

## Respiratory Protection

Responsible Administrator: Industrial Hygiene  
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**Summary:** This section outlines the policy and procedures related to the Respiratory Protection Program that is administered through the Environmental Health and Safety (EHS) Department.

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### 1. Program Description

The Respiratory Protection Program provides a system for complying with the requirements of the applicable regulatory standards. The program defines the procedures for:

- selecting respirators (which includes performance of a respiratory hazard evaluation),
- medical evaluations,
- UC Irvine respirator user training in
  - respiratory hazards and proper respirator use,
  - fit testing,
  - proper use of respirators in routine and reasonably foreseeable emergencies,
  - respirator care and maintenance,
  - atmosphere supplying respirators,
- evaluating program effectiveness, and
- voluntary use of respiratory protection.

### 2. Scope

When possible, engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation, and substitution with less toxic materials) are implemented to prevent exposure to harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors.

When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators are used. The University of California, Irvine (UC Irvine), through the Environmental Health and Safety (EHS) office, selects and provides an appropriate respirator to personnel subject to this policy. Such personnel include, but are not limited to:

- A. UC Irvine personnel in areas known to have contaminant levels requiring the use of respiratory protection;
- B. UC Irvine personnel performing operations documented to be health hazardous;
- C. UC Irvine personnel performing operations suspected of being health hazardous but for which adequate sampling data has not been obtained.

### 3. Definitions

**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.

**Atmosphere-supplying respirator** - A respirator that supplies the user with breathing-quality air from a source independent of the work environment. This includes supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units.

**Canister or cartridge** - A container with a filter, sorbent media, catalyst, or combination of these items, which removes specific contaminants from the air.

**Demand respirator** - An atmosphere-supplying respirator that supplies breathing air to the user only when a negative pressure is created inside the facepiece by inhalation.

**Emergency situation** is any occurrence that may result in an uncontrolled significant release of an airborne contaminant. This may include equipment failure, rupture of containers, or failure of control equipment.

**UC Irvine personnel exposure** - Exposure to a concentration of an airborne contaminant that would occur if the UC IRVINE personnel were not using respiratory protection.

**End-of-service-life indicator (ESLI)** is a system that warns the respirator user of the approach of the end of adequate respiratory protection, for example, that the sorbent media is approaching saturation or is no longer effective.

**Escape-only respirator** is a respirator intended to be used only for emergency exit from a contaminated area.

**Filter or air purifying element** is a component used in respirators to remove solid or liquid aerosols from the inspired air.

**Filtering facepiece (dust mask)** is a negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium.

**Fit factor** is a quantitative estimate of the fit of a particular respirator to a specific individual, and typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn.

**Fit test** is the use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator. (See also Qualitative fit test QLFT and Quantitative fit test QNFT.)

**High efficiency particulate air (HEPA) filter** is a filter that is at least 99.97% efficient in removing monodisperse particles of 0.3 micrometers in diameter. The equivalent NIOSH 42 CFR 84 particulate filters are the N100, R100, and P100 filters.

**Immediately dangerous to life or health (IDLH)** is 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.

**Loose-fitting facepiece** is a respiratory inlet covering that is designed to form a partial face-to-facepiece seal.

**Negative pressure respirator (tight fitting)** is a respirator which uses a tight face-to-facepiece seal to create negative pressure inside the mask during inhalation with respect to the ambient air.

**Oxygen deficient atmosphere** is an atmosphere with oxygen content below 19.5% by volume.

**Physician or other licensed health care professional (PLHCP)** is 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 of the health care services required by the regulations.

**Positive pressure respirator** is a respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator.

**Powered air-purifying respirator (PAPR)** is an air-purifying respirator that uses a built-in fan to actively filter ambient air through air-purifying elements to the inlet covering.

**Pressure demand respirator** is a positive pressure atmosphere-supplying respirator that supplies breathing air to the facepiece when the pressure inside the facepiece is reduced by inhalation.

**Qualitative fit test (QLFT)** is a pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent.

**Quantitative fit test (QNFT)** is an assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

**Respiratory inlet covering** is 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 facepiece, helmet, hood, suit, or a mouthpiece respirator with nose clamp.

**Self-contained breathing apparatus (SCBA)** is an atmosphere-supplying respirator for which the breathing air source is contained within a portable compressed gas cylinder designed to be carried by the user.

**Service life** is the period of time that a respirator, filter or sorbent media, or other respiratory equipment provides adequate protection to the wearer.

**Supplied-air respirator (SAR) or airline respirator** is an atmosphere-supplying respirator for which the air supply is provided by an external, fixed compressed gas source or compressor. The SAR air supply is not typically carried by the user.

**Tight-fitting facepiece** is a respiratory inlet covering that forms a complete face-to-facepiece seal.

**User seal check** is an action conducted by the respirator user to determine if the respirator is properly seated to the face.

#### 4. Responsibilities

UC Irvine/EHS:

UC Irvine, through the administration of the EHS office, shall be responsible for the establishment, implementation, and maintenance of a written respiratory protection program. A trained program administrator will administer the program. The EHS office shall:

- Conduct the respiratory hazard evaluation;
- Perform the respirator fit test and respirator use training, including provision of the suitable respirator for the task, as determined by the evaluation;
- Assess the effectiveness of the program as described in this document.

The program shall be updated as necessary to reflect changes in workplace conditions that affect respirator use.

Manager/Supervisor:

The UC Irvine department manager/supervisor/PI/administrator shall be responsible for implementing the recommendations provided by EHS following a hazard evaluation. The recommendations are intended to minimize, reduce, or eliminate UC Irvine personnel exposures and may include engineering controls, administrative controls, or the use of personal protective equipment. EHS shall work collaboratively with the affected UC Irvine department to develop worksite-specific procedures. The affected department shall be responsible for implementing and maintaining the worksite-specific procedures.

Employee:

UC Irvine personnel shall be responsible for:

- implementing EHS recommendations;
- following worksite-specific procedures;
- maintaining current on status of annual fit test and training;
- notifying EHS when respiratory protection is no longer in use or is needed.

## 5. Program Components

### PROCEDURES FOR SELECTING RESPIRATORS

EHS shall only issue NIOSH-certified respirators. Its use shall comply with the conditions of its certification. All filters, cartridges and canisters used in the workplace shall be labeled and color-coded with the NIOSH approval label; the label shall not be removed and shall be legible. EHS shall maintain the respiratory equipment inventory.

Prior to assigning a respirator to the UC Irvine personnel, EHS shall evaluate the respiratory hazards in which the respirator will be used. The “UC Irvine EHS Respiratory Hazard Evaluation Part 1 and 2” forms (Appendices A1 and A2) and the “UC Irvine EHS Respirator Decision Logic Sequence and Filter Change- out Schedule” and associated flowchart ([Appendix B](#) and [B1](#)) shall be used to determine the appropriate respirator to issue.

Typically, the potential respirator user will complete and submit the “UC Irvine EHS Respiratory Hazard Evaluation Part 1” online form found in the [EHS site](#). After completion of Part 1, an Industrial Hygienist will communicate with the submitter to complete Part 2.

- A. The “UC Irvine Respiratory Hazard Evaluation” forms identify and provide an evaluation of the respiratory hazard(s) in the workplace. The evaluation includes a reasonable estimate of UC Irvine personnel exposures to respiratory hazard(s) and an identification of the contaminant(s). The contaminant(s) may be chemical or biological in nature.
  - i. If the UC Irvine personnel exposure cannot be identified or reasonably estimated, the atmosphere shall be considered immediately dangerous to life and health (IDLH).
    1. All oxygen-deficient atmospheres shall be considered IDLH.
    2. No UC Irvine personnel shall be authorized to enter an atmosphere immediately dangerous to life and health (IDLH).
  - ii. When applicable, the contaminant(s) chemical state and physical form shall be identified in the hazard evaluation.

- iii. The hazard evaluation determines the need or requirement for respirator use. However, requirement for respirator use can be at the discretion of the evaluator since materials exist that do not have exposure limits (such as many biological agents).
  - iv. If the hazard evaluation determines that respirator use is not required, the UC Irvine personnel(s) may still choose to use respiratory protection. Such “voluntary use” of respiratory equipment is subject to the following:
    - 1. All affected respirator users shall be identified;
    - 2. Shall sign the “UC Irvine EHS Respiratory Protection Voluntary Use Affidavit” ([Appendix C](#));
    - 3. Shall be provided with a copy of [Appendix D](#) of the regulations, “Information for UC Irvine Personnel Using Respirators When Not Required Under the Standard” ([Appendix D](#)); and,
    - 4. Shall be provided with a medical evaluation and training (*Exception: voluntary users of filtering facepieces are not subject to medical evaluations*).
  - v. The “UC Irvine Respiratory Hazard Evaluation” forms shall be provided to the physician or other licensed health care professional (PLHCP) prior to the UC Irvine personnel’s medical evaluation.
- B. The “UC Irvine EHS Respirator Decision Logic Sequence and Flowchart” provides a process for selecting respirators for use in the workplace. The sequence of questions is used to identify the class or type of respirators to be assigned.
- i. EHS shall issue respirators that are adequate to protect the health of the UC Irvine personnel and to ensure compliance with all applicable regulatory requirements. The respirators shall be appropriate for the chemical state and physical form of the contaminant. All filters, cartridges and canisters used in the workplace shall be labeled and color coded with the NIOSH approval label and that the label is not removed and remains legible.
  - ii. To protect against gases and vapors, EHS shall issue:
    - 1. An atmosphere-supplying respirator; or
    - 2. An air-purifying respirator equipped with a cartridge/canister that has an End-of-Service-Life-Indicator (ESLI).
      - a. In the absence of an ESLI, a “Change-out Schedule” for the cartridge/canister shall be provided.
      - b. The Change-out Schedule shall be based on the information and data collected and recorded on the respiratory hazard evaluation. Additional guidelines for determining the change schedule are found in [Appendix B](#).
  - iii. To protect against particulates, EHS shall issue:
    - 1. An atmosphere-supplying respirator; or

- a. An air-purifying respirator equipped with a High-Efficiency-Particulate-Air (HEPA) filter cartridge; or Any NIOSH-certified filters may be used to protect against particulates of mass median aerodynamic diameters (MMAD) of at least 2 micrometers.
2. A filtering facepiece.
- iv. If deemed appropriate, UC Irvine personnel shall be issued with a powered air purifying respirator (PAPR).

## MEDICAL EVALUATION

UC Irvine personnel subject to this policy shall have a medical evaluation completed before they are assigned or required to use respiratory protection.

- A. Pursuant to regulatory requirements and this policy, voluntary users of respirators may be subject to the medical evaluation. The cost of the medical evaluation shall be borne by the UC Irvine personnel's department.
- B. The medical evaluation should be performed every five years pursuant to American National Standard Institute ANSI Z88.2

The procedures for medical evaluation are as follows:

- A. The UC Irvine EHS-identified professional or other licensed health care professional (PLHCP) shall obtain the "UC Irvine EHS Respiratory Hazard Evaluation Part 1 and 2" form (Appendices A1 and A2) from EHS.
- B. The UC Irvine personnel shall be provided with the UC Irvine EHS "OSHA Respirator Medical Evaluation Questionnaire (Mandatory)" form ([Appendix E](#)). The UC Irvine personnel shall be instructed to submit the form to the PLHCP.
  - i. The medical questionnaire shall be administered confidentially during the UC Irvine personnel's normal working hours or at a time and place convenient to the UC Irvine personnel.
  - ii. The UC Irvine personnel will be afforded the opportunity to discuss the questionnaire with the PLHCP.
- C. The PLHCP shall determine if the employee is medically fit to wear respiratory protection.
  - i. Additional medical evaluations shall be provided if a UC Irvine personnel report medical signs or symptoms that are related to his/her ability to wear a respirator.
  - ii. Additional medical evaluations shall be provided as deemed necessary by the PLHCP, UC Irvine personnel supervisor, or the Respirator Program administrator.
  - iii. Additional medical evaluations shall be provided pursuant to information from the respiratory protection program that indicates a need for reevaluation. Such information includes, but is not limited to, observations made during fit testing and program evaluation.
  - iv. Additional medical evaluations shall be provided if a change occurs in the workplace conditions that may result in a substantial increase in the physiological burden placed

on the UC Irvine personnel. Such conditions include, but are not limited to, physical work effort, protective clothing, or temperature.

The questionnaire evaluation is the typical medical assessment for personnel who are assigned to wear filtering facepiece. However, a follow-up medical evaluation may be required at the discretion of the PLHCP.

D. Following the medical determination of the UC IRVINE personnel's ability to use a respirator, the PLHCP shall provide:

- i. The UC Irvine personnel with the results of the medical determination.
- ii. The EHS Respiratory Program Specialist with the "Respirator Clearance Statement" letter ([Appendix F](#)).
  1. The "Respirator Clearance Statement" letter shall contain the following information:
    - a. Any limitations on respirator use related to the medical condition of the UC Irvine personnel;
    - b. Any limitations on respirator use relating to the workplace conditions in which the respirator will be used;
    - c. A statement regarding whether the UC Irvine personnel is medically able to use the respirator;
    - d. The need, if any, for Follow-up medical evaluations;
    - e. A statement that the PLHCP has provided the UC Irvine personnel with a copy of the "Respirator Clearance Statement" letter.

## COMPETENCY ASSESSMENT

Competency is assessed during the fit-test and training. The respirator user is asked to demonstrate proper donning, doffing, fit-check, and cleaning procedures. Competency is further assessed during the follow up visit/program evaluation.

## TRAINING

Training and fit testing frequency is annual except for voluntary users of filtering facepieces and PAPR's with loose fitting facepiece.

UC Irvine personnel identify their training needs after completion of the Safety Training Self-Assessment (STSA). UC Irvine personnel then receive training on the hazards present in the workplace through completion of the applicable general EHS-administered course: SOS Representative (SR) Training, Core Safety Training, Laboratory Safety Training, and/or HAZCOM for Building, Facilities, and Custodial Personnel.

With regards to respiratory protection, EHS needs to evaluate the respiratory hazards in which the respirator will be used. The hazard evaluation determines the need or requirement for respirator use, and the correct respiratory protection for the process or operation.

The STSA identifies candidates for respiratory protection. Potential respiratory protection users may also self-identify and request an evaluation. To initiate the assessment, the “UC Irvine EHS Respiratory Hazard Evaluation Part 1” ([Appendix A1](#)) form must be completed and submitted to the EHS Respiratory Protection Program administrator/team. This form is available [online](#). The potential user will be contacted to discuss the submitted information and will be advised of any follow-up actions (for example, medical evaluations, voluntary use affidavits, etc.)

UC Irvine personnel who use respiratory protection receive a comprehensive training during the EHS Respirator Fit test and Training course. The training course must be completed prior to requiring the UC Irvine personnel to use a respirator. The training course recurs annually and more often if necessary.

Note: New UC Irvine personnel who have received Respiratory Protection training within the last 12 months are not required to repeat such training provided that the UC Irvine personnel can demonstrate knowledge and records of medical clearance.

Retraining is administered annually, and when the following situations occur:

- Changes in the workplace or the type of respirator render previous training obsolete;
- Inadequacies in the UC Irvine personnel's knowledge or use of the respirator indicate that the UC Irvine personnel has not retained the requisite understanding or skill; or
- Any other situation arises in which retraining appears necessary to ensure safe respirator use.

UC Irvine personnel who wear respirators on a voluntary basis receive the basic information on respirators, including training on the proper use and limitation of the respirator, in accordance with [Appendix D](#) of the regulation and of this program. Voluntary Use personnel also receives a copy of UC Irvine EHS' [Appendix D](#) “Information for Employees Using Respirators When Not Required Under the Standard” (a Spanish version is available as [Appendix D1](#)) pursuant to all applicable Respiratory Protection standards, completes the “UC Irvine EHS Voluntary Use Affidavit” ([Appendix C](#)), submits the completed form to EHS for recordkeeping and retains a copy for the department.

UC IRVINE personnel who wear powered air-purifying respirators (PAPR's) **with loose-fitting headpieces\*** receive the basic information on respirators, including training on the proper use and limitation of the respirator, in accordance with the regulation and of this program. Users also complete the “UC Irvine EHS Powered Air Purifying Respirator (Loose Fitting Facepiece) Training Affidavit” ([Appendix L](#)), submits the completed form to EHS for recordkeeping and retains a copy for the department.

\*PAPR's with tight-fitting headpieces are subject to fit testing. The PAPR is tested in the “off” mode and is subject to the pass requirements for negative pressure air-purifying respirators.

#### Training In Respiratory Hazards and Proper Respirator Use

UC IRVINE personnel subject to this policy shall be taught in the respiratory hazards for which the respiratory protection will be used. The information can be conveyed through a thorough discussion with the UC IRVINE personnel regarding their UC Irvine EHS Respiratory Hazard Evaluation ([Appendix A](#)) prior to performing the fit testing. The discussion includes:

- Identification and discussion of the respiratory hazard;
- Review of the Safety Data Sheet (SDS);
- Discussion of the permissible exposure limit for the respiratory hazard;
- Discussion of the assessment for the respiratory hazard, including monitoring results.

In addition, UC Irvine personnel subject to this policy shall be trained in the proper use of respiratory protection. The training shall address the following elements:

- the necessity for using the respirator;
- the effects of improper fit, usage, or maintenance;
- the limitations and capabilities of the respirator;
- the effective use of respirators in emergency situations;
- the proper inspection, donning, doffing, and use of the respirator (including seal check)
- the procedures for maintenance and storage of the respirator;
- the medical signs and symptoms that may limit or prevent the effective use of respirators.

When applicable, the training elements shall be demonstrated by the trainer to the UC Irvine personnel prior to performing the fit testing. [Appendix G](#), "UC Irvine EHS Information of Respiratory Protection", shall be provided to the UC Irvine personnel.

#### Fit-Testing Procedures for Tight-Fitting Respirators

UC Irvine personnel subject to this policy shall be fit tested pursuant to all applicable regulations. The cost of the fit testing and equipment shall be borne by the UC Irvine personnel's department. The UC Irvine fit testing protocols are in [Appendix H](#), "UC Irvine EHS Respiratory Protection SOP for Fit Testing".

Fit testing shall be performed prior to initial use of a respirator, with the same make, model, style, and size of the respirator that will be used.

The qualitative fit test (QLFT) and quantitative fit test (QNFT) protocols shall comply with all applicable regulatory protocols and procedures.

Respirator types subject to this procedure include any negative or positive pressure tight-fitting facepiece.

Routine fit testing shall recur annually. Additional fit testing shall be performed:

- whenever a different respirator facepiece (size, style, model, or make) is used;
- when there are changes in the UC Irvine personnel's physical condition that could affect respirator fit. Such conditions include, but are not limited to, facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight.

UC IRVINE personnel must pass the qualitative fit test (QLFT) or quantitative fit test (QNFT) prior to using a tight-fitting respirator.

#### Qualitative Fit Test (QLFT):

QLFT may only be used to fit test negative pressure air-purifying respirators that must achieve a fit factor of 100 or less.

The UC IRVINE EHS QLFT instrument is the 3M FT-30 Qualitative Fit Test

#### Apparatus (Bitter). Quantitative Fit Test (QNFT):

QNFT is passed when the fit factor for:

1. Tight-fitting half facepieces is equal to or greater than 100;
2. Tight-fitting full facepieces is equal to or greater than 500.

UC IRVINE EHS QNFT instrument: TSI Portacount Plus Model 8020 and the OHD Quantifit

Fit testing of tight-fitting atmosphere-supplying respirators and tight-fitting powered air – purifying respirators shall be accomplished by performing quantitative or qualitative fit testing in the negative pressure mode.

Procedures For Proper Use in Routine and Reasonably Foreseeable Emergencies

UC Irvine personnel subject to this policy shall properly use the respirator pursuant to all applicable regulations.

When wearing tight-fitting respirators, UC Irvine personnel may not have facial hair that comes between the sealing surface of the facepiece and the face or that interferes with valve function; or any condition that interferes with the face-to-facepiece seal or valve function. UC Irvine respirator users shall be instructed of this requirement during the initial fit test and training.

Use of corrective glasses or goggles or other personal protective equipment must be worn in a manner that does not interfere with the seal of the facepiece to the face of the UC Irvine personnel. The UC Irvine personnel shall be instructed of this requirement during the initial fit test and training.

The UC Irvine personnel shall be trained on the specific limitations and proper use of the issued respirator during the initial fit test and training.

When donning a tight-fitting respirator (including a filtering facepiece), the UC IRVINEUC IRVINE personnel shall perform a user seal check. The User Seal Check procedure is in Appendices G and H.

The respirator user shall immediately leave the respirator use area if:

- Breathing becomes difficult;
- Dizziness or other distress occurs;
- Contaminant breakthrough is detected through smell, taste, or sense irritation;
- The End-of-Service-Life Indicator (ESLI) on the canister/cartridge changes color to indicate expiration;
- The respirator becomes damaged.

These issues must be addressed, and corrections must be made before returning to the respirator use area.

UC IRVINE personnel are not permitted to enter atmospheres immediately dangerous to life and health (IDLH).

Procedures For Care and Maintenance

UC IRVINE respirator users are required to routinely inspect, clean and disinfect, properly store, and the respirators. Details of these requirements are found in [Appendix I](#), “UC IRVINE EHS Procedures for Respirator Care and Maintenance”. Necessary repairs must be reported to the EHS Respiratory Program administrator.

Inspection:

Respirator users must inspect their respiratory protection equipment before each use and during cleaning.

The respirator inspection must include a check of:

- respirator function,
- tightness of connections,
- and the condition of the various parts including, but not limited to, the facepiece, head straps, valves, connecting tube, and cartridges, canisters or filters; and
- elastomeric parts for pliability and signs of deterioration.

Cleaning and Disinfecting:

The respirator user must clean and disinfect the respirator following the procedures in [Appendix I](#), "UC IRVINE EHS Procedures for Respirator Care and Maintenance"

The respirator user shall develop a respirator cleaning and disinfecting schedule based on frequency of use; however, the respirator shall be cleaned and disinfected as often as necessary to be maintained in a sanitary condition.

Respirators used in fit testing and training shall be cleaned and disinfected after each use.

Storage:

All respirators shall be stored in a manner that will protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals, and they shall be packed or stored to prevent deformation of the facepiece and exhalation valve.

Repairs:

Respirators that fail an inspection or are found to be defective shall be reported to the EHS Respiratory Program administrator. The failed/defective respirator shall be removed from service, then discarded or repaired or pursuant to all regulatory requirements and manufacturer's recommendations.

#### Procedures For Atmosphere Supplying Respirators

Use of atmosphere supplying respirators, such as self-contained breathing apparatus (SCBA) or supplied-air respirators, at UC IRVINE is subject to the requirements of the UC IRVINE EHS Respiratory Protection Program and must receive approval from the EHS Respiratory Program Specialist.

UC IRVINE EHS personnel are the general users of self-contained breathing apparatus (SCBA). The SCBA's are used during emergency situations.

- i. All respirators maintained for use in emergency situations shall be inspected at least monthly and in accordance with the manufacturer's recommendations and shall be checked for proper function before and after each use.
- ii. For respirators maintained for emergency use, a responsible person designated by the responsible department shall:
  - a. Certify the respirator by documenting the date the inspection was performed, the name (or signature) of the person who made the inspection, the findings, required remedial action, and a serial number or other means of identifying the inspected respirator; and

b. Provide this information on a tag or label that is attached to the storage compartment for the respirator, is kept with the respirator, or is included in inspection reports stored as paper or electronic files. This information shall be maintained until replaced following a subsequent certification.

iii. Respirators maintained for emergency use shall be cleaned and disinfected after each use.

All atmosphere-supplying respirators shall be inspected monthly. The inspection protocol and documentation shall follow the same procedures as above.

Air and oxygen cylinders shall be maintained in a fully charged state and shall be recharged when the pressure falls to 90% of the manufacturer's recommended pressure level. The regulator and warning devices shall be maintained in good working order.

The procedures and checklists associated with atmosphere supplying respirators are in [Appendix K](#), "UC IRVINE EHS Atmosphere Supplying Respirators"

Breathing air quality and use:

The compressed air, compressed oxygen, liquid air, and liquid oxygen used for respiration shall accord with the following specifications:

- i. Compressed and liquid oxygen shall meet the United States Pharmacopoeia requirements for medical or breathing oxygen; and
- ii. Compressed breathing air shall meet at least the requirements for Grade D breathing air described in ANSI/Compressed Gas Association Commodity Specification for Air, G- 7.1-1989, to include:
  - a. Oxygen content (v/v) of 19.5-23.5%;
  - b. Hydrocarbon (condensed) content of 5 milligrams per cubic meter of air or less;
  - c. Carbon monoxide (CO) content of 10 ppm or less;
  - d. Carbon dioxide content of 1,000 ppm or less; and
  - e. Lack of noticeable odor.

Compressed oxygen shall not be used in atmosphere-supplying respirators that have previously used compressed air.

Oxygen concentrations greater than 23.5% shall only be used in equipment designed for oxygen service or distribution.

Cylinders used to supply breathing air to respirators shall meet the following requirements:

- i. Cylinders are tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49 CFR 173 and part 178);

ii. 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

iii. The moisture content in the cylinder does not exceed a dew point of -50 deg. F (-45.6 deg. C) at 1 atmosphere pressure.

The compressors used to supply breathing air to respirators shall be constructed and situated so as to:

i. Prevent entry of contaminated air into the air-supply system;

ii. Minimize moisture content so that the dew point at 1 atmosphere pressure is 10 degrees F (-5.56 deg. C) below the ambient temperature;

iii. Have suitable in-line air-purifying sorbent beds and filters to further ensure breathing air quality. Sorbent beds and filters shall be maintained and replaced or refurbished periodically following the manufacturer's instructions.

iv. Have a tag containing the most recent change date and the signature of the person authorized by the employer to perform the change. The tag shall be maintained at the compressor.

For oil lubricated compressors, a high-temperature or carbon monoxide alarm, or both, shall be used to monitor carbon monoxide levels. If only high-temperature alarms are used, the air supply shall be monitored at intervals sufficient to prevent carbon monoxide in the breathing air from exceeding 10 ppm.

Breathing air couplings shall be incompatible with outlets for nonrespirable worksite air or other gas systems. No asphyxiating substance shall be introduced into breathing air lines.

The breathing gas containers shall be marked in accordance with the NIOSH respirator certification standard, 42 CFR part 84.

## PROCEDURES FOR EVALUATING PROGRAM EFFECTIVENESS

To ensure continuing respirator effectiveness, the UC IRVINE respirator user shall report changes:

- in the work area conditions; or
- in the degree of the exposure to the contaminant; or
- in the stress that may affect respirator effectiveness;
- to the SOS Safety Representative, or EHS School Safety Coordinator, or the EHS Respiratory Program administrator/team.

EHS conducts evaluations of the workplace as necessary to ensure that the provisions of the current written program are being effectively implemented and that it continues to be effective.

EHS consults UC IRVINE personnel required to use respirators to assess the UC IRVINE personnel's views on program effectiveness and to identify any problems. Any problems that are identified during this assessment are corrected.

A. The assessment is performed during:

1. a follow-up site-visit conducted after the initial fit-test and training; or

2. a follow-up communication (email, voice call) conducted after the initial fit-test and training;

3. and at the annual fit-test and training.

B. Factors to be assessed include, but are not limited to:

1. Respirator fit (including the ability to use the respirator without interfering with effective workplace performance);

2. Appropriate respirator selection for the hazards to which the UC IRVINE personnel is exposed;

3. Proper respirator use under the workplace conditions the UC IRVINE personnel encounters; and

4. Proper respirator maintenance.

The assessment is performed using [Appendix J](#), "UC IRVINE EHS Respirator Use Assessment".

## 6. Reporting Requirements

To ensure continuing respirator effectiveness, the UC IRVINE respirator user shall report changes:

- in the work area conditions; or
- in the degree of the exposure to the contaminant; or
- in the stress that may affect respirator effectiveness;

to the EHS School Safety Coordinator or the EHS Respiratory Program Specialist.

Medical Clearance letters, Fit-test results, and training records shall be maintained in the Environmental Health and Safety office. Records shall also be entered in UCLC.

## 7. References

[Appendix A1- UC IRVINE EHS Respiratory Hazard Evaluation](#) Part 1

[Appendix A2- UC IRVINE EHS Respiratory Hazard Evaluation](#) Part 2

[Appendix B- UC IRVINE EHS Respirator Decision Logic Sequence and Filter Change-out Schedule](#)

[Appendix B1- UC IRVINE EHS Respirator Decision Logic Sequence Flowchart](#)

[Appendix C- UC IRVINE EHS Respiratory Protection Voluntary Use Affidavit](#)

[Appendix D- Information for Employees Using Respiratory When Not Required Under the Standard](#)

[Appendix E- UC IRVINE EHS Respirator Medical Questionnaire](#)

[Appendix F- UC IRVINE EHS Respirator Medical Clearance](#)

[Appendix G- UC IRVINE EHS Information on Respiratory Protection](#)

[Appendix H- UC IRVINE EHS Respiratory Protection SOP for Fit Testing](#)

[Appendix I- UC IRVINE EHS Respirator Care and Maintenance](#)

[Appendix J- UC IRVINE EHS Respiratory Protection Program Evaluation](#)

[Appendix K- UC IRVINE EHS Atmosphere Supplying Respirators](#)

[Appendix L- UC IRVINE EHS Powered Air Purifying Respirator \(Loose Fitting Facepiece\) Training Affidavit](#)

[UC IRVINE EHS Respiratory Program Process Flowchart](#)

[Title 29 Code of Federal Regulations 1910.134 Respiratory](#)

[Protection Title 8 California Code of Regulations 5144 Respiratory Protection](#)

[National Institute of Occupational Safety and Health Publication No. 87-116 "NIOSH Guide to Industrial Respiratory Protection"](#)

Appendix A1 (To be completed by Employee)

UCI EH&S Respiratory Hazard Evaluation Part 1

Job Title:		Date:	
Department:			
Supervisor Name:		Phone Extension:	Email:
Employees Represented by Evaluation:			
<i>Name</i>	<i>UCI Net ID</i>	<i>Name</i>	<i>UCI Net ID</i>
Process Description:			
Identity of Contaminant(s)/Hazard(s)?		Quantity of contaminant used per unit time:	Duration of Exposure:
Controls and/or personal protective equipment being used to minimize or eliminate exposure?			
<b>Expected physical work effort:</b> <input type="checkbox"/> High <input type="checkbox"/> Moderate <input type="checkbox"/> Low			
<i>Physical Work Effort Key (based on ACGIH TLV and BEI handbook)</i>  <b>High:</b> Examples of activities are sawing by hand, shoveling dry/wet sand, intermittent heavy lifting with pushing or pulling  <b>Moderate:</b> Examples of activities are scrubbing in standing position, walking about with moderate lifting or pushing  <b>Low:</b> Examples of activities are sitting with moderate arm and leg movements, standing with light work at machine or bench while using mostly arms or with some walking about			

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Appendix A2 (To be completed by EH&S)

UCI EH&S Respiratory Hazard Evaluation Part 2

<b>Evaluation By:</b>		<b>Reviewed By:</b>		<input type="checkbox"/> New	<input type="checkbox"/> Revised
<b>What type of respiratory hazard is present?</b>		<input type="checkbox"/> Oxygen Deficiency	<input type="checkbox"/> Gas/Vapor	<input type="checkbox"/> Particulate/Aerosol	Rev. Date
		<input type="checkbox"/> Combination	<input type="checkbox"/> Biohazard		
<b>Respiratory Hazard(s)</b>	<b>TLV?¹</b>	<b>STEL/PEL?¹</b>	<b>Concentration in the atmosphere?²</b>		
<i>1 Mark "NONE" if value is not available</i> <i>2 Provide reasonable estimate if sampling data is not available</i>					
<b>Relative Humidity: (report potential range)</b>			<b>Temperature: (report potential range)</b>		
<b>Are IDLH conditions possible?</b>		<input type="checkbox"/> No <input type="checkbox"/> Yes	<b>Is hazard an eye irritant?</b>		<input type="checkbox"/> No <input type="checkbox"/> Yes
<b>Are engineering controls available?</b>		<input type="checkbox"/> No <input type="checkbox"/> Yes	<b>Is hazard absorbed through the skin?</b>		<input type="checkbox"/> No <input type="checkbox"/> Yes
<b>Is a respirator required?</b>		<input type="checkbox"/> No <input type="checkbox"/> Yes (Based on exposure/potential/protocol) <input type="checkbox"/> <u>Voluntary Use only</u> <i>Provide Appendix D</i>	<b>Check all that apply:</b> <input type="checkbox"/> Half face <input type="checkbox"/> SCBA <input type="checkbox"/> PAPR		<i>(Refer to Appendix B- Respirator Decision Logic Sequence)</i> <input type="checkbox"/> Full Face <input type="checkbox"/> Air line <input type="checkbox"/> Filtering Facepiece
<b>Cartridge type(s) to be issued and approximate weight of respirator + cartridge(s):</b> <i>(Refer to Appendix B- Respirator Decision Logic Sequence)</i>					
<b>Recommended Change Schedule for Cartridges:</b> <i>(NOTE: For formaldehyde, change cartridges every 3 hours)</i>					
<b>Additional required and/or recommended P.P.E. (personal protective equipment)</b>					
<b>Expected duration and frequency of respirator use:</b>					
<b>Comments/Notes:</b>					

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## Appendix B

### Respirator Decision Logic Sequence

After all criteria have been identified and evaluated and after the requirements and restrictions of the respiratory protection program have been met, the following sequence of questions can be used to identify the class of respirators that should provide adequate respiratory protection:

1. Is the respirator intended for use in an oxygen-deficient atmosphere, i.e., less than 19.5% oxygen at sea level?
  - a. If yes, stop. This is an IDLH (immediately dangerous to life and health) environment. Employees are not authorized to enter.
  - b. If no, proceed to Step 2.
2. Is the respirator intended for use during emergency situations?
  - a. If yes, an atmosphere-supplying respirator is recommended.
  - b. If no, proceed to Step 3.
3. Is the exposure concentration of the contaminant, as determined by acceptable industrial hygiene methods, less than the applicable exposure limit? (Whenever a worker is given a respirator to use on a voluntary basis when ambient levels are below applicable limits, OSHA requires the implementation of a complete respiratory protection program, which includes medical evaluation, training, fit testing, periodic environmental monitoring.
  - a. If yes, a respirator would not be required except for an escape situation. Proceed to Step 4.
  - b. If no, proceed to Step 5.
4. Are conditions such that a worker who is required to wear a respirator can escape from the work area and not suffer loss of life or immediate or delayed irreversible health effects if the respirator fails, i.e., are the conditions not immediately dangerous to life or health (IDLH)?
  - a. If yes, conditions are not considered to be IDLH. Proceed to Step 5.
  - b. If no, conditions are considered to be IDLH. Stop. Employees are not authorized to enter or work in that environment.
5. Is the contaminant an eye irritant, or can the contaminant cause eye damage at the exposure concentration?
  - a. If yes, a respirator equipped with a full facepiece, helmet, or hood is recommended. Proceed to Step 6.
  - b. If no, a half-face respirator may still be an option, depending on the exposure concentration. Proceed to Step 6.
6. Divide the 8-hour time-weighted average (TWA) exposure concentration for the contaminant (or maximum exposure concentration for a

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contaminant with a ceiling limit) determined in Step 4 by the applicable exposure limit to determine the minimum protection factor has been calculated, proceed to Step 7.

7. If the physical state of the contaminant is a particulate (solid or liquid) during periods of respirator use, proceed to Step 8; if it is a gas or vapor, proceed to Step 9; if it is combination of gas or vapor and particulate, proceed to Step 10.

#### 8. Particulate Respirators

- 8.1. Is the particulate respirator intended only for escape purposes?

- a. If yes, use pre-determined "escape only" respirators.
- b. If no, the particulate respirator is intended for use during normal work activities. Proceed to Step 8.2.

- 8.2. An atmosphere-supplying respirator, OR a NIOSH-certified filter medium that will provide protection against exposure to the particulate in question is recommended. Refer to the respiratory protection equipment inventory list when choosing the filter. Proceed to Step 8.3.

- 8.3 Respirators that have assigned protection factors (APFs) equal to or greater than the minimum protection factor determined in Step 6 are recommended. Maximum airborne concentrations for each level of respiratory protection can be calculated by multiplying the applicable exposure limit by the APF for that class of respirators. Refer to the respiratory protection equipment inventory list when choosing the filter.

#### 9. Gas/Vapor Respirators

- 9.1 Is the gas/vapor respirator intended for "escape only" purposes?

- a. If yes, use pre-determined "escape only" respirators.
- b. If no, the gas/vapor is intended for use during normal work activities. Proceed to Step 9.2

- 9.2 Are the warning properties for the gas/vapor contaminant adequate at or below the applicable exposure limit?

- a. If yes, proceed to Step 9.3
- b. If no, an atmosphere-supplying respirator, OR an air-purifying respirator equipped with a NIOSH-certified end-of-service-life indicator (ESLI) for the contaminant is recommended. (Note: In the absence of ESLI, a cartridge/canister change schedule based on objective information or data shall be implemented). Refer to the respiratory protection equipment inventory list when choosing the respirator. Proceed to Step 9.4

contaminant with a ceiling limit) determined in Step 4 by the applicable exposure limit to determine the minimum protection factor has been calculated, proceed to Step 7.

7. If the physical state of the contaminant is a particulate (solid or liquid) during periods of respirator use, proceed to Step 8; if it is a gas or vapor, proceed to Step 9; if it is combination of gas or vapor and particulate, proceed to Step 10.

#### 8. Particulate Respirators

- 8.1. Is the particulate respirator intended only for escape purposes?

- a. If yes, use pre-determined "escape only" respirators.
- b. If no, the particulate respirator is intended for use during normal work activities. Proceed to Step 8.2.

- 8.2. An atmosphere-supplying respirator, OR a NIOSH-certified filter medium that will provide protection against exposure to the particulate in question is recommended. Refer to the respiratory protection equipment inventory list when choosing the filter. Proceed to Step 8.3.

- 8.3 Respirators that have assigned protection factors (APFs) equal to or greater than the minimum protection factor determined in Step 6 are recommended. Maximum airborne concentrations for each level of respiratory protection can be calculated by multiplying the applicable exposure limit by the APF for that class of respirators. Refer to the respiratory protection equipment inventory list when choosing the filter.

#### 9. Gas/Vapor Respirators

- 9.1 Is the gas/vapor respirator intended for "escape only" purposes?

- a. If yes, use pre-determined "escape only" respirators.
- b. If no, the gas/vapor is intended for use during normal work activities. Proceed to Step 9.2

- 9.2 Are the warning properties for the gas/vapor contaminant adequate at or below the applicable exposure limit?

- a. If yes, proceed to Step 9.3
- b. If no, an atmosphere-supplying respirator, OR an air-purifying respirator equipped with a NIOSH-certified end-of-service-life indicator (ESLI) for the contaminant is recommended. (Note: In the absence of ESLI, a cartridge/canister change schedule based on objective information or data shall be implemented). Refer to the respiratory protection equipment inventory list when choosing the respirator. Proceed to Step 9.4

9.3 An air-purifying chemical cartridge/canister respirator, is recommended that has a sorbent suitable for the chemical properties of the anticipated gas/vapor contaminants and for the anticipated exposure levels. The air-purifying chemical cartridge/canister respirator shall be equipped with a NIOSH-certified end-of-service-life indicator (ESLI) for the contaminant. (Note: In the absence of ESLI, a cartridge/canister change schedule based on objective information or data shall be implemented). Refer to the respiratory protection equipment inventory list when choosing the respirator. Proceed to Step 9.4.

9.4 Respirators that have APFs equal to or greater than the minimum protection factor determined in Step 6 are recommended. Maximum airborne concentrations for each class of respiratory protection can be calculated by multiplying the applicable exposure limit by the APF for that class of respirators. The calculated maximum use concentration limits should not be exceeded. Refer to the respiratory protection equipment inventory list when choosing the respirator.

#### 10. Combination Particulate and Gas/Vapor Respirators

10.1. Is the combination respirator intended for "escape only" purposes?  
a. if yes, use pre-determined "escape only" respirators.  
b. If no, the combination respirator is intended for use during normal activities. Proceed to Step 10.2.

10.2. Does the gas/vapor contaminant have adequate warning properties at or below the applicable exposure limit?  
a. If yes, proceed to Step 10.3.  
b. If no, an atmosphere-supplying respirator, or an air-purifying respirator equipped with a NIOSH-certified end-of-service-life indicator (ESLI) for the contaminant is recommended. (Note: In the absence of ESLI, a cartridge/canister change schedule based on objective information or data shall be implemented). Refer to the respiratory protection equipment inventory list when choosing the respirator. Proceed to Step 10.4

10.3 An air-purifying chemical cartridge/canister is recommended that has a particulate prefilter suitable for the specific type(s) of gas/vapor and particulate contaminant(s) and for the exposure concentrations. The air-purifying chemical cartridge/canister respirator shall be equipped with a NIOSH-certified end-of-service-life indicator (ESLI) for the contaminant. (Note: In the absence of ESLI, a cartridge/canister change schedule based on objective information or data shall be implemented). Refer to the respiratory protection equipment inventory list when choosing the respirator. Proceed to Step 10.4.

10.4. Respirators that have APF's equal to or greater than the minimum protection factor determined in Step 7 are recommended. Maximum airborne concentrations for each level of respiratory protection can be calculated by multiplying the applicable exposure limit by the APF for that class of respirators. The calculated maximum use concentration limits should not be exceeded. Refer to the respiratory protection equipment inventory list when choosing the respirator.

### Filter and Cartridge Change-Out Schedule

#### A. FILTER CHANGE OUT SCHEDULES

The service life of all filters is limited by considerations of hygiene, damage, and breathing resistance. All filters should be replaced whenever they are damaged, soiled, or causing noticeably increased breathing resistance.

Filter Series	Recommended Change Schedule
N	When breathing becomes difficult, or when breakthrough odor or taste is detected
R	After each 8-hour shift or 8 hours of use
P	Follow manufacturer's time-use recommendation

#### B. CARTRIDGE CHANGE SCHEDULES

OSHA has substance-specific standards that provide mandatory change out schedules. Employees exposed to any of the following contaminants at or above the OSHA Permissible Exposure Limit (PEL) shall change cartridges/canisters according to their requirements:

Contaminant	OSHA Mandatory Cartridge Change Rules
Acrylonitrile	End of service life or end of shift
Benzene	End of service life or beginning of shift
Butadiene	Every 1, 2 or 4 hours based on concentration and at the beginning of each shift
Formaldehyde	Cartridges every 3 hours or end of shift; canisters every 2 or 4 hours, according to (g)(2)(ii) of Formaldehyde Standard 1910.1048
Vinyl Chloride	End of service life or end of shift in which they are first used
Methylene Chloride	Canisters for emergency escape only, replace after use

Employees NOT included under OSHA's substance specific requirements shall change their cartridges/canisters according to the Program Administrator's recommendations for their department/area. **For conservative purposes, employees should change their cartridges every 8 hours of work or at the end of the shift.**

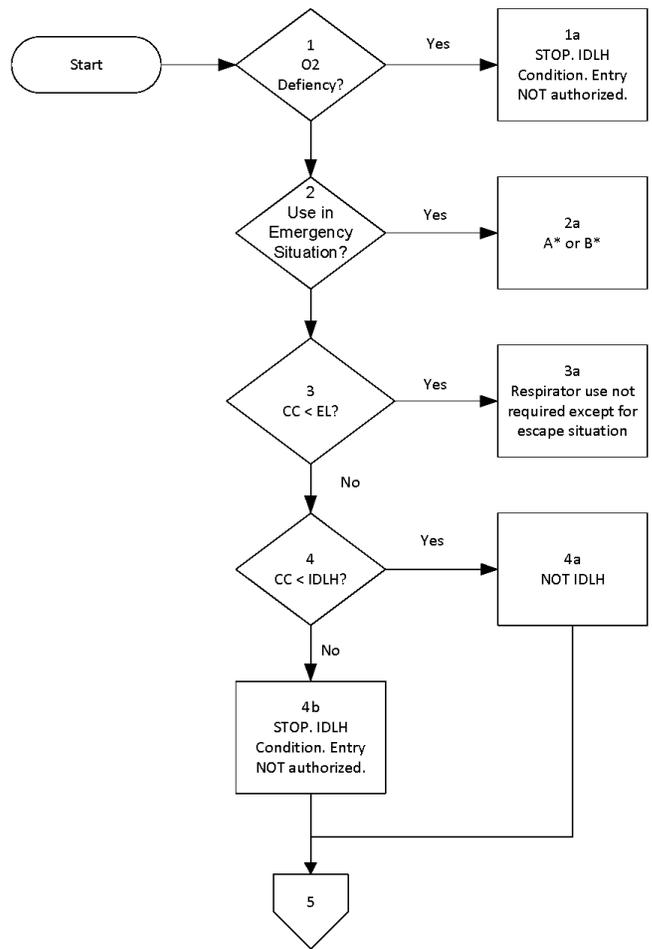
Since hazards and their concentrations continuously vary at University of California, Irvine, EH&S as with other facilities, the development of change schedules will rely on good judgment and available data. There is no OSHA-accepted method for determining a cartridge's service life when exposed to mixtures; therefore, OSHA's recognized rules of thumb and factors affecting cartridge service life are taken into consideration:

#### OSHA's Rules of Thumb

- If the chemical's boiling point is  $>70^{\circ}\text{C}$  ( $158^{\circ}\text{F}$ ) and the concentration is less than 200 ppm, you can expect a service life of 8 hours at a normal work rate
- Service life is inversely proportional to work rate
- Reducing concentration by a factor of 10 will increase the service life by a factor of 5
- Humidity above 85% will reduce service life by 50%

#### Factors that Reduce Cartridge Service Life

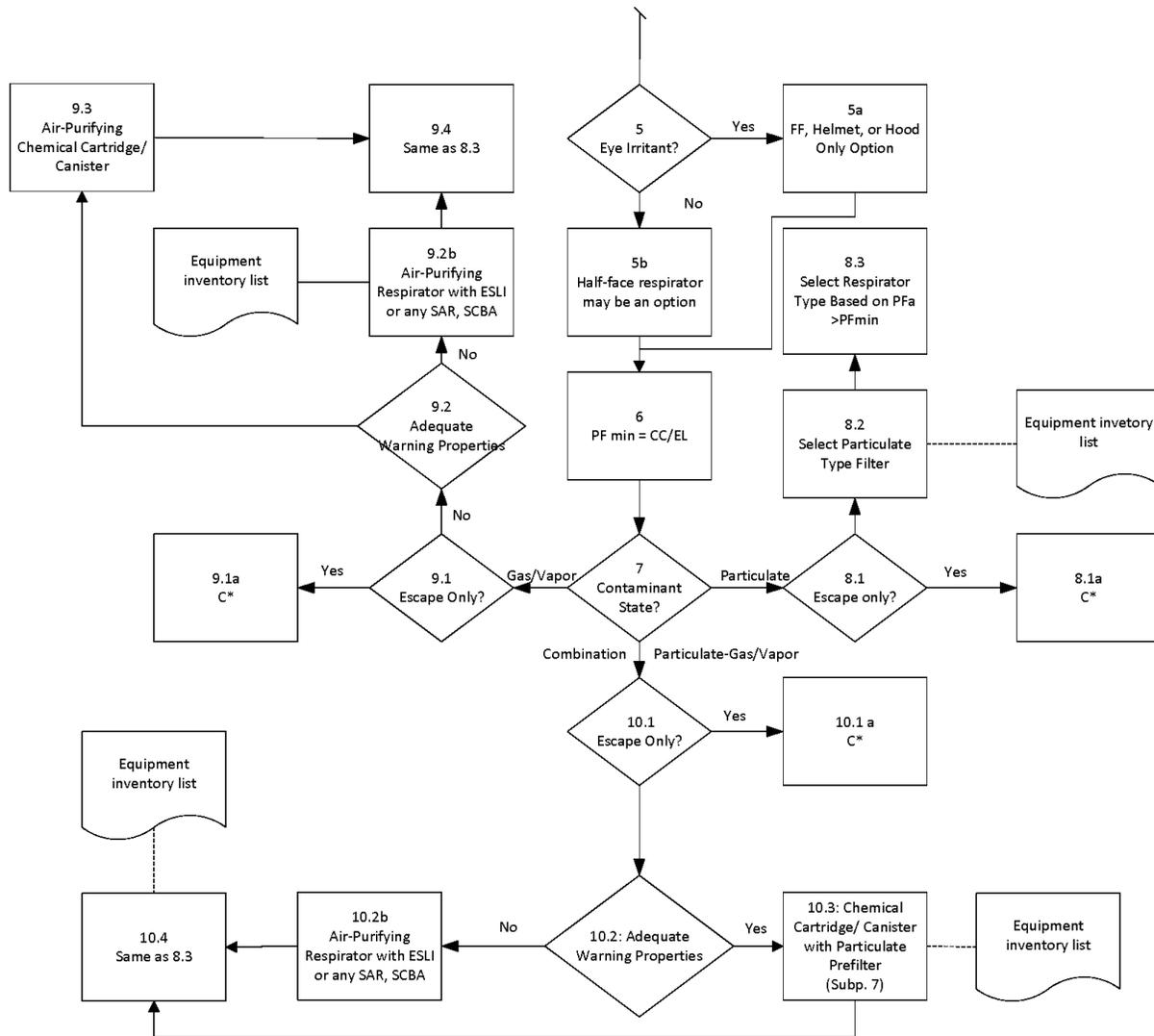
- Exertion level (work rate)
- Cartridge variability (charcoal content, characteristics)
- Temperature
- Humidity
- Multiple Contaminants



KEY: CC - Contaminant Concentration  
 EL - Exposure Limit  
 ESLI - End of Service Life Indicator  
 FF - Full Facepiece  
 IDLH - Immediately Dangerous to Life or Health  
 PD - Pressure Demand  
 PF - Protection Factor  
 PFa - Assigned PF  
 PFmin - Minimum PF  
 PP - Positive Pressure  
 SCBA - Self-Contained Breathing Apparatus  
 SAR - Supplied-Air Respirator

Respirator Key
<b>A*</b> - SCBA with FF operated in PD or PP mode
<b>B*</b> - Type C supplied-air respirator (airline) operated in PD or PP mode with auxiliary SCBA
<b>C*</b> - Escape respirator or gas mask with appropriate filter/sorbent (Subparagraph 5); if O <sub>2</sub> deficient, then SCBA.

**Appendix B1 - UCI EH&S Respirator Decision Logic Sequence Flowchart**



Appendix B1 continued - UCI EH&S Respirator Decision Logic Sequence Flowchart

Appendix C

UCI EH&S Respiratory Protection Voluntary Use Affidavit

Date \_\_\_\_\_

Department \_\_\_\_\_

Location \_\_\_\_\_

Process/Procedure:

--

Respirator Information (Brand, Type, etc): \_\_\_\_\_

I/We understand that a respiratory hazard evaluation was performed to determine the need for respiratory protection while performing the abovementioned process/procedure.

I/We acknowledge that the results of the evaluation indicate that respirator use is not required while performing the abovementioned process/procedure and that any respirator use during the process/procedure is strictly **voluntary**.

In addition, I/we further acknowledge that I/we received training on the proper use and limitation of the respirator and received a copy of Appendix D "Information for Employees Using Respirators When Not Required Under the Standard" pursuant to all applicable Respiratory Protection standards.

Print Name	Signature

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## Appendix D (English)

By Standard Number > 1910.134 App D - (Mandatory) Information for Employees Using Respirators When not Required Under the Standard.

• <b>Part Number:</b>	1910
• <b>Part Number Title:</b>	Occupational Safety and Health Standards
• <b>Subpart:</b>	1910 Subpart I
• <b>Subpart Title:</b>	Personal Protective Equipment
• <b>Standard Number:</b>	<a href="#">1910.134 App D</a>
• <b>Title:</b>	(Mandatory) Information for Employees Using Respirators When not Required Under the Standard.
• <b>GPO Source:</b>	<a href="#">e-CFR</a>

### Appendix D to § 1910.134 (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 designed 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.

[63 FR 1152, Jan. 8, 1998; 63 FR 20098, April 23, 1998]

## Appendix D (Spanish)

Safety and Health Topics: Respiratory Protection - Apéndice D para la sección 1910.134 (Mandatorio)... Page 1 of 1

UNITED STATES  
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[Back to Previous Page / Apéndice D](#)

## Apéndice D para la sección 1910.134 (Mandatorio) Información Para los Empleados Que Usan los Respiradores Cuando No lo Exige el Reglamento o Norma

Los respiradores son uno de los medios de protección adecuados contra los distintos productos químicos cuando se han seleccionado y utilizado adecuadamente. Se fomenta el uso del respirador para el bienestar y protección del empleado, aun cuando la concentración de los productos químicos estén por debajo de los valores límites de exposición establecidos. Sin embargo, el respirador puede causarle daño si no se mantiene limpio o se usa incorrectamente. Algunas veces los empleados usan los respiradores para evitar ser expuestos a los diferentes productos químicos, aunque estos no excedan los valores límites establecidos por los reglamentos de la Administración de Seguridad y Salud Ocupacional (OSHA). Si su patrono provee los respiradores para uso voluntario, o si usted provee su propio respirador, necesita tomar ciertas precauciones para que se asegure que no corre riesgos cuando use el respirador.

Usted debe hacer lo siguiente:

1. Lea y haga caso a las instrucciones que provee el fabricante en el uso, mantenimiento, limpieza y cuidado, y las advertencias en cuanto a las limitaciones de los respiradores.
2. Escoja respiradores certificados contra los contaminantes que le interesa. La Institución Nacional para la Seguridad y Salud Ocupacional (NIOSH) del Departamento de Salud y Servicios Humanos de los Estados Unidos de América, son los que certifican los respiradores. Una etiqueta o certificado de exposición debe aparecer en el respirador o en el empaque del respirador. Este debe decirle para que químicos fue hecho y cuanto le va a proteger.
3. No use su respirador en atmósferas que contienen contaminantes para los cuales no fue diseñado porque no le va a proteger. Por ejemplo, si un respirador es diseñado para filtrar partículas de polvo no le va a proteger contra gases, vapores o partículas solidas de vaho (mal olor) o humo.
4. No pierda de vista su respirador para que así no use el respirador de otra persona por equivocación.

UNITED STATES  
DEPARTMENT OF LABOR

Occupational Safety and Health Administration  
200 Constitution Ave NW  
Washington, DC 20210  
☎ 800-321-6742 (OSHA)  
TTY  
[www.OSHA.gov](http://www.OSHA.gov)

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Severe Storm and Flood Recovery Assistance  
Disaster Recovery Assistance  
[DisasterAssistance.gov](http://DisasterAssistance.gov)  
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## Appendix D

### **Appendix D to 29 CFR 1910.134 (Non- Mandatory) and 8 CCR 5144 (Non-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 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 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 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.

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## Respirator Medical Evaluation Questionnaire

CCR, TITLE 8, 5144

### To the employee

This questionnaire is only to be distributed to and completed by individuals who are proficient in reading and writing English.

Your supervisor at UCI must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you. Your supervisor is not permitted to look at or review your answers. To maintain your confidentiality, please send your responses directly to the licensed health care professional listed below.

Occupational Health Program Coordinator  
Email: [occhlth@uci.edu](mailto:occhlth@uci.edu)  
Phone: (949) 824-8024  
Fax: (949) 824-1325 (confidential fax machine)  
Zot 2725

This evaluation is **mandatory** to help determine your ability to wear a respirator at UCI. Your answers will remain confidential. After a review of your responses, the licensed health care professional may in some cases recommend that you receive a physical exam to complete your evaluation. Once you have received medical clearance to wear a respirator, you and your supervisor will receive notification of your approval to be fitted for a respirator.

### PART A. SECTION 1. (please print)

1. Today's date \_\_\_\_/\_\_\_\_/\_\_\_\_/
2. Name \_\_\_\_\_ Employee No. \_\_\_\_\_  
First Name Last Name
3. Your Age \_\_\_\_\_ Date of Birth \_\_\_\_/\_\_\_\_/\_\_\_\_
4. Sex  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) \_\_\_\_\_ Your e-mail \_\_\_\_\_
9. The best time to phone you at this number \_\_\_\_\_
10. Your Supervisor's Name \_\_\_\_\_
11. Your Supervisor's Phone No. \_\_\_\_\_ Your Supervisor's e-mail \_\_\_\_\_
12. Has your employer told you how to contact the health care professional who will review this questionnaire?  No  Yes
13. 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 , half- or full-facepiece , powered-air purifying , supplied-air , self-contained breathing apparatus
  - c. I don't know
14. Have you worn a respirator?  No  Yes If "yes," what type(s) \_\_\_\_\_

Appendix E  
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Program\Appendix E- UCI EH&S RESPIRATOR MEDICAL QUESTIONNAIRE.doc

**PART A. SECTION 2.**

- |    |   |                             |                              |
|----|---|-----------------------------|------------------------------|
| 1. | Do you currently smoke tobacco, or have you smoked tobacco in the last month?                   | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
| 2. | Have you ever had any of the following conditions?  | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | a. Seizures (fits)  | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | b. Diabetes (sugar disease)   | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | c. Allergic reactions that interfere with your breathing  | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | d. Claustrophobia (fear of closed-in places)  | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | e. Trouble smelling odors   | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
| 3. | Have you ever had any of the following pulmonary or lung problems?                              |                             |                              |
|    | a. Asbestosis   | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | b. Asthma   | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | c. Chronic bronchitis   | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | d. Emphysema  | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | e. Pneumonia  | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | f. Tuberculosis   | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | g. Silicosis  | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | h. Pneumothorax (collapsed lung)  | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | i. Lung cancer  | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | j. Broken ribs  | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | k. Any chest injuries or surgeries  | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | l. Any other lung problem that you've been told about   | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
| 4. | Do you <b>currently</b> have any of the following symptoms of pulmonary or lung illness?        |                             |                              |
|    | a. Shortness of breath  | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | c. Shortness of breath when walking with other people at an ordinary pace on level ground       | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | d. Have to stop for breath when walking at your own pace on level ground                        | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | e. Shortness of breath when washing or dressing yourself  | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | f. Shortness of breath that interferes with your job  | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | g. Coughing that produces phlegm (thick sputum)   | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | h. Coughing that wakes you early in the morning   | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | i. Coughing that occurs mostly when you are lying down  | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | j. Coughing up blood in the last month  | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | k. Wheezing   | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | l. Wheezing that interferes with your job   | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | m. Chest pain when you breathe deeply   | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | n. Any other symptoms that you think may be related to lung problems                            | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
| 5. | Have you <b>ever had</b> any of the following cardiovascular or heart problems?                 |                             |                              |
|    | a. Heart attack   | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | b. Stroke   | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | c. Angina   | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | d. Heart failure  | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | e. Swelling in your legs or feet (not caused by walking)  | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | f. Heart arrhythmia (heart beating irregularly)   | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | g. High blood pressure  | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | h. Any other heart problem that you've been told about  | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
| 6. | Have you <b>ever had</b> any of the following cardiovascular or heart symptoms?                 |                             |                              |
|    | a. Frequent pain or tightness in your chest   | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | b. Pain or tightness in your chest during physical activity                                     | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | c. Pain or tightness in your chest that interferes with your job                                | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | d. In the past two years, have you noticed your heart skipping or missing a beat                | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | e. Heartburn or indigestion that is not related to eating                                       | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|    | f. Any other symptoms that you think may be related to heart or circulation problems            | <input type="checkbox"/> No | <input type="checkbox"/> Yes |

7. Do you **currently** take medication for any of the following problems?
- |                               |                             |                              |
|-------------------------------|-----------------------------|------------------------------|
| a. Breathing or lung problems | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
| b. Heart trouble              | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
| c. Blood pressure             | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
| d. Seizures (fits)            | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
8. If you've 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  | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
| b. Skin allergies or rashes  | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
| c. Anxiety   | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
| d. General weakness or fatigue                                     | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
| e. Any other problem that interferes with your use of a respirator | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire
- |  |                             |                              |
|--|-----------------------------|------------------------------|
|  | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|--|-----------------------------|------------------------------|

**PART A. SECTION 3.**

**QUESTIONS 10 - 15 ARE MANDATORY FOR ALL EMPLOYEES WHO WEAR A FULL-FACEPIECE RESPIRATOR OR A SELF-CONTAINED BREATHING APPARATUS (SCBA). OTHERS MAY ANSWER THESE QUESTIONS VOLUNTARILY.**

10. Have you **ever lost** vision in either eye (temporarily or permanently)
- |  |                             |                              |
|--|-----------------------------|------------------------------|
|  | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|--|-----------------------------|------------------------------|
11. Do you **currently** have any of the following vision problems?
- |                                    |                             |                              |
|------------------------------------|-----------------------------|------------------------------|
| a. Wear contact lenses             | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
| b. Wear glasses                    | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
| c. Color blind                     | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
| d. Any other eye or vision problem | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
12. Have you **ever had** an injury to your ears, including a broken ear drum?
- |  |                             |                              |
|--|-----------------------------|------------------------------|
|  | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|--|-----------------------------|------------------------------|
13. Do you **currently** have any of the following hearing problems?
- |                                     |                             |                              |
|-------------------------------------|-----------------------------|------------------------------|
| a. Difficulty hearing               | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
| b. Wear a hearing aid               | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
| c. Any other hearing or ear problem | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
14. Have you **ever had** a back injury?
- |  |                             |                              |
|--|-----------------------------|------------------------------|
|  | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
|--|-----------------------------|------------------------------|
15. Do you **currently** have any of the following musculoskeletal problems?
- |   |                             |                              |
|---|-----------------------------|------------------------------|
| a. Weakness in any of your arms, hands, legs, or feet                           | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
| b. Back pain  | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
| c. Difficulty fully moving your arms and legs                                   | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
| d. Pain or stiffness when you lean forward or backward at the waist             | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
| e. Difficulty fully moving your head up or down                                 | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
| f. Difficulty fully moving your head side to side                               | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
| g. Difficulty bending at your knees   | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
| h. Difficulty squatting to the ground   | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
| i. Climbing a flight of stairs or a ladder carrying more than 25 lbs.           | <input type="checkbox"/> No | <input type="checkbox"/> Yes |
| j. Any other muscle or skeletal problem that interferes with using a respirator | <input type="checkbox"/> No | <input type="checkbox"/> Yes |



ENVIRONMENTAL HEALTH AND SAFETY  
4600 BISON AVE.  
IRVINE, CALIFORNIA 92697-2725  
FAX NUMBER: (949) 824-8539

## RESPIRATOR MEDICAL CLEARANCE

Date: May 24, 2006

Industrial Hygiene/Occupational Health  
Environmental Health and Safety  
University of California, Irvine  
Irvine, CA 92697-2725

Name: Megan Boysen Employee  Student

Date of Respirator Evaluation: 04/17/2006

This individual:

- is medically qualified for use of any type of respirator including SCBA.
- is medically qualified for use of any type of air purified respirator (excludes SCBA).
- is medically qualified for use of an N, R, or P disposable particulate respirator (dust mask, non-cartridge).
- has the following respirator use restriction(s): \_\_\_\_\_
- is NOT qualified for use of a respirator.

**In order to receive final approval for respirator use you must complete the UCI EH&S Respiratory Protection Fit-test and Training course.** Please register for your Respirator Fit-test and Training through [http://www.ted.uci.edu/kc/login/login\\_ldap.asp](http://www.ted.uci.edu/kc/login/login_ldap.asp). You may also contact the UCI Respirator Program Administrator, Alvin Samala at [amsamala@uci.edu](mailto:amsamala@uci.edu) or 949-824-44817 if you have any questions. If you have any questions regarding this evaluation, please contact me.

Sincerely,

Karen Shore, M.S.N.  
Nurse Practitioner  
Occupational Health Program Manager  
Environmental Health & Safety  
949-824-8024  
[shorek@uci.edu](mailto:shorek@uci.edu)

cc: employee or student, and supervisor

## UCI EH&S INFORMATION ON RESPIRATORY PROTECTION

You have been identified as a respiratory protection user and are subject to all applicable regulations and the UCI Respiratory Protection Program. This document is provided to you to address the training elements in the program. The training covers:

- Why the respirator is necessary;
- How improper fit, usage, or maintenance can compromise the protective effect of the respirator;
- How to inspect, don and doff, check the seals, and use of the respirator;
- What the limitations and capabilities of the respirator are;
- How to use the respirator effectively in emergency situations, including situations in which the respirator malfunctions;
- What the procedures are for maintenance and storage of the respirator;
- How to recognize the medical signs and symptoms that may limit or prevent the effective use of respirators

### NECESSITY FOR RESPIRATOR USE

Information provided in the Respiratory Hazard Evaluation (RHE) determines the need for respiratory protection. Respirator use may be driven by exposure or potential for exposure to various substances, or its use may be required by an associated protocol. A review of the RHE, the applicable Material Safety Data Sheet (MSDS), the exposure limits, and any available monitoring results will enhance understanding of the need for respirator use. The evaluation materials will be reviewed prior to your fit-test and training session.

### RESPIRATOR FIT, USAGE, AND MAINTENANCE

The protective effect of the respirator can be compromised if the respirator does not fit properly, is not used correctly, or is not maintained appropriately. Proper fit is determined during the fit testing. The fit test administrator will determine the type of fit testing, whether qualitative or quantitative. Fit testing custom fits the respirator to you; as such, you may only wear respirators to which you have been tested. In the case of disposable respirators, you are custom fitted to the type, brand, and model. A change in the type, brand, or model will then require a re-evaluation.

You are ultimately responsible for correctly using the respiratory protection. You will be given instructions on how to inspect the equipment, how to don and doff, and how to maintain it.

Proper fit, use, and maintenance of your respiratory equipment are important factors to observe to ensure your continued protection from airborne contaminants.

Appendix G

RESPIRATOR INSPECTION, DONNING, DOFFING, SEAL CHECK, AND USE

During the respiratory protection fit test and training, you will be instructed on how to inspect, don and doff, use, and check the seal of your respiratory protection equipment. Respiratory protection equipment must always be inspected prior to use. The following inspection table highlights the key components of a respirator and the conditions that would require repair before use:

<b>INSPECTION TABLE</b>	
<i>IF ANY OF THE DEFECTS LISTED BELOW ARE FOUND, HAVE THE RESPIRATOR REPAIRED BEFORE USE.</i>	
<b>COMPONENT</b>	<b>LOOK FOR</b>
<b>For Filtering Facepieces:</b>	
FACEPIECE	<ol style="list-style-type: none"> <li>1. Cuts, gouges, punctures,</li> <li>2. Distortions of the sealing flange.</li> <li>3. Tears or nicks in the sealing area.</li> <li>4. Deterioration from age, heat, or contamination.</li> <li>5. If applicable, exhalation valve flaps are not in place, in poor condition, and not secure.</li> </ol>
<b>For Half-Face Assemblies:</b>	
FACEPIECE	<ol style="list-style-type: none"> <li>1. Cuts, gouges, punctures,</li> <li>2. Distortions of the sealing flange.</li> <li>3. Tears or nicks in the sealing area.</li> <li>4. Deterioration from age, heat, or contamination.</li> <li>5. Exhalation valve flaps are not in place, in poor condition, and not secure.</li> </ol>
<b>For Full-Face Assemblies:</b>	
FACEPIECE LENS	<ol style="list-style-type: none"> <li>1. Nicks, scratches, or abrasions which could impair visibility.</li> <li>2. Deep gouges or cracks which could reduce impact resistance.</li> <li>3. Anti-fog coating in need of replacement.</li> </ol>
FACEPIECE RIMS	<ol style="list-style-type: none"> <li>1. Deformed, cracked, or broken</li> <li>2. Loose screws. Do not overtighten.</li> </ol>
FACEPIECE SKIRT	<ol style="list-style-type: none"> <li>1. Cuts, gouges, or punctures.</li> <li>2. Tears or nicks in the sealing area.</li> <li>3. Deterioration from age, heat, or contamination</li> </ol>
FACEPIECE HEADSTRAP	<ol style="list-style-type: none"> <li>1. Abrasions or nicks.</li> <li>2. Deterioration from age, heat, or contamination.</li> </ol>

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FACEPIECE BUCKLES	<ol style="list-style-type: none"> <li>1. Crushed, bent, or corroded.</li> <li>2. Damaged or loose rivets.</li> </ol>
FACEPIECE INLET NOZZLE	<ol style="list-style-type: none"> <li>1. Loose cover screws.</li> <li>2. Heat or impact damage.</li> <li>3. Nicks, cracks, or dents in the exhalation valve seat.</li> <li>4. Nicks, cracks, tears, or creases in the exhalation valve.</li> <li>5. Sticking exhalation valve. Exhale a few times to test. The valve must be close after each exhalation. Valves that fail to close must be replaced.</li> </ol>
SPEAKING DIAPHRAGM	<ol style="list-style-type: none"> <li>1. Holes or tears. Do not remove to inspect</li> </ol>

If no defects are found during the inspection, you may don the respiratory protection equipment.

Donning the respirator. You must don the respirator before you enter the respirator use area. To put on the respirator:

(Filtering Facepiece)

- Prestretch top and bottom straps before placing the respirator on your face.
- Cup the respirator in your hand, with the nosepiece at your fingertips, allowing the headbands to hang freely below your hand.
- Remove your eyewear (if applicable). Position the respirator under your chin with the nosepiece up. Pull the top strap over your head resting it high on the top back of your head. Pull the bottom strap over your head and position it around the neck below the ears.
- If applicable, place your fingertips from both hands at the top of the metal nosepiece. Using two hands, mold the nose area to the shape of your nose by pushing inward while moving your fingertips down both sides of the nosepiece. Pinching the nosepiece using one hand may result in improper fit and less effective respirator performance.
- Perform a User Seal Check.

(Half-face)

- Remove your eyewear (if applicable), then grasp the front of the respirator with one hand and the upper headband with your other hand. Place the portion of the facepiece containing the exhalation valve under your chin.
- Position the narrow portion of the respirator on your nose bridge and place the cradle suspension system on your head so that the top headband rests across the top of your head and the bottom headband rests above your ears, on the back of your head. Then hook the bottom headband behind your neck, below

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## Appendix G

your ears, and adjust the position of the facepiece on your face for best fit and comfort.

- The length of the headbands are adjustable; tighten or loosen by holding the respirator body or headband yoke with one hand and pulling on the elastic material in the appropriate direction with your other hand.
- Position the facepiece so that the nose section rests as low on the bridge of your nose as is comfortable, and tighten the upper headband on both sides just tight enough so that the respirator doesn't slide down on your nose. Do not over tighten. If the respirator pinches your nose, loosen the upper headband slightly.
- Then, tighten the lower headband on both sides just tight enough to secure the respirator under your chin. (For proper positioning and comfort, the upper headband must be adjusted first, then the lower headband must be adjusted.)
- Perform a User Seal Check.

### (Full-face)

- Adjust all the facepiece head straps to their full outward position.
- Remove your eyewear (if applicable). Grasp the head strap harness, and with your thumbs through the straps, spread the straps outwards.
- Push the harness top up your forehead, brushing your hair upward from the seal areas. Continue up and over your head until the harness is centered at the rear of your head, and your chin fits into the chin cup.
- Make sure the facepiece is centered on your face and pull both lower head straps at the same time toward the rear.
- Tighten the two upper head straps.
- If applicable, tighten the forehead head strap.
- Perform a User Seal Check.

Doffing the respirator. You must doff the respirator outside the respirator use area. To take off the respirator:

### (Filtering Facepiece)

- Cup the respirator in your hand to maintain its position on your face.
- Pull the bottom strap over your head.
- Still holding the respirator in position, pull the top strap over your head and remove the respirator.

### (Half-face and Full-face)

- Loosen the headbands and remove the facepiece.

**PART B SUPPLEMENTAL QUESTIONS**

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?  No  Yes  
 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?  No  Yes
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?  No  Yes  
 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  No  Yes
  - b. Silica (e.g., in sandblasting)  No  Yes
  - c. Tungsten/cobalt (e.g., grinding or welding this material)  No  Yes
  - d. Beryllium  No  Yes
  - e. Aluminum  No  Yes
  - f. Coal (for example, mining)  No  Yes
  - g. Iron  No  Yes
  - h. Tin  No  Yes
  - i. Dusty environments  No  Yes
  - j. Any other hazardous exposures  No  Yes  
 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?  No  Yes  
 If "yes," were you exposed to biological or chemical agents (either in training or combat)?  No  Yes
8. Have you ever worked on a HAZMAT team?  No  Yes
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)?  No  Yes  
 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  No  Yes
  - b. Canisters (for example, gas masks)  No  Yes
  - c. Cartridges  No  Yes
11. How often are you expected to use the respirator(s) (mark "yes" or "no" for all answers that apply to you)?
  - a. Escape only (no rescue)  No  Yes
  - b. Emergency rescue only  No  Yes
  - c. Less than 5 hours **per week**  No  Yes
  - d. Less than 2 hours **per day**  No  Yes
  - e. 2 to 4 hours per day  No  Yes
  - f. Over 4 hours per day  No  Yes
12. During the period you are using the respirator(s), is your work effort
  - a. **Light** (less than 200 kcal per hour)  No  Yes  
 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)  No  Yes

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)  No  Yes

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 your respirator?  No  Yes

If "yes," describe this protective clothing and/or equipment \_\_\_\_\_

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

15. Will you be working under humid conditions?  No  Yes

16. Describe the work you'll be doing while you're using your respirator(s)?  No  Yes

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 the first toxic substance \_\_\_\_\_

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

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

Name of the second toxic substance \_\_\_\_\_

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

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

Name of the 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)

\_\_\_\_\_

**RESPIRATOR MEDICAL CLEARANCE**

Date: \_\_\_\_\_

Name: \_\_\_\_\_ Employee  Student

Date of Respirator Evaluation: Reviewed Medical Evaluation Questionnaire on \_\_\_\_\_

This individual:

- Is medically qualified for use of an N, R, or P disposable particulate respirator (dust mask, non-cartridge).
- Is medically qualified for use of an air-purified, full-face respirator.
- Has the following respirator use restriction(s): \_\_\_\_\_
- Is NOT qualified for use of a respirator.

---

**Signature of Licensed Health Care Provider** \_\_\_\_\_ **Date** \_\_\_\_\_

**Print name of Licensed Health Care Provider** \_\_\_\_\_

**Print name of clinic/ City:** \_\_\_\_\_

Copy provided to employee/student for their files. You need to keep the signed Medical Clearance form in your files as you will need this document for your fit test.

Fax to: Environmental Health & Safety at **949-824-4535** or scan a copy to [occhealth@uci.edu](mailto:occhealth@uci.edu)



ENVIRONMENTAL HEALTH AND SAFETY  
4600 Health Sciences Road  
Irvine, California 92697-2725  
Phone Number: (949) 824-3757  
Fax Number: (949) 824-1325

**RESPIRATOR MEDICAL CLEARANCE**

Date: \_\_\_\_\_

Name: \_\_\_\_\_ Employee  Student

Date of Respirator Evaluation: Reviewed Medical Evaluation Questionnaire  
on \_\_\_\_\_

This individual:

Is medically qualified for use of an N, R, or P disposable particulate respirator (dust mask, non-cartridge).

Is medically qualified for use of an air-purified, full-face respirator.

Has the following respirator use restriction(s): \_\_\_\_\_

Is NOT qualified for use of a respirator.

\_\_\_\_\_  
**Signature of Licensed Health Care Provider**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Print name of Licensed Health Care Provider**

\_\_\_\_\_  
**Print name of clinic/ City:**

Copy provided to employee/student for their files. You need to keep the signed Medical Clearance form in your files as you will need this document for your fit test.

Fax to: Karla Hill Environmental Health & Safety at **949-824-1325** or scan a copy to [occhealth@uci.edu](mailto:occhealth@uci.edu)



ENVIRONMENTAL HEALTH AND SAFETY  
4600 Health Sciences Road  
Irvine, California 92697-2725  
Phone Number: (949) 824-3757  
Fax Number: (949) 824-1325

**RESPIRATOR MEDICAL CLEARANCE**

Date: \_\_\_\_\_

Name: \_\_\_\_\_ Employee  Student

Date of Respirator Evaluation: Reviewed Medical Evaluation Questionnaire  
on \_\_\_\_\_

This individual:

Is medically qualified for use of an N, R, or P disposable particulate respirator (dust mask, non-cartridge).

Is medically qualified for use of an air-purified, full-face respirator.

Has the following respirator use restriction(s): \_\_\_\_\_

Is NOT qualified for use of a respirator.

\_\_\_\_\_  
**Signature of Licensed Health Care Provider**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Print name of Licensed Health Care Provider**

\_\_\_\_\_  
**Print name of clinic/ City:**

Copy provided to employee/student for their files. You need to keep the signed Medical Clearance form in your files as you will need this document for your fit test.

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User seal check. Perform a user seal check, either the negative and positive pressure seal checks described below or those recommended by the respirator manufacturer.

### *Facepiece Positive Pressure Seal Check*

Close off the exhalation valve and exhale gently into the facepiece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the facepiece without any evidence of outward leakage of air at the seal. For most respirators this method of leak testing requires the wearer to first remove the exhalation valve cover before closing off the exhalation valve and then carefully replacing it after the test.

### *Facepiece Negative Pressure Seal Check*

Close off the inlet opening of the canister or cartridge(s) by covering with the palm of your hand(s) or by replacing the filter seal(s), inhale gently so that the facepiece collapses slightly, and hold the breath for ten seconds. If the design of the inlet opening of some cartridges cannot be effectively covered with the palm of the hand, perform the test by covering the inlet opening of the cartridge with a thin latex or nitrile glove. If the facepiece remains in its slightly collapsed condition and no inward leakage or air is detected, the tightness of the respirator is considered satisfactory.

Proper use of the respirator. You must use the respirator as instructed and follow the appropriate donning, doffing, and user seal check procedures. In addition, you must observe the change schedule or End-Of-Service-Life Indicators for the air purifying elements/cartridges and know the conditions when you need to evacuate an area.

## RESPIRATOR LIMITATIONS and CAPABILITIES

All persons using respiratory protection must be made aware of its limitations. This facepiece must be worn and used as specified in these instructions.

Your respirator has been constructed of materials selected for their performance, safety, and durability. However, all materials have exposure limitations to extremes of heat and cold or to the many chemicals in use today, and could be degraded by exposure beyond their limitations, creating conditions in which this equipment would be dangerous to use.

It cannot be predicted what will happen to this equipment in every potential environment. Materials can be chemically attacked if exposed to the wrong environment and may exhibit excessive corrosion or other forms of damage. Permeation of gases and liquids through the materials could be excessive. Extremes of temperature might cause thermal degradation. Do not use this respirator at temperatures below -30°F (-1°C) or above 130°F (71°C). Each of these things, or a combination of them, could create conditions in which this equipment would be dangerous to use.

Before entering an environment while wearing the equipment, you must conduct safe, scientific tests to determine if the environment could render the equipment unsafe. Results of this testing should be well documented. Seek the help of EHS& personnel.

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## Appendix G

DO NOT USE this equipment if you would be endangered in any way through environmentally induced degradation of the materials in the apparatus.

Do not use this respirator in environments where the concentrations of contaminants are unknown, or where the atmosphere is immediately dangerous to life or health (IDLH). IDLH atmospheres are defined as:

- Those which the wearer could not breathe for short periods.
- Those from which the wearer could not escape without the aid of the respirator.
- Those which have an immediate or delayed adverse effect on health.

When used as an air-purifying respirator, *ONLY* use this respirator with appropriate cartridges/filters identified on the NIOSH approval label securely threaded onto the facepiece. Always read cartridge labels prior to use to be certain that you have cartridges and/or filters that will provide the required protection.

When used as an air-purifying respirator, this respirator does not supply oxygen and must not be used in atmospheres containing less than 19.5% oxygen by volume.

This respirator does not protect exposed areas of the body. Some contaminants can be reabsorbed directly through the skin while others may irritate exposed areas.

This respirator must not be used for abrasive blasting, underwater diving, or interior structural firefighting.

Beards, stubble, or sideburns will prevent a good facepiece seal. Do not use this respirator unless you are clean shaven. Absence of one or both dentures can seriously affect the fit of the facepiece.

No respirator can provide complete protection from all conditions. Use extreme care for emergency operations. Do not use this respirator for applications involving exposure to high heat or direct flame.

Respirators, accessories, and associated equipment should not be used in atmospheres which may contain contaminant concentrations above the lower explosive level (LEL). Intrinsic safety certification of electronic components does not eliminate potential danger from ignition in these atmospheres.

### Limitations of Filtering Facepieces:

In the case of N-95 filtering facepiece, the respirator has at least 95% filtration efficiency against solid and liquid aerosols that do not contain oil.

Do not use the filtering facepiece for paint spray, oil aerosols, gases, vapors, asbestos, and sandblasting.

## Appendix G

The filtering facepiece does not supply oxygen. Do not use in atmospheres containing less than 19.5% oxygen by volume.

Do not use the filtering facepiece when concentrations of the contaminants are immediately dangerous to life and health (IDLH), are unknown, or when concentrations exceed ten times the permissible exposure limit (PEL).

Do not alter, abuse, or misuse the filtering facepiece.

Do not use with beards or other facial hair or other conditions that prevent a good seal between the face and the edge of the filtering facepiece.

If the filtering facepiece becomes damaged, soiled, or breathing becomes difficult, leave the respirator use area and dispose of the filtering facepiece.

***FAILURE TO OBSERVE ALL WARNINGS MAY RESULT IN PERSONAL INJURY, SERIOUS ILLNESS, OR DEATH.***

### EFFECTIVE USE DURING ROUTINE OR IN EMERGENCY SITUATIONS

During routine situations, continue to use respiratory protection as directed.

During an emergency situation, you must respond calmly and immediately to ensure your safety and minimize your exposure. An emergency situation can be equipment failure, rupture of containers, or failure of control equipment that has potential for an uncontrolled significant release of an airborne contaminant.

The response to such events will vary depending on the situation, but generally, you will want to continue wearing your respiratory protection equipment until you have completely exited from the respirator use area.

You must also leave the respirator use area when replacing the respiratory protection equipment or any of its associated components.

### MAINTENANCE AND STORAGE

Unless your respiratory protection equipment is disposable, your equipment must be cleaned and disinfected as often as necessary to be maintained in a sanitary condition. Shared respiratory protection equipment must be cleaned and disinfected before being worn by different individuals. Emergency use respiratory protection equipment must be cleaned and disinfected after each use, as with respirators used in fit testing and training.

You will receive hands-on instruction on cleaning procedures during your fit test and training session. You will learn to clean and disinfect the respiratory protection equipment in accordance with the manufacturer literature that is provided to you during issue of equipment; or you may also follow these procedures:

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### Procedures for Cleaning Respirators

- Remove filters, cartridges, or canisters. Disassemble the facepiece by removing speaking diaphragms, demand and pressure-demand valve assemblies, hoses, or any components recommended by the manufacturer. Discard or repair any defective parts.
- 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.
- Rinse components thoroughly in clean, warm (43 deg. C [110 deg. F] maximum), preferably running water. Drain.
- When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:
  - 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,
  - Aqueous solution of iodine (50 ppm iodine) made by adding approximately 0.8 milliliters of tincture of iodine (6-8 grams ammonium and/or potassium iodide/100 cc of 45% alcohol) to one liter of water at 43 deg. C (110 deg. F); or,
  - Other commercially available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer.
- 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 facepieces may result in dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.
- Components should be hand-dried with a clean lint-free cloth or air-dried.
- Reassemble facepiece, replacing filters, cartridges, and canisters where necessary.
- Test the respirator to ensure that all components work properly.

### Storage

Respiratory protection equipment must be stored in a clean, dry area, preferably away from the respirator use area. Your facepiece must be kept in the storage bag provided to you at the time of issue. Store the rubber and elastomeric parts in a manner which will prevent them from taking an abnormal set. Store location must be away from excessive heat, moisture, contaminating gaseous substances, or airborne particulates.

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## Appendix G

### Medical Signs and Symptoms Affecting Respirator Use

Be alert to conditions which may affect the effective use of the respiratory protection equipment during use. Immediately leave the respirator use area if:

- You taste or smell contaminants, or if your eyes, nose, or throat becomes irritated.
- Breathing becomes difficult.
- The air you are breathing becomes uncomfortably warm.
- You feel nauseous or dizzy.

Once outside of the respirator use area, doff the respirator, and then check if the medical signs and symptoms persist. If the effects continue, you may need to seek medical attention. If the effects cease, don the respirator, and then take a moment to assess that the signs and symptoms do not recur before returning to the respirator use area.

**Appendix H**  
**STANDARD OPERATING PROCEDURES FOR FIT TESTING**

**Requirements for Fit Testing**

All campus personnel required to use respiratory protection equipment shall be quantitatively and/or qualitatively fit tested prior to use of the equipment.

The employee must be medically cleared to wear a respirator.

Voluntary users of filtering facepieces may be exempt from medical evaluation and clearance.

The employee must have no facial hair that may interfere with the facepiece-face sealing area.

If the employee is a smoker, s/he should not smoke one-half hour prior to the fit test.

**Fit Testing Procedures – General Requirements**

UCI shall conduct fit testing using the following procedures. The requirements in this appendix apply to all OSHA- accepted fit test methods, both QLFT and QNFT.

The employee shall be allowed to pick the most acceptable respirator from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the employee.

Prior to the selection process, the employee shall be shown how to put on a respirator, how it should be positioned on the face, how to set strap tension and how to determine an acceptable fit. A mirror shall be available to assist the subject in evaluating the fit and positioning of the respirator.

The employee shall be informed that he/she is being asked to select the respirator that provides the most acceptable fit.

The employee shall be instructed to hold each chosen facepiece up to the face and eliminate those that obviously do not give an acceptable fit.

The most comfortable mask is donned and worn at least five minutes to assess comfort.

Assessment of comfort shall include a review of the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator:

- (a) Position of the mask on the nose

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- (b) Room for eye protection
- (c) Room to talk
- (d) Position of mask on face and cheeks

The following criteria shall be used to help determine the adequacy of the respirator fit:

- (a) Chin properly placed;
- (b) Adequate strap tension, not overly tightened;
- (c) Fit across nose bridge;
- (d) Respirator of proper size to span distance from nose to chin;
- (e) Tendency of respirator to slip;
- (f) Self-observation in mirror to evaluate fit and respirator position.

User seal check. The employee shall conduct a user seal check, either the negative and positive pressure seal checks described below or those recommended by the respirator manufacturer. Before conducting the negative and positive pressure seal checks, the employee shall be told to seat the mask on the face by moving the head from side-to-side and up and down slowly while taking in a few slow deep breaths. Another facepiece shall be selected and retested if the employee fails the user seal check.

### Facepiece Positive Pressure Seal Check

Close off the exhalation valve and exhale gently into the facepiece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the facepiece without any evidence of outward leakage of air at the seal. For most respirators this method of leak testing requires the wearer to first remove the exhalation valve cover before closing off the exhalation valve and then carefully replacing it after the test.

### Facepiece Negative Pressure Seal Check

Close off the inlet opening of the canister or cartridge(s) by covering with the palm of the hand(s) or by replacing the filter seal(s), inhale gently so that the facepiece collapses slightly, and hold the breath for ten seconds. The design of the inlet opening of some cartridges cannot be effectively covered with the palm of the hand. The test can be performed by covering the inlet opening of

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the cartridge with a thin latex or nitrile glove. If the facepiece remains in its slightly collapsed condition and no inward leakage or air is detected, the tightness of the respirator is considered satisfactory.

The test shall not be conducted if there is any hair growth between the skin and the facepiece sealing surface, such as stubble beard growth, beard, mustache or sideburns which cross the respirator sealing surface.

If the employee exhibits difficulty in breathing during the tests, s/he shall be referred to a PLHCP, as appropriate.

If the employee finds the fit of the respirator unacceptable, s/he shall be given the opportunity to select a different respirator and to be retested.

Exercise regimen. Prior to the commencement of the fit test, the employee shall be given a description of the fit test and the test subject's responsibilities during the test procedure. The description of the process shall include a description of the test exercises that the subject will be performing. The respirator to be tested shall be worn for at least five minutes before the start of the fit test.

The fit test shall be performed while the employee is wearing any applicable safety equipment that may be worn during actual respirator use that could interfere with respirator fit.

Test Exercises. The following test exercises are to be performed for all fit testing methods prescribed in this appendix. The employee shall perform exercises, in the test environment, in the following manner:

(1) *Normal breathing.* In a normal standing position, without talking, the subject shall breathe normally. The exercise shall be 60 seconds in duration.

(2) *Deep breathing.* In a normal standing position, the subject shall breathe slowly and deeply, taking caution so as not to hyperventilate. The exercise shall be 60 seconds in duration.

(3) *Turning head side to side.* Standing in place, the subject shall slowly turn his/her head from side to side between the extreme positions on each side. The head shall be held at each extreme momentarily so the subject can inhale at each side. The exercise shall be 60 seconds in duration.

(4) *Moving head up and down.* Standing in place, the subject shall slowly move his/her head up and down. The subject shall be instructed to inhale in the up position (i.e., when looking toward the ceiling). The exercise shall be 60 seconds in duration.

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(5) *Talking*. The subject shall talk out loud slowly and loud enough so as to be heard clearly by the test conductor. The subject can read from a prepared text such as the Rainbow Passage, count backward from 100, or recite a memorized poem or song. The exercise shall be 60 seconds in duration.

### **Rainbow Passage**

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond reach, his friends say he is looking for the pot of gold at the end of the rainbow.

(6) *Grimace*. The employee shall grimace by smiling or frowning. (This applies only to QNFT testing; it is not performed for QLFT). The exercise shall be 15 seconds in duration.

(7) *Bending over*. The employee shall bend at the waist as if s/he were to touch his/her toes. Jogging in place shall be substituted for this exercise in those test environments, such as shroud type QNFT or QLFT units that do not permit bending over at the waist. The exercise shall be 60 seconds in duration.

(8) *Normal breathing*. Same as exercise (1).

The test subject shall be questioned by the test conductor regarding the comfort of the respirator upon completion of the protocol. Any adjustments during the test void the test, and the fit test must be repeated.

## **Fit Test Protocols**

### **Qualitative Fit Test (QLFT) Protocol**

Preparation:

The qualitative fit-test equipment is the 3M FT-30 Qualitative Fit Test Apparatus (Bitter)

Prepare the qualitative fit-test equipment (hood, collar, and nebulizers) according to the manufacturer instructions.

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### Sensitivity Test:

This test is done to assure that the person being fit tested can detect the bitter taste of the test solution at very low levels. The Sensitivity Test Solution is a very dilute version of the Fit Test solution.

The employee should not eat, drink (except water), or chew gum for 15 minutes before the test.

- 1.) Have the employee don the hood and collar assembly without the respirator.
- 2.) Position the hood assembly forward so that there is about six inches between the employees face and the hood window.
- 3.) Instruct the employee to breathe through his/her mouth with tongue extended.
- 4.) Using Nebulizer #1 with the Sensitivity Test solution (#1), inject the aerosol into the hood through the hole in the hood window. Inject ten squeezes of the bulb, fully collapsing and allowing the bulb to expand fully on each squeeze. Both plugs on the nebulizer must be removed from the openings during use. The nebulizer must be held in an upright position to ensure aerosol generation.
- 5.) Ask the employee if he/she can detect the bitter taste of the solution. If tasted, note the number of squeezes if necessary. If tasted, note the number of squeezes as 10 and proceed with the Fit Test.
- 6.) If not tasted, inject an additional ten squeezes of the aerosol into the hood. Repeat with ten more squeezes if necessary. Note whether 20 or 30 squeezes produced a taste response.
- 7.) If 30 squeezes are inadequate, in that the subject does not detect a bitter taste, the test is ended. Another type of fit test must be used.
- 8.) Remove the test hood, and give the employee a few minutes to clear the taste from his/her mouth.

### Fit Test:

- 1.) Have the employee don the respirator and perform a user seal check, as applicable.
- 2.) Have the employee put on the position the test hood as before, and breathe through his/her mouth.
- 3.) Using Nebulizer #2 with Fit Test Solution (#2), inject the fit test aerosol using the same number of squeezes as required in the Sensitivity Test. A minimum of ten squeezes is required, fully collapsing and allowing the bulb to expand fully on each squeeze. The nebulizer must be held in an upright position to ensure aerosol generation.
- 4.) To maintain an adequate concentration of aerosol during this test, inject one-half the number of squeezes (used in step 3) every 30 seconds for the duration of the fit test procedure.

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- 5.) After the initial injection of aerosol, ask the employee to perform the test exercises prescribed above.
- 6.) The test is terminated at any time the bitter taste of aerosol is detected by the subject because this indicates an inadequate fit. Wait 15 minutes and perform the sensitivity test again.
- 7.) Repeat the fit test after redonning and readjusting the respirator. A second failure may indicate that a different size or model respirator is needed.
- 8.) If the entire test is completed without the subject detecting the bitter taste of the aerosol, the test is successful and respirator fit has been demonstrated.

## Quantitative Fit Test (QNFT) Protocol

### Preparation:

The quantitative fit-test equipment is the TSI Portacount Plus Model 8020.

Check the respirator to make sure the sampling probe and line are properly attached to the facepiece and that the respirator is fitted with a particulate filter capable of preventing significant penetration by the ambient particles used by the fit test pursuant to manufacturer's instruction.

The pass criterion of the Portacount is:

Tight-fitting half facepieces is equal to or greater than 100;  
Tight-fitting full facepieces is equal to or greater than 500.

### Fit Test:

- 1.) Instruct the employee to don the respirator for five minutes before the fit test starts. This purges the ambient particles trapped inside the respirator and permits the wearer to make certain the respirator is comfortable.
- 2.) Check the criteria for the adequacy of the respirator fit.
- 3.) Instruct the employee to perform a user seal check. If leakage is detected, determine the cause. If leakage is from a poorly fitting facepiece, try another size of the same model respirator, or another model of respirator.
- 4.) Follow the manufacturer's instruction for operating the TSI Portacount Plus Model 8020 and proceed with the test.
- 5.) Instruct the employee to perform the test exercises prescribed above.
- 6.) After the test exercises, ask the employee about the comfort of the respirator upon completion of the protocol.

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- 7.) The Portacount will automatically stop and calculate the overall fit factor for the entire set of exercises. The overall fit factor is what counts. The Pass or Fail message will indicate whether or not the test was successful. If the test was a Pass, the fit test is complete.
- 8.) A record of the successful test shall be kept on file. The record will contain the employee's name, overall fit factor, make, model, style, and size of the respirator used, and the date tested.

## PROCEDURES FOR RESPIRATOR CARE AND MAINTENANCE

Respiratory protection equipment must always be inspected prior to use. The following inspection table highlights the key components of a respirator and the conditions that would require repair before use:

<b>INSPECTION TABLE</b>	
<b><i>IF ANY OF THE DEFECTS LISTED BELOW ARE FOUND, HAVE THE RESPIRATOR REPAIRED BEFORE USE.</i></b>	
<b>COMPONENT</b>	<b>LOOK FOR</b>
<b>For Filtering Facepieces:</b>	
FACEPIECE	<ol style="list-style-type: none"> <li>1. Cuts, gouges, punctures,</li> <li>2. Distortions of the sealing flange.</li> <li>3. Tears or nicks in the sealing area.</li> <li>4. Deterioration from age, heat, or contamination.</li> <li>5. If applicable, exhalation valve flaps are not in place, in poor condition, and not secure.</li> </ol>
<b>For Half-Face Assemblies:</b>	
FACEPIECE	<ol style="list-style-type: none"> <li>1. Cuts, gouges, punctures,</li> <li>2. Distortions of the sealing flange.</li> <li>3. Tears or nicks in the sealing area.</li> <li>4. Deterioration from age, heat, or contamination.</li> <li>5. Exhalation valve flaps are not in place, in poor condition, and not secure.</li> </ol>
<b>For Full-Face Assemblies:</b>	
FACEPIECE LENS	<ol style="list-style-type: none"> <li>1. Nicks, scratches, or abrasions which could impair visibility.</li> <li>2. Deep gouges or cracks which could reduce impact resistance.</li> <li>3. Anti-fog coating in need of replacement.</li> </ol>
FACEPIECE RIMS	<ol style="list-style-type: none"> <li>1. Deformed, cracked, or broken</li> <li>2. Loose screws. Do not overtighten.</li> </ol>
FACEPIECE SKIRT	<ol style="list-style-type: none"> <li>1. Cuts, gouges, or punctures.</li> <li>2. Tears or nicks in the sealing area.</li> <li>3. Deterioration from age, heat, or contamination</li> </ol>
FACEPIECE HEADSTRAP	<ol style="list-style-type: none"> <li>1. Abrasions or nicks.</li> <li>2. Deterioration from age, heat, or contamination.</li> </ol>
FACEPIECE BUCKLES	<ol style="list-style-type: none"> <li>1. Crushed, bent, or corroded.</li> <li>2. Damaged or loose rivets.</li> </ol>
FACEPIECE INLET NOZZLE	<ol style="list-style-type: none"> <li>1. Loose cover screws.</li> <li>2. Heat or impact damage.</li> <li>3. Nicks, cracks, or dents in the exhalation valve seat.</li> <li>4. Nicks, cracks, tears, or creases in the exhalation valve.</li> <li>5. Sticking exhalation valve. Exhale a few times to test. The valve must be close after each exhalation. Valves that fail to close must be replaced.</li> </ol>
SPEAKING DIAPHRAGM	<ol style="list-style-type: none"> <li>1. Holes or tears. Do not remove to inspect</li> </ol>

Appendix I

**PROCEDURES FOR CLEANING RESPIRATORS**

A. Remove filters, cartridges, or canisters. Disassemble facepieces 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:

1. 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,
2. Aqueous solution of iodine (50 ppm iodine) made by adding approximately 0.8 milliliters of tincture of iodine (6-8 grams ammonium and/or potassium iodide/100 cc of 45% alcohol) to one liter of water at 43 deg. C (110 deg. F); or,
3. Other commercially available cleansers of equivalent disinfectant quality when used as directed, if their 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 facepieces 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 facepiece, replacing filters, cartridges, and canisters where necessary.

H. Test the respirator to ensure that all components work properly.

## Appendix I

### **STORAGE**

Respiratory protection equipment must be stored in a clean, dry area, preferably away from the respirator use area. Your facepiece must be kept in the storage bag provided to you at the time of issue. Store the rubber and elastomeric parts in a manner which will prevent them from taking an abnormal set. Store location must be away from excessive heat, moisture, contaminating gaseous substances, or airborne particulates.

Appendix J

UCI EH&S RESPIRATORY PROTECTION PROGRAM  
EVALUATION

Date of Evaluation: \_\_\_\_\_  
Name of Evaluator: \_\_\_\_\_  
Name of Respirator User: \_\_\_\_\_  
Issue Date of Respirator/Training Date: \_\_\_\_\_

Thank you for assisting in the evaluation of the Respiratory Protection Program. Please take a few moments to review the following elements with respirator user.

Does the respirator fit?<sup>1</sup> Yes No  
*If not, explain:*

Does the respirator interfere with the user's workplace performance?<sup>2</sup> Yes No  
*If so, explain:*

Is the respirator used to protect only against the hazard(s) identified in the Respiratory Hazard Evaluation (RHE)?<sup>3</sup> Yes No  
*If not, explain:*

Is the respirator used only during the workplace conditions identified in the Respiratory Hazard Evaluation (RHE)?<sup>3</sup> Yes No  
*If not, explain:*

Is the respirator stored and maintained properly?<sup>4</sup> Yes No  
*If not, explain:*

- 1 Fit can be determined by observation and by asking the user if they detect the contaminant.
- 2 Interference can be determined by observation and by asking the user if they detect the contaminant.
- 3 Request for and review the RHE as needed prior to the assessment.
- 4 Proper maintenance can be determined by observation; Inspect the respirator storage location.

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## UCI EH&S Atmosphere Supplying Respirator

### SCOPE

This procedure applies to the training and maintenance of the Survair Sigma Self-Contained Breathing Apparatus (SCBA).

### RESPONSIBILITIES

It is the responsibility of the designated person to the SCBAs to follow this procedure.

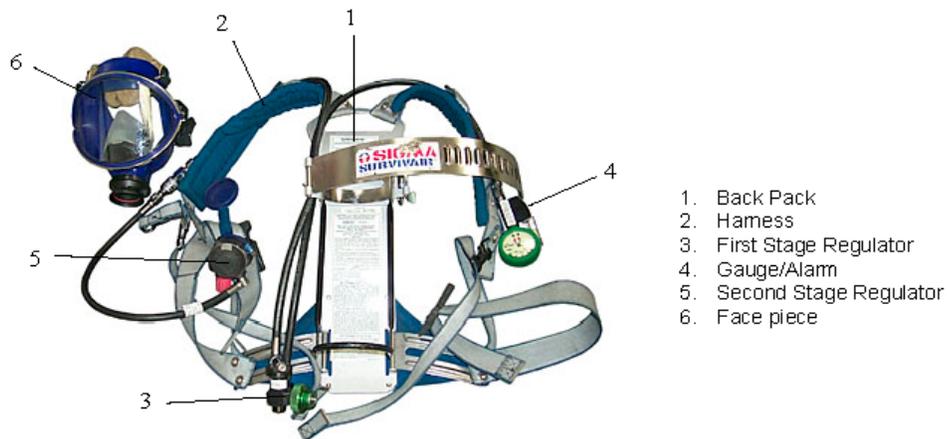
### PURPOSE

This procedure provides assurance that the SCBAs are maintained in a manner to which they can be utilized for immediate usage during an Emergency Response. Additionally, the training assurance

### PRACTICE

#### 1. Description

1.1. The following figure identifies the components of the SCBA:



#### 1.2. Description of each component:

##### 1.2.1. Back Pack (1)

- Contoured, articulated aluminum frame with tubular stainless steel cylinder support.
- Built-in carrying handle
- Cylinder attached by a one-piece stainless steel tank band and ratchet locks

##### 1.2.2. Harness (2)

- Kevlar/Nomex straps: heat and fire resistant
- Pressure gauge mounted on right shoulder strap
- Intermediate pressure hose is routed over left shoulder

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## Appendix K

- 1.2.3. Cylinder
  - High pressure (4500 psi) 60 minute bottle
  - Composite construction with aluminum inner liner over-wrapped by non-metallic fiber
- 1.2.4. First stage regulator (3) and hose
  - Composed of pressure reducer, over-pressurization relief valve, intermediate pressure hose and positive lock quick-disconnect fitting.
  - Pressure reducer: reduces pressure from cylinder
  - Over-pressurization relief valve: protects against excess pressures
- 1.2.5. Gauge/Alarm (4)
  - Mounted on the right shoulder
  - Protected by angled back plate
  - Gauge can swivel 360
  - Gauge indicates air pressure remaining in cylinder
  - Alarm sounds when remaining air pressure has dropped approx. 25%
  - Alarm will whistle during system pressurization
- 1.2.6. Second Stage Regulator (5)
  - Mounted on face piece by Survivair Air Klic system
  - Air flow activated on first breath flow (pressure demand) or by pressing the manual override button (black button)
  - Once activated, air flow can be stopped by pressing gray shut-off button
  - Red knob - adjustable bypass valve; can provide constant flow
- 1.2.7. Face Piece (6)
  - Made of silicone
  - Five point head strap
  - Lens treated with anti-fog
  - Abrasion resistant coating on outside

## 2. Operation

### 2.1. The proper operation of the SCBA is dependant on the following steps:

- Initial Inspection
  - Donning
  - Leak Check
  - Pressurization
  - Doffing
- 2.1.1. Initial Inspection
1. Ensure that the cylinder valve gauge reads in the green (FULL) zone.
  2. Check tank condition (no excessive chips, dents, etc.)
  3. Condition of harness straps (no damaged buckles, corrosion, loose hardware, etc.)
  4. Check ratchet lock and ensure that cylinder is secure in backpack.
  5. Make sure gauges are readable and not cracked.
  6. Check mask/face piece (no scratches, abrasion, cracks, etc.)
  7. Condition of hoses (no excessive nicks, cracks, leaks, etc.)
  8. Hand tighten high-pressure hose to cylinder - do not use tools to tighten.

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## Appendix K

### 2.1.2. Donning

1. There are two methods of donning SCBA: Over the Head and Coat Style

#### **Over the Head**

- Lean SCBA against legs with cylinder valve resting on floor and spread harness
- Grasp cylinder and backpack near center
- Lift over-head and allow it to slide onto back.

#### **Coat Style**

- Insert arm through one of the shoulder straps and swing SCBA on
- Insert other arm through shoulder strap

2. Lean forward and pull straps until back support rests on small of back.
3. Take up slack with straps
4. Fasten waist belt straps
5. Adjust straps if necessary
6. Loosen straps on face piece
7. Place chin in chin cup and pull straps over your head
8. Tighten face-piece in the following order: lower straps, temples straps and finally the top strap

### 2.1.3. Leak Check

1. Place palm of hand over Air Klic of face piece.
2. Inhale and hold your breath for a few second. Face piece should collapse on your face without leaking.
3. If leak occurs, reposition, check straps, and repeat leak check.

### 2.1.4. Pressurization

1. Fully depress the shutoff button (gray button) on second stage regulator.
2. Open cylinder valve and check gauge/alarm to ensure that the needle reads in the green (FULL) zone.
3. Remove second stage regulator from waist strap regulator holder.
4. Insert regulator into Air Klic on face piece and press firmly until you hear both release buttons snap into place.
5. Take a sharp, deep breath to activate the regulator.
6. Quickly open and close the bypass valve (red button) to ensure that it is operating properly.
7. Check manual over-ride button (black button).

### 2.1.5. Doffing

1. Press the two release buttons on the Air Klic and remove the regulator from the face piece.
2. Depress the second stage regulator shut-off button (gray button).
3. Close the cylinder valve by disengaging the cylinder valve-locking sleeve by pushing in and turning it counterclockwise.
4. Open the bypass valve (red button) on the second stage regulator to vent air from the SCBA.
5. Close the bypass valve.
6. Push second stage regulator into the waist-strap-mounted regulator holder until it clicks.
7. Remove face piece and SCBA

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## Appendix K

### 2.2. Emergency Operations

#### 2.2.1. Restricted or interrupted air flow:

1. Open the bypass valve by turning the red knob on the second stage counter-clockwise until the desired constant airflow is achieved.
2. IMMEDIATELY exit to a safe area.
3. Have the SCBA inspected and/or repaired by a certified repair technician before reuse.

#### 2.2.2. First breath on failure:

1. Press the manual override button on the front of the regulator to start air flow.
2. IMMEDIATELY exit to a safe area.
3. Have the SCBA inspected and/or repaired by a certified repair technician before reuse.

#### 2.2.3. Free flow:

1. If the regulator will not shut off (free flow) during extremely heavy breathing, exhale forcefully. The regulator should return to normal flow.
2. If the free flow continues, open and close the bypass once.
3. If the problem persists, IMMEDIATELY exit to a safe area.
4. Have the SCBA inspected and/or repaired by a certified repair technician before reuse.

#### 2.2.4. Relief valve operates:

1. Disengage the cylinder valve-locking sleeve by pushing in and turning it counterclockwise as far as it will go.
2. Regulate the amount of airflow by manually throttling the cylinder valve.
3. Have the SCBA inspected and/or repaired by a certified repair technician before reuse.

### 3. Inspections

Inspections of all SCBA units and spare tanks are conducted on a monthly basis and logged into a record book.

#### 3.1. SCBA Unit w/Cylinder

##### 3.1.1. Leak test

1. Push gray shutoff on second stage regulator.
2. Open cylinder valve to fully pressurize regulators.
3. Close cylinder valve.
4. Observe gauge/alarm for 15 seconds. Significant needle movement indicates leak; SCBA should not be used.

##### 3.1.2. Alarm Test

1. Open cylinder valve.
2. Then close cylinder valve.
3. Press gray shutoff button on second stage regulator.
4. Slightly open and close bypass valve to stop gauge pointer at each ¼ mark for 2 seconds.
5. Continue to open and close until pointer moves slowly to ¼ FULL mark.
6. Alarm whistle should begin when gauge reaches approximately ¼ FULL.
7. When alarm sounds, close the bypass valve.
8. Alarm should continue until air is almost depleted.
9. Bleed all residual air and close bypass valve.

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## Appendix K

### 3.1.3. Function test

1. Close second stage regulator bypass valve and depress the gray shutoff valve.
2. Slowly open cylinder valve.
3. Check that cylinder valve gauge and gauge/alarm both read in green zone.
4. Attach second stage regulator to facepiece and inhale. (Regulator should deliver an acceptable flow of air without excessive effort, free flow or fluttering.)
5. Slowly open bypass valve; a steady flow of air flow should enter the facepiece.
6. Depress the gray shutoff button; air flow should stop.
7. Push override button; small burst of air should enter facepiece and the regulator should activate.
8. Close cylinder valve and bleed all residual air.

### 3.2. Spare Cylinder

3.2.1. The following is the checklist for cylinder inspection; any cylinder showing symptoms from the subsequent list fails the inspection and must have corrective action taken.

- Dents, gouges, blisters or cuts.
- External damage to cylinder valve.
- Rough/stiff operation of valve hand-wheel and racket collar.
- Loose screws securing rubber guard on cylinder valve.
- Threads on valve outlet are in poor condition.
- Cylinder pressure gauge lens scratched; pointer deformed or stuck.
- Gauge reading improperly.
- Cylinder pressure gauge less than "full" indication.
- Hydrostatic test date expired.

## 4. Maintenance

### 4.1. Inventory

4.1.1. The following is the inventory of SCBA harnesses:

<b>EH&amp;S Harness #</b>	<b>Serial #</b>	<b>UCI Property #</b>
1	HHBN0868	9590-02806
2	HHBN0895	9590-02805
3	HHBN0930	9590-02804
4	HHBN0928	9590-02803
5	HHBN0925	9590-02802
6	HHBN1040	9590-02801

4.1.2. The following is the inventory of the spare cylinders:

<b>EH&amp;S Cylinder #</b>	<b>Serial #</b>	<b>UCI Property #</b>
1	CFBK0538	9590-05570
2	CFBK0539	9590-02813
3	CFBK0541	9590-05569
4	CFBK0546	9590-05571
5	CFBK0554	9590-02807
6	CFBK0564	9590-05573
7	CFBK0567	9590-02808
8	CFBK0569	9590-02811

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9	CFBK0595	9590-02809
10	CFBK0607	9590-02812
11	CFBK0618	9590-05572
12	CFBK0647	9590-02810

### 4.2. Cylinders

#### 4.2.1. Hydro-testing

4.2.1.1. All cylinders must pass hydrostatic testing.

4.2.1.2. Testing is conducted every 3 years. The following table identifies the current status of the cylinders:

Cylinder #	Original Hydro Test Date	Last Hydro Test Date	Hydro Re-Test Due	Time Rating (min.)
1	6/95	8/02	8/05	60
2	6/95	1/02	1/05	60
3	6/95	11/00	11/03	60
4	6/95	1/02	1/05	60
5	6/95	1/02	1/05	60
6	6/95	1/02	1/05	60
7	6/95	8/02	8/05	60
8	6/95	11/00	11/03	60
9	6/95	8/02	8/05	60
10	6/95	8/02	8/05	60
11	6/95	1/02	1/05	60
12	6/95	8/02	8/05	60

4.2.1.3. All cylinders must be stamped with the last date of testing.

4.2.1.4. The cylinder type is a non-metallic fiber composite with aluminum inner liner. These are composite cylinders identified as DOT – E8058.

4.2.1.4.1. According to the Department of Transportation Specification, these cylinders have a maximum 15-year service life counting from the date of the cylinder's original hydrostatic test.

4.2.1.5. Testing must be conducted at an Authorized Repair Center. (i.e. LifeCom, Huntington Beach)

#### 4.2.2. Switching Out

1. Lay the harness on a ground with the cylinder facing up.
2. Close the cylinder valve by disengaging the cylinder valve-locking sleeve by pushing in and turning it counterclockwise.
3. Open the bypass valve (red button) on the second stage regulator to de-pressurize the SCBA.
4. Unscrew the harness from the cylinder.
5. Turn the racket on the steel tank band to loosen it.
6. Unhook the band and remove the cylinder
7. Place new cylinder on harness
8. Wrap the band around and hook the racket on.
9. Turn the racket to tighten
10. Screw the harness to the cylinder

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## Appendix K

### 4.2.3. Filling

The following procedure must be utilized when re-filling tanks:

1. Turn on the main electrical switch located on the wall left of the compressor
2. Turn the Bauer compressor On. This will start the compressor.
3. Make sure that both doors leading to the room are fully open.
4. Close Fill Valve located on the front panel of the fragmentation unit.
5. Place the tank to be filled in the fragmentation tank. Connect the fill hose to the tank.
6. Close Bleed Valve on the tank to be filled. The Bleed Valve is located on the hose.
7. Open the tank valve.
8. Don't adjust the Fill Pressure with the regulator it's already pre-adjusted.
9. Open fill valve slowly to start filling. Note that the compressor will automatically start up when the valve is open.
10. When the filling is completed, close the Fill Valve, close Tank Valve and slowly open the Bleed Valve

### 4.3. Repairs

#### 4.3.1. Harness/Cylinder

4.3.1.1. All repairs and maintenance activities are coordinated through:

LifeCom, Inc.  
5081 Argosy Ave.  
Huntington Beach, CA 92649  
800/824.5178

#### 4.3.2. Compressor

4.3.2.1. The compressor used to fill the tanks is a Bauer Compressor (Model MVT7-E3, S/N 22208) that is located in the ERT supply room (room 166).

4.3.2.2. The compressor is maintained and calibrated on an annual base.

4.3.2.3. All repairs and maintenance activities are coordinated through:

Compressed Air Specialties  
1340 Simpson Circle  
Anaheim, CA 92806  
714/991.8800

4.3.2.4. Air samples are analyzed to comply with the air/gas quality portion of NFPA 1989-2008.

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Appendix L

UCI EH&S Powered Air Purifying Respirator  
(Loose Fitting Facepiece)  
Training Affidavit

Date \_\_\_\_\_

Department \_\_\_\_\_

Location \_\_\_\_\_

Process/Procedure:

--

Respirator Information (Brand, Type, etc): \_\_\_\_\_

I/We understand that a respiratory hazard evaluation was performed to determine the need for respiratory protection while performing the abovementioned process/procedure.

In addition, I/we further acknowledge that I/we received training on the proper use of the equipment, including set up procedures and performance check, inspection and cleaning, respirator limitations and capabilities, and medical signs and symptoms that may affect the use of the respirator.

Print Name	Signature

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EH&S PAPR Loose Fitting Facepiece.doc

# RESPIRATORY PROTECTION PROGRAM

## Appendix M: UCI EH&S Internal SOP

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