate of breathing gas analysis from the supplier instead of the requirement to conduct their own gas analysis.

## **Respiratory Protection Model Program**

***Whom can I contact if I have additional questions about the Respiratory Protection Standard that are not answered in the Respiratory Protection Model Program?***

For additional assistance in establishing and implementing a respiratory protection program, contact the PEOSH Program at (609) 984-1863.

***Checklists: to be used to determine compliance with the  
Respiratory Protection Standard (29 CFR 1910.134)***



## CHECKLIST FOR RESPIRATORY PROTECTION PROGRAMS

Check to ensure that your facility has:

- A written respiratory protection program that is specific to your workplace and covers the following:
  - Procedures for selecting respirators.
  - Medical evaluations of employees required to wear respirators.
  - Fit testing procedures.
  - Routine use and emergency respirator use procedures.
  - Procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, discarding, and maintaining respirators.
  - Procedures for ensuring adequate air quality for supplied air respirators.
  - Training in respiratory hazards.
  - Training in proper use and maintenance of respirators.
  - Program evaluation procedures.
  - Procedures for ensuring that workers who voluntarily wear respirators (excluding filtering facepieces) comply with the medical evaluation, and cleaning, storing and maintenance requirements of the standard.
- A designated program administrator who is qualified to administer the program.
- Updated the written program as necessary to account for changes in the workplace affecting respirator use.
- Provided equipment, training, and medical evaluations at no cost to employees.

## CHECKLIST FOR RESPIRATORY PROTECTION PROGRAMS

Check that at your facility:

- Respiratory hazards have been identified and evaluated.
- Employee exposures that have not been, or cannot be, evaluated are considered immediately dangerous to life or health (IDLH).
- Respirators are NIOSH certified, and used under the conditions of certification.
- Respirators are selected based on the workplace hazards evaluated and workplace and user factors affecting respirator performance and reliability.
- A sufficient number of respirator sizes and models are provided to correctly fit the users.
- For IDLH atmospheres:
  - Full facepiece pressure demand supplied-air respirator (SARs) with auxiliary self-contained breathing apparatus (SCBA) unit or full facepiece pressure demand SCBAs, with a minimum service life of 30 minutes, are provided.
  - Respirators used for escape only are National Institute for Occupational Safety and Health (NIOSH) certified for the atmosphere in which they will be used.
  - Oxygen deficient atmospheres are considered IDLH.
- For Non-IDLH atmospheres:
  - Respirators selected are appropriate for the chemical state and physical form of the contaminant.
  - Air-purifying respirators used for protection against gases and vapors are equipped with end-of-service-life indicator (ESLIs) or a change schedule has been implemented.
  - Air-purifying respirators used for protection against particulates are equipped with NIOSH-certified high efficiency particulate air (HEPA) filters or other filters certified by NIOSH for particulates under 42 CFR part 84.

## **CHECKLIST FOR MEDICAL EVALUATION**

Check that at your facility:

- All employees have been evaluated to determine their ability to wear a respirator prior to being fit tested for or wearing a respirator for the first time.
- A physician or other licensed health care professional (PLHCP) has been identified to perform the medical evaluations.
- The medical evaluations obtain the information requested in Sections 1 and 2, Part A of Appendix C of the standard, 29 CFR 1910.134.
- Employees are provided follow-up medical exams if they answer positively to any of questions 1 through 8 in Section 2, Part A of Appendix C, or if their initial medical evaluation reveals that a follow-up exam is needed.
- Medical evaluations are administered confidentially during normal work hours, and in a manner that is understandable to employees.
- Employees are provided the opportunity to discuss the medical evaluation results with the PLHCP.
- The following supplemental information is provided to the PLHCP before they make a decision about respirator use:
  - Type and weight of the respirator.
  - Duration and frequency of respirator use.
  - Expected physical work effort.
  - Additional protective clothing to be worn.
  - Potential temperature and humidity extremes.
  - Written copies of the respiratory protection program and the Respiratory Protection standard.

### **CHECKLIST FOR MEDICAL EVALUATION** *(continued)*

- Written recommendations are obtained from the PLHCP regarding each employee's ability to wear a respirator, and that the PLHCP has given the employee a copy of these recommendations.
- Employees who are medically unable to wear a negative pressure respirator are provided with a power air-purifying respirator (PAPR) if they are found by the PLHCP to be medically able to use a PAPR.
- Employees are given additional medical evaluations when:
  - The employee reports symptoms related to his or her ability to use a respirator.
  - The PLHCP, respiratory protection program administrator, or supervisor determines that a medical reevaluation is necessary.
  - Information from the respiratory protection program suggests a need for reevaluation.
  - Workplace conditions have changed in a way that could potentially place an increased burden on the employee's health.

## **CHECKLIST FOR FIT TESTING**

Check that at your facility:

- Employees who are using tight fitting respirator facepieces have passed an appropriate fit test prior to being required to use a respirator.
- Fit testing is conducted with the same make, model, and size that the employee will be expected to use at the worksite.
- Fit tests are conducted annually and when different respirator facepieces are to be used.
- Provisions are made to conduct additional fit tests in the event of physical changes in the employee that may affect respirator fit.
- Employees are given the opportunity to select a different respirator facepiece, and be retested, if their respirator fit is unacceptable to them.
- Fit tests are administered using PEOSH-accepted quantitative fit test (QNFT) or qualitative fit test (QLFT) protocols.
- QLFT is only used to fit test either PAPRs, SCBAs, or negative pressure APRs that must achieve a fit factor of 100 or less.
- QNFF is used in all situations where a negative pressure respirator is intended to protect workers from contaminant concentrations greater than 10 times the PEL.
- When QNFT is used to fit test negative pressure respirators, a minimum fit factor of 100 is achieved for tight-fitting half-facepieces and 500 for full-facepieces.
- For tight-fitting atmosphere-supplying respirators and powered air-purifying respirators:
  - Fit tests are conducted in the negative pressure mode.
  - QLFT is achieved by temporarily converting the facepiece into a negative pressure respirator with appropriate filters, or by using an identical negative pressure APR.
  - QNFT is achieved by modifying the facepiece to allow for sampling inside the mask midway between the nose and mouth. The facepiece is restored to its NIOSH approved configuration before being used in the workplace.

## **CHECKLIST FOR PROPER USE OF RESPIRATORS**

Check your facility to be certain that:

- Workers using tight-fitting respirators have no conditions, such as facial hair, that would interfere with a face-to-facepiece seal or valve function.
- Workers wear corrective glasses, goggles, or other protective equipment in a manner that does not interfere with the face-to-facepiece seal or valve function.
- Workers perform user seal checks prior to each use of a tight-fitting respirator.
- There are procedures for conducting ongoing surveillance of the work area for conditions that affect respirator effectiveness, and that, when such conditions exist, you take steps to address those situations.
- Employees are permitted to leave their work area to conduct respirator maintenance, such as washing the facepiece, or to replace respirator parts.
- Employees do not return to their work area until their respirator has been repaired or replaced in the event of breakthrough, a leak in the facepiece, or a change in breathing resistance.
- There are procedures for respirator use in IDLH atmospheres and during interior structural firefighting to ensure that: the appropriate number of standby personnel are deployed; standby personnel and employees in the IDLH environment maintain communication; standby personnel are properly trained, equipped, and prepared; the employer will be notified when standby personnel enter an IDLH atmosphere; and the employer will respond to this notification.
- Standby personnel are equipped with a pressure demand or other positive pressure SCBA, or a positive pressure supplied air respirator with an escape SCBA, and appropriate retrieval equipment or other means for rescue.
- Procedures for interior structural firefighting require that: at least two employees enter the IDLH atmosphere and remain in contact with one another at all times; at least two standby personnel are used; and all firefighting employees use SCBAs.

## **CHECKLIST FOR RESPIRATOR MAINTENANCE AND CARE**

Check to make sure that your facility has met the following requirements:

### ***Cleaning and Disinfecting***

- Respirators are provided that are clean, sanitary, and in good working order.
- Respirators are cleaned and disinfected using the procedures specified in Appendix B-2 of the standard.
- Respirators are cleaned and disinfected:
  - As often as necessary when issued for the exclusive use of one employee.
  - Before being worn by different individuals.
  - After each use for emergency use respirators.
  - After each use for respirators used for fit testing and training.

### ***Storage***

- Respirators are stored to protect them from damage from the elements, and from becoming deformed.
- Emergency respirators are stored:
  - To be accessible to the work area.
  - In compartments marked as such.
  - In accordance with manufacturer's recommendations.

### ***Inspections***

- Routine-use respirators are inspected before each use and during cleaning.
- SCBAs and emergency respirators are inspected monthly and checked for proper function before and after each use.
- Emergency escape-only respirators are inspected before being carried into the workplace for use.

## **CHECKLIST FOR RESPIRATOR MAINTENANCE AND CARE** *(continued)*

- Inspections include:
  - Check of respirator function.
  - Tightness of connections.
  - Condition of the facepiece, head straps, valves, and cartridges.
  - Condition of elastomeric parts.
- For SCBAs, inspection includes checking that cylinders are fully charged, and that regulators and warning devices function properly.
- Emergency use respirators are certified by documenting the inspection, and by tagging the information either to the respirator or its compartment, or storing it with inspection reports.

### ***Repairs***

- Respirators that have failed inspection are taken out of service.
- Repairs are made only by trained personnel.
- Only NIOSH-approved parts are used.
- Reducing and admission valves, regulators and alarms are adjusted or repaired only by the manufacturer or a technician trained by the manufacturer.



## **CHECKLIST FOR BREATHING AIR QUALITY AND USE**

Check that at your facility:

### ***General***

- Compressed breathing air meets the requirements for Grade D breathing air.
- Compressed oxygen is not used in respirators that have previously used compressed air.
- Oxygen concentration greater than 23.5 percent is used only in equipment designed for oxygen service or distribution.
- Breathing air couplings are incompatible with outlets for other gas systems.
- Breathing gas containers are marked with appropriate NIOSH certification.

### ***Breathing Air Cylinders***

- Cylinders are tested and maintained according to US DOT Regulations 49 CFR Part 173 and 178.
- A certificate of analysis for breathing air has been obtained from the supplier.
- Moisture content in the cylinder does not exceed a dew point of -50°F at 1 atmosphere pressure.

### ***Compressors***

- Are constructed and situated to prevent contaminated air from getting into the system.
- Are set up to minimize the moisture content.
- Are equipped with in-line air-purifying sorbent beds and/or filters that are maintained or replaced following manufacturer's instructions.
- Are tagged with information on the most recent change date of the filter and an authorizing signature.
- Carbon monoxide does not exceed 10 ppm in the breathing air from compressors that are not oil-lubricated.
- High-temperature and carbon monoxide alarms are used on oil-lubricated compressors.

## TRAINING AND INFORMATION CHECKLIST

Check that at your facility:

- Employees can demonstrate knowledge of:
  - Why the respirator is necessary and the consequences of improper fit, use, or maintenance.
  - Limitations and capabilities of the respirator.
  - How to effectively use the respirator in emergency situations.
  - How to inspect, put on, remove, use, and check the seals of the respirator.
  - Maintenance and storage procedures.
  - The general requirements of the respirator standard.
- Training is understandable to employees.
- Training is provided prior to employee use of a respirator.
- Retraining is provided:
  - Annually.
  - Upon changes in workplace conditions that affect respirator use.
  - Whenever retraining appears necessary to ensure safe respirator use.
- Appendix D of the standard is provided to voluntary users.

## **PROGRAM EVALUATION CHECKLIST**

Check that at your facility:

- Workplace evaluations are being conducted as necessary to ensure that the written respiratory protection program is being effectively implemented.
- Employees required to wear respirators are being regularly consulted to assess the employees' views and to identify problems with respirator fit, selection, use and maintenance.
- Any problems identified during assessments are corrected.

## **RECORDKEEPING CHECKLIST**

Check that at your facility:

- Records of medical evaluations have been retained.
- Fit testing records have been retained.
- A copy of the current respiratory protection program has been retained.
- Access to these records is provided to affected employees.

## **Sample Respiratory Protection Program**

This Sample Respiratory Protection Program is for demonstration purposes only. The County Sign Shop is not intended to represent an actual public workplace. The Sign Shop is a hypothetical shop that has been chosen for interpretation of certain provisions of 29 CFR 1910.134 in ways that could be different from the way another sign shop might choose to implement it.

# Sample Respiratory Protection Program

## 1.0 Purpose

The County Sign Shop has determined that employees in the stripping, painting and maintenance departments are exposed to respiratory hazards during routine operations. These hazards include wood dust, particulates, and vapors, and in some cases represent Immediately Dangerous to Life or Health (IDLH) conditions. The purpose of this program is to ensure that all County Sign Shop employees are protected from exposure to these respiratory hazards.

Engineering controls, such as ventilation and substitution of less toxic materials, are the first line of defense; however, engineering controls have not always been feasible for some of the operations, or have not always completely controlled the identified hazards. In these situations, respirators and other protective equipment must be used. The work processes requiring respirator use at the Sign Shop are outlined in Table 1 in the Scope and Application section of this program.

In addition, some employees have expressed a desire to wear respirators during certain operations that do not require respiratory protection. As a general policy, the county will review each of these requests on a case-by-case basis. If the use of respiratory protection in a specific case will not jeopardize the health or safety of the worker(s), the county may provide respirators for voluntary use. As outlined in the Scope and Application section of this program, voluntary respirator use is subject to certain requirements of this program.

## 2.0 Scope and Application

This program applies to all employees who are required to wear respirators during normal work operations. This includes employees in the stripping, painting and maintenance departments. All employees working in these areas and engaged in certain processes or tasks (as outlined in the table below) must be enrolled in the county's respirator protection program.

In addition, any employee who voluntarily wears a respirator when a respirator is not required (i.e., in certain maintenance and coating operations) is subject to the medical evaluation, cleaning, maintenance, and storage elements of this program, and must be provided with certain information specified in this section of the program.<sup>1</sup>

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<sup>1</sup>Employees who voluntarily wear filtering facepieces (dust masks) are not subject to the medical evaluation, cleaning, storage, and maintenance provisions of this program.

Employees participating in the respiratory protection program do so at no cost to them. The expense associated with training, medical evaluations and respiratory protection equipment will be borne by the county.

<b>TABLE 1: VOLUNTARY AND REQUIRED RESPIRATOR USE AT THE COUNTY SIGN SHOP</b>	
<b>Respirator</b>	<b>Department/Process</b>
Filtering facepiece (dust mask)	Voluntary use for warehouse workers
Half-facepiece APR or PAPR with P100 filter	Prep and Assembly Voluntary use for maintenance workers when cleaning spray booth walls or changing spray booth filter
Half-facepiece APR with organic vapor cartridge	Booth Operators (gun cleaning), and Maintenance workers (loading coating agents into supply systems)
SCBA	Spray Booth Cleaning Area

### **3.0 Responsibilities**

#### **Program Administrator**

The Program Administrator is responsible for administering the respiratory protection program. Duties of the program administrator include:

- ! Identifying work areas, processes or tasks that require workers to wear respirators, and evaluating hazards.
- ! Selection of respiratory protection options.
- ! Monitoring respirator use to ensure that respirators are used in accordance with their certifications.
- ! Arranging for and/or conducting training.
- ! Ensuring proper storage and maintenance of respiratory protection equipment.
- ! Conducting qualitative fit testing with Bitrex.
- ! Administering the medical surveillance program.
- ! Maintaining records required by the program.

- ! Evaluating the program.
- ! Updating written program, as needed.

The Program Administrator for the County Sign Shop is Mrs. Brown.

### **Supervisors**

Supervisors are responsible for ensuring that the respiratory protection program is implemented in their particular areas. In addition to being knowledgeable about the program requirements for their own protection, supervisors must also ensure that the program is understood and followed by the employees under their charge. Duties of the supervisor include:

- ! Ensuring that employees under their supervision (including new hires) have received appropriate training, fit testing, and annual medical evaluation.
- ! Ensuring the availability of appropriate respirators and accessories.
- ! Being aware of tasks requiring the use of respiratory protection.
- ! Enforcing the proper use of respiratory protection when necessary.
- ! Ensuring that respirators are properly cleaned, maintained, and stored according to the respiratory protection plan.
- ! Ensuring that respirators fit well and do not cause discomfort.
- ! Continually monitoring work areas and operations to identify respiratory hazards.
- ! Coordinating with the Program Administrator on how to address respiratory hazards or other concerns regarding the program.

### **Employees**

Each employee has the responsibility to wear their respirator when and where required and in the manner in which they were trained. Employees must also:

- ! Care for and maintain their respirators as instructed, and store them in a clean sanitary location.
- ! Inform their supervisor if the respirator no longer fits well, and request a new one that fits properly.
- ! Inform their supervisor or the Program Administrator of any respiratory hazards that they feel are not adequately addressed in the workplace and of any other concerns that they have regarding the program.



## 4.0 Program Elements

### Selection Procedures

The Program Administrator will select respirators to be used on site, based on the hazards to which workers are exposed and in accordance with all PEOSH standards. The Program Administrator will conduct a hazard evaluation for each operation, process, or work area where airborne contaminants may be present in routine operations or during an emergency. The hazard evaluation will include:

- 1) Identification and development of a list of hazardous substances used in the workplace, by department, or work process.
- 2) Review of work processes to determine where potential exposures to these hazardous substances may occur. This review shall be conducted by surveying the workplace, reviewing process records, and talking with employees and supervisors.
- 3) Exposure monitoring to quantify potential hazardous exposures. Monitoring will be contracted out. The County Sign Shop currently has a contract with ABC Industrial Hygiene Services to provide monitoring when needed.

### *Updating the Hazard Assessment*

The Program Administrator must revise and update the hazard assessment as needed (i.e., any time work process changes may potentially affect exposure). If an employee feels that respiratory protection is needed during a particular activity, they are to contact their supervisor or the Program Administrator. The Program Administrator will evaluate the potential hazard, arranging for outside assistance as necessary. The Program Administrator will then communicate the results of that assessment back to the employees. If it is determined that respiratory protection is necessary, all other elements of this program will be in effect for those tasks and this program will be updated accordingly.

### *NIOSH Certification*

All respirators must be certified by the National Institute for Occupational Safety and Health (NIOSH) and shall be used in accordance with the terms of that certification. Also, all filters, cartridges, and canisters must be labeled with the appropriate NIOSH approval label. The label must not be removed or defaced while it is in use.

### *Voluntary Respirator Use*

The County Sign Shop will provide respirators at no charge to employees for voluntary use for the following work processes:

- ! Employees may wear half-facepiece APRs with organic vapor cartridges while working in the dip coat area.

- ! Warehouse workers may wear filtering facepieces.
- ! Spray Booth Operators may wear half-facepiece APRs with organic vapor cartridges while cleaning spray guns.
- ! Maintenance personnel may wear half-facepiece APRs with P100 cartridges while cleaning spray booth walls, and organic vapor cartridges while loading spray guns.

The Program Administrator will provide all employees who voluntarily choose to wear either of the above respirators with a copy of Appendix D of the standard. (Appendix D details the requirements for voluntary use of respirators by employees.) Employees choosing to wear a half facepiece APR must comply with the procedures for Medical Evaluation, Respirator Use, and Cleaning, Maintenance and Storage.

The Program Administrator shall authorize voluntary use of respiratory protective equipment as requested by all other workers on a case-by-case basis, depending on specific workplace conditions and the results of the medical evaluations.

### **Medical Evaluation**

Employees who are either required to wear respirators, or who choose to wear an APR voluntarily, must pass a medical exam before being permitted to wear a respirator on the job. Employees are not permitted to wear respirators until a physician has determined that they are medically able to do so. Any employee refusing the medical evaluation will not be allowed to work in an area requiring respirator use.

A licensed physician where all county medical services are provided, will provide the medical evaluations. Medical evaluation procedures are as follows:

- ! The medical evaluation will be conducted using the questionnaire provided in Appendix C of the respiratory protection standard. The Program Administrator will provide a copy of this questionnaire to all employees requiring medical evaluations.
- ! To the extent feasible, the county will assist employees who are unable to read the questionnaire (by providing help in reading the questionnaire). When this is not possible, the employee will be sent directly to the physician for medical evaluation.
- ! All affected employees will be given a copy of the medical questionnaire to fill out, along with a stamped and addressed envelope for mailing the questionnaire to the county physician. Employees will be permitted to fill out the questionnaire on county time.
- ! Follow-up medical exams will be granted to employees as required by the standard, and/or as deemed necessary by the county medical clinic physician.

- ! All employees will be granted the opportunity to speak with the physician about their medical evaluation, if they so request.
- ! The Program Administrator has provided the county medical clinic physician with a copy of this program, a copy of the Respiratory Protection Standard, the list of hazardous substances by work area, and, for each employee requiring evaluation: their work area or job title, proposed respirator type and weight, length of time required to wear respirator, expected physical work load (light, moderate, or heavy), potential temperature and humidity extremes, and any additional protective clothing required.
- ! Any employee required for medical reasons to wear a positive pressure air purifying respirator will be provided with a powered air purifying respirator.
- ! After an employee has received clearance and begun to wear their respirator, additional medical evaluations will be provided under the following circumstances:
  - ! The employee reports signs and/or symptoms relating to their ability to use a respirator, such as shortness of breath, dizziness, chest pains, or wheezing.
  - ! The county medical clinic physician or supervisor informs the Program Administrator that the employee needs to be reevaluated;
  - ! Information from this program, including observations made during fit testing and program evaluation, indicates a need for reevaluation;
  - ! A change occurs in workplace conditions that may result in an increased physiological burden on the employee.

A list of county employees currently included in medical surveillance is provided in Table 2 of this program.

All examinations and questionnaires are to remain confidential between the employee and the physician.

### **Fit Testing**

Fit testing is required for employees wearing half-facepiece air-purifying respirator (APRs) for exposure to wood dust in Prep and Assembly, and maintenance workers who wear a tight-fitting supplied-air respirator (SAR) for dip tank cleaning. Employees voluntarily wearing half-facepiece APRs may also be fit tested upon request.

Employees who are required to wear half-facepiece APRs will be fit tested:

- ! Prior to being allowed to wear any respirator with a tight fitting facepiece.
- ! Annually.
- ! When there are changes in the employee's physical condition that could affect respiratory fit (e.g., obvious change in body weight, facial scarring, etc.).

Employees will be fit tested with the make, model, and size of respirator that they will actually wear. Employees will be provided with several models and sizes of respirators so that they may find an optimal fit. Fit testing of PAPRs is to be conducted in the negative pressure mode.

The Program Administrator will conduct fit tests following the PEOSH approved Bitrex Solution Aerosol QLFT Protocol in Appendix B (B4) of the Respiratory Protection Standard.

The Program Administrator has determined that quantitative fit test QNFT is not required for the respirators used under current conditions at the County Sign Shop. If conditions affecting respirator use change, the Program Administrator will evaluate on a case-by-case basis whether QNFT is required.

## Respirator Use

Respiratory protection is required for the following personnel:

<b>TABLE 2: COUNTY SIGN SHOP PERSONNEL IN RESPIRATORY PROTECTION PROGRAM</b>			
<b>Name</b>	<b>Department</b>	<b>Job/Description/ Work Procedure</b>	<b>Respirator</b>
Joe Apple	Prep	Operator	Half mask APR P100 filter when sanding/ SAR continuous flow hood for cleaning
Lisa Jones	Coating	Spray Booth Operator	SAR, continuous flow hood

### *General Use Procedures:*

- ! Employees will use their respirators under conditions specified by this program, and in accordance with the training they receive on the use of each particular model. In addition, the respirator shall not be used in a manner for which it is not certified by NIOSH or by its manufacturer.
  
- ! All employees shall conduct user seal checks each time that they wear their respirator. Employees shall use either the positive or negative pressure check (depending on which test works best for them) specified in Appendix B-1 of the Respiratory Protection Standard.
  
- ! All employees shall be permitted to leave the work area to go to the locker room to maintain their respirator for the following reasons: to clean their respirator if the respirator is impeding their ability to work, to change filters or cartridges, to replace parts, or to inspect the respirator if it stops functioning as intended. Employees should notify their supervisor before leaving the area.

Employees are not permitted to wear tight-fitting respirators if they have any condition, such as facial scars, facial hair, or missing dentures, that prevents them from achieving a good seal. Employees are not permitted to wear headphones, jewelry, or other articles that may interfere with the facepiece-to-face seal.

*Emergency Procedures:*

The following work areas have been identified as having foreseeable emergencies:

- Spray Booth Cleaning Area - spill of hazardous waste
- Dip Coat Area - malfunction of ventilation system, leak in supply system
- Coatings Storage Area - spill or leak of hazardous substances

When the alarm sounds, employees in the affected department must immediately don their emergency escape respirator, shut down their process equipment, and exit the work area. All other employees must immediately evacuate the building. The County Emergency Action Plan describes these procedures (including proper evacuation routes and rally points) in greater detail.

Emergency escape respirators are located in:

- Locker #1 in the Spray Booth Area
- Locker #4 in the Coatings Storage Area

Respiratory protection in these instances is for escape purposes only. The County Sign Shop employees are not trained as emergency responders, and are not authorized to act in such a manner.

*Respirator Malfunction*

1. APR Respirator Malfunction:

For any malfunction of an APR (e.g., such as breakthrough, facepiece leakage, or improperly working valve), the respirator wearer should inform their supervisor that the respirator no longer functions as intended, and go to the designated safe area to maintain the respirator. The supervisor must ensure that the employee receives the needed parts to repair the respirator, or is provided with a new respirator.

All workers wearing atmosphere-supplying respirators will work with a buddy. Buddies shall assist workers who experience an SAR malfunction as follows:

If a worker in the spray booth experiences a malfunction of an SAR, they should signal to the buddy that they have had a respirator malfunction. The buddy shall don an emergency escape respirator and aid the worker in immediately exiting the spray booth.

**Air Quality**

For supplied-air respirators, only Grade D breathing air shall be used in the cylinders. The Program Administrator will coordinate deliveries of compressed air with the company's vendor, Compressed Air Inc., and require Compressed Air Inc. to certify that the air in the cylinders meets the specifications of Grade D breathing air.

The Program Administrator will maintain a minimum air supply of one fully charged replacement cylinder for each SAR unit. In addition, cylinders may be recharged as necessary from the breathing air cascade system located near the respirator storage area. The air for this system is provided by the county supplier, and deliveries of new air are coordinated by the Program Administrator.

## **Cleaning, Maintenance, Change Schedules and Storage**

### *Cleaning*

Respirators are to be regularly cleaned and disinfected at the designated respirator cleaning station located in the employee locker room.

Respirators issued for the exclusive use of an employee shall be cleaned as often as necessary, but at least once a day for workers in the Prep and Assembly departments.

Atmosphere supplying and emergency use respirators are to be cleaned and disinfected after each use.

The following procedure is to be used when cleaning and disinfecting respirators:

- ! Disassemble respirator, removing any filters, canisters, or cartridges.
- ! Wash the facepiece and associated parts in a mild detergent with warm water. Do not use organic solvents.
- ! Rinse completely in clean warm water.
- ! Wipe the respirator with disinfectant wipes to kill germs.
- ! Air dry in a clean area.
- ! Reassemble the respirator and replace any defective parts.
- ! Place in a clean, dry plastic bag or other air tight container.

Note: The Program Administrator will ensure an adequate supply of appropriate cleaning and disinfection material at the cleaning station. If supplies are low, employees should contact their supervisor, who will inform the Program Administrator.

### *Maintenance*

Respirators are to be properly maintained at all times in order to ensure that they function properly and adequately protect the employee. Maintenance involves a thorough visual inspection

for cleanliness and defects. Worn or deteriorated parts will be replaced prior to use. No components will be replaced or repairs made beyond those recommended by the manufacturer. Repairs to regulators or alarms of atmosphere-supplying respirators will be conducted by the manufacturer.

The following checklist will be used when inspecting respirators:

! Facepiece:

- cracks, tears, or holes
- facemask distortion
- cracked or loose lenses/faceshield

! Headstraps:

- breaks or tears
- broken buckles

! Valves:

- residue or dirt
- cracks or tears in valve material

! Filters/Cartridges:

- approval designation
- gaskets
- cracks or dents in housing
- proper cartridge for hazard

! Air Supply Systems:

- breathing air quality/grade
- condition of supply hoses
- hose connections
- settings on regulators and valves

Employees are permitted to leave their work area to perform limited maintenance on their respirator in a designated area that is free of respiratory hazards. Situations when this is permitted include washing their face and respirator facepiece to prevent any eye or skin irritation, replacing the filter, cartridge or canister, and if they detect vapor or gas breakthrough or leakage in the facepiece or if they detect any other damage to the respirator or its components.



### *Change Schedules*

Employees wearing APRs or PAPRs with P100 filters for protection against wood dust and other particulates shall change the cartridges on their respirators when they first begin to experience difficulty breathing (i.e., resistance) while wearing their masks.

Based on discussions with our respirator distributor about the County Sign Shop's workplace exposure conditions, employees voluntarily wearing APRs with organic vapor cartridges shall change the cartridges on their respirators at the end of each work week to ensure the continued effectiveness of the respirators.

### *Storage*

Respirators must be stored in a clean, dry area, and in accordance with the manufacturer's recommendations. Each employee will clean and inspect their own air-purifying respirator in accordance with the provisions of this program and will store their respirator in a plastic bag in their own locker. Each employee will have their name on the bag and that bag will only be used to store that employee's respirator.

Atmosphere supplying respirators will be stored in the storage cabinet outside of the Program Administrator's office.

The Program Administrator will store the county supply of respirators and respirator components in their original manufacturer's packaging in the equipment storage room.

### *Defective Respirators*

Respirators that are defective or have defective parts shall be taken out of service immediately. If, during an inspection, an employee discovers a defect in a respirator, they are to bring the defect to the attention of their supervisor. Supervisors will give all defective respirators to the Program Administrator. The Program Administrator will decide whether to:

- ! Temporarily take the respirator out of service until it can be repaired.
- ! Perform a simple fix on the spot such as replacing a headstrap.
- ! Dispose of the respirator due to an irreparable problem or defect.

When a respirator is taken out of service for an extended period of time, the respirator will be tagged out of service, and the employee will be given a replacement of similar make, model, and size. All tagged out respirators will be kept in the storage cabinet inside the Program Administrator's office.

## **Training**

The Program Administrator will provide training to respirator users and their supervisors on the contents of the County Respiratory Protection Program and their responsibilities under it, and on the PEOSH Respiratory Protection Standard. Workers will be trained prior to using a respirator in the workplace. Supervisors will also be trained prior to using a respirator in the workplace or prior to supervising employees that must wear respirators.

The training course will cover the following topics:

- ! the County Sign Paint Shop Respiratory Protection Program
- ! the PEOSH Respiratory Protection Standard
- ! respiratory hazards encountered at the Sign Shop and their health effects
- ! proper selection and use of respirators
- ! limitations of respirators
- ! respirator donning and user seal (fit) checks
- ! fit testing
- ! emergency use procedures
- ! maintenance and storage
- ! medical signs and symptoms limiting the effective use of respirators

Employees will be retrained annually or as needed (e.g., if they change departments and need to use a different respirator). Employees must demonstrate their understanding of the topics covered in the training through hands-on exercises and a written test. Respirator training will be documented by the Program Administrator and the documentation will include the type, model, and size of respirator for which each employee has been trained and fit tested.

### **5.0 Program Evaluation**

The Program Administrator will conduct periodic evaluations of the workplace to ensure that the provisions of this program are being implemented. The evaluations will include regular consultations with employees who use respirators and their supervisors, site inspections, air monitoring and a review of records.

Problems identified will be noted in an inspection log and addressed by the Program Administrator. These findings will be reported to County Sign Shop management, and the report will list plans to correct deficiencies in the respirator program and target dates for the implementation of those corrections.

## **6.0 Documentation and Recordkeeping**

A written copy of this program and the Respiratory Protection Standard is kept in the Program Administrator's office and is available to all employees who wish to review it.

Also maintained in the Program Administrator's office are copies of training and fit test records. These records will be updated as new employees are trained, as existing employees receive refresher training, and as new fit tests are conducted.

The Program Administrator will also maintain copies of the respiratory protection records for all employees. The completed medical questionnaire and the physician's documented findings are confidential and will remain at the County Medical Clinic. The County will only retain the physician's written recommendation regarding each employee's ability to wear a respirator.

## **Appendix 1**

### **Respiratory Protection Standard (29 CFR 1910.134)**