

Respiratory Protection Policy

Keene State College

October 2008

Keene State College has a voluntary use policy with respect to respiratory protection. This means there are no known job tasks where Permissible Exposure Limits (PELs) are exceeded¹. However, if an employee chooses to wear a respirator the College will provide the employee with a respirator for their comfort in accordance with this policy. The following procedures must be followed if you choose to wear a respirator.

Respirators

A respirator is a device that protects you from inhaling dangerous substances, such as chemicals and infectious particles. Selecting the right respirator requires an assessment of all the workplace operations, processes or environments that may create a respiratory hazard. There are four main types of respirators:

- **Particulate Respirators** only protect against particles (e.g., dust). They do not protect against chemicals, gases, or vapors, and are intended only for low hazard levels. The “N-95” filtering facepiece² respirator or “dust mask” is one type of particulate respirator. Particulate respirators filter out dusts, fumes, and mists, are usually disposable dust masks or respirators with disposable filters, and must be replaced when they become discolored, damaged, or clogged.
- **Chemical Cartridge/Gas Mask Respirators** filter or clean chemical gases out of the air as you breathe. This respirator includes a facepiece or mask, a replaceable cartridge or canister to remove the contaminant, and may require more than one cartridge to protect against multiple hazards. They are color coded, depending on the type of chemical hazard. It is very important to choose the correct type of cartridge to protect you from the chemical hazard you may be exposed to.
- **Powered Air-Purifying Respirators (PAPR)** use a fan to draw air through the filter to the user. They use the same type of filters/cartridges as other respirators, but they are easier to breathe through.
- **Self-Contained Breathing Apparatus (SCBA)** use their own air tank to supply clean air, so you don’t need to worry about filters. They are commonly used by firefighters and require special training and provide clean air when the air round you is simply too dangerous to breathe.

If you do not use a respirator correctly, it is very likely that it will not adequately protect you and may even hurt you.

Potential Hazards

Masks and respirators reduce exposure to the hazard, but if the exposure is such that it is greater than the filter is designed to handle, the filter may not be effective in providing the required protection. Even respirators that

¹ If you think that your job responsibilities may expose you to substances at concentrations above OSHA’s PELs please contact the Environmental Health and Safety (EHS) Manager, who will make arrangements to have your workspace evaluated and tested.

² **Filtering facepiece (dust mask)** means a negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium (1910.134(b)).

have been fit-tested may have a small amount of leakage. Also cartridges, filters, and masks can get old and have a limited service life—they must be changed periodically during use.

Note about beards: Anything that prevents the face mask from fitting tightly against your face may cause leakage and will greatly diminish the effectiveness of a dust mask or tight-fitting respirator. If your respirator requires a tight fit, you must trim back your beard so that it will not interfere with the face-facepiece seal.

Employees must be medically evaluated before being assigned to use a respirator because breathing through a respirator is more difficult than breathing in open air. This can be a hazard for people with lung diseases (asthma or emphysema), or people with claustrophobia. People with vision problems may have trouble seeing while wearing a mask or hood.

Voluntary Use of Respirators

OSHA 1910.134(c)(2) (see Attachment A) states that the employer may provide respirators at the request of employees or permit employees to use their own respirators if the employer determines that the respirator use will not in itself create a hazard. The employer shall:

- Provide the respirator users with the information contained in Appendix D of 1910.134 (“Information for Employees Using Respirators When Not Required Under the Standard”) (see Attachment B).
- Establish and implement a written respiratory protection program (Keene State College Respiratory Protection Program Standard Operating Procedure) to ensure that any employee using a respirator is medically able to wear a respirator and that the respirator is cleaned, stored, and maintained so that its use does not present a health hazard to the user.

If an employee wishes to wear a respirator, he/she must complete the following steps:

- Medical evaluation,
- Instruction in the cleaning, maintenance, and proper storage of the respirator.

The only exception to this rule is for filtering face pieces (dust masks)³. The exception states that if a respirator is used voluntarily (i.e. in a situation where exposure above an established exposure limit is not anticipated) a medical evaluation and instruction are not required. However, the employer shall provide the respirator user with the information contained in Appendix D of 1910.134 (Attachment B).

Medical Evaluation

Attached is the OSHA medical evaluation form that you will need to fill out so that you can be cleared for respirator use. You can either have your own physician provide the necessary clearance or you can call the Occupational Health at the Cheshire Medical Center (354-6585) and make an appointment with them.

You must bring the completed OSHA Respirator Medical Evaluation Questionnaire (see Attachment C) to the appointment. A doctor or other licensed health care professional (PLHCP) will review the completed form and perform any necessary tests that the PLHCP deems necessary to make the final determination.

³ *Exception: Employers are not required to include in a written respiratory protection program those employees whose only use of respirators involves the voluntary use of filtering facepieces (dust masks)(OSHA1910.134(c)(2)(ii).*

After the appointment, you should receive a “Clearance Form” that must be returned to the Environmental Health and Safety (EHS) office. The Clearance Form and a copy of your completed Medical Evaluation Questionnaire will be kept in a locked Confidential File in the Physical Plant office.

Summary

If you voluntarily choose to wear a dust mask:

- Please read Attachment B (*Information for Employees Using Respirators When Not Required Under the Standard*), sign the bottom, and return the signed acknowledgement to the Environmental Health and Safety Office (Mailstop 2502).

If you want to wear a full-face or half-face tight-fitting respirator (for comfort use only) you must:

- Read Attachment B, sign the bottom, and return the signed acknowledgement to the EHS Office.
- Fill out the attached Medical Evaluation Form (Appendix C) and have it evaluated by a PLHCP.
- Provide a copy of the clearance form to the EHS Office.
- After you have been approved for respirator use, the EHS manager will provide you with a respirator, and instructions on how to clean, store, and maintain your respirator (see Attachment E). EHS can also arrange to have you fit-tested if you would like to ensure that your respirator is properly fitted.

The following table summarizes the requirements of 1910.134:

1910.134 Respiratory protection requirement	Voluntary Use		Required		
	Dust Mask	All other Respirators	Dust Mask	Tight-fitting respirator	Loose-fitting Facepiece
Written respiratory program	No	Yes	Yes	Yes	Yes
Medical Evaluation	No	Yes	Yes	Yes	Yes
Fit-testing	No	No	Yes	Yes	No
Annual training	No	No	Yes	Yes	Yes
Appendix D*	Yes	Yes	No	No	No
Clean, inspect, maintain, store**	No	Yes	Yes	Yes	Yes
Beards permitted?	Yes***	Yes***	No	No	Yes
*Appendix D (Mandatory Information for Employees Using Respirators When Not Required Under the Standard) **Follow manufacturer instructions or procedures found in 1910.134, Appendix B-2. ***Beards will greatly reduce the effectiveness of a dust mask or tight-fitting respirator. You should trim back your beard or mustache if you choose to wear a respirator.					

References:

OSHA Bulletin—General Respiratory Protection Guidance for Employers and Workers:

http://www.osha.gov/dts/shib/respiratory_protection.pdf

News from the Industrial Hygiene Group REM NEWs, Purdue University, Summer 2007:

<http://www.purdue.edu/rem/home/files/news/2007Summer.pdf>

Keene State College Respiratory Protection Program Standard Operating Procedure, 2/1/05:

<http://www.keene.edu/ehs/Respirator%20Program.pdf>

Oregon OSHA Fact Sheet—Voluntary Respirator Use:

http://www.osha.oregon.gov/pdf/pubs/fact_sheets/fs05.pdf

ATTACHMENT A

OSHA Regulations (Respiratory Protection):

1910.134(c)(2) Where respirator use is not required:

1910.134(c)(2)(i)

An employer may provide respirators at the request of employees or permit employees to use their own respirators, if the employer determines that such respirator use will not in itself create a hazard. If the employer determines that any voluntary respirator use is permissible, the employer shall provide the respirator users with the information contained in Appendix D to this section ("Information for Employees Using Respirators When Not Required Under the Standard"); and

1910.134(c)(2)(ii)

In addition, the employer must establish and implement those elements of a written respiratory protection program necessary to ensure that any employee using a respirator voluntarily is medically able to use that respirator, and that the respirator is cleaned, stored, and maintained so that its use does not present a health hazard to the user. Exception: **Employers are not required to include in a written respiratory protection program those employees whose only use of respirators involves the voluntary use of filtering facepieces (dust masks).**

1910.134(c)(3)

The employer shall designate a program administrator who is qualified by appropriate training or experience that is commensurate with the complexity of the program to administer or oversee the respiratory protection program and conduct the required evaluations of program effectiveness.

1910.134(c)(4)

The employer shall provide respirators, training, and medical evaluations at no cost to the employee.

ATTACHMENT B

Appendix D to Sec. 1910.134 (Mandatory) Information for Employees Using Respirators When Not Required Under the Standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.
4. Keep track of your respirator so that you do not mistakenly use someone else's respirator. [63 FR 1152, Jan. 8, 1998; 63 FR 20098, April 23, 1998]

By my signature, I acknowledge that I am not required to wear respiratory protection and that I understand the above precautions.

NAME: _____

SIGNATURE: _____

DATE: _____

Department: _____

A copy of this signed form must be sent to the Environmental Health and Safety Office (Mailstop 2502).

ATTACHMENT C

Appendix C to Sec. 1910.134: OSHA Respirator Medical Evaluation Questionnaire (Mandatory)

To the employer: Answers to questions in Section 1, and to question 9 in Section 2 of Part A, do not require a medical examination.

To the employee:

Can you read (circle one): Yes/No

Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care professional who will review it.

Part A. Section 1. (Mandatory) The following information must be provided by every employee who has been selected to use any type of respirator (please print).

1. Today's date: _____

2. Your name: _____

3. Your age (to nearest year): _____

4. Sex (circle one): Male/Female

5. Your height: _____ ft. _____ in.

6. Your weight: _____ lbs.

7. Your job title: _____

8. A phone number where you can be reached by the health care professional who reviews this questionnaire (include the Area Code): _____

9. The best time to phone you at this number: _____

10. Has your employer told you how to contact the health care professional who will review this questionnaire (circle one): Yes/No

11. Check the type of respirator you will use (you can check more than one category):

a. _____ N, R, or P disposable respirator (filter-mask, non- cartridge type only).

b. _____ Other type (for example, half- or full-facepiece type, powered-air purifying, supplied-air, self-contained breathing apparatus).

12. Have you worn a respirator (circle one): Yes/No

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

Part A. Section 2. (Mandatory) Questions 1 through 9 below must be answered by every employee who has been selected to use any type of respirator (please circle "yes" or "no").

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
- 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): 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

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

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

Questions 10 to 15 below must be answered by every employee who has been selected to use either a full-facepiece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is 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
- d. Any other eye or vision problem: Yes/No

12. Have you **ever had** an injury to your ears, including a broken ear drum: Yes/No

13. Do you **currently** have any of the following hearing problems?

- 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. Difficulty 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

Part B Any of the following questions, and other questions not listed, may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.

1. In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen: Yes/No

If "yes," do you have feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you're working under these conditions: Yes/No

2. At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact with hazardous chemicals: Yes/No

If "yes," name the chemicals if you know them: _____

3. Have you ever worked with any of the materials, or under any of the conditions, listed below:

- a. Asbestos: Yes/No
- b. Silica (**e.g.**, in sandblasting): Yes/No
- c. Tungsten/cobalt (e.g., grinding or welding this material): Yes/No
- d. Beryllium: Yes/No
- e. Aluminum: Yes/No
- f. Coal (for example, mining): Yes/No
- g. Iron: Yes/No
- h. Tin: Yes/No
- i. Dusty environments: Yes/No
- j. Any other hazardous exposures: Yes/No

If "yes," describe these exposures: _____

4. List any second jobs or side businesses you have: _____

5. List your previous occupations: _____

6. List your current and previous hobbies: _____

7. Have you been in the military services? Yes/No

If "yes," were you exposed to biological or chemical agents (either in training or combat): Yes/No

8. Have you ever worked on a HAZMAT team? Yes/No

9. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications): Yes/No

If "yes," name the medications if you know them: _____

10. Will you be using any of the following items with your respirator(s)?

- a. HEPA Filters: Yes/No
- b. Canisters (for example, gas masks): Yes/No
- c. Cartridges: Yes/No

11. How often are you expected to use the respirator(s) (circle "yes" or "no" for all answers that apply to you)?:

- a. Escape only (no rescue): Yes/No
- b. Emergency rescue only: Yes/No
- c. Less than 5 hours **per week**: Yes/No
- d. Less than 2 hours **per day**: Yes/No
- e. 2 to 4 hours per day: Yes/No
- f. Over 4 hours per day: Yes/No

12. During the period you are using the respirator(s), is your work effort:

- a. **Light** (less than 200 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift: _____ hrs. _____ mins.

Examples of a light work effort are **sitting** while writing, typing, drafting, or performing light assembly work; or **standing** while operating a drill press (1-3 lbs.) or controlling machines.

- b. **Moderate** (200 to 350 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift: _____ hrs. _____ mins.

Examples of moderate work effort are **sitting** while nailing or filing; **driving** a truck or bus in urban traffic; **standing** while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level; **walking** on a level surface about 2 mph or down a 5-degree grade about 3 mph; or **pushing** a wheelbarrow with a heavy load (about 100 lbs.) on a level surface.

- c. **Heavy** (above 350 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift: _____ hrs. _____ mins.

Examples of heavy work are **lifting** a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; **shoveling**; **standing** while bricklaying or chipping castings; **walking** up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lbs.).

13. Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using your respirator: Yes/No

If "yes," describe this protective clothing and/or equipment: _____

14. Will you be working under hot conditions (temperature exceeding 77 deg. F): Yes/No

15. Will you be working under humid conditions: Yes/No

16. Describe the work you'll be doing while you're using your respirator(s):

17. Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for example, confined spaces, life-threatening gases):

18. Provide the following information, if you know it, for each toxic substance that you'll be exposed to when you're using your respirator(s):

Name of the first toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

Name of the second toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

Name of the third toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

The name of any other toxic substances that you'll be exposed to while using your respirator:

19. Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and well-being of others (for example, rescue, security):

[63 FR 1152, Jan. 8, 1998; 63 FR 20098, April 23, 1998]

ATTACHMENT D

Appendix B-2 to § 1910.134: Respirator Cleaning Procedures (Mandatory)

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 facepiece, replacing filters, cartridges, and canisters where necessary.
- H. Test the respirator to ensure that all components work properly.