

# **SANTA CLARA POLICE DEPARTMENT GENERAL ORDER: 41.7**

## **RESPIRATORY PROTECTION PROGRAM**

**ISSUED APRIL 2006**

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### **41.7.1 Policy**

The Santa Clara Police Department is committed to preventing injury and illness in the workplace and makes every effort to protect our employees from harmful airborne substances. In accordance with OSHA standards, the following program has been developed for police personnel. The department has determined that employees may be exposed to certain airborne hazards and may come into contact with hazardous materials or respond to the release of hazardous materials during routine and emergency situations. The purpose of this program is to ensure that police employees are protected from exposure to respiratory hazards. This program will comply with the California Code of Regulations, Title 8, Section 5144, Respiratory Protection.

This program shall incorporate the body of this text, and:

Appendix B-1. California Code of Regulations, Appendix B-1 to section 5144: User Seal Check Procedures

Appendix B-2. California Code of Regulations, Appendix B-2 to section 5144: Respirator Cleaning Procedures

### **41.7.2 Scope and Application**

This program applies to all police personnel who are required to wear respirators during normal work operations and during emergency situations. Participation in this program is mandatory for all field operation personnel as well as those involved in any of the following:

- Officers who are issued respirators to be used for escape from hazardous atmospheres.
- Officers who are issued respirators to be used while maintaining perimeters at hazardous materials incidents. These include officers who are stationed in the support (“cold” or “green”) zone, where contaminants are not expected to exceed levels deemed safe for unprotected persons, as determined by the incident commander.
- Officers who are issued respirators for use in maintaining the perimeter at crowd control incidents where chemical agents (e.g., CS or CN tear gas, O.C.) are used.
- Officers who are issued respirators to prevent exposure to tuberculosis and other serious airborne respiratory infections due to sustained contact with, or transport of, persons who are suspected of carrying an active infection with a serious airborne respiratory disease.

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- Officers who, in exigent or emergency situations, are required to enter an area where CS, CN, smoke, or other tearing agents have been expelled.

**Note:** In these situations the incident commander, or officer in charge, shall ensure that the levels of contamination do not exceed the tearing agent manufacturer's recommendation for safe operation, or the NIOSH maximum concentration for use (MUC), prior to entry. As of 10/1/03, the MUC for CN is 15mg/M3 and the MUC for CS is 2mg/M3.

Any employee who voluntarily wears a respirator when a respirator is not required is subject to the medical evaluation, fit test, cleaning, maintenance, and storage elements of this program. Employees who voluntarily wear facepieces (dust masks) are not subject to the medical evaluation, fit test, cleaning, maintenance, and storage provisions of this program.

Employees participating in the respiratory protection program do so at no cost. The expense associated with the training, medical evaluations and respiratory protection equipment will be borne by the City of Santa Clara.

### 41.7.3 Responsibilities

#### **Program Administrator**

The Program Administrator is responsible for administering the respiratory protection program. The Santa Clara Police Department Training Manager is the Program Administrator for the City of Santa Clara Police Department. Duties of the Program Administrator include:

- Arrange for qualitative or quantitative fit testing using an accepted OSHA protocol.
- Maintain records required by the program.
- Evaluate the program.
- Update the written program, as needed.
- Purchase, maintain and inventory of respirators and filter canisters.
- Ensure employees attend the required training.
- Identify work areas and tasks that require workers to wear respirators.
- Select respiratory protection options
- Ensure proper storage and maintenance of respiratory protection equipment.
- Ensure that employees under their supervision (including new hires) have received appropriate training fit testing, and annual medical evaluation.
- Ensure the availability of appropriate respirators and accessories.
- Ensure that respirators are properly cleaned, maintained, and stored according to the manufacturer recommendations
- Awareness of tasks requiring the use of respiratory protection
- Enforce the proper use of respiratory protection when necessary.
- Continually monitor work areas to identify respiratory hazards

## **Employees**

It is the responsibility of the employee to have an awareness of the respiratory protection requirements for his or her work areas in accordance with the departments respiratory protection program and California Code of Regulations, Title 8, Section 5144, Respiratory Protection. Employees are responsible for wearing the appropriate respiratory equipment according to instructions. Employees are also responsible to observe all factors and conditions required to demonstrate a good respirator fit and adequate face seal. Employees must also:

- Care for and maintain respiratory protection equipment as instructed and store it in a clean and sanitary location.
- Inform their supervisors if the respirator no longer fits well and to request a new one that fits properly.
- Inform their supervisor or the Program Administrator of any respiratory hazards that they feel is not adequately addressed in the workplace and of any concerns that they have regarding the program.

### **41.7.4 Workplace Exposure Assessment**

The type of airborne hazards presented to police personnel occurs in situations where engineering controls are not feasible or adequate. Control of airborne hazards through employee's use of respirators will provide emergency protection against occasional an/or relatively brief exposures. The results of the current hazard evaluation have identified the following potential exposure risks:

- Potential risk of exposure to CN and CS gas during enforcement and training. The department utilizes both CN and CS gas. The gas can be delivered by shotgun, grenades and via a 37mm launcher. The deployment of CN and CS gas is restricted to members of the Special Response Team (SRT). However, it is recognized that CN and CS gas can spread and affect other people in the area. Properly worn full-face air purifying respirators are effective for protecting the eyes, nose, mouth, and throat from CN and CS.
- Potential risk of exposure to OC spray during enforcement and training. The Department utilizes OC spray in MK-3 canisters for use by individual officers as well as maintaining large canisters of O.C. in supervisor's vehicles. Properly worn full-face air purifying respirators are effective for protecting the eyes, nose, mouth, and throat from OC.
- Potential risk of exposure to Tuberculosis (TB) while interacting with individuals likely to be infected. The use of a one half face respirator has been shown to effective in protecting the wearer from TB.

### **41.7.5 Respirator Equipment, Use and Selection**

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There are two different pieces of equipment that fall under the category of respirators that Santa Clara Police Department field employees shall be provided.

- The first is a full-face air-purifying respirator, commonly known as a gas mask, which will be the MSA Millennium or similar respirator. This full-face respirator is to be used to protect the employee from chemical agents such as CN and CS. The employee is advised that the full-face respirator is National Institute for Occupational Safety and Health (NIOSH) certified to protect against CN and CS, and is effective but not certified in protecting against OC, Sarin, Hydrogen Cyanide, and other chemicals. The respirator is not intended to protect against all Weapons of Mass Destruction type agents and does not supply its own oxygen.
- The second type of respirator supplied to field employees is the one half face N95 respirator. This respirator closely resembles a mesh surgical mask or dust mask and is intended to protect the employee against Tuberculosis (TB.) The one half face N95 respirator will be the Technol N95 Respirator or similar product. The one half face respirator is not designed to protect the wearer against chemical agents but rather is useful in protecting the wearer from contracting TB from a TB victim. These one half face respirators shall be kept in the patrol vehicle first aid kits as well as in the Temporary Holding Facility. A field employee may retain an extra one half facemask if they desire. The N95 filters exhale air outside the mask so logically the mask would not be appropriate to place on a TB victim. The mask is instead only for use by the employee. (A non-respirator “painters type” dust mask is appropriate to place over the nose and mouth of a TB victim.)

Reserve officers will be issued air-purifying respirators. These employees are required to have their respirators available in the field when working uniformed assignments. One half face TB respirators will be kept in vehicle first aid kits.

All officers working in a field operation assignment should make every effort to wear their respirators in situations involving harmful exposures.

It is recognized that in emergency situations, employees may be unable to obtain and don a respirator prior to deploying harmful agents such as CN, CS and OC. Employees should take appropriate action to avoid exposure. Respirators should be obtained and worn as soon as practical.

All respirators must be certified by the NIOSH and shall be used in accordance with the terms of that certification.

All filters, cartridges, and canisters must be labeled with the appropriate NIOSH approval label. The label must not be removed or defaced while it is in use.

Air-purifying respirators should not be used under the following conditions:

- When contaminants have poor warning properties; that is, when the contaminant can not be recognized by taste, smell or irritation at or below the permissible exposure limits;
- In oxygen-deficient atmospheres ( below 19.5%);

- In atmospheres Immediately Dangerous to Life or Health (IDLH); and
- Atmospheres in which short exposures would cause death, injury or delayed reaction.
- When there is a respirator selection question remember to refer to the Material Safety Data Sheet for the appropriate personal protective equipment.

#### **41.7.6 User Seal Check**

All employees will conduct a user seal check each time the respirator is put on. The seal check will be conducted following the guidelines in Appendix B-1

#### **41.7.7 Respirator Cleaning Procedures**

Respirators will be cleaned following the guidelines in Appendix B-2

#### **41.7.8 Filter Replacement Schedule**

Filters will be stored in their sealed pouches until such time as an employee needs to deploy a respirator.

Opened filters that have not been exposed to a hazardous substance will be replaced after 40 hours.

Opened filters that have been exposed, or that may have been exposed to a hazardous substance, will be replaced after 10 hours. SRT officers who expose their filters to live chemical agents at yearly trainings shall discard the exposed filter after training and be issued a sealed new one.

Unopened filters will be replaced every two years.

#### **41.7.9 Medical Evaluation**

**Personnel are considered medically qualified to use respiratory protective equipment after completing the POST Medical History Statement (POST 2-252) or its equivalent and successfully passing a physical examination that occurs as a condition of employment. The pre-employment physical must meet or exceed the standards as described by POST Medical Screening Manual for California Law Enforcement.**

Employees who were hired prior to the implementation of the POST Medical History Statement (POST 2-252) or its equivalent shall complete the Cal/OSHA medical questionnaire and have it approved by a licensed physician.

Medical evaluations are required for any officer when:

- An officer reports medical signs or symptoms that are related to the ability to use a respirator,
- A physician or other licensed health care professional (PLHCP), a supervisor, or the Program Administrator informs the agency that an officer needs to be re-evaluated,

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- Observations made during fit testing and program evaluation indicate a need for re-evaluation,
- A change occurs in workplace conditions (e.g., physical work effort, protective clothing, temperature) that may result in a substantial increase in the physiological burden placed on an officer.

### 41.7.10 Fit Testing

Respirators cannot be worn when conditions prevent a good seal between the face of the wearer and the seal area of the respirator. Facial hair, sideburns, moustaches, long hairlines, or bangs can pass between the sealing surface of the face piece and the face thus interfering with the function of the respirator valve(s) causing leakage of air or preventing air from entering the face piece on demand. Fit testing should be done annually. Moustaches, small sideburns, hair length are acceptable if they are worn in a manner so as not to come between the skin and the sealing surfaces of the respirator. All affected employees must comply with these regulations:

- Before an officer is required to use any respirator with a tight-fitting facepiece (APR/PAPR), the officer must be fit tested with the same make, model, style, and size of respirator to be used. Officers shall be provided with a sufficient number of respirator models and sizes so that he/she may select an acceptable facepiece.
- Fit tests shall be provided at the time of initial assignment and at least annually thereafter. Additional fit tests will be provided whenever the officer, employer, PLHCP, supervisor, or program administrator makes visual observations of changes in the officer's physical condition that could affect respirator fit. These conditions include, but are not limited to, facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight.
- The person who administers the fit test shall complete fit test training. Officers may accomplish this through their fire agency, OSHA, or the manufacturer of the equipment. The program administrator must maintain documentation of all training. All personnel qualified to fit-test must keep up to date on their training.
- Prior to the fit test, the officer shall be shown the proper procedures for donning a respirator. The officer shall demonstrate donning the respirator, adjusting the straps, and perform positive and negative fit checks.
- Officers who wear corrective glasses or other personal protective equipment must be sure that such equipment is worn in a manner that does not interfere with the face piece seal. The glasses or personal protective equipment that must be worn with the respirator shall be taken to the fit-test assessment and worn during the test.
- Officers who are issued tight fitting face piece gas/vapor air purifying respirators (gas masks) shall be provided with either a qualitative (employee response to test agent) or quantitative (numerical measurement of leakage) method of fit test. The program administrator will document in his department training records which test was utilized and the results of the test.

### 41.7.11 Respirator Use

**Escape:** For escape from the release of hazardous materials, officers will be provided a combination cartridge air-purifying respirator (MSA Millennium or similar NIOSH approved mask).

**Entry:** Respirators issued under this program shall not be used to enter any area that is designated as the exclusion (“hot” or “red”) zone, or the contaminant reduction (“warm” or “yellow”) zone of a hazardous materials incident. They also should not be used to enter any areas that are known or suspected to be oxygen deficient, or that contain concentrations of hazardous substances that are unknown or are immediately dangerous to life or health (IDLH). Respirator use shall not conflict with our agencies emergency response plan.

**Continuous duty:** For continuous duty in maintaining the perimeter of hazardous materials or crowd control incidents, approved gas masks shall be used. Respirators shall be selected that are approved for the contaminants that are believed to be present, and wearers shall not be located in atmospheres in which concentrations exceed the protection factor of the respirator. The incident commander shall determine a cartridge change schedule.

**Breakthrough:** If an officer detects a breakthrough, the officer shall exit the area immediately, or as soon as safety conditions permit, remove the respirator and perform decontamination procedures. Breakthrough shall be reported to the officer’ immediate supervisor or incident commander. The incident commander shall re-evaluate potential exposures and determine whether it is necessary to redefine the perimeter. An exposure report shall be completed as soon as possible by the immediate supervisor and the affected employee and turned into the patrol secretary.

**Note:** Some contaminants are detectable at levels below Cal/OSHA permissible exposure limits. Therefore detection of contaminants by a respirator user does not necessarily mean that the officer is being exposed above the concentration permitted under this program.

**TB and other infectious airborne diseases:** Particulate respirators (Technol N95) shall be used when an officer is in sustained contact (including transport in a closed vehicle) with a person who is suspected of carrying an active infection with a serious airborne respiratory disease (such as tuberculosis).

### 41.7.12 Training

Cal/OSHA requires agencies to conduct training for all personnel designated to use respirators.

The training shall include at least the following:

- The specific circumstances under which respirators are to be used, including illustrative scenarios that identify the proper use by general duty officers.

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- Why the respirator is necessary and how proper fit, usage, or maintenance can ensure the protective effect of the respirator.
- What the respirator's limitations and capabilities are in terms of protecting against chemical agents and other respiratory hazards.
- How to effectively use the respirators in emergency situations, including situations when the respirator malfunctions.
- How to inspect, put on, remove, use, and check the seals of the respirator.
- How to maintain and store the respirator.
- How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.
- How to decontaminate (or safely dispose of) a respirator that has been contaminated with chemicals or hazardous biological materials.

Training shall be provided at the time of initial assignment to respirator use, and at least annually thereafter.

Additional training shall be provided when there is a change in the type of respiratory protection used, or when inadequacies in the officer's knowledge or use of the respirator indicate that he/she has not retained the requisite understanding or skill.

Note: The above listed training requirements can be fulfilled by utilizing the POST produced training video available in June 2004.



**APPENDIX B-1 TO SECTION 5144  
USER SEAL CHECK PROCEDURES**

**Subchapter 7. General Industry Safety Orders  
Group 16. Control of Hazardous Substances  
Article 107. Dusts, Fumes, Mists, Vapors and Gases  
§5144. Respiratory Protection.**

Appendix B-1. to Section 5144: User Seal Check Procedures (Mandatory)

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**Guide to Respiratory Protection at Work**

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The individual who uses a tight-fitting respirator is to perform a user seal check to ensure that an adequate seal is achieved each time the respirator is put on. Either the positive and negative pressure checks listed in this appendix, or the respirator manufacturer's recommended user seal check method shall be used. User seal checks are not substitutes for qualitative or quantitative fit tests.

**I. Face piece Positive and/or Negative Pressure Checks.**

- A. **Positive pressure check**-Close off the exhalation valve and exhale gently into the face piece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the face piece 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.
- B. **Negative pressure 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 face piece 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 the cartridge with a thin latex or nitrile glove. If the face piece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.

**II. Manufacturer's Recommended User Seal Check Procedures.**

The respirator manufacturer's recommended procedures for performing a user seal check may be used instead of the positive and/or negative pressure check procedures provided that the employer demonstrates that the manufacturer's procedures are equally effective.

**NOTE**

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

**HISTORY**

1. New appendix B-2 to section 5144 filed 8-25-98; operative 11-23-98 (Register 98, No. 35).

**APPENDIX B-2 TO SECTION 5144  
RESPIRATOR CLEANING PROCEDURES**

**Subchapter 7. General Industry Safety Orders  
Group 16. Control of Hazardous Substances  
Article 107. Dusts, Fumes, Mists, Vapors and Gases  
§5144. Respiratory Protection**

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**Appendix B-2. to Section 5144: Respirator Cleaning Procedures (Mandatory)**

**[Guide to Respiratory Protection at Work](#)**

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These procedures are provided for employer use when cleaning respirators. They are general in nature, and the employer as an alternative may use the cleaning recommendations provided by the manufacturer of the respirators used by their employees, provided such procedures are as effective as those listed here in Appendix B-2. Equivalent effectiveness simply means that the procedures used must accomplish the objectives set forth in Appendix B-2, i.e., must ensure that the respirator is properly cleaned and disinfected in a manner that prevents damage to the respirator and does not cause harm to the user.

**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 face piece, replacing filters, cartridges, and canisters where necessary.

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

**NOTE**

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

**HISTORY**

1. New appendix B-2 to section 5144 filed 8-25-98; operative 11-23-98 (Register 98, No. 35).