

The respiratory protection program is intended to provide a resource to employees who perform job functions which may require respiratory protection.

## Respiratory Protection Plan

October 1, 2019

### Approval

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Annual Plan Review

Revision Date	Reviewer	Summary of Changes (if applicable)	Approved By:
June 18, 2018	M. DeSalvio	New plan template, program updates and procedure changes. Implementing new procedure for voluntary use and fit testing form.	
March 25, 2019	M. DeSalvio	Updated approval for E.O. 1039 Updated exemption process for pre-existing medical conditions.	
October 1, 2019	M. DeSalvio	Updated training and voluntary use provisions.	

## Article I. Acronyms

- (a) **IDLH**: Immediately Dangerous to Life and Health
- (b) **NIOSH**: National Institute for Occupational Safety and Health
- (c) **PAPR**: Powered Air Purifying Respirator
- (d) **PLHCP**: Primary Licensed Health Care Physician
- (e) **PSI**: Pounds per Square Inch
- (f) **SCBA**: Self-Contained Breathing Apparatus
- (g) **SDS**: Safety Data Sheet
- (h) **TLV**: Threshold Limit Values

## Article II. Policy

It is the policy of California State Polytechnic University, Pomona, to maintain, insofar as it is reasonably within the control of the University to do so, a campus environment for students, faculty, staff and visitors that will not adversely affect their health and safety nor subject them to avoidable risks of accidental injury. No individual or employee shall be required to perform any task, which is determined to be unsafe or unreasonably hazardous. Furthermore, the University shall ensure that all operational activities are carried out in compliance with existing environmental laws, rules, regulations, and campus policies in order to protect the environment.

All activities involving the use of respiratory protective equipment, as defined in this manual, in facilities controlled by the University, shall be conducted in compliance with Title 8 of the California Code of Regulations and with the provisions of this manual.

## Article III. Purpose

The University Respiratory Protection Program, through the requirements described in this manual, establishes a program for the use of respirators. The criteria are designed for those University personnel who during their normal duties are or could be exposed to hazardous substances or environments that may adversely affect their health or safety. For the purposes of this plan, students shall be treated the same as an employee with respect to the requirements and applicability of this plan.

### The program includes:

- (a) Provisions for protective procedures and equipment when a working environment is oxygen deficient or when airborne radioactive or toxic materials could exceed acceptable limits.
- (b) Provisions for proper respiratory equipment for emergency use when there is a potential for loss of life.
- (c) Efforts to prevent atmospheric contamination. This shall be accomplished whenever feasible by accepted engineering or administrative control measures. However, when not feasible or while such measures are being instituted or evaluated, the program provides appropriate respiratory protection to personnel who might be exposed to unhealthful conditions.
- (d) Provisions for the proper selection and fitting of respiratory equipment and for the training of University personnel in the proper use of such equipment.
- (e) Establishment of requirements and controls for those employees who must use respirators and for their supervisors.

## Article IV. Responsibilities

### Section 4.01- Environmental Health and Safety (EH&S)

- (a) Develop, implement, and monitor the Respiratory Protection Program in compliance with Section 5144, Title 8, California Code of Regulations.
- (b) Assist departments in complying with program requirements on a consultation basis.
- (c) Consult and provide guidance to departments related to equipment recommendations and purchases. Specialized equipment should be reviewed by EH&S prior to purchase to ensure compliance with the standard.
- (d) Provide training that is accessible to the campus.
- (e) Develop and implement a campus-wide medical monitoring program for respirator users.
- (f) Conduct routine inspections for respiratory equipment usage, maintenance, and storage.

#### Section 4.02- Department

- (a) Identify employees for enrollment into the Respiratory Protection Program.
- (b) Determine what specific applications require the use of respiratory equipment.
- (c) Provide proper respiratory equipment to meet the needs of each specific application.
- (d) Ensure that appropriate employees are provided with adequate training and instructions on all equipment and that all personnel are completely knowledgeable of the respiratory protection requirements for the areas in which they work (See Appendix 2, Respirator Training).
- (e) Ensure that personnel comply with all facets of the University Respiratory Protection Program, including respirator inspection and maintenance.

#### Section 4.03- Employee

- (a) Use good judgment at all times; the unlimited number of potential hazards that may exist or be created in the work place is sometimes unpredictable.
- (b) Read and comply with all applicable procedures, whether written or oral, while performing assigned duties, including the Safety Data Sheet (SDS) for all materials being used.
- (c) Utilize respiratory protective equipment in accordance with instruction and training provided by EH&S, the department, or SDS.
- (d) Inform the supervisor of any personal health problems that could be aggravated by the use of respiratory protective equipment. Detailed medical conditions are confidential and should not be disclosed. Employees should report that they may not be able to wear a respirator because of a medical condition. A follow-up medical exam can be provided by EH&S.
- (e) Guard against damage and ensure that respirators are not disassembled, modified, or otherwise altered in any way other than by the changing of respirator cartridges/filters.
- (f) Report any observed or suspected malfunctioning respirator to your supervisor.
- (g) Use only those brands and types of respiratory protective equipment for which training and fit testing have been provided specifically to you as the employee.
- (h) Ensure equipment is properly maintained and stored under proper conditions when not in use.

#### Section 4.04- Campus Designated Physician

The designated physician is responsible for reviewing the Medical History form and conducting pre-enrollment and periodic physical examinations on all employees who use respirators to assure that they are physically able to perform their work and can use respiratory protective equipment as required.

### Article V. Respirator Eligibility

### Section 5.01- Annual Medical Exam

Each employee whose duties require the use of a respirator will be required to fill out a Respirator Medical Evaluation Questionnaire (Appendix G).

Employees will not be assigned to tasks requiring use of respirators unless it has been determined that they are physically able to perform the work while using the required respiratory protective equipment. The University shall designate a licensed physician who will determine what health and physical conditions are pertinent. Employees will be provided with the opportunity to discuss their medical questionnaire and physical exam with the physician.

If the physician determines that the use of a negative pressure respirator may place an employee's health at risk, the University will provide the employee with a Powered Air Purifying Respirator (PAPR), provided the employee is medically fit to use a PAPR. If a subsequent medical evaluation finds that the employee is medically able to use a negative pressure respirator, the use of a PAPR by the employee may be discontinued. Employees may be exempted from the respiratory protection program if a pre-existing medical condition precludes the employee from wearing a negative pressure filtration device. Such exemptions should be formalized by communicating with the Office of Equity, Inclusion and Compliance for a reasonable accommodation request.

The medical status of employees assigned use of respiratory protective equipment should be reviewed at least annually. The medical provider will advise the employee of their status after the exam as well as submit a non-confidential report to EH&S.

Students who require the use of a respirator can request a pulmonary function test (PFT) through the Student Health Center for a fee of \$55. The attending physician will notify EH&S of the approval or any applicable work restrictions. Students may utilize a respirator in alignment with section 7.04 of this program provided all requirements of that section are observed.

### Section 5.02- Respiratory Protection Training

Each employee, upon assignment to an area requiring respirator use and prior to such use, shall receive training relative to his/her responsibilities in the Respiratory Protection Program. Instruction shall include a complete description of the need, use, limitations, and care of the respirator issued to him/her (*Appendix C*). This training will be completed prior to use of respiratory protection and annually thereafter. All training will be documented and records filed in the Environmental Health & Safety Department.

(a) Employee Training

Employees, including Faculty, Staff and Student Assistants shall complete the following web-based safety training modules through the SumTotal training portal.

- [Respiratory Protection](#)
- [Hazard Communication](#) (*if not already completed*)



(b) Student Training

Students, graduate students, and interns must complete online safety training through the dedicated student training portal.

- **Step 1:** [Student Training Dashboard](#)
- **Step 2:** Once logged in, students can access laser safety training by searching the course library or using the following course links
  - [Respiratory Protection](#)
  - [Hazard Communication](#) (*if not already completed*)

### Section 5.03- Fit-Testing

Fit tests are essential to insuring the proper fit of a respirator which is essential to ensure adequate protection while wearing the respirator. Manufacturers provide fitting instructions and use limitations on the product package.

Respirator face pieces are made in various sizes to fit a wide variety of face shapes and sizes; however, some workers simply won't be able to get a good fit with any available respirator and they should not be assigned duties which requires respiratory protection. Facial scars, beards, and sideburns can all interfere with a proper fit. This problem is apparent when masks are used in which there is negative pressure created during inhalation.

Employees are encouraged to try various respirator types to ensure they select one that not only provides the required protection but also comfort.

(a) Fit Test Methods

*(i) Qualitative:*

**Qualitative fit test (QLFT)** means a pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent. Agents used include isoamyl acetate, saccharin, biturex and irritant smoke.

*(ii) Quantitative:*

**Quantitative fit test (QNFT)** means an assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator. Required fit tests procedure are found in Appendix A of the California Code of Regulations, Title 8, Section 5144. It may be necessary to try several different sizes or types of respirators in order to find one that gives a good fit.

(b) Seal Checks

It's important to perform a self-check on your respirator prior to each use. The following steps should be followed.

*(i) Negative Pressure Seal Check*

The employee closes off the respirator inlet and inhales. A vacuum and partial inward collapse of the mask should result. If a vacuum cannot be maintained, readjust the face piece and try again.

*(ii) Positive Pressure Seal Check*

The employee closes off the exhalation valve and breathes out gently; air should escape through any gaps in the seal. If a slight positive pressure cannot be maintained without escape of the air, readjust the face piece and try again.

## Article VI. Authorization for Use

Only those employees who have been designated by their department as requiring use of respiratory protective equipment and who have been completed the program eligibility requirements identified in Article 5 shall use such equipment upon approval of EH&S.

## Article VII. Equipment Selection, Approval, and Procurement

### Section 7.01- Equipment Selection

Proper selection of respirators shall be made by each department based on the Respiratory Equipment Selection Guide, Respirator Protection Factors (Appendix A & B), Safety Data Sheets (SDS), Permissible Exposure Limits, and/or Threshold Limit Values. Departments shall ensure that the correct respirator is specified for each job and that the individual issuing them is adequately instructed to ensure that the correct respirator is used. Upon completion of the test results, the proper type of respirator will be selected by utilizing the chart and table found in Appendix A & B.

(a) Restrictions

*(i) The employee shall not be permitted to wear a half mask or full-face mask if the minimum protection factor of 100 or 1,000, respectively, cannot be obtained.*

*(ii) If an employee exhibits difficulty in breathing during the test, he/she shall be referred to the Industrial Clinic to determine whether he/she can wear a respirator while performing his/her duties.*

*(iii) Contact lenses are prohibited while using respiratory protective equipment. If prescription eye-wear is required, consult with your supervisor or EH&S.*

### Section 7.02- Approval

Whenever respirators are required to be used, only respirators approved by the National Institute for Occupational Safety and Health (NIOSH) shall be used. Only parts approved for the specific respirator system shall be used for replacement.

The EH&S Department is available to consult with departments on the correct type of respiratory protection needed for a specific activity or help identify when respiratory protection would be required.

### Section 7.03- Procurement

Departments are responsible to procure appropriate respiratory protective equipment and should stock several approved brands of respirators that provide the required protection. Half mask and full facemask respirators shall be equipped with a filter and/or cartridge for the specific hazard against which employees are to be protected. Employees shall not be required to purchase their own respiratory protection equipment unless being purchased by the employee in alignment with Section 7.04 Voluntary Use.

### Section 7.04- Voluntary Use

Where respirator use is not required, employees may use their own respirators if the University determines that such respirator use will not in itself create a hazard. Voluntary users must register with EH&S to confirm compliance with regulatory requirements. Employees must be provided with the information contained in Appendix D of the California Code of Regulations Section 5144 which has been appended to this program in Appendix D.

Except for the voluntary use of filtering facepieces (dust masks), all employees voluntarily using respirators must meet the eligibility requirements outlined in section 5.01 above and ensure that the respirator is cleaned, stored, and maintained so that its use does not present a health hazard to the user. The employer and/or department is not required to comply with Section 4.02 (c) once an employee has registered for voluntary use.

## Article VIII. Record Keeping

After fitting has been completed, each employee shall be issued a wallet sized respirator training and fitting card (Appendix F) indicating the brand and type of respirator to be used by the employee and the date tested. Employees shall return a signed copy of the Fit Test certification and employee acknowledgement located in Appendix E. Respirator training records shall be maintained for a period of at least 3 years. Fit test records shall be retained for 1 year until the next fit test exam. Medical exams as defined in Article V § 5.01 shall be retained in alignment with 8 CCR § 3204

## Article IX. Procedures

This section contains operating instructions for each type of respirator and instruction on the limitations of each.

## Section 9.01- Dust Masks

- (a) **Availability and Types for Use:** Dust masks of various kinds, including disposable types, have been approved for exposure to low concentrations of certain dusts.
- (b) **Limitations:** Dust masks provide no protection against gases and vapors and since they do not form a seal around the mouth and nose; they do not supply oxygen, and therefore cannot be used in oxygen-deficient areas. Similarly, dust masks cannot be worn for protection against toxic contaminants.
- (c) **Procedure:** When a dust mask is required for a job assignment, the employee should:
  - (i) *Put on the mask and adjust it for proper fit. Negative and Positive Pressure Seal Checks are not practical or required for dust masks or loose-fitting respirators. Some masks have adjustable areas around the nose which are intended to aid in achieving a more comfortable fit.*
  - (ii) *Discard a disposable dust mask after each use.*

## Section 9.02- Air-Purifying Half Mask Respirators

- (a) **Availability and Types for Use:** Half mask respirators are the most widely used types of respirators. Several brands of this type are commercially available and should be purchased by departments to ensure that employees have a satisfactory fit. Each half mask face piece is normally equipped with HEPA filter elements, except for those used in areas where the potential hazard is not particulate. HEPA filters protect against low concentrations of radioactive and toxic particulates. Other types of cartridges are available that protect against low concentrations of organic vapors and/or acid gas vapors. All cartridges used must be approved for the contaminant(s) in question (See Manufacturer's Information Sheet).
- (b) **Limitations:** Since this type of respirator does not supply air, it cannot be used in oxygen-deficient atmospheres, in IDLH atmospheres, or in confined spaces. It can only be used for protection against the contaminants listed on the cartridge. The employee should leave an area immediately if he/she smells gas or vapor inside the mask or if the breathing resistance increases. The half mask respirator shall not be worn with contact lenses or when facial hair extends under the face mask seal area.
- (c) Procedure to put on and adjust a half mask:

- (i) Use the mask approved for use as indicated on the respirator training and fitting card.*
- (ii) Hold the mask so the narrow nose clip points upward.*
- (iii) Grasp both lower mask straps and hook them behind the neck.*
- (iv) Grasp both top straps and hook them behind the head and above the ears for proper fit.*
- (v) Adjust straps so the fit is snug but comfortable.*
- (vi) Check for leaks by performing both positive and negative pressure seal checks as described in Article 5, §5.03 (b). If the mask fails either check, try adjusting the fit of the respirator to your face. If the respirator still fails either test, do not use the respirator and contact your supervisor.*
- (vii) Return used respirators to your supervisor for cleaning and maintenance or for replacement as instructed by your supervisor.*

### Section 9.03- Full Face Mask Respirators

- (a) Availability and Types for Use:** Full face mask respirators provide more protection than half masks because their shape allows a better mask-to-face seal. They also protect the eyes from irritating chemicals or particulate atmospheres. Full face masks come equipped with selective types of air purifying cartridges, dependent upon the protection required. All cartridges used must be approved for the contaminant(s) in question (See Manufacturer's Information Sheet). Additionally, full face masks are available with air supplied systems such as airline or SCBA units.
- (b) Limitations:** Air purifying full face masks have the same limitations for use as half mask respirators. Additionally, standard eyeglasses interfere with the mask to face seal. Therefore, employees should obtain an additional pair of glasses through their department for installation into a mask. Contact lenses shall not be worn unless specifically approved by the EH&S Department.
- (c) Procedure:**
  - (i) Loosen all straps, pull the harness over the head, and place the chin in the chin cup.*
  - (ii) Pull the head harness well down on the back of the head.*
  - (iii) Tighten the harness gently, starting with the bottom straps and then the middle and top straps.*
  - (iv) Check for leaks by performing both positive and negative pressure seal checks as described in Article 5, §5.03 (b). If the mask fails either check, try adjusting the fit of the respirator to your face. If the respirator still fails either test, do not use the respirator and contact your supervisor.*
  - (v) Return the respirator to your supervisor for cleaning and maintenance or for replacement when necessary.*

## Section 9.04- Self-Contained Breathing Apparatus (SCBA)

- (a) **Availability and Types of Use:** SCBA units provide the user with a pure supply of breathing air regardless of ambient air contamination. They may be used in atmospheres unsuitable for air purifying respirators. This includes use in IDLH atmospheres, confined spaces, and in emergencies where breathing hazards may exist. SCBA units may be used in IDLH atmospheres only in conjunction with a positive pressure full face mask.
  
- (b) **Limitations:** The air supply in a standard SCBA cylinder is normally rated for a thirty-minute period; however, heavy exertion and stress will increase breathing rates and deplete the air in less than thirty minutes. When the alarm bell on the unit sounds, the wearer has about five minutes of air remaining and should leave the area immediately. No one should work alone in hazardous atmospheres: a standby with SCBA and proper communications equipment should always be nearby (see Confined Space Safety Field Manual). The positive pressure full face mask used with the SCBA unit cannot be worn with contact lenses or when facial hair extends under the face-piece sealing area of the mask.
  
- (c) **Procedure for SCBA Checkout:**
  - (i) *Remove the unit from its case or cabinet and inspect it to ensure that it is operating properly before donning it. This inspection should include:*
    - 1) Check cylinder gauge for a "full" indication.
    - 2) Check the connection between the cylinder and high-pressure hose to assure that it is snug.
    - 3) Check bypass knob; it should be fully closed.
    - 4) Check mainline knob; it should be fully opened, and the locking tab engaged.
    - 5) Make sure pressure demand switch is in the demand (down) position.
    - 6) Open cylinder valve and check regulator gauge for comparison with cylinder gauge (plus or minus 100 psi).
    - 7) Close cylinder valve and watch regulator gauge for "creepage" (1 increment on gauge is allowable; more indicates a leak).
    - 8) Place mouth over regulator opening and take several breaths to make sure air is flowing.
    - 9) With your mouth still over the opening, blow back into the regulator until the diaphragm takes a "seat". You should not be able to force air back into the system. (This is a very important step.) Place palm of hand over regulator opening and switch regulator to positive pressure position (up), then allow air to escape slowly while watching regulator gauge. Bell should ring at about 500 - 550 psi (one quarter full or above on regulator gauge).

- (ii) Switch regulator to demand (down) position and open cylinder valve one and a half to two turns. Put on and adjust harness.*
- (iii) Stretch hose, and check overall condition of mask (straps, lens, etc.).*
- (iv) Put mask on and adjust, starting with bottom straps, then temple straps, and finally top strap (pull top strap snug, not tight).*
- (v) Place palm over end of hose and inhale slowly until mask is drawn toward face; hold breath for ten seconds to see whether there is any leakage in the face piece to face seal.*
- (vi) With palm still over the end of the hose, exhale, noting whether there is any leakage around the face piece. (This step also clears the exhalation valve.)*
- (vii) Connect breathing hose to regulator.*
- (viii) Always switch regulator to positive pressure mode (up) before entering into suspected unsafe atmospheres.*
- (ix) After use, notify your department that the unit has been used, so that it may be serviced and put back into operating condition.*

**(d) Pressure Demand Regulator:**

The pressure demand regulator minimizes any chance of contaminants leaking into the mask during inhalation, because the entire face mask is kept at positive pressure in relation to the ambient atmosphere

A special full-face mask equipped with a positive pressure exhalation valve is held closed by air pressure to prevent contaminants from leaking into the face piece during inhalation. Because proper performance of the pressure demand regulator is essential to the employee's protection, any problems with the regulator must be immediately reported to your supervisor.

**Section 9.05- Specialized Respiratory Protective Equipment**

- (a) Use of a pressure demand, airline system may be permitted in an IDLH atmosphere under certain conditions. For example, if protection is required over an extended period of time, it would be impractical to use SCBA because of frequent bottle changing requirements.
- (b) The EH&S Department must approve this type of protective equipment or other specialized equipment prior to use.

## Article X. General Maintenance and Care

### Section 10.01- Inspection

- (a) Inspect the condition of the respirator before and after each use and during cleaning.
- (b) Inspect at least monthly those respirators provided for emergency use only.
- (c) Examine the condition of the mask, straps, valves, and filter elements.
- (d) Examine the condition of the air hose, hose clamps, and gaskets.
- (e) Inspect for cleanliness.
- (f) Inspect for respirator display of a NIOSH approval code.
- (g) Inspect for mask approval for the hazardous atmosphere to which the worker will be exposed.

### Section 10.02- Cleaning and Disinfecting

- (a) After removing the filter and/or straps, wash the respirator in a mild soap solution and air dry (do not dry the respirator in temperatures above 125 °F); or immerse the respirator in a sanitary solution recommended by the manufacturer for at least two minutes.
- (b) After washing or immersing the respirator, rinse it thoroughly to prevent dermatitis from residue on the mask.

### Section 10.03- Storage

- (a) Respirators can be permanently damaged if they are not stored properly. After use, clean, sanitize, and store respirators in resealable plastic bags.
- (b) Protect respirators from sunlight, dust, chemicals, moisture, and extreme temperatures.
- (c) Ensure that tanks are stored in approved storage cases or adequately secured with two straps to prevent accidental tip-over and/or damage to the valve assembly.

### Section 10.04- Repair

- (a) If repair is required, use only replacement parts from the same type and brand of equipment.
- (b) Repair of SCBA equipment should be done only by the manufacturer.



## Section 10.05- SCBA Inspections

### (a) Responsibilities

(i) *Department. Each department shall conduct a monthly inspection of each SCBA unit stored for emergency use to ensure proper operation.*

(ii) *EH&S Department.*

*The EH&S Department shall conduct a quarterly survey of each SCBA unit to determine that proper inspection and records are being maintained. The EH&S Department shall arrange annual training classes on SCBA inspection and maintenance requirements for department personnel who utilize SCBA units.*

(b) **Monthly Inspections.** Each department shall assign a responsible person(s) to conduct a monthly inspection of each SCBA unit and record the results on the monthly Maintenance Checklist for SCBA Units, Form EH&S F-1768-00 (Appendix H).

The inspection shall consist of the following procedures:

- (i) *After breaking the seal, open the case and check the date on the plastic mask bag. If the mask has not been serviced within one year, return it to your department designated person.*
- (ii) *Inspect the hose by stretching it and looking for cracks or holes. Check hose connections for deterioration. Place the mask in a new bag and seal it with a rubber band.*
- (iii) *Examine the air cylinder pressure gauge for proper air pressure. Check the tightness of the high-pressure air hose connection at the cylinder. Ensure that the yellow valve on the regulator is on and fully open, that the red bypass valve is closed, and that the selector is in the demand or "off" position.*
- (iv) *Open the air cylinder valve to pressurize the regulator. Check to see that the regulator pressure gauge has approximately the same pressure as the cylinder gauge. Close the air cylinder valve to see whether the pressure goes down. A noticeable decrease in pressure (within one to two minutes) indicates a defective regulator or hose.*
- (v) *Cup one hand over the regulator outlet and inhale. The regulator should deliver air during each inhalation. Next, try blowing into the regulator outlet. If air can be blown into the outlet, the regulator is defective.*
- (vi) *Open the red bypass valve slightly. You should notice the air beginning to flow. Then close the bypass valve, bleed the air out slowly using the "on/off" lever, and check the regulator pressure gauge to see whether the alarm sounds when the pressure reaches about 500psi.*
- (vii) *Check the harness, backpack, and air cylinder for wear or damage.*

- (viii) After inspecting the SCBA unit, fill out the monthly Maintenance Checklist form found in or on the case. The records should be marked to reflect the month and day of inspection and the inspector's initials.*
- (ix) After the inspection, the case or cabinet shall be secured with a seal.*
- (x) Should defective equipment be found or servicing to the unit be required, the inspector shall take immediate action to correct any deficiencies*

## Article XI. EMERGENCY USE OF RESPIRATORS

### Section 11.01- Limitations.

This section limits the type of respirators to use during those emergencies where breathing hazards may exist.

### Section 11.02- Emergency Situations.

An emergency can be defined as "an unforeseen combination of circumstances that calls for immediate action." Respiratory hazards often occur during emergencies when police or other emergency service personnel need immediate entry into a fire or accident scene. Other types of breathing hazards may occur when personnel are exposed to hazardous substances while trapped by an accident or escaping from the scene of a fire or accident, or when they are exposed to hazardous material spills. An unforeseen chemical reaction may also result in an overexposure to hazardous substances.

### Section 11.03- Acceptable Type of Equipment During Emergencies.

Each respiratory device has a limited ability to protect health. During emergency entry, when there is usually neither time nor opportunity to evaluate the degree of exposure, only SCBA operating in the pressure-demand mode should be used. SCBAs are approved for use in IDLH atmospheres. After the type and degree of breathing hazards are evaluated, other respiratory equipment may be recommended.

### Section 11.04- Reports.

Following any incident where emergency respirator protective equipment has been used, the EH&S Department should be notified. Based on the type of exposure, EH&S may conduct a post-exposure follow-up or accident investigation.

## Article XII. Reference

California Code of Regulations, Title 8, Section 5144

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## Appendix A: Equipment Selection Guide

Respirator Type	Chemical, Gas, Vapors	Dust, Fibers	Oxygen Enriched	Oxygen Deficient	IDLH
Quarter Mask					
Half Mask					
Full-Face					
Self-Contained (SCBA)					
Airline					
Self-rescue mouthpiece	*	*	*	*	*



Acceptable Protection



Acceptable Protection (with appropriate chemical filter)



Acceptable Protection (with appropriate particulate filter)



Not Acceptable Protection

**Oxygen Deficient:** Less than 19.5% oxygen

**Oxygen Enriched:** Greater than 23.5% oxygen

**IDLH:** Immediately Dangerous to Life and Health

**LEL:** Lower Explosive Limit

\* Intended for self-rescue or escape only. Requires prior approval.

**Note:**

- Always follow manufacturer's instructions and/or recommendations when selecting the proper respirator.
- Atmospheres containing 25% of the lower explosive limit of a contaminant should be considered IDLH and not entered.

## Appendix B: Respirator Protection Factors

Respirator Class and Type	NIOSH
<b>Air Purifying</b>	
Filtering Facepiece	10
Half Mask	10
Full Facepiece	50
<b>Powered Air Purifying</b>	
Half Mask	50
Full Facepiece	50
Loose Fitting Facepiece	25
Hood or Helmet	25
<b>Supplied Air</b>	
Half Mask-Demand	10
Half Mask-Continuous	50
Half Mask-Pressure Demand	1000
Full Facepiece Demand	50
Full Facepiece Continuous Flow	50
Full Facepiece Pressure Demand	2000
Loose Fitting Facepiece	25
Hood or Helmet	25
<b>Self-Contained Breathing Apparatus (SCBA)</b>	
Demand	50
Pressure Demand	10,000

## Appendix C: Respirator Training Summary

### RESPIRATOR TRAINING

The training you receive in the use of respirators can help you protect yourself against injury and could save your life. Your employer must, by law, provide you with a safe and healthful workplace and supply respiratory protection if the air in your workplace becomes hazardous. You have the responsibility to correctly use the respiratory protective apparatus given you and to make sure that it remains in good condition. Your life may depend on how seriously you take these responsibilities.

There are three types of hazards which require respiratory protection: an oxygen deficient atmosphere (ODA)—oxygen concentration less than 19.5%, oxygen enriched atmosphere (OEA)—oxygen concentration greater than 23.5% and a contaminated atmosphere—dusts, mists, fumes, gases, or vapors at harmful levels.

The type of atmosphere or contaminant you encounter dictates the types of respiratory protection you must wear. Pay special attention to the section in your training which deals with the proper selection of gear. Using the wrong gear can be just as harmful (sometimes even more harmful) as using no protection at all.

Although your employer must provide you with respirators, if they are required by your working conditions, the employer's first responsibility is to try to create working conditions in which respirators are not needed. If there is an operation in your area which creates a hazardous atmosphere, your employer must try to change the operation in such a way that the hazard is eliminated. This is called an "engineering control". An example of an engineering control is the substitution of a non-toxic or less toxic substance in an operation for a more harmful one. Another example is the use of ventilation to remove harmful gases, dusts, and vapors before they can contaminate the air you work in. Your employer may also institute "administrative controls" and limit the time that you can spend in a harmful atmosphere, rotating you to another job periodically. When it is practical for the employer to use engineering and administrative controls to eliminate or sufficiently reduce the hazard, the employer must do so. Protection by respirators should be used only as a last resort or while more effective controls are being installed. Of course, even in areas where there is no routine hazard from contaminated atmospheres there is always the possibility of an accident which can result in a temporary hazard. In either case, whether you must use respirators daily or only in emergencies, you must know how to use them correctly and safely.

The training you receive is required by law. If you don't understand something, ask questions. Participate. If you have examples of accidents in your work area that this training could have helped to prevent, share them. If you have ideas about how to eliminate hazardous conditions in your shop, mention them. If you have suggestions for further training, make them.

Even when given adequate training, no worker may be assigned to work, which requires the use of a respirator without the approval of a licensed physician and an annual review of the worker's medical status. There are a number of medical conditions (e.g. pulmonary deficiencies, heart disease, anemia, hemophilia, use of contact lenses or glasses), which may affect a worker's ability to wear and work with a respirator.

## RESPIRATOR TRAINING (continued)

The topics that are covered in respirator training are listed below:

1. Why respirators are necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirators.
2. The limitations and capabilities of respirators.
3. How to use respirators effectively in emergency situations, including situations in which the respirator malfunctions.
4. How to inspect, put on and remove, use, and check the seals of respirators.
5. The procedures for the maintenance and storage of the respirators.
6. How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.
7. The general requirements of Cal/OSHA's Respiratory Protection Standard.

### Training Options:

#### Employee Training

Employees, including Faculty, Staff and Student Assistants shall complete the following web-based safety training modules through the SumTotal training portal.

- [Respiratory Protection](#)
- [Hazard Communication](#) (if not already completed)

#### Student Training

Students, graduate students, and interns must complete online safety training through the dedicated student training portal.

- Step 1: [Student Training Dashboard](#)
- Step 2: Once logged in, students can access laser safety training by searching the course library or using the following course links
  - [Respiratory Protection](#)
  - [Hazard Communication](#) (if not already completed)
- Web Based: Respiratory protection training is available online via Skillssoft by using the following link.
- Live Training: EH&S can provide direct training upon request
- Video Training: EH&S has training materials available on DVD which can be checked out from the EH&S office.

**Training Records:** Training records must be filed with EH&S in order to be valid and satisfy training requirements.

## Appendix D: Section 5144 Exemption

### Appendix D to Section 5144: (Mandatory) Information for Employees Using Respirators When Not Required Under the Standard

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.

#### NOTE

Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

#### HISTORY

1. New appendix D to section 5144 filed 8-25-98; operative 11-23-98 (Register 98, No. 35).



## Appendix E: Respirator Fit-Test Form

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## Appendix F: Optional Fit Test Employee Card

Upon completion of a fit-test, employees may complete the following form for their records.

### CALIFORNIA STATE POLYTECHNIC UNIVERSITY, POMONA Respirator Fitting Data

Name: \_\_\_\_\_

Department: \_\_\_\_\_

Type of Respirator	Manufacturer	Model Number	Size

\_\_\_\_\_  
Authorized Signature

(See Reverse Side)

\_\_\_\_\_  
Date

#### Remember:

- Use only the brand and model of mask fitted.
- Check the mask to face seal each time you use it. Cover the filters or hose with your hands and inhale. The mask will collapse toward your face if sealed.
- For half and full-face masks, use the cartridge recommended for the contaminant involved.
- Each type of respirator has limitations that govern its ability to protect you. Ask your supervisor or contact EH&S at ext. 4697 for more information.

## Appendix G: Medical Exam Questionnaire

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## Appendix H: Sample SCBA Inspection Form

### California State Polytechnic University, Pomona Environmental Health and Safety

#### MONTHLY MAINTENANCE CHECKLIST FOR SCBA UNITS\*

Department: \_\_\_\_\_

Person(s) Responsible: \_\_\_\_\_ Ext. \_\_\_\_\_

\_\_\_\_\_ Ext. \_\_\_\_\_

MODEL NO.	SERIAL NO												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1. Mask and hose -- Examine for contamination, damage, and deterioration.													
2. Stretch hose -- Check for tightness of assembly and cracking.													
3. Examine harness for wear and function of hardware.													
4. Test unit as worn (regulator hooked up to cylinder).													
a. Check cylinder gauge for full indication.													
b. Open cylinder valve filling regulator and hose.													
c. Close cylinder valve. Compare regulator gauge to cylinder gauge +/- 50 psi allowable.													
d. Watch regulator gauge for drop in reading, which would indicate leakage. (One increment on gauge in 5 minutes is allowable).													
e. Breathe unit down until Pak Alarm starts. Check regulator gauge for indication of pressure. Alarm should start at about 1/4 full.													
f. Close yellow knob, open and close cylinder valve.													
g. Slightly breathe on regulator to check shut-off of yellow knob (On-Off Valve). Regulator should not flow.													
h. Open yellow knob full and lock.													
i. Open red knob (bypass), and bleed off pressure.													
j. Close red knob. Replace unit in ready position.													
Inspection Date:													
Inspector's initials:													

\*See Section 10.05(b) for more complete instructions on SCBA inspections.

**Note:** If at any time the seal is found broken, the tank pressure is below 1500 psi, or any other deficiencies are found, contact EH&S at ext. 4697.