

# Sampson Community College Respiratory Protection Program

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*Employees who voluntarily wear filtering face pieces or dust masks (i.e. devices that consists of a simple filter designed to remove particulate matter or dust from the air) are not subject to the medical evaluation, cleaning, storage, and maintenance provisions of this program. Respirators or cartridge respirators use chemicals such as activated charcoal to remove specific gases and vapors from the air. These devices are subject to the provisions of this policy concerning medical evaluation, cleaning, storage, and maintenance.*

## **1.0 Purpose**

SCC has determined that employees that work as members of the college's plant operations are exposed to respiratory hazards during pesticide and herbicide spraying operations. These hazards include exposure to solvent vapors and the active ingredients of the products being sprayed. The purpose of this program is to ensure that all SCC employees are protected from exposure to these respiratory hazards.

Engineering controls, such as ventilation and substitution of less toxic materials, are the first line of defense at SCC; however, engineering controls are generally not feasible for outdoor operations, or have not always completely controlled the identified hazards. In these situations, respirators and other protective equipment must be used. The work processes requiring respirator use at SCC are outlined in Table 1 in the Scope and Application section of this program.

In addition, some employees may express a desire to wear respirators during certain operations that do not require respiratory protection. As a general policy SCC will review each of these requests on a case-by-case basis. If the use of respiratory protection in a specific case will not jeopardize the health or safety of the worker(s), SCC will provide respirators for voluntary use. As outlined in the Scope and Application section of this program, voluntary respirator use is subject to certain requirements of this program.

## **2.0 Scope and Application**

This program applies to all employees who are required to wear respirators during normal work operations, and during some non-routine or emergency operations such as a spill of a hazardous substance. This includes employees working as members of the plant operations staff. Employees working in this area and engaged in certain processes or tasks (as outlined in the table below) must be enrolled in the college's respiratory protection program.

In addition, any employee who voluntarily wears a respirator when a respirator is not required is subject to the medical evaluation, cleaning, maintenance, and storage elements of this program, and must be provided with certain information specified in this section of the program.<sup>1</sup>

Employees participating in the respiratory protection program do so at no cost to them. The expense associated with training, medical evaluations and respiratory protection equipment will be borne by the college.

**TABLE 1: VOLUNTARY AND REQUIRED RESPIRATOR USE AT SCC**

<b>Respirator Department/Process</b>	
Filtering facepiece (dust mask)	Voluntary use during grounds operations
Half-facepiece APR with organic vapor cartridge and HEPA pre-filter (type of prefilter based on solvent used as carrier)	Mandatory use for pesticide/herbicide spraying operations.

### **3.0 Responsibilities**

#### **Program Administrator**

The program administrator is responsible for administering the respiratory protection program. Duties of the program administrator include:

- Identifying work areas, processes or tasks that require workers to wear respirators, and evaluating hazards.
- Selection of respiratory protection options.
- Monitoring respirator use to ensure that respirators are used in accordance with their certifications.
- Arranging for and/or conducting training.
- Ensuring proper storage and maintenance of respiratory protection equipment.
- Conducting qualitative fit testing with Bitrex.
- Administering the medical surveillance program.
- Maintaining records required by the program.
- Evaluating the program.
- Updating written program, as needed.

The program administrator for the college is Dr. William J. Starling, Vice President of Administration.

#### **Supervisors**

Supervisors are responsible for ensuring that the respiratory protection program is implemented in their particular areas. In addition to being knowledgeable about the program requirements for their own protection, supervisors must also ensure that the program is understood and followed by the employees under their charge. Duties of the supervisor include:

- Ensuring that employees under their supervision (including new hires) have received appropriate training, fit testing, and annual medical evaluation.
- Ensuring the availability of appropriate respirators and accessories.
- Being aware of tasks requiring the use of respiratory protection.
- Enforcing the proper use of respiratory protection when necessary.
- Ensuring that respirators are properly cleaned, maintained, and stored according to the respiratory protection plan.
- Ensuring that respirators fit well and do not cause discomfort.
- Continually monitoring work areas and operations to identify respiratory hazards.

- Coordinating with the program administrator on how to address respiratory hazards or other concerns regarding the program.

### **Employees**

Each employee has the responsibility to wear his or her respirator when and where required and in the manner in which they were trained. Employees must also:

- Care for and maintain their respirators as instructed, and store them in a clean sanitary location.
- Inform their supervisor if the respirator no longer fits well, and request a new one that fits properly.
- Inform their supervisor or the program administrator of any respiratory hazards that they feel are not adequately addressed in the workplace and of any other concerns that they have regarding the program.

## **4.0 Program Elements**

### **Selection Procedures**

The program administrator will select respirators to be used on site, based on the hazards to which workers are exposed and in accordance with all OSHA standards. The program administrator will conduct a hazard assessment for each operation, process, or work area where airborne contaminants may be present in routine operations or during an emergency. The hazard assessment will include:

- 1) Identification and development of a list of hazardous substances used in the workplace, by department, or work process.
- 2) Review of work processes to determine where potential exposures to these hazardous substances may occur. This review shall be conducted by surveying the workplace, reviewing process records, and talking with employees and supervisors.
- 3) Exposure monitoring to quantify potential hazardous exposures. Monitoring will be contracted out.

*The results of the current hazard assessment are the following:*

**Pesticide/Herbicide Spraying:** SCC has decided to take a conservative approach and require all employees to wear air-purifying respirators when involved in the spraying of pesticides and herbicides.

### *Updating the Hazard Assessment*

The program administrator must revise and update the hazard assessment as needed (i.e., any time work process changes may potentially affect exposure). If an employee feels that respiratory protection is needed during a particular activity, he/she is to contact his or her supervisor or the program administrator. The program administrator will evaluate the potential hazard, arranging for outside assistance as necessary. The program administrator will then communicate the results of that assessment back to the employees. If it is determined that respiratory protection is necessary, all other elements

of this program will be in effect for those tasks and this program will be updated accordingly.

#### *NIOSH Certification*

All respirators must be certified by the National Institute for Occupational Safety and Health (NIOSH) and shall be used in accordance with the terms of that certification. Also, 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.

#### *Voluntary Respirator Use*

SCC will provide respirators at no charge to employees for voluntary use.

The program administrator will provide all employees who voluntarily choose to wear either of the above respirators with a copy of Appendix D of the standard. (Appendix D details the requirements for voluntary use of respirators by employees.) Employees choosing to wear a half facepiece APR must comply with the procedures for Medical Evaluation, Respirator Use, and Cleaning, Maintenance and Storage.

The program administrator shall authorize voluntary use of respiratory protective equipment as requested by all other workers on a case-by-case basis, depending on specific workplace conditions and the results of the medical evaluations.

#### **Medical Evaluation**

Employees who are either required to wear respirators, or who choose to wear an APR voluntarily, must pass a medical exam before being permitted to wear a respirator on the job.

Employees are not permitted to wear respirators until a physician has determined that they are medically able to do so. Any employee refusing the medical evaluation will not be allowed to work in an area requiring respirator use.

A licensed physician will provide the medical evaluations. Medical evaluation procedures are as follows:

- The medical evaluation will be conducted using the questionnaire provided in Appendix C of the respiratory protection standard. The program administrator will provide a copy of this questionnaire to all employees requiring medical evaluations.
- To the extent feasible, the company will assist employees who are unable to read the questionnaire (by providing help in reading the questionnaire). When this is not possible, the employee will be sent directly to the physician for medical evaluation.
- All affected employees will be given a copy of the medical questionnaire to fill out, along with a stamped and addressed envelope for mailing the questionnaire to the company physician. Employees will be permitted to fill out the questionnaire on company time.
- Follow-up medical exams will be granted to employees as required by the standard, and/or as deemed necessary by physician.

- All employees will be granted the opportunity to speak with the physician about their medical evaluation, if they so request.
- The program administrator will provide the physician with a copy of this program, a copy of the respiratory protection standard, the list of hazardous substances by work area, and for each employee requiring evaluation: his or her work area or job title, proposed respirator type and weight, length of time required to wear respirator, expected physical work load (light, moderate, or heavy), potential temperature and humidity extremes, and any additional protective clothing required.
- Any employee required for medical reasons to wear a positive pressure air purifying respirator will be provided with a powered air purifying respirator.
- After an employee has received clearance and begun to wear his or her respirator, additional medical evaluations will be provided under the following circumstances:
- Employee reports signs and/or symptoms related to their ability to use a respirator, such as shortness of breath, dizziness, chest pains, or wheezing.
- The physician or supervisor informs the program administrator that the employee needs to be reevaluated;
- Information from this program, including observations made during fit testing and program evaluation, indicates a need for reevaluation;
- A change occurs in workplace conditions that may result in an increased physiological burden on the employee.

A list of SCC employees currently included in medical surveillance is provided in Table 2 of this program.

All examinations and questionnaires are to remain confidential between the employee and the physician.

### **Fit Testing**

Fit testing is required for employees wearing half-facepiece APRs for exposure to pesticides/herbicides. Employees voluntarily wearing half-facepiece APRs may also be fit tested upon request. Fit testing will be conducted on the campus.

Employees who are required to wear half-facepiece APRs will be fit tested:

- Prior to being allowed to wear any respirator with a tight fitting facepiece.
- Annually.
- When there are changes in the employee's physical condition that could affect respiratory fit (e.g., obvious change in body weight, facial scarring, etc.).

Employees will be fit tested with the make, model, and size of respirator that they will actually wear. Employees will be provided with several models and sizes of respirators so that they may find an optimal fit. Fit testing of PAPRs is to be conducted in the negative pressure mode.

The program administrator will arrange for fit tests following the OSHA approved Bitrex Solution Aerosol QLFT Protocol in Appendix B (B4) of the Respiratory Protection standard.

The program administrator has determined that QNFT is not required for the respirators used under current conditions at SCC. If conditions affecting respirator use change, the program administrator will evaluate on a case-by-case basis whether QNFT is required.

**Respirator Use**

Respiratory protection is required for the following personnel:

**TABLE 2: SCC Personnel in Respiratory Protection Program**

Name	Department	Job Description/Work Procedure	Respirator
Adams, Ronnie	Maintenance	Pesticide/Herbicide application	Half mask APR with organic vapor cartridges and HEPA prefilter
Langston, Billy	Maintenance	Pesticide/Herbicide application	Half mask APR with organic vapor cartridges and HEPA prefilter

*General Use Procedures*

- Employees will use their respirators under conditions specified by this program, and in accordance with the training they receive on the use of each particular model. In addition, the respirator shall not be used in a manner for which it is not certified by NIOSH or by its manufacturer.
- All employees shall conduct user seal checks each time that they wear their respirator. Employees shall use either the positive or negative pressure check (depending on which test works best for them) specified in Appendix B-1 of the Respiratory Protection Standard.
- All employees shall be permitted to leave the work area to go to the locker room to maintain their respirator for the following reasons: to clean their respirator if the respirator is impeding their ability to work, change filters or cartridges, replace parts, or to inspect respirator if it stops functioning as intended. Employees should notify their supervisor before leaving the area.
- Employees are not permitted to wear tight-fitting respirators if they have any condition, such as facial scars, facial hair, or missing dentures, that prevents them from achieving a good seal. Employees are not permitted to wear headphones, jewelry, or other articles that may interfere with the face piece-to-face seal.

*Emergency Procedures*

SCC employees are not trained as emergency responders, and are not authorized to use respiratory protection for emergency response.

### *Respirator Malfunction*

#### 1. APR Respirator Malfunction:

For any malfunction of an APR (e.g., such as breakthrough, face piece leakage, or improperly working valve), the respirator wearer should inform his or her supervisor that the respirator no longer functions as intended, and go to the designated safe area to maintain the respirator. The supervisor must ensure that the employee receives the needed parts to repair the respirator, or is provided with a new respirator.

### *IDLH Procedures*

The college does not have confined spaces that employees enter as part of their work responsibilities; therefore, the Program Administrator has not identified any areas as presenting the potential for IDLH conditions.

## **Cleaning, Maintenance, Change Schedules and Storage**

### *Cleaning*

Respirators are to be regularly cleaned and disinfected at the designated respirator cleaning station located in the employee locker room.

Respirators issued for the exclusive use of an employee shall be cleaned as often as necessary, but at least once during each day or use for workers in the Maintenance department.

The following procedure is to be used when cleaning and disinfecting respirators:

- Disassemble respirator, removing any filters, canisters, or cartridges.
- Wash the face piece and associated parts in a mild detergent with warm water. Do not use organic solvents.
- Rinse completely in clean warm water.
- Wipe the respirator with disinfectant wipes (70% Isopropyl Alcohol) to kill germs.
- Air dry in a clean area.
- Reassemble the respirator and replace any defective parts.
- Place in a clean, dry plastic bag or other airtight container.

Note: The Program Administrator will ensure an adequate supply of appropriate cleaning and disinfection material. If supplies are low, employees should contact their supervisor, who will inform the Program Administrator.

### *Maintenance*

Respirators are to be properly maintained at all times in order to ensure that they function properly and adequately protect the employee. Maintenance involves a thorough visual inspection for cleanliness and defects. Worn or deteriorated parts will be replaced prior to use.

No components will be replaced or repairs made beyond those recommended by the manufacturer. Repairs to regulators or alarms of atmosphere-supplying respirators will be

conducted by the manufacturer.

The following checklist will be used when inspecting respirators:

- Face piece:
  - cracks, tears, or holes
  - facemask distortion
  - cracked or loose lenses/face shield
- Head straps:
  - breaks or tears
  - broken buckles
- Valves:
  - residue or dirt
  - cracks or tears in valve material
- Filters/Cartridges:
  - approval designation
  - gaskets
  - cracks or dents in housing
  - proper cartridge for hazard
- Air supply systems:
  - breathing air quality/grade
  - condition of supply hoses
  - hose connections
  - settings on regulators and valves

Employees are permitted to leave their work area to perform limited maintenance on their respirator in a designated area that is free of respiratory hazards. Situations when this is permitted include to wash their face and respirator face piece to prevent any eye or skin irritation, to replace the filter, cartridge or canister, and if they detect vapor or gas breakthrough or leakage in the face piece or if they detect any other damage to the respirator or its components.

#### *Change Schedules*

Exposure levels during outdoor spraying are difficult to quantify because of variations in temperature, wind conditions, and other factors. Moldex-Metric was unable to provide cartridge breakthrough data for the contaminants of concern

(<http://www.moldex.com/test.html>, <http://www.moldex.com/test24.html>, and subsequent phone conversation indicating data was sparse for pesticides and herbicides). The OSHA Advisor Genius did not contain data on the contaminants either. As a result, SCC will take a conservative approach and require that employees wearing APRs with HEPA pre-filters for protection against pesticides and herbicides change the cartridges on their respirators after each day of use.

#### *Storage*

Respirators must be stored in a clean, dry area, and in accordance with the manufacturer's

recommendations. Each employee will clean and inspect their own air-purifying respirator in accordance with the provisions of this program and will store their respirator in a plastic bag. Each employee will have his/her name on the bag and that bag will only be used to store that employee's respirator.

### *Defective Respirators*

Respirators that are defective or have defective parts shall be taken out of service immediately.

If, during an inspection, an employee discovers a defect in a respirator, he/she is to bring the defect to the attention of his or her supervisor. Supervisors will give all defective respirators to the program administrator. The program administrator will decide whether to:

- Temporarily take the respirator out of service until it can be repaired.
- Perform a simple fix on the spot such as replacing a head strap.
- Dispose of the respirator due to an irreparable problem or defect.

When a respirator is taken out of service for an extended period of time, the respirator will be tagged out of service, and the employee will be given a replacement of similar make, model, and size. All tagged out respirators will be kept in the storage cabinet inside the maintenance office.

### **Training**

The program administrator will provide training to respirator users and their supervisors on the contents of the SCC Respiratory Protection Program and their responsibilities under it, and on the OSHA Respiratory Protection standard. Training will be provided by outside consultants with appropriate training in OSHA standards and the respiratory protection devices. Workers will be trained prior to using a respirator in the workplace. Supervisors will also be trained prior to using a respirator in the workplace or prior to supervising employees that must wear respirators.

The training course will cover the following topics:

- the SCC Respiratory Protection Program
- the OSHA Respiratory Protection standard
- respiratory hazards encountered at SCC and their health effects
- proper selection and use of respirators
- limitations of respirators
- respirator donning and user seal (fit) checks
- fit testing
- emergency use procedures
- maintenance and storage
- medical signs and symptoms limiting the effective use of respirators

Employees will be retrained annually or as needed (e.g., if they change departments and need to use a different respirator). Employees must demonstrate their understanding of

the topics covered in the training through hands-on exercises and a written test. Respirator training will be documented by the program administrator and the documentation will include the type, model, and size of respirator for which each employee has been trained and fit tested.

## **5.0 Program Evaluation**

The program administrator will conduct periodic evaluations of the workplace to ensure that the provisions of this program are being implemented. The evaluations will include regular consultations with employees who use respirators and their supervisors, site inspections, air monitoring and a review of records.

Problems identified will be noted in an inspection log and addressed by the program administrator. These findings will be reported to SCC management, and the report will list plans to correct deficiencies in the respirator program and target dates for the implementation of those corrections.

## **6.0 Documentation and Recordkeeping**

A written copy of this program and the OSHA standard is kept in the program administrator's office and is available to all employees who wish to review it.

Also maintained in the program administrator's office are copies of training and fit test records. These records will be updated as new employees are trained, as existing employees receive refresher training, and as new fit tests are conducted.

The program administrator will also maintain copies of the medical records for all employees covered under the respirator program. The completed medical questionnaire and the physician's documented findings are confidential and will remain with the physician. The company will only retain the physician's written recommendation regarding each employee's ability to wear a respirator.

**TABLE 3: SCC HAZARD ASSESSMENT – August 2000**

<b>Department</b>	<b>Contaminants</b>	<b>Exposure Level (8 hrs TWA)*</b>	<b>PEL</b>	<b>Controls</b>
Maintenance	Chlorothalonil	Low (material is mixed 2 oz to 1 gallon water)		Careful application to avoid overspray.
Maintenance	Diazinon/ Aromatic Petroleum Distillates		0.1 mg/m <sup>3</sup>	Careful application to avoid overspray.
Maintenance	Orthenex (Acephate)		1 mg/m <sup>3</sup> Chevron TLV	Careful application to avoid overspray.