



# Respiratory Protection Program

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# Respiratory Protection Program

## I. Policy

The objective of the Respiratory Protection Program is to minimize exposure to respiratory hazards during the course of an employee's assigned duties. Where feasible, exposure to contaminants will be eliminated by engineering controls (i.e., general and local ventilation, enclosure or isolation, substitution of less hazardous process or material, etc.). If engineering controls are not feasible or do not adequately control the respiratory hazard, administrative controls and Personal Protective Equipment must be applied to achieve a safe work environment.

The City of Redlands is committed to protecting the health and well-being of all employees. Employees subject to respiratory hazards in the workplace will be included in this program and have their exposures assessed for proper control measures.

## II. Authority

California Code of Regulations, Title 8, Sections:  
5144-5155 (Respiratory Protection and Airborne Contaminants)  
California Code of Regulations, Title 3, Section  
6739 (Respiratory Protection for Pesticide Handlers)

## III. Scope

This program applies to employees and supervisors required to use respiratory protection and to those who voluntarily use respiratory protection.

## IV. Definitions

- A. **Air-Purifying Respirator**- a respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.
- B. **Assigned Protection Factor (APF)** – the workplace level of respiratory protection that a respirator or class of respirators is expected to provide to employees when the employer implements a continuing, effective respiratory protection program.
- C. **Atmosphere-Supplying Respirator**- a respirator that supplies the user with breathing air from a source independent of the ambient atmosphere and includes supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units.
- D. **Canister or Cartridge**- a container with a filter. Filtering absorbent, or catalyst, or combination of these items, which removes specific contamination from the air passed through the container.
- E. **Ceiling Limit**- the maximum concentration of an airborne contaminant to which an employee may be exposed at any time.
- F. **Demand Respirator**- an atmosphere-supplying respirator that admits breathing air to the face piece only when negative pressure is created inside the face piece by inhalation.
- G. **Emergency Situation**- any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment that may or does result in an uncontrolled significant release of an airborne contaminant.
- H. **Employee Exposure**- an exposure to a concentration of an airborne contaminant that would occur if the employee were not using respirator protection.
- I. **End of Service Life Indicator (ESLI)** - a system that warns the respirator user of the approach of the end of adequate respiratory protection, for example. That the filtering absorbent is approaching saturation or is no longer effective.
- J. **Escape Only Respirator**- a respirator intended to be used only for emergency exit.

- K. **Filter or Air Purifying Element**- a component used in respirators to remove solid or liquid aerosols from the inspired air.
- L. **Filtering Face Piece (Dust Mask)** - a negative pressure particulate respirator with a filter as an integral part of the face piece or with the entire face piece composed of the filtering medium.
- M. **Fit Factor**- a quantitative estimate of the fit of a particular respirator to a specific individual, and typically estimates the ration of the concentration of a substance in ambient air to its concentration inside the respirator when worn.
- N. **Fit Test**- the use of a protocol to evaluate qualitatively or quantitatively the fit of a respirator on an individual (See also Qualitative fit test and Quantitative fit test)
- O. **Helmet**- a rigid respiratory inlet covering that also provides head protection against impact and penetration.
- P. **High Efficiency Particulate Air (HEPA) filter**- filter that is at least 99.97% efficient in removing particles of 0.3 micrometers in diameter. The equivalent NIOSH particulate filters are the N100, R100, and P100.
- Q. **Hood**- a respiratory inlet covering that completely covers the head and neck and may also cover portions of the shoulders and torso.
- R. **Immediately Dangerous to Life or Health (IDLH)** – an atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual’s ability to escape from a dangerous atmosphere.
- S. **Interior Structural Firefighting**- the physical activity of fire suppression, rescue or both, inside of buildings or enclosed structures which are involved in a fire situation beyond the incipient stage.
- T. **Loose Fitting Face Piece**- a respiratory inlet covering that is designed to form a partial seal with the face piece.
- U. **Negative Pressure Respirator (Tight Fitting)** – a respirator in which the air pressure inside the face piece is negative during inhalation with respect to the ambient air pressure outside the respirator.
- V. **National Institute for Occupational Safety and Health (NIOSH)** - federal agency responsible for conducting research and making recommendations for the prevention of work-related injury and illness.
- W. **Oxygen Deficient Atmosphere**- an atmosphere with oxygen content below 19.5% by volume.
- X. **Permissible Exposure Limit (PEL)** – the maximum permitted 8-hour time-weighted average concentration of an airborne contaminant.
- Y. **Physician or Other Licensed Health Care Professional (PLHCP)** – an individual whose legally permitted scope or practice (i.e., license, registration, or certification) allows him or her to independently provide, or be delegated the responsibility to provide, some or all the health care services required.
- Z. **Positive Pressure Respirator**- a respirator in which the pressure inside the respiratory inlet covering exceed the ambient air pressure outside the respirator.
- AA. **Powered Air Purifying Respirator**- an air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.
- BB. **Pressure Demand Respirator**- a positive pressure atmosphere-supplying respirator that admits breathing air to the face piece when the positive pressure is reduced inside the face piece by inhalation.
- CC. **Qualitative Fit Test (QLFT)** - a pass/fail fit test to access the adequacy of respirator fit that relies on the individual’s response to the test agent.
- DD. **Quantitative Fit Test (QNFT)** – an assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

- EE. Respirator Inlet Covering-** that portion of a respirator that forms the protective barrier between the user's respiratory tract and an air-purifying device or breathing air source, or both. It may be a face piece, helmet, hood, or suit.
- FF. Self-Contained Breathing Apparatus (SCBA)** - an atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.
- GG. Service Life-** the period of time that a respirator, filter or filtering absorbent, or other respiratory equipment provides adequate protection to the wearer.
- HH. Short Term Exposure Limit (STEL)** – a 15-minute time-weighted average exposure which is not to be exceeded at any time during a workday even if the 8-hour time weighted average is below the PEL.
- II. Supplied-Air Respirator (SAR) or Airline Respirator-** an atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user.
- JJ. Tight Fitting Face Piece-** a respiratory inlet covering that forms a complete seal with the face.
- KK. Time Weighted Average (TWA)** – the average exposure to a hazardous substance over a specified period, usually a nominal eight hours.
- LL. User Seal Check-** an action conducted by the respirator user to determine if the respirator is properly seated to the face.

## **V. Responsibilities**

### **PROGRAM ADMINISTRATOR**

The Respirator Protection Program Administrator is the Safety Specialist. The Program Administrator will be responsible for the following:

- A. Evaluate and revise this Program:
  - 1. On an annual basis.
  - 2. When changes occur to CCR T8 and T3, that prompt revision of this document.
  - 3. When operational changes occur that require a revision of this document; and
  - 4. Where there is an accident or near miss that relates to this section.
- B. Provide or coordinate respiratory training to affected employees and supervisors.
- C. Coordinate Medical Examinations between employees and Fox Occupational Medical Clinic and maintain records.
- D. Coordinate annual fit tests and maintain records.
- E. Provide recommendations to Departments regarding purchase of personal protective devices.
- F. Maintain all program required training records.

### **DIRECTORS, MANAGERS, AND SUPERVISORS**

- A. Ensure the Respiratory Protection Program is implemented in their areas of supervision.
- B. Ensure that all employees under their supervision (including new hires) have received appropriate training, fit testing, and medical evaluation.
- C. Be aware of tasks requiring the use of respiratory protection and ensure their proper usage when necessary.
- D. Ensure personnel under their supervision are properly cleaning, maintaining, and storing respirators per the Respiratory Protection Program.
- E. Evaluate work areas and operations to identify respiratory hazards.
- F. Coordinate with Program Administrator to review any identified hazards or assess any concerns regarding the Respiratory Protection Program.

### **AFFECTED EMPLOYEES**

- A. Use City-issued respiratory protection in designated respiratory hazard exposure areas.

- B. Care for and maintain respirators as instructed, and store them in a clean, sanitary location.
- C. Advise immediate supervisor if assigned respirator no longer fits well or needs replacement.
- D. Inform immediate supervisor or Program Administrator of any respiratory hazards they feel are not adequately addressed in their workplace, as well as any other concerns they may have regarding the program.
- E. Perform pre-use respirator inspection for damage and negative/positive face seal check.

### CONTRACTORS

- A. Contractors who perform work on City property must adhere to the City's Respiratory Protection Program. It is the responsibility of the Project Manager to ensure these measures are carried out.
- B. Contractors must also submit a copy of their Respiratory Protection Program to Risk Management for review.
- C. Contractors with an insufficient program will not be allowed to begin work until their program meets or exceeds the requirements of the City's program.
- D. Contractors are expected to always enforce these guidelines while performing work for the city.
- E. If there is a conflict in procedures between Contractor and City programs, notification will be sent to Risk Management for support.

## **VI. Program**

### RESPIRATOR SELECTION

- A. Respirators are selected based on respiratory hazards to which the worker is exposed at the workplace, and user factors that affect respirator performance and reliability. Employees may choose from a selection of respirators approved by the Respiratory Program Administrator. Respirator selection procedures include coverage of the following OSHA requirements:
  - 1. Respirators are based on the respiratory hazard(s).
  - 2. NIOSH approved certified respirators and used in compliance with the conditions of its certification.
  - 3. The evaluation of respiratory hazards shall include a reasonable estimate of employee exposures to respiratory hazard(s) and an identification of the contaminant's chemical state and physical form
    - a. The City of Redlands will use objective data where appropriate to identify and evaluate respiratory hazards.
    - b. If objective data does not provide adequate information, sampling will be coordinated for exposure assessment.
  - 4. When the City of Redlands cannot identify or reasonably estimate the employee's exposure, the atmosphere will be considered Immediately Dangerous to Life or Health (IDLH); and
  - 5. Respirators are selected from a number of models and sizes so that the respirator has a proper fit with the user.
- B. IDLH atmospheres
  - 1. The following respirators shall be used in IDLH atmospheres:
    - a. A full-face piece pressure demand SCBA certified by NIOSH for a minimum service life of thirty minutes; or
    - b. A combination full- face piece pressure demand supplied-air respirator (SAR) with auxiliary self-contained air supply.
  - 2. Respirators provided only for escape from IDLH atmospheres shall be NIOSH certified for escape from the atmosphere in which they will be used.
  - 3. All oxygen-deficient atmospheres shall be considered IDLH.

- C. Respirators for atmospheres that are not IDLH:
  - 1. Respirators in these conditions are provided to protect the health of the employees and to ensure compliance with all other OSHA statutory and regulatory requirements, under routine and reasonably foreseeable emergency situations.
  - 2. Respirator protection is selected for the chemical state and physical form of the contaminant.
  - 3. For protection against gases and vapors, use:
    - a. An atmosphere-supplying respirator, or
    - b. An air-purifying respirator, provided that the respirator is equipped with an end-of-service-life indicator (ESLI) certified by NIOSH for the contaminant or an established and enforced cartridge/canister change schedule.
  - 4. For protection against particulates, use:
    - a. An atmosphere-supplying respirator; or
    - b. An air-purifying respirator equipped with a filter certified by NIOSH as a high efficiency particulate air (HEPA) filter, or an air –purifying respirator equipped with a filter certified for particulates by NIOSH under 42 CFR part 84.

#### SPECTACLE KIT ORDERING PROCEDURE

- A. A spectacle kit is required for any employee who regularly uses prescription glasses or contact lenses.
- B. Once the respirator is selected, the designated spectacle kit will be identified by the supervisor.
- C. To order a spectacle kit:
  - a. The employee will provide Risk Management a current prescription specific to eyeglasses
  - b. Risk Management will complete the online order through a selected vendor and request a billing payment method from the department’s authorized party.
  - c. The spectacle kit will be shipped to the Human Resources department for visual inspection.
    - i. Once the inspection is completed, the employee will be notified that the spectacle kit is ready for pickup and a confirmation email will be sent to the supervisor.
- D. Employees are expected to properly maintain the spectacle kit in addition to the respirator.
- E. Spectacle kits may be re-ordered on a yearly basis if there are changes to the prescription that would impact proper usage. If there are no changes to the prescription, the spectacle kit may continue to be used if it remains in good repair.

#### MEDICAL EVALUATIONS

- A. A medical evaluation determines whether an employee is physically able to use a respirator.
- B. City of Redlands will not assign tasks requiring the use of respirators until an individual is medically cleared by a physician or other licensed health care professional (PLHCP). If an individual is deemed unfit to wear a respirator by a PLHCP, the City will prohibit employee from participating in respiratory required tasks.
- C. Any employee who chooses to wear a respirator voluntarily, must first pass a medical evaluation before wearing the equipment on the job.
- D. Reliance Safety Consultants will perform all medical evaluations in compliance with OSHA standards.
- E. All medical questionnaires are confidential and handled during the employees’ normal working hours or at a time and place convenient to the employee. The medical questionnaire is administered so that an employee understands its content. All employees are provided an opportunity to discuss the questionnaire and examination with the PLHCP.
- F. Results of the medical evaluation must be in writing and will be sent to the Program Administrator providing only the following information:
  - 1. A determination of whether the employee is medically able to use a respirator

2. Any limitations on respirator use related to the medical condition of the employee or to the workplace conditions in which the respirator will be used
  3. The need, if any, for follow-up medical evaluations
  4. A statement that the PLHCP has provided the employee with a copy of the PLHCP's written recommendation.  
Note: The PLHCP must provide a copy of the written recommendation to the employee.
- G. In some cases, the PLHCP may require additional evaluations to assess an employee's qualification to wear a respirator.
- H. Supplemental information for the PLHCP
1. The Program Administrator must provide the PLHCP with the following information before a recommendation is made:
    - a. The type and weight of the respirator to be used by the employee
    - b. The duration and frequency of respirator use (including use for rescue and escape)
    - c. The expected physical work effort
    - d. Additional protective clothing and equipment to be worn; and
    - e. Temperature and humidity extremes that may be encountered.
    - f. Must supply the PLHCP with a copy of the City of Redlands Respiratory Protection Program.
  - I. Additional medical evaluations are warranted when:
    1. An employee reports medical signs or symptoms that affect their ability to use a respirator;
    2. A PLHCP, supervisor, or program administrator requests a reevaluation
    3. Information from the respiratory protection program, including fit testing and program evaluation, indicates a need for employee reevaluation
    4. A change occurs in workplace conditions (e.g., physical work effort, protective clothing, temperature, etc.) that may result in a substantial increase in the physiological burden placed on an employee; or
    5. The results of a medical examination reveal the need for additional evaluations.

#### FIT TESTING PROCEDURES

- A. It is important that respirators fit properly to provide adequate protection. If a tight seal is not maintained between the face piece and employee, contaminated air may be drawn into the face piece and inhaled by the employee. Fit testing seeks to protect the employee against breathing contaminated ambient air.
- B. Fit testing is required for all employees wearing tight-fitting face piece respirators:
  1. Prior to initial use
  2. Whenever an employee switches to a different tight-fitting face piece respirator (for example, a different size, make, or model)
  3. Changes in the respirator wearer's physical condition; and
  4. At least annually.
- C. Qualitative fit test (QLFT) procedure:
  1. QLFT involves the introduction of an aerosol test agent or irritant smoke into an area around the head of the respirator user. QLFT is a non-numeric pass/fail test that relies on the respirator wearer's response to a test agent. If the user can detect the presence of the test agent through subjective means, such as odor, taste, or irritation, the respirator fit is inadequate.
  2. The test shall not be conducted if there is any hair growth between the skin and the face piece sealing surface, such as:
    - a. Stubble beard growth

- b. Beard
  - c. Mustache or sideburns which cross the respirator sealing surface.
  - d. Any type of apparel which interferes with a satisfactory fit shall be altered or removed, including eyeglasses for full piece respirators.
3. The employee will be informed on proper donning and doffing procedures including:
  - a. Position on the face
  - b. How to set strap tension; and
  - c. How to determine proper fit
4. The employee shall wear applicable PPE required of the job task during fit test to ensure proper fit with additional equipment.
5. Before any fit test is conducted, the employee must perform a user seal check to verify the respirator works properly. To conduct a user seal check, use the following guidelines:

Negative Pressure Check

  - a. Cover the respirator inlets (cartridges, canisters, or seals),
  - b. Gently inhale, and
  - c. Hold breath for 10 seconds.

The face piece should collapse on the worker's face and remain collapsed.

Positive Pressure Check

  - a. Cover the respirator exhalation valve(s), and
  - b. Exhale.

The face piece should hold the positive pressure for a few seconds. During this time, the employee should not hear or feel the air leaking out of the face piece seal.
6. Once user seal check is completed, the subject will stand in an enclosure (test hood) with introduction of test agent. Acceptable test agents are:
  - a. Banana oil (Isoamyl acetate)
  - b. Saccharin
  - c. Bitrex; and
  - d. Irritant smoke (no enclosure needed)
7. The following exercises must be performed in a QLFT in the given order for a minute each:
  - a. Normal breathing
  - b. Deep breathing
  - c. Turning head side to side
  - d. Moving head up and down
  - e. Talking-Counting backwards from 100 or recite a memorized poem or song
  - f. Bending over; and
  - g. End with normal breathing.
8. If employee exhibits difficulty in breathing during tests, the test shall be ended immediately, and he/she shall be referred to a PLHCP for evaluation.
9. If employee can detect the test agent, this indicates that the agent leaked into the face piece and the respirator has failed the test.
10. Employees will be fit tested with the same make, model, and size of respirator they will use in their work environment. Employees will be provided with several sizes and models of respirators to choose from.
11. Negative Pressure Air Purifying Respirators requiring a fit factor above 100 cannot be tested using a QLFT.

D. Quantitative fit test (QNFT) procedure:

1. QNFT measures the leakage of the challenge agent into the respirator without dependence on a worker's response to it. It is a numeric assessment of how well a respirator fits a particular individual.
2. A passing score for a QNFT is as follows:
  1. For a half face piece- The fit factor achieved in the test is greater than or equal to 100.
  2. For a full-face piece- The fit factor achieved in the test is greater than or equal to 500.
3. The test shall not be conducted if there is any hair growth between the skin and the face piece sealing surface, such as:
  - e. Stubble beard growth
  - f. Beard
  - g. Mustache or sideburns which cross the respirator sealing surface.
  - h. Any type of apparel which interferes with a satisfactory fit shall be altered or removed, including eyeglasses for full piece respirators.
4. The employee will be informed on proper donning and doffing procedures including:
  - d. Position on the face
  - e. How to set strap tension; and
  - f. How to determine proper fit.
5. The employee shall wear applicable PPE required of the job task during fit test to ensure proper fit with additional equipment.
6. Before any fit test is conducted, the employee must perform a user seal check to verify the respirator works properly. To conduct a user seal check, use the following guidelines:

Negative Pressure Check

  - d. Cover the respirator inlets (cartridges, canisters, or seals),
  - e. Gently inhale, and
  - f. Hold breath for 10 seconds.

The face piece should collapse on the worker's face and remain collapsed.

Positive Pressure Check

  - c. Cover the respirator exhalation valve(s), and
  - d. Exhale.

The face piece should hold the positive pressure for a few seconds. During this time, the employee should not hear or feel the air leaking out of the face piece seal.
7. If a QNFT is required for a given respirator, the City of Redlands will contract a qualified tester to conduct the assessment.
8. The following table highlights acceptable fit testing methods

| Respirator  | QNFT                     | QLFT |
|---|--------------------------|------|
| Half Face, Negative Pressure, APR (<100 fit factor)   | Yes                      | Yes  |
| Full face, Negative Pressure, APR (<100 fit factor) used in atmospheres up to 10 times the PEL    | Yes                      | Yes  |
| Full face, Negative Pressure, APR (>100 fit factor)   | Yes                      | No   |
| PAPR  | Yes                      | Yes  |
| Supplied-Air Respirators (SAR), or SCBA used in Negative Pressure (Demand Mode) (>100 fit factor) | Yes                      | No   |
| SCBA - Structural Fire Fighting, Positive Pressure  | Yes                      | Yes  |
| SCBA/SAR - IDLH, Positive Pressure  | Yes                      | Yes  |
| Mouthbit Respirators  | Fit Testing Not Required |      |
| Loose-fitting Respirators (e.g., hoods, helmets)  | Fit Testing Not Required |      |

-Table drawn from OSHA's Small Entity Compliance Guide for Respiratory Protection

### RESPIRATOR GENERAL USE

- A. Respirators shall be used to prevent harmful exposures only in the following situations:
1. During the time necessary to install or implement feasible engineering controls
  2. Where feasible engineering controls and administrative controls fail to achieve full compliance; or
  3. In emergencies.

B. Face piece seal

Face piece seals and valves are important in tight-fitting respirators. Tight-fitting respirators should be able to provide a complete seal to the face. If there is a leak in the seal of a tight-fitting respirator or valve, the respirator cannot effectively reduce the wearer's exposures to respiratory hazards. The wearer must be sure that nothing interferes with the seal of the respirator to the wearer's face or with the valves. You must also ensure that employees check the seal of a tight-fitting respirator by conducting a user seal check before each use.

1. User Seal Check

Negative Pressure Check

- g. Cover the respirator inlets (cartridges, canisters, or seals),
- h. Gently inhale, and
- i. Hold breath for 10 seconds.

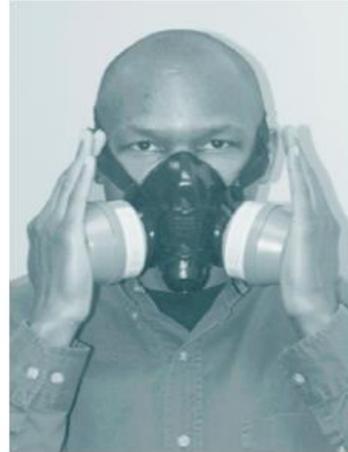
The face piece should collapse on the worker's face and remain collapsed.

Positive Pressure Check

- e. Cover the respirator exhalation valve(s), and
- f. Exhale.

The face piece should hold the positive pressure for a few seconds. During this time, the employee

should not hear or feel the air leaking out of the face piece seal.



*Positive-pressure seal check*

*Negative-pressure seal check*

2. Employees will not be allowed to wear tight-fitting respirators who have:
  - a. Facial hair that comes between the sealing surface of the face piece and face or that interferes with valve function
  - b. Corrective glasses/goggles or other personal protective equipment interferes with the seal of the face piece; or
  - c. Any other condition that may interfere with the face-to-face piece seal or valve function.
- C. Respirator effectiveness
  1. Appropriate surveillance must be maintained of work area conditions and degree of employee exposure or stress. When there is a change in work area conditions or degree of employee exposure or stress that may reduce respirator effectiveness, the supervisor shall reevaluate the continued use of respirator.
  2. Employees must leave the respirator use area or zone for the following reasons:
    - a. To wash his/her face and respirator face piece as necessary to prevent respirator-induced eye or skin irritation
    - b. If vapor or gas breakthrough is detected
    - c. If there is a change in breathing resistance
    - d. If there is face piece leakage; or
    - e. To replace the respirator/filter or change the cartridge/canister.
  3. If an employee detects vapor or gas breakthrough, changes in breathing resistance, or leakage of the face piece, the supervisor must replace the respirator or have it repaired before allowing the employee to return to the work area.
- D. Emergency Situations
  1. Each employee will leave the area where respirators are required for any of the following reasons:
    - a. If the employee becomes ill
    - b. If the employee experiences dizziness, nausea, weakness, breathing difficulty, coughing, sneezing, vomiting, fever, or chills.
- E. Voluntary use of respirators
  1. If an employee desires to wear a respirator voluntarily during operations in the course of their work, the Program Administrator will review each request on a case-by-case basis.
  2. An employee may use a respirator provided or may provide his/her own for voluntary use, if:
    - a. Employee is medically cleared to wear respirator

- b. In doing so does not jeopardize the employee's health or safety, or that of his/her co-workers
    - c. The equipment itself does not create a workplace hazard; and
    - d. The Respiratory Protection Program Administrator has approved the use. 78
  3. All employees voluntarily wearing respirators are required to receive a copy of "Information for Employees Using Respirators When Not Required Under the Standard." See Attachment B
  4. The Respiratory Protection Program Administrator must review this OSHA information with each employee prior to their voluntary use of respiratory protective equipment. A written record must be retained by the Program Administrator.
  5. In addition, employees voluntarily using tight-fitting respirators must follow the medical surveillance, cleaning, maintenance, and storage procedures set forth in this program.
  6. Employees voluntarily wearing dust masks are not subject to the program's medical evaluation. However, their equipment must be clean and free of contamination, and not interfere with the employee's ability to work safely.
- E. Procedures for IDLH atmosphere locations
  1. Departments/divisions exposed to potential IDLH situations shall prepare department specific procedures for routine, infrequent, and emergency situations involving use of SCBA's and SAR's.
  2. These procedures should model the following guidelines:
    - a. One employee or, when needed, more than one employee is located outside the IDLH atmosphere.
    - b. Visual, voice, or signal line communication is maintained between the employee(s) in the IDLH atmosphere and the employee(s) located outside the IDLH atmosphere.
    - c. The employee(s) located outside the IDLH atmosphere are trained and equipped to provide effective emergency rescue; in the event of an emergency, call 911 immediately.
    - d. That department director/or manager and Fire Department are notified before the employee(s) located outside the IDLH atmosphere enter the IDLH atmosphere to provide emergency rescue.
    - e. Employee(s) located outside the IDLH atmosphere are equipped with:
      - I. Pressure demand or other positive pressure SCBA's, or a pressure demand or other positive pressure supplied-air respirator with auxiliary SBA; and
      - II. Appropriate retrieval equipment for removing the employee(s) who enter(s) these hazardous atmospheres where retrieval equipment would contribute to the rescue of the employee(s) and would not increase the overall risk resulting from entry.

### MAINTENANCE AND CARE

To ensure continued protection from respiratory protective devices, it is necessary to establish and implement proper maintenance and care procedures and schedules.

#### A. Cleaning and Disinfecting

1. Each department/division must establish a designated respirator cleaning area.
2. Supervisors will ensure that an adequate supply of appropriate cleaning and disinfection material is available at the cleaning station.
3. The City of Redlands provides each respirator user with a respirator that is clean, sanitary, and in good working condition. Each employee shall ensure that respirators are cleaned and disinfected after each use or as often as necessary to be maintained in a sanitary condition, using the procedure below:

- a. Remove filters, cartridges, or canisters. Disassemble face pieces by removing speaking diaphragms, demand and pressure-demand valve assemblies, hoses, or any components recommended by the manufacturer. Discard or repair any defective parts.
- b. Wash components in warm (43 deg. C [110 deg. F] maximum) water with a mild detergent or with a cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.
- c. Rinse components thoroughly in clean, warm (43 deg. C [110 deg. F] maximum), preferably running water. Drain.
- d. When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:
  - I. Hypochlorite solution (50 ppm of chlorine) made by adding approximately one milliliter of laundry bleach to one liter of water at 43 deg. C (110 deg. F); or
  - II.
  - III. Other commercially available cleansers of equivalent disinfectant quality when used as directed if the use is recommended or approved by the respirator manufacturer.
- e. Rinse components thoroughly in clean, warm (43 deg. C [110 deg. F] maximum), preferably running water. Drain. The importance of thorough rinsing cannot be overemphasized. Detergents or disinfectants that dry on face pieces may result in dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.
- f. Components should be hand-dried with a clean lint-free cloth or air-dried.
- g. Reassemble face piece, replacing filters, cartridges, and canisters where necessary.
- h. Test the respirator to ensure that all components work properly.

#### B. Storage

1. Respirators must be stored in a manner that:
  - a. Protects them from contamination, dust, sunlight, extreme temperatures, excessive moisture, damaging chemicals, or other destructive conditions
  - b. Prevents the face piece or valves from becoming deformed; and
  - c. Follows all storage precautions issued by the respirator manufacturer.
2. In addition to the above storage requirements, emergency respirators must be:
  - a. Kept accessible to the work area
  - b. Stored in compartments or in covers that are clearly marked as containing emergency respirators; and
  - c. Stored in accordance with any applicable manufacture instructions.

#### C. Inspection

1. Respirators are to be inspected on the following regular basis:
  - a. All types of respirators used in routine situations must be inspected before each use and during cleaning process
  - b. All respirators maintained for use in emergency situations shall be inspected at least monthly and in accordance with manufacture's recommendations, and shall be checked for proper function before and after each use
    - I. These inspections must be documented with name, inspector, findings, action required, and serial number of the respirator.
  - c. Self-contained breathing apparatus (SCBA) shall be inspected monthly, making sure the air and oxygen cylinders that are available for immediate use are maintained in a fully

charged state (i.e., pressure is not below 90% of manufacturer’s recommended level).  
 Inspection shall also include activation of the regulator and low-pressure warning devices to ensure proper function; and

- d. Emergency escape-only respirators shall be inspected before being carried into the workplace for use.

2. Use following checklist when inspecting respirators:

|                    |   |   |   |
|--------------------|---|---|---|
| Face Piece         | Cracks, tears, holes, facemask distortion, cracked or loose lenses/face shield?                               | P | F |
| Head Straps        | Breaks, tears, broken buckles/clasps, overstretched elastic bands?  | P | F |
| Valves             | Residue/dirt, cracks or tears in valve material, absence of valve flap?                                       | P | F |
| Filter/Cartridges  | Proper cartridge for hazard, intact gaskets, cracks or dents in housing?                                      | P | F |
| Air Supply Systems | Breathing air quality/ grade, condition of supply hoses, hose connections, settings on regulators and valves? | P | F |

**D. Repairs**

1. All respirators found to be defective during inspection or otherwise, must be immediately removed from service and tagged as out-of-service.
2. If a respirator is found to be damaged past repair, it must be disposed of.
3. Repairs or adjustments to respirators shall only be made by trained individuals and shall only use manufacturer’s NIOSH approved parts designed for the respirator.
4. Repairs shall be made according to the manufacturer’s recommendations and specifications for the type and extent of repairs to be performed.
5. Reducing and admission valves, regulators, and alarms shall be adjusted or repaired only by the manufacturer, or a technician trained by the manufacturer.

**BREATHING AIR QUALITY**

- A. All cylinders used to supply breathing air shall meet the following requirements:
  1. Cylinders are tested and maintained as prescribed in the Shipping Container Specification regulations of the Department of Transportation (49 CFR 173 and Part 178)
  2. Cylinders of purchased breathing air have a certificate of analysis from the supplier that the breathing air meets the requirements for Grade D breathing air; and
  3. The moisture content in the cylinder does not exceed a dew point of -50 deg. F (-45.6 deg C) at 1 atmosphere pressure.

**FILTERS, CARTRIDGES AND CANISTERS**

- A. All filters, cartridges and canisters used in the workplace must:
  1. Be labeled and color coded with a NIOSH approved label
  2. Not be removed; and
  3. Remain legible.
- A. Service Life
  1. The useful service life of a cartridge or canister is defined by how long it provides employees with adequate protection from harmful chemicals in the air.
  2. The service life depends on many factors, including:

- a. Environmental conditions (e.g., high humidity)
  - b. Breathing rate
  - c. Cartridge capacity
  - d. The concentration of contaminant in the air; and
  - e. How many hours the cartridge is used each day.
3. An End of Service Life Indicator (ESLI) system or established and enforced change out schedule must be implemented when using a cartridge or canister.
  4. When purchasing canisters and cartridges, priority should be given to products containing ESLI systems to limit use of change out schedules.
- B. Change Out Schedule
1. If a canister or cartridge does not have an ESLI system, a change out schedule must be implemented.
  2. Use the manufacturer's cartridge capacity data as a basis for a successful change out schedule.
  3. Seek assistance from manufacturer/vendor for additional assistance.
  4. For change out schedule for particulate filters, use manufacturer's recommendation for change out frequency. Typically, particulate filters should be changed out when a user experiences difficulty breathing (i.e., resistance) while wearing their mask.

### TRAINING

- A. Employees who use respirators shall be trained in the following areas:
1. The information covered under CCR T8 5144 and 5155
  2. Respiratory hazards encountered at the worksite
  3. Proper selection and use of respirators
  4. Additional PPE
  5. Respirator limitations
  6. How to perform user seal checks
  7. Fit testing
  8. Emergency respirator use procedures
  9. Respirator maintenance and storage
  10. Medical signs and symptoms limiting effective respirator use; and
  11. The contents of this Respiratory Protection Program.
- B. Training will be conducted annually or as needed (e.g., relocation to another department using a different type of respirator).

### PROGRAM EVALUATION

- A. City of Redlands Respiratory Protection Program is evaluated by the Program Administrator under the following criteria:
1. On an annual basis
  2. When changes occur to Cal/OSHA regulations that prompt revision of this document
  3. When operational changes occur that require a revision of this document; and
  4. Where there is an accident or near miss that relates to this section.
- B. Evaluation involves the following:
1. Program review
  2. Conducting evaluations of the workplace as necessary to ensure provisions of the current written program are effectively implemented; and
  3. Communicating effectiveness with respirator users.

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**VII. Recordkeeping**

All training records, fit test records, and medical evaluations prepared in association with the Respiratory Protection Program will be maintained by the Program Administrator.

**VIII. Additional References**

<https://www.dir.ca.gov/title8/5144.html>

[https://www.dir.ca.gov/title8/5155table\\_ac1.html](https://www.dir.ca.gov/title8/5155table_ac1.html)

<https://www.dir.ca.gov/title8/5155.html>

**Attachment A**  
**OSHA Respirator Medical Evaluation Questionnaire**

To the employer: Answers to questions in Section 1, and to question 9 in Section 2 of Part A, do not require a medical examination.

To the employee:

Can you read (circle): Yes/No

Your employer must allow you to answer the questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care professional who will review it.

Part A. Section 1. (Mandatory) The following information must be provided by every employee who has been selected to use any type of respirator (please print).

1. Today's date: \_\_\_\_\_

2. Your name: \_\_\_\_\_

3. Your age (to nearest year): \_\_\_\_\_

4. Sex (circle one): Male/Female

5. Your height: \_\_\_\_\_ ft. \_\_\_\_\_ in.

6. Your weight: \_\_\_\_\_ lbs.

7. Your job title: \_\_\_\_\_

8. A phone number where you can be reached by the health care professional who reviews this questionnaire (include the Area Code): \_\_\_\_\_

9. The best time to phone you at this number: \_\_\_\_\_

10. Has your employer told you how to contact the health care professional who will review this questionnaire (circle one): Yes/No

11. Check the type of respirator you will use (you can check more than one category):

a. \_\_\_ N, R, or P disposable respirator (filter-mask, non-cartridge type only).

b. \_\_\_ Other type (for example, half- or full-facepiece type, powered-air purifying, supplied-air, self-contained breathing apparatus).

12. Have you worn a respirator (circle one): Yes/No

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If “yes,” what type(s): \_\_\_\_\_

Part A. Section 2. (Mandatory) Questions 1 through 9 below must be answered by every employee who has been selected to use any type of respirator (please circle “yes” or “no”).

1. Do you currently smoke tobacco, or have you smoked tobacco in the last month: Yes/No

2. Have you ever had any of the following conditions?

a. Seizures: Yes/No

b. Diabetes (sugar disease): Yes/No

c. Allergic reactions that interfere with your breathing: Yes/No

d. Claustrophobia (fear of closed-in places): Yes/No

e. Trouble smelling odors: Yes/No

3. Have you ever had any of the following pulmonary or lung problems?

a. Asbestosis: Yes/No

b. Asthma: Yes/No

c. Chronic bronchitis: Yes/No

d. Emphysema: Yes/No

e. Pneumonia: Yes/No

f. Tuberculosis: Yes/No

g. Silicosis: Yes/No

h. Pneumothorax (collapsed lung): Yes/No

i. Lung cancer: Yes/No

j. Broken ribs: Yes/No

k. Any chest injuries or surgeries: Yes/No

l. Any other lung problem that you've been told about: Yes/No

4. Do you currently have any of the following symptoms of pulmonary or lung illness?

- 
- a. Shortness of breath: Yes/No
  - b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline: Yes/No
  - c. Shortness of breath when walking with other people at an ordinary pace on level ground: Yes/No
  - d. Have to stop for breath when walking at your own pace on level ground: Yes/No
  - e. Shortness of breath when washing or dressing yourself: Yes/No
  - f. Shortness of breath that interferes with your job: Yes/No
  - g. Coughing that produces phlegm (thick sputum): Yes/No
  - h. Coughing that wakes you early in the morning: Yes/No
  - i. Coughing that occurs mostly when you are lying down: Yes/No
  - j. Coughing up blood in the last month: Yes/No
  - k. Wheezing: Yes/No
  - l. Wheezing that interferes with your job: Yes/No
  - m. Chest pain when you breathe deeply: Yes/No
  - n. Any other symptoms that you think may be related to lung problems: Yes/No
5. Have you ever had any of the following cardiovascular or heart problems?
- a. Heart attack: Yes/No
  - b. Stroke: Yes/No
  - c. Angina: Yes/No
  - d. Heart failure: Yes/No
  - e. Swelling in your legs or feet (not caused by walking): Yes/No
  - f. Heart arrhythmia (heart beating irregularly): Yes/No
  - g. High blood pressure: Yes/No
  - h. Any other heart problem that you've been told about: Yes/No
6. Have you ever had any of the following cardiovascular or heart symptoms?

- 
- a. Frequent pain or tightness in your chest: Yes/No
  - b. Pain or tightness in your chest during physical activity: Yes/No
  - c. Pain or tightness in your chest that interferes with your job: Yes/No
  - d. In the past two years, have you noticed your heart skipping or missing a beat: Yes/No
  - e. Heartburn or indigestion that is not related to eating: Yes/No
  - f. Any other symptoms that you think may be related to heart or circulation problems: Yes/No

7. Do you currently take medication for any of the following problems?

- a. Breathing or lung problems: Yes/No
- b. Heart trouble: Yes/No
- c. Blood pressure: Yes/No
- d. Seizures (fits): Yes/No

8. If you've ever used a respirator, have you ever had any of the following problems?

(If you've never used a respirator, check the following space and go to question 9:)

- a. Eye irritation: Yes/No
- b. Skin allergies or rashes: Yes/No
- c. Anxiety: Yes/No
- d. General weakness or fatigue: Yes/No
- e. Any other problem that interferes with your use of a respirator: Yes/No

9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire: Yes/No

Questions 10 to 15 below must be answered by every employee who has been selected to use either a full-facepiece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.

10. Have you ever lost vision in either eye (temporarily or permanently): Yes/No

11. Do you currently have any of the following vision problems?

- a. Wear contact lenses: Yes/No

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b. Wear glasses: Yes/No

c. Color blind: Yes/No

d. Any other eye or vision problem: Yes/No

12. Have you ever had an injury to your ears, including a broken ear drum: Yes/No

13. Do you currently have any of the following hearing problems?

a. Difficulty hearing: Yes/No

b. Wear a hearing aid: Yes/No

c. Any other hearing or ear problem: Yes/No

14. Have you ever had a back injury: Yes/No

15. Do you currently have any of the following musculoskeletal problems?

a. Weakness in any of your arms, hands, legs, or feet: Yes/No

b. Back pain: Yes/No

c. Difficulty fully moving your arms and legs: Yes/No

d. Pain and stiffness when you lean forward or backward at the waist: Yes/No

e. Difficulty fully moving your head up or down: Yes/No

f. Difficulty fully moving your head side to side: Yes/No

g. Difficulty bending at your knees: Yes/No

h. Difficulty squatting to the ground: Yes/No

i. Climbing a flight of stairs or a ladder carrying more than 25 lbs: Yes/No

j. Any other muscle or skeletal problem that interferes with using a respirator: Yes/No

Part B. Any of the following questions, and other questions not listed, may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.

1. In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen: Yes/No

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If “yes,” do you have feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you're working under these conditions: Yes/No

2. At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact with hazardous chemicals: Yes/No

If “yes,” name the chemicals if you know them: \_\_\_\_\_, \_\_\_\_\_,  
\_\_\_\_\_, \_\_\_\_\_.

3. Have you ever worked with any of the materials, or under any of the conditions, listed below:

a. Asbestos: Yes/No

b. Silica (e.g., in sandblasting): Yes/No

c. Tungsten/cobalt (e.g., grinding or welding this material): Yes/No

d. Beryllium: Yes/No

e. Aluminum: Yes/No

f. Coal (for example, mining): Yes/No

g. Iron: Yes/No

h. Tin: Yes/No

i. Dusty environments: Yes/No

j. Any other hazardous exposures: Yes/No

If “yes,” describe these exposures: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

4. List any second jobs or side businesses you have: \_\_\_\_\_

\_\_\_\_\_

5. List your previous occupations: \_\_\_\_\_

\_\_\_\_\_

6. List your current and previous hobbies: \_\_\_\_\_

\_\_\_\_\_

7. Have you been in the military services? Yes/No

If “yes,” were you exposed to biological or chemical agents (either in training or combat): Yes/No

8. Have you ever worked on a HAZMAT team? Yes/No

9. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications): Yes/No

If “yes,” name the medications if you know them: \_\_\_\_\_

10. Will you be using any of the following items with your respirator(s)?

a. HEPA Filters: Yes/No

b. Canisters (for example, gas masks): Yes/No

c. Cartridges: Yes/No

11. How often are you expected to use the respirator(s) (circle “yes” or “no” for all answers that apply to you)?:

a. Escape only (no rescue): Yes/No

b. Emergency rescue only: Yes/No

c. Less than 5 hours per week: Yes/No

d. Less than 2 hours per day: Yes/No

e. 2 to 4 hours per day: Yes/No

f. Over 4 hours per day: Yes/No

12. During the period you are using the respirator(s), is your work effort:

a. Light (less than 200 kcal per hour): Yes/No

If “yes,” how long does this period last during the average shift: \_\_\_ hrs. \_\_\_ mins.

Examples of a light work effort are sitting while writing, typing, drafting, or performing light assembly work; or standing while operating a drill press (1-3 lbs.) or controlling machines.

b. Moderate (200 to 350 kcal per hour): Yes/No

If “yes,” how long does this period last during the average shift: \_\_\_ hrs. \_\_\_ mins.

Examples of moderate work effort are sitting while nailing or filing; driving a truck or bus in urban traffic; standing while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level; walking on a level surface about 2 mph or down a 5-degree grade about 3 mph; or pushing a wheelbarrow with a heavy load (about 100 lbs.) on a level surface.

c. Heavy (above 350 kcal per hour): Yes/No

If “yes,” how long does this period last during the average shift: \_\_\_\_ hrs. \_\_\_\_ mins.

Examples of heavy work are lifting a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; shoveling; standing while bricklaying or chipping castings; walking up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lbs.).

13. Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using the respirator: Yes/No

If “yes,” describe this protective clothing and/or equipment:

\_\_\_\_\_.

14. Will you be working under hot conditions (temperature exceeding 77 deg. F): Yes/No

15. Will you be working under humid conditions: Yes/No

16. Describe the work you'll be doing while you're using your respirator(s):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

17. Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for example, confined spaces, life-threatening gases): \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

18. Provide the following information, if you know it, for each toxic substance that you'll be exposed to when you're using your respirator(s):

Name of first toxic substance: \_\_\_\_\_

Estimated maximum exposure level per shift: \_\_\_\_\_

Duration of exposure per shift: \_\_\_\_\_

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Name of second toxic substance: \_\_\_\_\_

Estimated maximum exposure level per shift: \_\_\_\_\_

Duration of exposure per shift: \_\_\_\_\_

Name of third toxic substance: \_\_\_\_\_

Estimated maximum exposure level per shift: \_\_\_\_\_

Duration of exposure per shift: \_\_\_\_\_

The name of any other toxic substances that you'll be exposed to while using your respirator:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

19. Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and well-being of others (for example, rescue, security): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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**Attachment B**  
**Information for Employees Using Respirators When Not Required Under the Standard**  
**(Appendix D to Section 5144)**

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designated to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors or very small solid particles of fumes or smoke.
4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.