

Alexander County Government
29 CFR 1910.134

RESPIRATORY PROTECTION POLICY
29 CFR 1910.134
WRITTEN PROGRAM INCLUDING TRAINING GUIDELINES

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I. PURPOSE

There are some employees of Alexander County that may be exposed to respiratory hazards during routine work-related operations. These hazards include biological agents, which may or may not be known. When engineering controls are not capable of reducing exposure to acceptable levels or are not feasible, the use of personal respiratory protective equipment becomes necessary. The purpose of this RPP program is to ensure that employees of Alexander County are protected from exposure to these respiratory hazards. This written program is designed to comply with the requirements of the Federal Occupational Safety and Health Administration (OSHA) Respiratory Protection Standard (29 CFR 1910.134) referred to as reference (1).

II. SCOPE AND APPLICATION

This program applies to all employees of Alexander County who may be required to wear respirators during normal work operations and while performing duties within the scope of their job description including investigation of a disease outbreak. 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 the responsibility of the employer.

III. RESPONSIBILITIES

A. Safety Coordinators/Risk Management/Emergency Services

The **Title of the Safety Coordinators and Risk Manager** will serve as the Program Administrator and will be responsible for implementing this Respiratory Protection Program. These people serve as the first contact for employees concerned with respiratory protection. The Safety Coordinator will communicate this with Risk Management. Duties will include:

- a. Identifying work areas, processes or tasks that require workers to don respirators and evaluating hazards
- b. Selection of respiratory protection
- c. Monitoring respirator use to ensure that respirators are used in accordance with their certification
- d. Arranging for and or conduct training
- e. Ensuring proper storage and maintenance of respiratory protection equipment
- f. Administering the medical surveillance program

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- g. Maintaining records required by the program
- h. Evaluating the program for compliance

B. Employees' Responsibility

Each employee named herein of Alexander County has the responsibility to wear their respirator when and where required and in the manner in which they were trained. **Employees** must also:

- a. Care for and maintain their respirators as instructed, and store them in a clean sanitary location
- b. Inform their Safety Coordinator if the respirator no longer fits well, and request a new one that fits properly
- c. Inform their Safety Coordinator of any respiratory hazards that they feel are not adequately addressed in the performance of their work duties and of any other concerns that they have regarding the program
- d. Inform the Safety Coordinator of any changes in their physical or health status that may impact their ability to wear a respirator

IV. PROGRAM ELEMENTS

A. Selection Procedures

The Safety Committee will select respirators to be used by personnel. Only respirators, filters, cartridges and canisters, certified by the National Institute for Occupational Safety and Health (NIOSH) will be chosen. The selection is based upon the physical and chemical properties of the air contaminant and the concentration level likely to be encountered by the employee. The Emergency Services will conduct a hazard evaluation for each operation where an airborne contaminant may be present in routine operations or during an emergency. The hazard evaluation will include:

- a. Identification and development of a list of hazardous substances that employees may encounter
- b. Review of work processes to determine where potential exposures to these hazardous substances may occur
- c. Exposure monitoring, if possible, to quantify potential hazardous exposures

B. Medical Surveillance

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Employees who are either required to wear respirators, or who choose to voluntarily don respirator protection, 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 or qualified licensed health care provider 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 or operation requiring respirator use.

A physician or other licensed health care professional (PLHCP) from Alexander County Health Department and Family Medicine and/or Medical Director will provide the medical screening as followed:

- a. The medical evaluation will be conducted using the questionnaire provided in accordance with Appendix A. The Risk Manager will provide a copy of this questionnaire to all employees requiring medical evaluations provided as Appendix A of this document
- b. Follow-up medical exams will be granted to employees as required by the standard, or if the employee experiences medical difficulties when wearing the respirator
- c. All examinations and questionnaires are to remain confidential between the employee and physician

C. Fit Testing

Before any employee may be required to use a respirator with a negative or positive pressure tight-fitting facepiece, the employee must be fit tested with the same make, model, style, and size respirator that will be used. This applies to respirators, including air purifying and SCBA. Employees volunteering to don a respirator may ask to be fit tested. The fit-testing procedures that will be used are attached as Appendix B. The Saccharin fit test will be used first and if the test subject fails to detect the sensitivity solution the Bitrix fit test procedures will serve as a second option.

D. General Use Procedures

- a. Employees will use their respirators under conditions specified by this program, and in accordance with the training they received 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
- b. All employees shall conduct user seal checks each time that they wear their respirator by conducting a positive/negative pressure check.

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- c. Employees must clean their respirators and change their filter/cartridges/canisters when required
- d. Employees are not permitted to wear tight-fitting respirators if they have any condition, such as facial scars, facial hair, glasses or missing dentures that prevents them from achieving a good seal
- e. For any malfunction of a respirator, (e.g., such as a breakthrough, facepiece leakage, or improperly working valve), the respirator wearer should inform their Safety Coordinator that the respirator is no longer performing properly
- f. All employees wearing a supplied air respirator will operate using the buddy system. Buddies shall assist workers who experience a malfunction

E. Cleaning

- a. Respirators are to be regularly cleaned and disinfected
- b. Respirators should be cleaned after each use
- c. The following procedure is to be used when cleaning and disinfecting respirators:
 - 1. Disassemble respirator, removing any filter
 - 2. Wash the hood/facepiece and associated parts in a mild detergent with warm water
 - 3. Rinse completely in clean warm water
 - 4. Wipe the respirator with disinfectant wipes to kill germs
 - 5. Air-dry in a clean area
 - 6. Reassemble the respirator and replace any defective parts
 - 7. Place in a clean, dry plastic case or other airtight container
 - 8. The Safety Coordinator will ensure an adequate supply of appropriate cleaning and disinfectant material is available. If supplies are low, employees should contact the Safety Coordinator

F. Maintenance

- a. Respirators are to be properly maintained at all times in order to ensure that they function properly and adequately protect the employee
- b. 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. Respirator will be inspected after each use utilizing the form in Appendix C

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G. Storage

- a. Respirators must be stored in a clean, dry area, and in accordance with the manufacturer's recommendations. Each employee will clean, inspect and store their own respirators in a clean bag labeled with their name
- b. The Safety Coordinator will store the supply of respirators and respirator component in their original manufacturer's packaging if available

H. Change Schedules

Employees wearing PAPRs with High Efficiency Particulate Cartridge for protection against a biological agent shall change the cartridge on their respirators when they first begin to experience difficulty breathing (resistance) while wearing the respirator or when they come into contact with a biological agent such as anthrax

I. Employee Training

No employee will be permitted to work with a respirator until he or she has received training in respiratory protection. The training will be provided or coordinated by the Safety Coordinator and will cover the following topics:

- a. Explanation of the hazard and what would happen if respiratory protection was not used
- b. Elements of the Respiratory Protection Program and the employee's responsibility under it
- b. Selection of respiratory protection and who is authorized to modify the selection
- c. Medical surveillance program and the Respirator Fitting Form
- d. Function, capabilities, and limitations of the selected respiratory protection
- e. Explanation of the operation of the respiratory protection, including how to don, check the fit, and wear the respirator properly
- f. Respirator maintenance including cleaning, inspection, and storage
- g. Recognition and handling of emergency situations

J. Program Evaluation

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The Safety Committee will conduct periodic evaluations of the workplace and operating conditions to ensure the provisions of this program are being implemented. The evaluation will include regular consultations with employees who use respirators, sampling results and review of records.

K. Documentation and Recordkeeping

For each employee assigned a respirator, the following records will be maintained in the noted locations:

- a. Medical records, including copies of the Respirator Fitting Form and results of any physical examinations by the contracted Occupational Medicine Center
- b. Training records by the Risk Manager
- c. Fit testing records by the Risk Manager

Appendix A

Annual Respirator Medical Evaluation Questionnaire and Fitting Form

Confidential Medical Record

PART 1. PERSONAL INFORMATION

Date: _____ Name: _____ SS#: _____

(last) (first) (middle)

Age: _____ Sex (circle one): Male Height: _____ ft. Weight: _____ lbs.
Female _____ in.

Job Title: _____ Department: _____

A phone number where you can be reached by the health care professional who reviews this questionnaire: _____ The best time to phone you at this number: _____

You can reach the health care professional who reviews this questionnaire at: _____

Have you worn a respirator in the last year?(circle one): Yes No

If "yes," what type(s): _____

HEALTH QUESTIONS: Please circle "yes" or "no" to the following.

1. Do you currently smoke tobacco, or have you smoked tobacco in the last month: Yes No

2. Have you ever had any of the following conditions?

a. Seizures (fits): Yes No

b. Diabetes (sugar disease): Yes No

c. Allergic reactions that interfere with your breathing: Yes No

d. Claustrophobia (fear of closed-in places): Yes No

e. Trouble smelling odors: Yes No

3. Have you ever had any of the following pulmonary or lung problems?

a. Asbestosis: Yes No

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- b. Asthma: Yes No
- c. Chronic bronchitis: Yes No
- d. Emphysema: Yes No
- e. Pneumonia: Yes No
- f. Tuberculosis: Yes No
- g. Silicosis: Yes No
- h. Pneumothorax (collapsed lung): Yes No
- i. Lung cancer: Yes No
- j. Broken ribs: Yes No
- k. Any chest injuries or surgeries: Yes No
- l. Any other lung problem that you've been told about: Yes No

4. Do you currently have any of the following symptoms of pulmonary or lung illness?

- a. Shortness of breath: Yes No
- b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline: Yes No

- c. Shortness of breath when walking with other people at an ordinary pace on level ground: Yes No
- d. Have to stop for breath when walking at your own pace on level ground: Yes No
- e. Shortness of breath when washing or dressing yourself: Yes No
- f. Shortness of breath that interferes with your job: Yes No
- g. Coughing that produces phlegm (thick sputum) not associated with a cold: Yes No
- h. Coughing that wakes you early in the morning: Yes No
- i. Coughing that occurs mostly when you are lying down: Yes No
- j. Coughing up blood in the last month: Yes No
- k. Wheezing: Yes No
- l. Wheezing that interferes with your job: Yes No
- m. Chest pain when you breathe deeply: Yes No
- n. Any other symptoms that you think may be related to lung problems: Yes No

5. Have you ever had any of the following cardiovascular or heart problems?

- a. Heart attack: Yes No
- b. Stroke: Yes No
- c. Angina: Yes No
- d. Heart failure: Yes No
- e. Swelling in your legs or feet (not caused by walking): Yes No
- f. Heart arrhythmia (heart beating irregularly): Yes No
- g. High blood pressure: Yes No
- h. Any other heart problem that you've been told about: Yes No

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6. Have you ever had any of the following cardiovascular or heart symptoms?
- a. Frequent pain or tightness in your chest: Yes No
 - b. Pain or tightness in your chest during physical activity: Yes No
 - c. Pain or tightness in your chest that interferes with your job: Yes No
 - d. In the past two years, have you noticed your heart skipping or missing a beat: Yes No
 - e. Heartburn or indigestion that is not related to eating: Yes No
 - f. Any other symptoms that you think may be related to heart or circulation problems: Yes No
7. Do you currently take medication for any of the following problems?
- a. Breathing or lung problems: Yes No
 - b. Heart trouble: Yes No
 - c. Blood pressure: Yes No
 - d. Seizures (fits): Yes No
 - e. Other _____
8. If you've used a respirator, have you ever had any of the following problems? (If you've never used a respirator, check the following space and go to question 9:)
- a. Eye irritation: Yes No
 - b. Skin allergies or rashes: Yes No
 - c. Anxiety: Yes No
 - d. General weakness or fatigue: Yes No
 - e. Any other problem that interferes with your use of a respirator: Yes No
9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire: Yes No

The following questions are voluntary:

10. Have you ever lost vision in either eye (temporarily or permanently): Yes No
11. Do you currently have any of the following vision problems?
- a. Wear contact lenses: Yes No
 - b. Wear glasses: Yes No
 - c. Color blind: Yes No
 - e. Any other eye or vision problem: Yes No
12. Have you ever had an injury to your ears, including a broken eardrum: Yes No
13. Do you currently have any of the following hearing problems?

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- a. Difficulty hearing: Yes No
- b. Wear a hearing aid: Yes No
- c. Any other hearing or ear problem: Yes No

14. Have you ever had a back injury: Yes No

15. Do you currently have any of the following musculoskeletal problems?
- a. Weakness in any of your arms, hands, legs, or feet: Yes No
 - b. Back pain: Yes No
 - c. Difficulty fully moving your arms and legs: Yes No
 - d. Pain or stiffness when you lean forward or backward at the waist: Yes No
 - e. Difficulties fully moving your head up or down: Yes No
 - f. Difficulty fully moving your head side to side: Yes No
 - g. Difficulty bending at your knees: Yes No
 - h. Difficulty squatting to the ground: Yes No
 - i. Climbing a flight of stairs or a ladder carrying more than 25 lbs: Yes No
 - j. Any other muscle or skeletal problem that interferes with using a respirator:
Yes No

16. Has your health changed within the past year?: Yes No If “yes”, describe:

PART 2. WORKING ENVIRONMENT
(to be completed by Program Administrator)

Categorization of Workload* Light Moderate Heavy

Will the user be working under hot conditions (temperature exceeding 77° F(circle one):

Yes No

Hazards to be protected against (e.g., dust, fumes, vapors): _____

Type of respirator to be assigned: _____ Filtering Face Piece
_____ Half-face air purifying
_____ Full-face air purifying
_____ Atmosphere Supplying (SCBA)
_____ PAPR

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Special Considerations: _____

PART 3. MEDICAL EVALUATION
(to be completed by a licensed health care professional)

_____ This person can wear a respirator without restrictions
_____ This person can wear a respirator subject to the following restrictions:

_____ This person cannot use a respirator of the type described above.

Physician's Signature _____ *Date*

PART 4. FITTING EVALUATION
(to be completed by Program Administrator)

Type of respirator fitted: _____ Air purifying
_____ Atmosphere supplying
_____ Unable to fit (see comments)

Name, model number and size of respirator fitted: _____

NIOSH Approval Number(s): _____

Fit tests conducted: _____ Negative Pressure _____ Saccharin
_____ Positive Pressure _____ Bitrix

Fitted by: _____ Date: _____

Additional Comments: _____

Fit-Testing Procedures

General Procedures

1. The test subject shall be allowed to pick the most acceptable respirator from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the user.
2. Prior to the selection process, the test subject shall be shown how to put on a respirator, how it should be positioned on the face, how to set strap tension and how to determine an acceptable fit. A mirror shall be available to assist the subject in evaluating the fit and positioning of the respirator. This instruction may not constitute the subject's formal training on respirator use, because it is only a review.
3. The test subject shall be informed that he/she is being asked to select the respirator that provides the most acceptable fit. Each respirator represents a different size and shape, and if fitted and used properly, will provide adequate protection.
4. The test subject shall be instructed to hold each chosen facepiece up to the face and eliminate those that obviously do not give an acceptable fit.
5. The more acceptable facepieces are noted in case the one selected proves unacceptable; the most comfortable mask is donned and worn at least ten minutes to assess comfort. If the test subject is not familiar with using a particular respirator, the test subject shall be directed to don the mask several times and to adjust the straps each time to become adept at setting proper tension on the straps.
6. Assessment of comfort shall include a review of the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator:
 - a) Position of the mask on the nose
 - b) Room for eye protection
 - c) Room to talk
 - d) Position of mask on face and cheeks

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7. The following criteria shall be used to help determine the adequacy of the respirator fit:
 - a) Chin properly placed
 - b) Adequate strap tension, not overly tightened
 - c) Fit across nose bridge
 - d) Tendency of respirator to slip
 - e) Self-observation in mirror to evaluate fit and respirator position
8. The test subject shall conduct a user seal check using negative and positive pressure seal checks as demonstrated by the program administrator. Before conducting the negative or positive pressure checks, the subject shall be told to seat the mask on the face by moving the head from side to side and up and down slowly while taking in a few slow deep breaths. Another facepiece will be selected if the test subject fails the user seal check tests.
9. The test shall not be conducted if there is any hair growth between the skin and the facepiece-sealing surface, such as stubble beard growth, beard, mustache, or sideburns which cross the respirator-sealing surface. Any type of apparel that interferes with a satisfactory fit shall be altered or removed.
10. If a test subject exhibits difficulty in breathing during the tests, he/she shall be referred to a physician or other licensed health care professional, as appropriate, to determine whether the test subject can wear a respirator while performing his or her duties.
11. If the employee finds the fit of the respirator unacceptable, the test subject shall be given the opportunity to select a different respirator and to be retested.
12. Prior to the commencement of the fit test, the test subject shall be given a description of the fit test and the test subject's responsibilities during the test procedure. The description of the process shall include a description of the test exercises that the subject will be performing. The respirator to be tested shall be worn for at least ten minutes before the start of the fit test.
13. The fit test shall be performed while the test subject is wearing any applicable safety equipment that may be worn during the actual respirator use, which could interfere with respirator fit.

SACCHARIN SOLUTION AEROSOL PROTOCOL

- A. Taste Threshold Screening.

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1. Threshold screening as well as fit testing employees shall use an enclosure about the head and shoulders that is approximately 12 inches in diameter by 14 inches tall with at least the front portion clear and that allows free movement of the head when a respirator is worn. An enclosure hood assembly, which comes with most fit testing kits, is adequate.
2. The test enclosure shall have a three-quarter inch hole in front of the test subject's nose and mouth area to accommodate the nebulizer nozzle.
3. The entire screening and testing procedure shall be explained to the test subject prior to the conduct of the screening test.
4. The test subject shall don the test enclosure. For the threshold screening test, he shall breathe through his open mouth with tongue extended.
5. Using a DeVilbiss Model 40 Inhalation Medication Nebulizer, the test conductor shall spray the threshold check solution into the enclosure. This nebulizer shall be clearly marked to distinguish it from the fit test solution nebulizer or equivalent.
6. The threshold check solution consists of 0.83 grams of sodium saccharin, USP in water. It can be prepared by putting 1 cc of the test solution (see C6 below) in 100 cc of water.
7. To produce the aerosol, the nebulizer bulb is firmly squeezed so that it collapses completely then released and allowed to fully expand.
8. Ten squeezes are repeated rapidly and then the test subject is asked whether the saccharin can be tasted.
9. If the first response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the saccharin is tasted.
10. If the second response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the saccharin is tasted.
11. The test conductor will take note of the number of squeezes required to elicit a taste response.
12. If the saccharin is not tasted after 30 squeezes (Step 9), the test subject may not perform the saccharin fit test and shall use the Bitrix test.
13. If a taste response is elicited, the test subject shall be asked to take note of the taste for reference in the fit test.
14. Correct use of the nebulizer means that approximately 1 cc of liquid is used at a time in the nebulizer body.
15. The nebulizer shall be thoroughly rinsed in water, shaken dry, and refilled at least each morning and afternoon or at least every four hours.

B. Respirator Selection.

Respirators shall be selected as described in section above, except that each respirator shall be equipped with a particular filter cartridge.

C. Fit Test.

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1. Each test subject shall wear his respirator for at least 10 minutes before starting the fit test.
2. The test subject shall don the enclosure while wearing the respirator selected in section above. This respirator shall be properly adjusted and equipped with a particular filter cartridge.
3. The test subject may not eat, drink (except plain water), or chew gum for 15 minutes before the test.
4. A second DeVilbiss Model 40 Inhalation Medication nebulizer is used to spray the fit test solution into the enclosure. This nebulizer shall be clearly marked to distinguish it from the screening test solution nebulizer or equivalent.
5. The fit test solution is prepared by adding 83 grams of sodium saccharin to 100 cc of warm water.
6. As before, the test subject shall breathe through the open mouth with tongue extended.
7. The nebulizer is inserted into the hole in front of the enclosure and the fit test solution is sprayed into the enclosure using the same technique as for the taste threshold screening and the same number of squeezes required to elicit a taste response in the screening.
8. After generation of the aerosol the test subject shall be instructed to perform the following exercise for one minute each:
 - a. Normal breathing.
 - b. Deep breathing. Be certain breaths are deep and regular.
 - c. Turning head from side-to-side. Be certain movement is complete. Alert the test subject not to bump the respirator on the shoulders. Have the test subject inhale when his head is at either side.
 - d. Nodding head up-and-down. Be certain motions are complete and made about every second. Alert the test subject not to bump the respirator on the chest. Have the test subject inhale when his head is in the fully up position.
 - e. Talking. Talk aloud and slowly for several minutes. The following paragraph is called the Rainbow Passage. Reading it will result in a wide range of facial movements, and thus be useful to satisfy this requirement. Alternative passages which serve the same purpose may also be used.

Rainbow Passage

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

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beyond reach, his friends say he is looking for the pot of gold at the end of the rainbow.

- f. Normal breathing.
- 9. Every 30 seconds, the aerosol concentration shall be replenished using one-half the number of squeezes as initially.
- 10. The test subject shall so indicate to the test conductor if at any time during the fit test the taste of saccharin is detected.
- 11. If the saccharin is detected the fit is deemed unsatisfactory and a different respirator shall be tried.
- 12. Successful completion of the test protocol shall allow the use of the tested respirator in contaminated atmospheres up to 10 times the PEL. In other words this protocol may be used to assign protection factors no higher than ten.

RESPIRATOR INSPECTION FORM

User's Name _____ Make of Respirator _____

NIOSH/MSHA Approval: _____ Model of Respirator _____

HOOD/ FACEPIECE		OK	
Defective	N/A		
Cleanliness			
Flexibility			
Lens			
General Condition			
HEADSTRAPS		OK	
Defective	N/A		
Elasticity			
Buckles and Attachments			
General Condition			
INHALATION AND EXHALATION VALVES		OK	
Defective	N/A		
Valve Condition			
Valve Cover			
General Condition			
AIR-PURIFYING ELEMENTS		OK	
Defective	N/A		
Correct Cartridge, Filter or Canister for Hazard			
Correct Installation			
Gaskets Present			
Cartridge or Filter Cleanliness			
General Condition of Cartridge Holders			

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General Condition of Cartridge			
STORAGE			OK
Defective	N/A		
General			

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