RESPIRATORY PROTECTION PROGRAM

I. PURPOSE

The purpose of this program is to ensure that proper respiratory protection is provided and used, when necessary, to protect the health of all employees from respiratory hazards. Respirators are to be used only where the engineering control of inhalation hazards is not feasible, while engineering controls are being installed, or in emergencies.

II. GENERAL PROGRAM MANAGEMENT

A. Responsibility

The **Operations Supervisor,** is responsible for overall implementation, management and support of our Respiratory Protection Program. This includes:

1) Establishing and maintaining, written standard operating procedures governing the selection and use of respirators used;

2) Providing instruction and training in the proper use, care and limitations of respirators used in our facility.

Employees who use respirators are responsible for:

A. Using them in accordance with the instructions and training received;

B. Properly inspecting before and after each use;

C. Cleaning and storage after each use;

D. Immediately reporting any malfunction or defect of their respirator to their immediate Supervisor or Operations Supervisor.

B. Program Review and Update

The Respiratory Protection Program will be reviewed and updated under these circumstances:

1) Annually, on or before March 1st.

2) Whenever new or modified tasks and procedures are implemented which will affect occupational exposure of our employees.

III. EXPOSURE DETERMINATION

Because of the specialized nature of the testing equipment, we out source the testing necessary to determine our employees' exposure. These testing procedures may include:

1) Area sampling for air contaminates and concentrations;

2) Personal sampling for specific work area exposures.

All employees at this facility are notified and included in the Respiratory Protection Program if their exposure to air contaminants meets or exceeds the Permissible Exposure Limits (PEL) set by OSHA.

IV. METHODS OF COMPLIANCE

A. Engineering Controls

In work areas that have high or questionable concentrations of air contaminants, we will use engineering controls to help reduce our employees' exposure as much as possible. These controls may include, but are not limited to:

1) Specific work area exhaust and/or air filtering systems;

2) Process exhaust and/or air filtering systems;

3) Maintenance on all exhaust/filtering systems to ensure maximum efficiency;

4) Process modification to reduce or eliminate fumes, mists, or other air contaminants.

B. Respirator Selection

Respirators are selected based on the hazards to which our employees are exposed. Detailed written standard operating procedures governing the selection and use of respirators, using the NIOSH Respirator Decision Logic Chart as a guideline, have been documented in Appendix A. Outside consultation, manufacturer's assistance, and other recognized authorities are consulted if there is any doubt regarding the proper selection and use.

Only respirators that are NIOSH approved are selected and used. Additional selection guidelines are located in Appendix B.

C. Instruction and Training

Each user will be instructed and trained in the proper use of respirators and their limitations. This training will provide the employee an opportunity to handle the respirator, have it fitted properly, test its facepiece-to-face seal, wear it in normal air for a familiarity period, and finally to wear it in a test atmosphere. Every respirator wearer will receive fitting instructions, including demonstrations and practice in how the respirator should be worn, how to adjust it, and how to determine if it fits properly.

No DCSD personnel will wear a ½ or full face piece negative air pressure respirator (PAPR) when existing conditions prevent a good face seal. Such conditions may include growth of a beard, sideburns, the absence of one or both dentures, a skull cap that projects under the facepiece, or temple pieces on eye glasses. The employees' diligence in observing these factors will be evaluated by periodic checks. To assure proper protection, the facepiece seal will be checked by the wearer each time the wearer puts on the respirator. This will be done by following the manufacturer's instructions.

Note= DCSD Personnel will be allowed to wear a full helmet respirator if they have a beard or facial scarring which precludes the use of a ½ or full face PAPR.

D. Cleaning and Sanitizing

Respirators will be regularly cleaned and disinfected. Those issued for the exclusive use of one person will be cleaned after each day's use, or more often if necessary. Those used by more than one employee will be thoroughly cleaned and disinfected after each use. Cleaning and sanitizing guidelines are shown in Appendix C.

F. Storage

Each respirator will be stored in a convenient, clean, and sanitary location. These locations should protect the respirator from; dust, sunlight, heat, extreme cold, excessive moisture or damaging chemicals that could accelerate deterioration. Storage should be in a plastic bag within a rigid container or suitable container with a resealable lid.
DCSD personnel are responsible for proper storage of their assigned respirator. The full helmet respirator, which has shared usage, is stored in the Maintenance Utility area at the KCAE.

G. Inspection

Where practicable, the respirators will be assigned to individuals for their exclusive use. All employees will inspect their respirators before each use and during cleaning. Worn or

deteriorated parts will be replaced immediately. Respirators for emergency use will be inspected at least once a month and after each use. Inspection for SCBA breathing gas pressure will be performed weekly. Inspection guidelines are shown in Appendix D.

H. Surveillance

Surveillance of work area conditions and the degree of employees' exposure will be performed where respirators are or will be in use to determine:

1) Identity of substances that may cause employee over exposure.

2) Whether engineering controls need to be provided to reduce or eliminate the exposure.

3) The estimated average and potential maximum exposure concentration on a time weighted average (TWA) basis, which can be expected for normal operation.

4) The estimated peak exposures that can be expected from any short-term exposure.

5) Type of required respirator.

6) Frequency of periodic monitoring to be conducted.

I . Program Review and Update

In order to assure that employee protection and OSHA compliance are maintained, a periodic review of airborne contaminants will be made. This review will include air sampling, process and work practice review, raw materials/ intermediates/products review, engineering control effectiveness and emergency procedures evaluations. Monitoring will be performed at periods specified in the standards.

In addition, the following indicators will be used in evaluating the effectiveness of the program:

1) Observation of respirator users in their normal work activities and invitation of their comments to indicate the degree of acceptance to the program. Factors to be considered are their ability to breath without objectionable effort, ability to perform work without undue interference, confidence in the facepiece fit, general comfort and adequate vision with provisions for prescription glasses if necessary;

2) Inspections to ascertain that respirators are used, inspected, cleaned, and stored correctly;

3) Where mandated, laboratory tests such as urine, blood or fecal analysis along with a physical examination to determine if respirators are providing appropriate protection.

Documentation of all findings from the evaluation along with plans and target dates for correcting faults in the program will be done. A follow up will be conducted to ensure that corrections are made. Records on the inspection and maintenance of respirators and the training provided will be maintained.

Respirator use will be re-evaluated when process's materials are changed. The written operating procedures should be modified to reflect the evaluation results if necessary.

J. Medical Surveillance

No employee will be assigned to a task that requires the use of a respirator, unless it has been determined that the person is physically able to perform under such conditions. In addition, once a determination is made as to physical ability to wear a respirator and perform the work task, a review of the employee's health status will be made on an annual basis. A copy of Appendix E will be provided to be filled out by physician who makes the initial determination and subsequent review.

K. Respirator Selection

Only respirators selected from among those jointly approved by the National Institute for Safety and Health (NIOSH) will be provided for use by our employees.

V. INFORMATION AND TRAINING

To ensure proper use both employees that are required to wear respiratory protection and their supervisors will be given training in selection, use, and maintenance of respirators. OSHA requires that training of both employees and supervisors include the following no matter what the circumstances:

1) Opportunity to handle the respirator.

2) Proper fitting, including demonstrations and practice in wearing, adjusting and determining the fit of the respirator.

3) Test of facepiece-to-face seal.

4) A familiarization period of wear in normal air.

5) Wear the respirator in a test atmosphere.

Training of supervisors and workers will also include:

1) Discussion of the engineering and administrative controls in use and why respirators are needed.

2) Explanation of the nature of the respiratory hazard and what happens if the respirator is not used properly.

3) Explanation of why a particular type of respirator has been selected.

4) Discussion of how to recognize and handle emergencies.

Supervisors should have a comprehensive knowledge of respirators and respiratory protection practices. To provide this knowledge their training will include:

1) Basic respiratory protection practices.

2) Selection and use of respirators to protect workers against every hazard to which they may be exposed.

3) Nature and extent of the respiratory hazards to which workers may be exposed.

4) Structure and operation of the entire respirator program. Supervisor should understand their responsibility to facilitate functioning of the program. This includes maintenance that workers may be able to do themselves, issuance of respirators, control of their use, and evaluation of the program's effectiveness.

5) The legal requirements pertinent to the use of respirators.

Because proper respirator use depends especially upon the wearer's motivation, it is important that the need for the respirator be fully explained. Each wearer's training will include:

1) Instruction in the nature of the hazard, whether acute, chronic, or both, and an honest appraisal of what may happen if the respirator is not used.

2) Explanation of why more non-respirator control is not feasible. This should include recognition that every reasonable effort is being made to reduce or eliminate the need for respirators.

3) Discussion of why this is the proper type of respirator for a particular purpose.

4) Discussion of the respirator's capabilities and limitations.

5) Classroom and field training in recognizing and coping with emergencies.

6) Other special training as needed.

APPENDIX A

Respirator Information and Selection Guidelines

The work area has been surveyed to determine:

A. The characteristics of all hazardous operations or processes.

1. Oxygen concentration.
2. Sources of potential exposures.
3. Time period that the respirator protection will be needed.
4. Activity of the workers and any limitations on their use of respirators.
5. Worker complaints.
6. Previous monitoring results.

B. The properties of each potential airborne hazardous substance.

1. Physical state i.e. particulate (dust, mist, metal fume), gas, vapor, or combination.

2. Possible eye or skin irritation

3. Possibility of systemic toxicity from absorbency through the skin.

4. Warning properties (odor, taste, irritation).

5. Vapor pressure (the lower the vapor pressure, the less tendency a substance has to vaporize).

6. Lower explosive or flammable limit (LEL or (LFL).

7. Immediately dangerous to life or health concentration (IDLH).

8. Standards, regulations or guidelines for exposure (PEL, TLV, ect.)

Copies of these surveys are maintained at the Operations Center in the Support Services files. Material Safety Data Sheets showing characteristics of chemicals and potential exposure risks

are maintained in a master file at the Operations Center.

Decision logic for selecting respirators are as follows:

A. Oxygen-deficient atmospheres (less than 19.5% oxygen by volume at sea level). Use only pressure demand self-contained breathing apparatus or pressure demand airline respirators with an escape provision.

B. Against Particulate.

1. Consider the type of particulate and its potential concentration.

2. If there is a possibility of eye or skin irritation, use a full facepiece.

3. If there is possibility of systemic poisoning, do not use a single-use respirator.

4. If the Permissible Exposure Limits are less than 0.05 milligrams per cubic meter, use only respirators with high efficiency particulate filters.

5. Abrasive blasting requires a special respirator. Use only those respirators specifically approved for this operation.

6. In unknown concentrations or concentrations above IDLH of LFL, use only a positive pressure self-contained breathing apparatus or a combination positive pressure supplied air respirator with auxiliary positive pressure self-contained breathing apparatus.

C. Against gases and vapors.

1. If there are poor warning properties, do not use air-purifying respirators.

2. If there is a possibility of eye or skin irritation, use a full facepiece.

3. In unknown concentrations or concentrations above the IDLH or LEL use only a positive pressure self-contained breathing apparatus or combination positive pressure supplied air respirator with an auxiliary positive pressure self-contained breathing apparatus.

D. Combinations of gas or vapor and particulate.

1. Use only respirators with a combination of particulate filters and chemical cartridges.

Air Purifying Respirators

A. Description.

1. Single use or disposable respirators with fibrous filters - designed for protection against nuisance dusts or toxic dusts and mists with a PEL equal to or greater than 0.05 mg per cubic meter of air. Please note that all such respirators MUST have DOUBLE STRAP to be NIOSH approved.

2. Quarter, half or full facepiece masks equipped with a single or double replaceable filters - designed for respiratory protection against particulate (dusts, mists, and/or metal fumes with a PEL equal to or greater than 0.05 mg per cubic meter of air.

3. Quarter, half or full facepiece masks equipped with a single or double replaceable chemical cartridges - designed as respiratory protection against gases or vapors. Each cartridge is labeled with the specific chemical or class of chemicals that it protects against, and maximum concentration in which it can be used.

4. Respirators with a combination prefilter and chemical cartridge - the most common combination is the respirator for use in spray painting operations equipped with a prefilter approved for dusts and mists of paint, lacquer, and enamel and an organic vapor cartridge.

5. Full facepiece masks are sometimes equipped with canisters that contain more of the chemical sorbent than cartridges are connected to the face piece via a hose. The canisters are color coded for the different contaminants they are effective against and labeled for the degree of protection they offer. These respirators are called gas masks.

B. Advantages

1. Air-purifying respirators are inexpensive and easily maintained.

2. They restrict the wearer's movement the least.

3. They are the most versatile with different combinations of facepieces, filters, cartridges and canisters.

C. Limitations

1. Air-purifying respirators do not provide breathing air so they must never be used in oxygen-deficient atmospheres or concentrations that are immediately dangerous to life and health.

2. They must be used for protection against only those contaminants and concentrations for which they are specifically approved.

3. The length of time cartridges of filter will provide protection depends on the conditions of their use (contaminants present, concentrations, humidity, wearer's breathing rate, ect.). Chemical cartridges have a limited adsorption capacity and eventually will become saturated. Filter life depends on the loading characteristics of the particulate, and these too will eventually become clogged. If odors are detected while wearing a respirator or if it is uncomfortable to breath, the cartridges and/or filters are overloaded and should be changed immediately.

4. They must be used for protection against only those contaminants with sufficient warning properties (odor, taste or irritation) to indicate that the cartridge is saturated before the permissible exposure limit is reached. The following is a PARTIAL list of contaminants for which air purifying respirators SHOULD NOT be used regardless of the time of exposure or the concentration.

Acrolein
Aniline
Arsine
Boron Hydrides
Carbon Dioxide
Carbon Disulfide
Carbon Monoxide
Dimethylaniline
Fluorine
Hydrogen Fluoride
Hydrogen Selenide
Hydrogen Sulfide
Isocyanates
Methyl Chloride
Nickel Carbonyl
Nitrobenzene
Nitrogen Oxides
Nitroglycerine
Nitromethane
Ozone
Phosphorous Trichloride
Polychlorinated- Biphenyls
Sulfur Chloride
Vinyl Chloride

APPENDIX B

Operating Procedure
Respirator Use

Date of Preparation_____Prepared by
Operation or Procedure where respirators are required:

Type of respirator to be used:

Condition under which respirators are used:

a. Expected average concentrations
b. Peak concentration

Type and Frequency of Monitoring

Emergency Procedures:(Include type of respirators to be used, protective clothing, ventilation procedures and cleanup procedures.)

Note: This form should be filled out for each area or operation.

APPENDIX C

CLEANING AND SANITIZING GUIDELINES FOR REUSABLE AIR PURIFYING RESPIRATORS

Respirators that are used routinely by the same person should be cleaned as often as necessary, usually daily. Respirators that are used by more than one person must be cleaned after each use.

Recommended procedures for cleaning and sanitizing respirators are as follows:

Remove the following components of respiratory-inlet covering assemblies before cleaning and sanitizing:

- Filters, cartridges, canisters
- Speaking diaphragms
- Valves, valve assemblies
- Straps, etc.

Wash the facepiece and accessories as recommended by the manufacturer in warm soapy water (Maximum temperature of 120 degrees F) or in a commercial cleaner. Use a soft brush if necessary. Rinse well with clean water.

Sanitize by immersing the respirator body in sanitizing solution for two minutes and then rinse with clean water. Clean and sanitize all parts removed from respirator as recommended by manufacturer. Then air dry.

Respirators may also be cleaned with alcohol free Respirator Wipes. These are provided by the district; contact Tom Pethoud for a supply.

Inspect parts and replace any, which are defective immediately. Contact Tom Pethoud for replacement parts, including filters. Each respirator is approved as a unit with its own specified components. The use of any other respirator parts invalidates its approval. Only trained personnel should repair respirators.

Reassemble the respirator and store properly.

Strong cleaning and sanitizing agents and many solvents can damage rubber or elastomeric respirator parts. These materials must be used with caution and only with specific approval of

the manufacturer. Never use lubricant on any part of the respirator. Keep all parts free from oil and grease.

Appendix D

Respirator Inspections

A. Check all disposable respirators for:

1. Holes in the filter.
2. Deterioration or loss of elasticity in the straps.
3. Deterioration of metal clip.

B. Check all air purifying respirators for:

1. Dirt, cracks, checking, tears and holes in the rubber facepiece.
2. Distortion of the facepiece.
3. Cracked, scratched or loose fitting face shields.
4. Breaks, tears, or loss of elasticity in the head straps or harness.
5. Broken or malfunctioning buckles.
6. Dirt or detergent residues on the inhalation and exhalation valves or valve seat.
7. Cracks, tears, or distortion of the valves or valve seats.
8. Correct filter, cartridge, and facepiece.
9. Worn threads on the filter, cartridge, or facepiece.
10. Cracks or dents in the filter housing.
11. Service life indicator or end of service date in the cartridge or canister.
12. Cracks, checking, tears, or holes in gas mask breathing hoses.
13. Broken, loose, or missing clamps or end connectors or breathing hose.

Monthly Respirator Inspection Record

Date_____Inspector Name

Respirator Type_____Respirator No.

Defects Found:

Facepiece
Inhalation Valve
Exhalation Valve
Headbands
Cartridge Holder

Cartridge/Canister
Filter
Harness Assembly
Hose Assembly
Speaking Diaphragm
Gaskets
Connections_____
Other Defects

Respirator Maintenance Record

Type Mask

Date	Repairs	Comments

Appendix E

Medical Questionnaire For Respirator Users

Name_____ Social Security No.

Employer_____ Supervisor

Date_____ Age____ Height_____ Weight

Have you ever worn a respirator before? Yes _____No _____

If yes, describe any apparent difficulties noted with respirator use:

Have you had or do you now have any of the following: Yes* No

1. Lung disease (emphysema, asthma, TB)
2. Persistent cough
3. Heart trouble (cardiac disease)
4. Shortness of breath
5. History of fainting or seizures
6. High blood pressure
7. Diabetes
8. Fear of tight or enclosed places
9. Sensation of smothering
10. Heat exhaustion or heat stroke
11. Ruptured ear drum
12. Defective vision

13. Defective hearing
14. Contact lenses or glasses
15. Other conditions that might interfere with respirator use or result in limited work ability.
16. Are you taking any medications?

- Please explain **Yes** answers:

Employee Signature Date

REQUEST FOR MEDICAL CLEARANCE FOR RESPIRATORY USE QUESTIONNAIRE

Employee: _____ Social Security No.:_____

Home Address: _____Date of Birth: _____

Department: _____ Supervisor:_____

Circle Type or Types of Respirator(s) to be Used:

Supplied-air respirator Combination air-line and SCBA

Air-purifying (non-powered) Air-purifying (powered)

Level of Work Effort (circle one):

Light Moderate Heavy Strenuous

Extent of Usage:

1. On a daily basis.
2. Occasionally - but more than once a week.
3. Rarely - or for emergency situations only.

Length of Time of Anticipated Effort in Hours:
Special Work Considerations (i.e., high places, temperature, hazardous material, protective clothing, ECT.)

PHYSICIAN'S EVALUATION

Class: ___No restrictions on respirator use.
___Some specific use restrictions.
___No respirator use permitted.

Restrictions:

Examining Physician Signture:_____ Date:_____

Return to Donna Neppl Cooper, Operations Center, 1008 W. Kimberly Rd.

Respirator Fit Testing Record

Employee Name:_____ Department

Type of Mask: Half Mask ( ) Full Face ( )

Date:_____ Respirator Type:_____ Type of Test:

Comments:

Tested by:_____ Date:

Employee's Signature

Respirator Training Record

I certify that I have been trained in the use of: **RESPIRATOR INFORMATION**

This training included the inspection procedures, fitting, maintenance, storage, and limitations of

the above respirator(s). I further certify that I have heard the explanation of the unit(s) as described above and I understand the instructions relevant to use, cleaning, disinfecting, storage and the limitations of the unit(s).

Employee Signature_____ Date:

Trainer(s) Signature_____ Date: