
APPENDIX D

**SAMPLE RESPIRATORY
PROTECTION PROGRAM**

**CALIFORNIA DEPARTMENT OF JUSTICE
DIVISION OF LAW ENFORCEMENT
BUREAU OF NARCOTIC ENFORCEMENT**

**CALIFORNIA DEPARTMENT OF JUSTICE
DIVISION OF LAW ENFORCEMENT**

**CLANDESTINE LABORATORY SAFETY
WRITTEN RESPIRATORY PROTECTION PROGRAM MANUAL**

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WRITTEN RESPIRATORY PROTECTION PROGRAM

RESPIRATORY PROTECTION PROGRAM - S.O.P.

1. INTRODUCTION

- 1.1 Scope – This standard sets forth accepted practices for respirator users, and provides information and guidance on proper selection, use, and maintenance of respirators.
- 1.2 Purpose – The purpose of this standard is to ensure the California Department of Justice's respiratory protection program provides guidance to all employees using respiratory protection. This program applies to all job related respiratory hazards encountered both in the field or in the laboratory.
- 1.3 Permissible Practice – In the control of those occupational diseases caused by breathing air contaminated with harmful dusts, fumes, sprays, mists, fogs, smokes, vapors or gases, the primary objective shall be to prevent atmospheric contamination. This shall be accomplished as far as feasible by accepted engineering control measures (e.g., enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials), and/or administrative control measures (e.g., limiting exposure by adjusting work schedule). When effective engineering and administrative controls are not feasible or while they are being instituted or evaluated, appropriate respirators shall be used.
- 1.4 Employer Responsibility
 - 1.4.1 Approved respirators shall be provided by the employer when such equipment is necessary to control harmful exposures.
 - 1.4.2 The employer shall properly select the correct respirator for the job application.
 - 1.4.3 The employer shall be responsible for the establishment and maintenance of a respiratory protection program.
 - 1.4.4 The employer shall educate and train employees on proper respirator use.

1.5 Employee Responsibility

1.5.1 The employee shall use the provided respiratory protection in accordance with the instruction and training received.

1.5.2 The employee shall properly maintain the respirator.

1.5.3 The employee shall report any malfunction of the respirator to the appropriate manager or supervisor.

1.6 Program Administration – Responsibility and authority for administration of this program shall be with the HRE Program.

1.7 Safety Officer – Individual designated by the Special Agent Supervisor or Laboratory Manager who is responsible for maintenance, monthly inspection, cartridge and accessory supply stock, etc., of respirators.

1.8 Site Safety Officer – Responsible for implementing the site safety plan, information gathering, evaluation and coordinated communications.

2. DEFINITIONS

Aerosol	A system consisting of particles, solid or liquid, suspended in air.
Approved	Respirators that have been tested and listed as satisfactory, meeting standards set by the National Institute for Occupational Safety and Health (NIOSH), or jointly by the Mine Safety and Health Administration (MSHA) and NIOSH.
Breathing Tube	A tube through which air or oxygen flows to the facepiece.
Cartridge	A small canister containing a filter solvent, or catalyst, or any combination thereof, which removes specific contaminants from the air drawn through it.

Confined Space	An enclosure – such as a storage tank, process vessel, boiler, silo, tank car, pipeline, tube, duct, sewer, underground utility vault, tunnel or pit – having limited means of egress and poor natural ventilation and which may contain hazardous contaminants or be oxygen deficient.
Contaminant	A harmful, irritating or nuisance material that is foreign to the natural atmosphere.
Dust	A solid, mechanically produced particle with size varying from submicroscopic to visible.
Emergency Respirator Use	Wearing a respirator when a hazardous atmosphere suddenly occurs that requires the immediate use of a respirator either for escape from or entry into the hazardous atmosphere.
Facepiece	That portion of the respirator that covers the wearer's nose and mouth (quarter mask and half mask) or that covers the nose, mouth and eyes (full facepiece). It is designed to make a gas-tight or particle-tight fit with the face and includes the headbands, exhalation valve(s) and connectors for an air purifying device or repairable gas source, or both.
Filter	A media component used in respirators to remove solid or liquid particles from the inspired air.
Fume	A solid condensation particle of extremely small size, generally less than one micrometer in diameter.
Gas	An aeriform fluid which is in the gaseous state at ordinary temperature and pressure.
High-efficiency Filter (HEPA)	A filter which removes from air 99.97% or more of monodisperse dioctyl phthalate (DOP) particles having a mean particle diameter of 0.3 micrometer.

Immediately Dangerous to Life and Health (IDLH)	Any atmosphere that poses an immediate hazard to life and produces immediate irreversible debilitating effects on health.
Inhalation Valve	A device that allows respirable air to enter a respirator and prevents exhaled air from leaving the respirator through the valve.
Maximum Use Limit	The maximum concentration of a contaminant for which an air-purifying filter, cartridge or canister is approved for use.
MSHA	Mine Safety and Health Administration, United States Department of Labor.
Mist	A liquid condensation particle with sizes ranging from submicroscopic to visible.
Negative Pressure Respirator	A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation and negative during inhalation in relation to the air pressure of the outside atmosphere.
NIOSH	National Institute for Occupational Safety and Health, United States Department of Health , Education, and Welfare.
Not Immediately Dangerous to Life or Health	Any hazardous atmosphere which may produce physical discomfort immediately, chronic poisoning after repeated exposure, or acute adverse physiological symptoms after prolonged exposure.
Odor Threshold Limit	The lowest concentration of a contaminant in air that can be detected by the olfactory sense.

OSHA	Occupational Safety and Health Administration, United States Department of Labor.
Permissible Exposure Limit (PEL)	The legally established time-weighted average (TWA) concentration or ceiling concentration of a contaminant that shall not be exceeded.
Positive Pressure Respirator	A respirator in which the air pressure inside the respiratory-inlet covering is positive in relation to the air pressure of the outside atmosphere during exhalation and inhalation.
Protection Factor	The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator at the breathing zone of the wearer. The protection factor is a measure of the degree of protection provided by a respirator to the wearer.
Respirator	A device designed to protect the wearer from the inhalation of harmful atmospheres.
Sanitization	The removal of dirt and the inhibiting of the action of agents that cause infection or disease.
Service Life	The period of time that a respirator provides adequate protection to the wearer.
Smoke	The products of combustion, pyrolysis, or chemical reaction of substances in the form of visible and invisible solid and liquid particles and gaseous products in air.
Spray	A liquid, mechanically produced particle with sizes varying from submicroscopic to visible.
Vapor	The gaseous state of a substance that is solid or liquid at ordinary temperature and pressure.

3. CLASSIFICATION, DESCRIPTION AND LIMITATIONS OF RESPIRATORS

3.1 Atmosphere-Supplying Respirators

3.1.1 Self contained breathing apparatus (SCBA's) are respirators in which the wearer carries his/her own breathing atmosphere. Chief limitations of SCBA's are their weight and/or bulk, limited service life, and the training required for maintenance and safe use. Only SCBA's providing 30 minutes of breathing air at 2215 psi and operated in the positive pressure mode will be used to enter atmospheres requiring the use of an SCBA.

3.1.2 Emergency escape respirators used in a hazardous atmosphere for immediate escape. This respirator is to be used only for escape. The respirator provides five minutes of breathing air.

3.1.3 Air line respirators are those in which the breathing atmosphere is supplied from a source away from the wearer.

3.2 Air Purifying – Air-purifying respirators are those employing a filter, cartridge, or canister type device to remove contaminants from the atmosphere. These respirators do not protect against IDLH, oxygen-deficient atmospheres, atmospheres with poor warning properties, or atmospheres not removed by air purifying cartridges and are limited by the type, efficiency and capacity of the filter, cartridge or canister employed.

4. SELECTION OF RESPIRATORS

4.1 Approved Respirators – Only MSHA/NIOSH approved respirators shall be selected. Surgical masks or unapproved dust filters shall not be substituted for approved respirators.

4.2 General Considerations – The selection of a respirator for any given situation shall require consideration of the following factors:

4.2.1 The nature of the hazard.

4.2.2 The characteristics of the hazardous operation or process.

4.2.3 The location of the hazardous area with respect to a safe area having respirable air.

4.2.4 The period of time for which respiratory protection may be provided.

4.2.5 The activity of the workers in the hazardous area.

4.2.6 The physical characteristics, functional capabilities, and limitations of various types of respirators.

4.2.7 The respirator-protection factors and respirator fit.

4.3 Selection Criteria

4.3.1 Respiratory protective equipment shall be selected based on hazard assessment findings and type of work being performed.

4.3.2 Selection of appropriate respirators shall be obtained according with the guidance of:

“Respirator Selection Criteria,” Attachment A; and

“Drager Detector Tube Sampling Laboratory Reference Chart,” Attachment B.

5. USE OF RESPIRATORS

5.1 Training – The supervisor and the respirator wearer shall be given adequate training by a qualified person(s) to ensure proper use of respirators. Written records shall be maintained by the Clandestine Laboratory Coordinator for BNE personnel and the HRE Manager for BFS personnel of those persons trained and the dates the training occurred.

5.1.1 Training of Supervisors – Supervisors who supervise respirator wearers shall be given adequate training to ensure proper use of respirators. This training shall include the following elements:

- The basic respiratory protection practices.
- The nature and extent of respiratory hazards to which persons under his/her supervision may be exposed.
- The principles and criteria of selecting respirators.
- The training of respirator wearers.
- The issuance of respirators.
- The inspection of respirators.
- The use of respirators, including monitoring of use.
- The maintenance and storage of respirators.
- The regulations concerning respirator use.

5.1.2 Training of Respirator Wearers - To ensure the proper and safe use of a respirator, the training of each respiratory wearer shall include the following elements:

- The reasons for respiratory protection.
- The nature, extent and effects of respiratory hazards to which a person may be exposed.
- An explanation of why engineering controls are not being applied or are not adequate and of what effort is being made to reduce or eliminate the need for respirators.

- An explanation of why a particular type of respirator has been selected for a specific respiratory hazard.
- An explanation of the operation, and the capabilities and limitations, of a respirator selected.
- Instruction in selecting, donning, checking the fit and wearing the respirator.
- An opportunity for each respirator wearer to handle the respirator, learn how to don and wear it properly, check its seals, wear it in a safe atmosphere and wear it in a test atmosphere.
- An explanation of how maintenance and storage of the respirator is carried out.
- Instruction in how to recognize and cope with emergency situations.
- Instruction is needed for special respirator use.
- Regulations concerning respirator use.

5.1.3 **Retraining** – Each respirator wearer shall be retrained annually.

5.2 **Respirator Fit Tests**

5.2.1 A qualitative respirator fit test shall be used to determine the ability of each individual respirator wearer to obtain a satisfactory fit with a negative pressure respirator (see Attachment C for recommendation fit test procedure).

5.2.2 A person shall be allowed to use only the specific make(s) and model(s); for which the person obtained a satisfactory fit. Under no circumstances shall a person be allowed to use any respirator if the results of the qualitative respirator fit test indicates that the person is unable to obtain a satisfactory fit.

5.2.3 A respirator fit test shall be carried out for each wearer of a negative pressure respirator prior to initial respirator use and at least annually.

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- 5.2.4 In qualitative fit tests, a respirator wearer is exposed to an irritant smoke, an odorous vapor, or other suitable test agent. An air-purifying respirator must be equipped with an air purifying element(s) which effectively removes the test agent from the inspired air. If the respirator wearer is unable to detect penetration of the test agent into the respirator, the respirator wearer has achieved a satisfactory fit with the respirator.
- 5.2.5 Respirator fit tests shall not be required for positive pressure respirators.
- 5.3 Respirator Fit Test Records - Records of respirator fit tests shall be kept. These records shall include the following information:
- 5.3.1 A person who has hair (stubble, moustache, sideburns, beard, low hairline, bangs) which passes between the face and the sealing surface of the facepiece of the respirator shall not be permitted to wear such a respirator.
- 5.3.2 A person who has hair (moustache, beard) which interferes with the function of a respirator valve(s) shall not be permitted to wear the respirator.
- 5.3.3 Spectacles which have temple bars or straps which pass between the sealing surface of the respirator full facepiece and the wearer's face shall not be used.
- 5.3.4 A head covering which passes between the sealing surface of the respirator facepiece and the wearer's face shall not be used.
- 5.3.5 The wearing of spectacles, goggles, a face shield, helmet, or other eye and face protective device which interferes with the seal of a respirator to the wearer shall not be allowed.
- 5.3.6 If scars, hollow temples, excessively protruding cheekbones, deep creases in facial skin, the absence of teeth or dentures, or unusual facial configurations prevent the seal of a respirator facepiece to a wearer's face, the person shall not be permitted to wear the respirator.

5.4 Respirator Inspection Prior to Use - Each person issued a respirator for routine, non-routine, emergency or rescue use shall inspect the respirator prior to its use to ensure that it is in good operation condition.

5.4.1 Air-purifying respirator inspection shall include facepiece, face shield, traps, buckles, valves, cartridges/canisters and sealing gaskets.

5.4.2 SCBA inspection shall include facepiece, face shield, straps, buckles, valves, breathing tubes, fittings, compressed air cylinder, air hoses, regulator and low pressure warning device.

5.5 Leaving a Hazardous Area - A respirator wearer shall be permitted to leave the hazardous area for any respirator-related cause. Reasons which require a respirator wearer to leave a hazardous area include, but are not limited to the following:

- Failure of the respirator to provide adequate protection.
- Malfunction of the respirator.
- Detection of leakage of an air contaminant into the respirator.
- Increase in resistance of respirator to breathing.
- Severe discomfort in wearing the respirator.
- Illness of respirator wearer.

6. MAINTENANCE OF RESPIRATORS

6.1 Cleaning and Sanitizing - Each respirator shall be cleaned and sanitized to ensure that the respirator wearer is provided with a clean and sanitized respirator at all times. Respirators shall be cleaned and sanitized after each use following the manufacturer's recommendations.

6.2 Inspection

6.2.1 Each respirator shall be inspected before and after use. A respirator shall be inspected by the user immediately prior to each use to ensure that it is in proper working condition.

6.2.2 Respirators used/maintained for emergency shall be inspected at least monthly by a designated individual.

6.2.3 A record of inspection dates, findings, remedial actions and the name of the individual performing the inspection shall be kept with each respirator.

6.3 Part Replacement and Repair

6.3.1 Replacement of parts or repairs shall be done only by persons trained in proper respirator assembly and correction of possible respirator malfunctions or defects.

6.3.2 Replacement parts shall be only those designed for the specific respirator being repaired.

6.4 Storage – Respirators shall be stored in a manner that will protect them against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals. Respirators shall be stored to prevent distortion of rubber or other elastomeric parts.

7. SPECIAL PROBLEMS

7.1 Vision

7.1.1 Employees who wear corrective lenses shall be provided spectacle kits designed to hold corrective lenses inside the respirator mask.

7.1.2 The wearing of contact lenses is prohibited in any atmosphere where a respirator is required.

7.2 Use of Respirators for Entry into Atmosphere Immediately Dangerous to Life or Health - When respirators are required for entry into IDLH atmospheres, at least one standby person shall have the proper equipment available to assist the respirator wearers in case of emergency. Communications (visual, voice, or other suitable means) shall be maintained between the standby person and the respirator wearers.

7.3 Respirator Use in Confined Spaces - All confined spaces shall be considered to be immediately dangerous to life or health unless proven otherwise. Before a person is allowed to enter a confined space, tests shall be carried out to determine the concentration of any known or expected flammable or toxic contaminant present and to determine the concentration of oxygen. A person shall not be permitted to enter a confined space without wearing the proper type of respirator.

8. EVALUATION OF PROGRAM EFFECTIVENESS

8.1 Wearer Acceptance - Respirator wearers shall be consulted periodically about their acceptance of respirators. Factors affecting the wearer acceptance of respirators include comfort, resistance to breathing, fatigue, interference with vision, interference with communication, restriction of movement, and confidence in the effectiveness of the respirator to provide adequate protection.

8.2 Appraisal of Protection Afforded - Medical surveillance of respirator wearers shall be conducted annually to determine if respirator wearers are being provided with adequate respiratory protection.

8.3 Industrial hygiene evaluation of workplace conditions requiring use of respirators shall be periodically conducted.

9. MEDICAL LIMITATIONS FOR RESPIRATOR WEARERS

9.1 No employee shall be assigned work requiring the use of a respirator, including stand-by-mode, unless it has been determined by a physician that the person is physically able to perform the work while using a respirator.

9.2 The physician's determination that an employee is certified to wear/use a respirator shall be based on medically indicated tests and findings, including:

- Medical History
- Pulmonary function tests (spirometry)
- Treadmill (when indicated)
- Chest X-Ray (when indicated)

9.3 The physician's determination shall be made at the time of pre-employment medical examination and updated annually.

9.4 The physician's determination shall be documented on the "Physician's Certification of Employee Respirator Use" letter or similar document, signed by the examining physician and placed into the employee's confidential medical record.

