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RESPIRATORY PROTECTION PROGRAM THE UNIVERSITY OF PITTSBURGH

1. Purpose

Faculty and staff at the University of Pittsburgh must be protected from inhaling atmospheres that exceed hazardous concentrations of dusts, fumes, mists, vapors, gases and microorganisms. This University of Pittsburgh Respirator Program contains guidelines for administering an effective respiratory protection program and provides the information, training, and equipment necessary for proper selection, use and maintenance of respirators. The Program is updated annually to address the changing needs of the University.

This document serves as a standard operating procedure (SOP) for faculty and staff who are required to wear a respirator during work assignments. The University shall take prudent measures to implement engineering or work practice controls to eliminate hazardous conditions. Where such controls are inadequate or prove ineffective, respiratory protection may be required. These guidelines permit some exemptions from requirements for respirator use during emergencies or for respirators worn on a voluntarily basis. These exemptions are subject to the discretion of the Department of Environmental Health & Safety (EH&S).

2. References

1998 OSHA Respiratory Protection Standard (29 CFR Part 1910.134), 1996 NIOSH revision of particulate respirator ratings and 2009 OSHA protection factor modifications.

3. Respirator Use

The University of Pittsburgh will provide appropriate respiratory protection when it is necessary to protect the health of an employee. The procedure to be followed to obtain a respirator is detailed in Appendix A. Respiratory protection shall be used:

- 3.1. For non-routine operations involving exposures to air contaminants above OSHA permissible exposure limits.
- 3.2. For emergency operations involving air contaminant exposures that may be above allowable limits during a spill or during the investigation of a possible terrorist act.
- 3.3. As a temporary measure to reduce employee exposures to air contaminants until engineering or work practice controls can be implemented.
- 3.4. For permanent exposure control when engineering controls are not feasible.
- 3.5. As a precaution to prevent exposures, such as during asbestos abatement, lead abatement, chemical spill cleanup.

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3.6. When treating or interacting with patients suspected of having tuberculosis, flu or other communicable disease transmissible by aerosol release.

3.7. To prevent exposures to hazardous microorganisms when working in BSL3 lab.

4. **Medical Evaluations**

Prior to assigning respirators to workers, a determination must be made to assure that employees are physically able to perform the work while wearing the equipment. This medical evaluation will be initiated by having each potential respirator wearer complete the Respiratory Protection Medical Form (Appendix B). This confidential questionnaire is reviewed by a licensed health care provider who determines if the employee has sufficient health status to safely wear respiratory protection or if additional medical examination is needed. The initial medical evaluation and subsequent medical exams deemed necessary by the University's designated clinicians are provided at no cost to the employee.

5. **Responsibilities**

5.1. Deans, Directors, and Department Chairpersons have overall responsibility for implementation of the Respiratory Protection Program within their departments.

5.2. The employee's immediate supervisor is responsible for arranging and enforcing the use of respiratory protection. The supervisor is also responsible to:

5.2.1. Consider engineering or administrative controls that would eliminate the need for respiratory protection in the department.

5.2.2. Work with EH&S to implement the Respiratory Protection Program if engineering or work practice controls are determined to be infeasible.

5.2.3. Develop Standard Operating Procedures (SOPs) for department activities that require respirator use.

5.2.4. Report any accidents, injury or illness that may be related to the use of respiratory protection.

5.3. Department of Environmental Health and Safety is responsible to:

5.3.1. Develop this Program and the associated technical and administrative decisions necessary for program implementation.

5.3.2. Monitor the workplace to determine employee exposures and the need for respiratory protection.

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5.3.3. Consult with the CHO or department supervision to select the best type of respirator for their purpose.

5.3.4. Perform fit tests on respirator wearers.

5.3.5. Train employees required to wear respirators.

5.3.6. Conduct audits to determine program effectiveness.

5.4. Employees are responsible to:

5.4.1. Use only respirators issued or approved by EH&S in accordance with the training and fit testing received. Employees who wear respirators on a voluntary basis must abide by Appendix D of this Program.

5.4.2. Wear respirators only as required for designated tasks and in specified locations.

5.4.3. Check the face piece seal of the mask each time the respirator is worn.

5.4.4. Guard against damage to the respirators and report any malfunction to their supervisors.

5.4.5. Be clean-shaven in the area between the sealing surface of the respirator and the face. Facial hair must not interfere with operation of inhalation and exhalation valves.

5.4.6. Wear corrective lenses with full face respirators that use special eyeglass frames designed to fit inside the face piece.

5.5. Department Chemical Hygiene Officers (CHOs) may serve as a liaison between the department and EH&S for the dissemination of information or resolution of concerns.

6. Selections and Use of Respirators

6.1.1. All respirators used at the University of Pittsburgh shall be certified by the National Institute for Occupational Safety and Health (NIOSH).

6.1.2. All respirators shall be used and maintained in accordance with manufacturer's instructions.

6.1.3. The selection of respirators depends upon the concentration of airborne contaminants likely to be encountered and the NIOSH protection factor assigned to each type of respirator as shown below:

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NIOSH RESPIRATOR TYPE AND PROTECTION FACTORS

Filtering Face Piece Dust Mask	10x TLV or PEL
Half-Mask, Air-Purifying Respirator	10x TLV or PEL
Full-Face (FF), Air Purifying Respirator	50x TLV or PEL
PAPRs with loose fitting hood or half face piece	25 and 50x TLV or PEL
PAPR with full face mask or NIOSH certified helmet	1000x TLV or PEL

Respirators meeting the above minimum protection factor requirements shall be used whenever the Threshold Limit Value (TLV) is exceeded.

6.1.4. Procedures for wearing respirators:

- 6.1.4.1. Only clean, sanitized, and inspected respirators shall be worn by the individual for whom they were fit tested and approved.
- 6.1.4.2. A positive and negative pressure sealing check shall be performed on all tight fitting respirators.
- 6.1.4.3. If the fit “check” is successful, any remaining clothing and equipment can be donned, and the worker can proceed to the duties.
- 6.1.4.4. If not successful, the worker will contact the job supervisor for possible new fit test. A respirator fit “check” should be performed several times during the shift to re-test the fit of a respirator.
- 6.1.4.5. Each time an employee exits the work area; the respirator should be removed and washed before being placed into storage.

7. **Limitations of Respirators**

- 7.1. Air-purifying and powered air purifying respirators (PAPR) shall only be used in atmospheres that are not oxygen-deficient, not Immediately Dangerous to Life or Health (IDLH), or in atmospheres that do not exceed the protection factors listed above.
- 7.2. Cartridge or canister respirators for gases and vapors may only be used when the airborne hazard has a physical warning such as odor or if the cartridge has a color “end of service life indicator” (ESLI) which demonstrates chemical saturation. A "Respirator Change Schedule" shall be established for each type of gas or vapor cartridge or canister used, based on the concentration of air contaminants present, the temperature and humidity in the work area, and the exertion level of employees. Contact EH&S for help in determining respirator service life.

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8. Inspecting and Donning the respirator

8.1. Air-Purifying Respirators:

- 8.1.1. Prior to donning the respirator, the wearer must check to ensure that all required parts are present and intact, and that the respirator is clean.
- 8.1.2. The respirator is donned by placing the device over the face by first fitting the chin into the respirator and pulling the face piece to the face;
- 8.1.3. Position the headbands around the crown of the head and the back of the neck;
- 8.1.4. Adjust the headbands, beginning with the lowest ones, until a tight, but comfortable fit is obtained; and
- 8.1.5. Perform a positive and negative pressure check.

8.2. Full or Half Face Powered-Air Purifying Respirators (PAPRs):

- 8.2.1. Prior to donning the respirator, the wearer must ensure that all required parts are present and intact; that the device is clean; and the battery is charged. Check the flow of air to the respirator using the supplier rotometer to assure acceptable air volume, typically 6 CFM.
- 8.2.2. The respirator is donned by placing the device over the face by first fitting the chin into the respirator and pulling the face piece to the face;
- 8.2.3. Position the headbands around the crown of the head and the back of the neck;
- 8.2.4. Adjust the headbands, beginning with the lowest ones, until a tight, but comfortable fit is obtained.
- 8.2.5. Perform a negative pressure check each time respirator is donned as discussed previously by closing off the breathing tube and then,
- 8.2.6. Connect the breathing tube to the respirator and the motor to a fully charged battery pack and the belt pack is fastened to the small of the back.

8.3. Helmet or Hood Type PAPR Respirators:

- 8.3.1. Prior to donning these PAPR respirators, the wearer must ensure all required parts are present and intact; the device is clean, and there is sufficient airflow to the respirator hood or helmet.

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8.3.2. The respirator is donned by fitting the filter unit and/or power pack around the waist.

8.3.3. After adjusting the helmet to fit snugly on the head, the helmet is placed on the head and the chinstrap tightened under the chin.

8.3.4. The face shield or hood is snapped down into position, with the chin protector fitting under the chin and covering any facial hair.

8.3.5. The power is turned on prior to entering the hazard area.

8.4. Disposable respirators (filtering face pieces):

8.4.1. Disposable respirators or dust masks should not be used in situations that require protection from hazardous dust or chemicals unless fit tested to an individual.

8.4.2. Disposable respirators shall be NIOSH approved as N-95 or better.

8.4.3. Disposable respirators must be fitted and in place prior to entering the work area.

8.4.4. Employees who wear dust masks on a voluntary basis are not generally included in the University's Respiratory Protection Program, however, EH&S approval to verify adequate protection and effective use is necessary. A medical evaluation questionnaire and initial fit test is usually required for voluntary users of filtering facepiece respirators.

9. Fit Testing

9.1. EH&S will perform qualitative fit testing for filtering face piece, air-purifying respirators following protocols outlined in Appendix A of the OSHA standard (1910.134).

9.2. EH&S also uses an OHD Fit Tester 3000 to check the fit of most mandatory use respirators with sealing face pieces.

9.3. The following exercises will be performed while the face-piece seal is being tested. Each exercise is performed for approximately one minute:

9.3.1. normal breathing;

9.3.2. deep breathing (deep and regular);

9.3.3. turning head from side-to-side, while inhaling;

9.3.4. nodding head up-and-down, while inhaling;

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9.3.5. talking aloud and slowly for several minutes, counting to 100, or reading the 'Rainbow Passage.'

9.4. Fit testing will be conducted prior to issuing a respirator and annually thereafter for mandatory respirator users.

10. Cleaning, Maintenance and Storage Procedures

The cleaning, inspection and storage of respirators at the University of Pittsburgh is the responsibility of employees wearing the respirators. Certain emergency use respirators are maintained by EH&S. Employees shall not attempt to repair respirators.

10.1. The face piece components are disassembled and soaked in warm soapy water, and visible residue is removed with a brush.

10.2. Parts are rinsed in clean water and allowed to air-dry.

10.3. All respirator parts are inspected for dirt, residue, and pliability of rubber or elastic straps, deterioration, cracks, tears, and holes prior to storage and donning.

10.4. Respirators with missing or defective parts must not be used and should be replaced.

10.5. All cleaned and inspected respirators should be placed in an airtight container such as plastic bags in a hazard-free area and stored in a position that does not distort the face piece.

11. Training

11.1. Department supervisors are trained in:

11.1.1. The capability and limitations of respiratory protection.

11.1.2. Selection and use of respirators for airborne contaminant protection.

11.1.3. Determining the nature of the hazards to which workers are exposed.

11.1.4. Their role in the University's "Respiratory Protection Program."

11.2. Employees are trained in:

11.2.1. Rationale for respiratory protection requirements for a particular job.

11.2.2. The respirator's ability to protect them from exposure.

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11.2.3. The capabilities and limitations of the respirator selected.

11.2.4. How to put on the respirator, adjust it for proper fit and check the face piece seal.

11.2.5. Determining when and how to change the filters or chemical cartridges.

11.2.6. Recognizing signs or symptoms that may limit or prevent effective use.

11.2.7. Proper care, maintenance and storage of their respirator,

11.3. Voluntary respirator users are given a copy of Appendix D from the OSHA Standard or this document.

12. Program Evaluation

Regular inspections and evaluations should be conducted by department supervisors to determine the continued effectiveness of the respirator program and to ensure that respirators are properly selected, cleaned, issued, and maintained. EH&S will complete a review of the written respirator program to determine the need for changes.

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Appendix: A

Procedures for Obtaining Respiratory Protection Equipment

1. Employee or Supervisor should contact EH&S (412-624-9505) to request an evaluation of exposure and the need for respiratory protection. (See Appendix F)
2. EH&S personnel will determine if the use of a respirator is necessary by evaluating the work process. This may be evaluated by one or a combination of the following methods:
 - Consulting with the supervisor.
 - Interviewing the employee.
 - Observing the work operation.
 - Collecting air samples during the work process to assess airborne exposure.
 - Evaluating existing or alternative engineering or administrative controls.
3. Upon recommendations of EH&S for respiratory protection, the employee will be required to fill out a Medical History Questionnaire (Appendix B). This form can be obtained from Employee Health Services on the 5th floor of the Medical Arts Building 3708 Fifth Avenue or by calling 412-647-3695. The completed form is sent to the Employee Health Services for medical evaluation. If the reviewing physician deems necessary, you may be asked to undergo a medical exam, pulmonary function test and/or other tests.
4. Upon receiving medical clearance from the employee health physician, the employee must attend “Respiratory Protection Training” from the Department of Environmental Health and Safety. This training informs the user of the limitations, use, and care of the respirator.
5. EH&S will qualitatively or quantitatively fit test the employee for a respirator when all the above requirements have been met. The supervisor (with consultation from EH&S if necessary) will issue a respirator that provides the best comfort and fit upon completion of these requirements.
6. Respirator users must update medical information and fit testing qualifications annually or as needed.

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Appendix B
Medical History Questionnaires

**EMPLOYEE HEALTH SERVICES -PARTICULATE FILTERING RESPIRATOR
MEDICAL EVALUATION - PART ONE**

This questionnaire is used in determining whether or not you have a medical condition that may affect your ability to safely wear a respirator. Fit testing is also required and is done separately. All medical information is confidential.

The following information must be provided by every employee who has been selected to use any type of respirator (PLEASE PRINT).

Date:		Name:		Social Security Number:	
Job Title:		Department:		Work Phone Number:	
Age (to nearest year)	Sex (circle one): Male Female	Height in feet/inches		Weight in pounds	
Has your employer told you how to contact the health care professional who will review this questionnaire? (circle one): Yes No					
Check the type of respirator you will use (you can check more than one category): <input type="checkbox"/> N,R, or P disposable respirator (filter mask) <input type="checkbox"/> Other type (if you use (or plan to use) half or full face, or self-contained breathing apparatus, contact Employee Health Services for respirator questionnaire supplement)					
The following information must be provided to the health care professional before he/she makes a recommendation concerning your ability to use a respirator: 1. Duration and frequency of respirator use: _____ 2. Expected physical work effort: _____ 3. Additional protective clothing and equipment to be worn: _____					

Questions 1 through 9 below must be answered by every employee who has been selected to use any type of respirator (please circle "Y" or "N").

1. Do you currently smoke tobacco, or have you smoked tobacco in the last month? Y N	5. Have you ever had any of the following cardiovascular or heart problems? a. Heart Attack Y N b. Stroke Y N c. Heart Failure Y N d. Swelling in your legs/ feet (not caused by walking) Y N e. Heart arrhythmia (heart beating irregularly) Y N f. High blood pressure Y N g. Any other heart problem that you have been told about Y N
2. Have you ever had any of the following conditions? a. Seizures (fits) Y N b. Diabetes (sugar disease) Y N c. Allergic reactions that interfere with your breathing Y N d. Claustrophobia (fear of closed-in places) Y N e. Trouble smelling odors Y N	6. Have you ever had any of the following cardiovascular or heart problems? a. Frequent pain or tightness in your chest Y N b. Pain or tightness in your chest during physical activity Y N c. Pain or tightness in your chest that interferes with your job Y N d. In the past 2 years, have you noticed your heart skipping or missing a beat Y N e. Heartburn or indigestion that is not related to eating Y N f. Any other symptoms that you think might be related to heart or circulation problems Y N
3. Have you ever had any of the following pulmonary or lung problems? a. Asbestosis Y N b. Asthma Y N c. Chronic Bronchitis Y N d. Emphysema Y N e. Pneumonia Y N f. Tuberculosis Y N g. Silicosis Y N h. Pneumothorax (collapsed lung) Y N i. Lung Cancer Y N j. Broken Ribs Y N k. Any chest injuries or surgeries Y N l. Any other lung problem that you have been told about Y N	7. Do you currently take medication for any of the following problems? a. Breathing or lung problems Y N b. Heart trouble Y N
4. Do you currently have any of the following symptoms of pulmonary or lung illness? a. Shortness of breath Y N b. Shortness of breath when walking fast on level ground Y N	

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c. or walking up a slight hill or incline Shortness of breath when walking with other people at an ordinary pace on level ground d. Have to stop for breath when walking at your own pace on level ground e. Shortness of breath when washing or dressing yourself f. Shortness of breath that interferes with your job g. Coughing that produces phlegm (thick sputum) h. Coughing that wakes you early in the morning i. Coughing that occurs mostly when you are lying down j. Coughing up blood in the last month k. Wheezing l. Wheezing that interferes with your job m. Chest pain when you breath deeply n. Any other symptoms that you think may be related to lung problems	Y	N	c. Blood Pressure d. Seizures (fits)	Y	N
	Y	N	8. If you've used a respirator, have you ever had any of the following problems?	Y	N
	Y	N	a. Eye Irritation	Y	N
	Y	N	b. Skin Allergies or Rashes	Y	N
Y	N		c. Anxiety	Y	N
Y	N		d. General Weakness or Fatigue		
Y	N		e. Any other problem that interferes with your use of a respirator		
Y	N		9. Would you like to talk to the health care professional who will review this questionnaire about your answers on this questionnaire?	Y	N
Y	N				
Y	N				
Y	N				
Y	N				
			Employee Signature	Date	

μ Approved	μ Denied	μ Approved w/restrictions	μ More information needed
Remarks:			
Physician/Nurse Signature			Date

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**EMPLOYEE HEALTH SERVICES RESPIRATOR QUESTIONNAIRE SUPPLEMENT –FOR
ALL BUT FILTERING FACE PIECE RESPIRATORS - PART TWO**

This questionnaire is used in determining whether or not you have a medical condition that may affect your ability to safely wear a respirator. Fit testing is also required and is done separately. All medical information is confidential.

The following information must be provided by every employee who has been selected to use SCBA/full-face respirator equipment (PLEASE PRINT).

Date:	Name:	Social Security Number:
Job Title:	Department:	Work Phone Number:

Questions 1 through 24 must be answered by every employee who has been selected to use SCBA/full-face respirator equipment (please circle "Y" or "N").

1. Have you ever lost vision in either eye (temporarily or permanently)?	Y	N
2. Do you currently have any of the following vision problem?		
a. Wear Contact Lenses	Y	N
b. Wear Glasses	Y	N
c. Color Blindness	Y	N
d. Any other eye or vision problem	Y	N
3. Have you ever had an injury to your ears, including a broken ear drum?	Y	N
4. Do you currently have any of the following hearing problems?		
a. Difficulty hearing	Y	N
b. Wear a hearing aid	Y	N
c. Any other hearing or ear problem	Y	N
5. Have you ever had a back injury?	Y	N
6. Do you currently have any of the following musculoskeletal problems?		
a. Weakness in your arms, hands, legs or feet	Y	N
b. Back pain	Y	N
c. Difficulty fully moving your arms and/or legs	Y	N
d. Pain or stiffness when you lean forward or backward at the waist	Y	N
e. Difficulty fully moving your head up or down	Y	N
f. Difficulty fully moving your head side to side	Y	N
g. Difficulty bending at your knees	Y	N
h. Difficulty squatting to the ground	Y	N
i. Climbing a flight of stairs or a ladder carrying more than 25 lb.	Y	N
j. Any other muscle or skeletal problem that interferes with using a respirator	Y	N
7. 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?	Y	N
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?	Y	Y
8. 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?	Y	N
If "Yes", name the chemicals (if you know them): _____		
9. Have you ever worked with any of the materials, or under any of the conditions, listed below?	Y	N
a. Asbestos	Y	N
b. Silica (e.g. in sandblasting)	Y	N
c. Tungsten/cobalt (e.g. grinding or welding this material)	Y	N
d. Beryllium	Y	N
e. Aluminum	Y	N
f. Coal (for example, mining)	Y	N
g. Iron	Y	N
h. Tin	Y	N
i. Dusty environments	Y	N
j. Any other hazardous exposures	Y	N

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If "Yes" describe these exposures: _____			
10. List any second jobs or side businesses you have:			
11. List your previous occupations:			
12. List your current and previous hobbies:			
13. Have you been in the military services?	Y	N	
If "Yes" were you exposed to biological or chemical agents (either in training or combat)?	Y	N	
14. Have you ever worked on a HAZMAT team?	Y	N	
15. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in the Particulate Respirator Medical Evaluation questionnaire, are you taking any other medications for any reason (including over-the-counter medications)?	Y	N	
If "Yes" name the medications (if you know them): _____			
16. How often are you expected to use the respirator(s) (circle Y or N for all answers that apply to you)?			
a. Escape only (no rescue)	Y	N	
b. Emergency rescue only	Y	N	
c. Less than 5 hours per week	Y	N	
d. Less than 2 hours per day	Y	N	
e. 2-4 hours per day	Y	N	
f. Over 4 hours per day	Y	N	
17. During the period you are using the respirator(s), is your work effort:			
a. LIGHT (less than 200 kcal per hour)	Y	N	
If "Yes" how long does this period last during the average shift: _____ hours _____ minutes			
Examples of a light work effort are <u>sitting</u> while writing, typing, drafting, or performing light assembly work; or <u>standing</u> while operating a drill press (1-3 lb) or controlling machines.			
b. MODERATE (200 to 350 kcal per hour)	Y	N	
If "Yes" how long does this period last during the average shift: _____ hours _____ minutes			
Examples of moderate work effort are <u>sitting</u> while nailing or filing; <u>driving</u> a truck or bus in urban traffic; <u>standing</u> while drilling, nailing, Performing assembly work, or transferring a moderate load (about 35 lb) at trunk level; <u>walking</u> on a level surface about 2 mph or down a 5-degree grade about 3 mph; or <u>pushing</u> a wheelbarrow with a heavy load (about 100 lb) on a level surface.			
c. HEAVY (above 350 kcal per hour)	Y	N	
If "Yes" how long does this period last during the average shift: _____ hours _____ minutes			
Examples of heavy work are <u>lifting</u> a heavy load (about 50 lb) from the floor to your waist or shoulder; working on a loading dock; <u>shoveling</u> ; <u>standing</u> while bricklaying or chipping castings; <u>walking up</u> an 8-degree grade about 2mph; climbing stairs with a heavy load (about 50 lb).			
18. Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using your respirator?	Y	N	
If "Yes" describe this protective clothing and/or equipment: _____			
19. Will you be working under hot conditions (temperature exceeding 77 degrees F)?	Y	N	
20. Will you be working under humid conditions?	Y	N	
21. Describe the work you'll be doing while you're using your respirator: _____			
22. Describe any special or hazardous conditions you might encounter when you're using your respirator(s). (Example: confined space, life-threatening gases): _____			
23. 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):			
a. Name of the first toxic substance: _____			
Estimated maximum exposure level per shift:: _____		Duration of exposure per shift: _____	
b. Name of the second toxic substance: _____			
Estimated maximum exposure level per shift:: _____		Duration of exposure per shift: _____	

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<p>c. Name of the third toxic substance: _____</p> <p>Estimated maximum exposure level per shift: _____ Duration of exposure per shift: _____</p> <p>d. The name of any other toxic substances that you'll be exposed to while using your respirator: _____</p> <p>_____</p>
<p>24. Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and well-being of others. (Example: rescue, security):</p> <p>_____</p> <p>_____</p> <p>_____</p>

Employee Signature	Date
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μ Approved	μ Denied	μ Approved w/restrictions	μ More information needed
Remarks:			
Physician/Nurse Signature			Date

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Appendix D

Employee Voluntary Use of Respirators

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. 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 you voluntarily elect to wear respiratory protection, you must do the following:

1. Read and follow all instructions provided by the manufacturer on use, maintenance, cleaning limitations regarding the respirator.
2. Choose respirators certified by NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services.
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.
5. Complete and submit the following Voluntary User form to EH&S.
6. According to an OSHA interpretation, the voluntary user provision in Appendix D apply only to filtering facepiece respirators (N-95 or equivalent dust masks) and not for half or full face respirators where most other provisions of the OSHA standard apply.
7. All voluntary respirator users at the University of Pittsburgh will be asked to complete a medical evaluation questionnaire and submit to an initial qualitative fit test and training as deemed necessary to assure safe and effective respirator use.

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**UNIVERSITY OF PITTSBURGH
VOLUNTARY RESPIRATOR USER REGISTRATION**

EMPLOYEE NAME (PRINT) _____

Pitt ID # 2P _____

JOB FUNCTION/TITLE _____

DEPARTMENT _____

BUILDING _____ **WORK PHONE NO.** _____

E-MAIL ADDRESS _____

RESPIRATOR USED: MANUFACTURER _____

TYPE _____

SIZE _____

FREQUENCY OF USE _____

AIR CONTAMINANT(S) EXPOSED TO OR REASON FOR USE:

HAVE YOU BEEN TRAINED OR FIT-TESTED FOR THIS RESPIRATOR? YES__NO__

DID YOU COMPLETE AND SUBMIT YOUR MEDICAL EVALUATION FORM?

YES__ NO__

Completed forms or questions should be sent by fax, e-mail or campus mail to:

Department of Environmental Health and Safety
Public Safety Building, Floor 4
3412 Forbes Avenue
Pittsburgh, PA. 15260
Phone: 412-624-9505
Fax: 412-624-8524
E-Mail: safety@ehs.pitt.edu

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Appendix E

UNIVERSITY OF PITTSBURGH ENVIRONMENTAL HEALTH AND SAFETY DEPARTMENT RESPIRATOR FIT TEST RECORD

EMPLOYEE NAME (PRINT) _____

EMPLOYEE (SIGNATURE) _____

Pitt ID Number 2P _____

JOB FUNCTION/TITLE _____

WORK DEPARTMENT _____

BUILDING _____ WORK PHONE NO. _____

DATE OF FIT TEST _____ DATE OF TRAINING _____

RESPIRATOR: MANUFACTURE _____
TYPE _____
SIZE _____
FREQUENCY OF USE _____

UNUSUAL CONTITIONS:

FACIAL HAIR _____
SCARS/MOLES _____
WRINKLES _____
GLASSES _____
MUSTACHE _____
BEARD GROWTH _____
OTHERS _____

SACCHARIN SENSITIVITY: PASS _____ FAIL _____ DID NOT RUN _____

IA / BIT SENSITIVITY TEST: PASS _____ FAIL _____ DID NOT RUN _____

SMOKE SENSITIVITY TEST: PASS _____ FAIL _____ DID NOT RUN _____

QUALITATAIVE TEST:	(PASS)	(FAILED)	(DID NOT RUN)
(PP) = POSITIVE PRESSURE	_____	_____	_____
(NP) = NEGATIVE PRESSURE	_____	_____	_____
(SA) = SACCHARIN	_____	_____	_____
(BIT)= BITREX	_____	_____	_____
(IA) = ISOAMYL ACETATE	_____	_____	_____
(IS) = IRRITANT SMOKE	_____	_____	_____

QUANITATIVE TEST (DNI -Nevada) PASS _____ FAIL _____ DID NOT RUN _____

Equivalent Fit Factor _____ Average % Leakage _____

PERFORMED BY (SIGNATURE) _____

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Appendix F

Instructions for completing the respirator protection hazard assessment form

In accordance with the OSHA Respiratory Protection Standard (29 CFR 1910.134) the University of Pittsburgh is required to evaluate each use of respirators to assure that an appropriate level of protection is provided for the exposure hazard. To assist in that task, the attached “Respiratory Protection Hazard Assessment Form” has been developed. EH&S requests that each Department complete one of the forms for each protocol or procedure where respirators are used. The OSHA regulation and the University’s Respiratory Protection Program addresses both the voluntary and mandatory use of respirators.

Completed forms should be sent to:

Department of Environmental Health and Safety
Public Safety Building, 4th Floor
3412 Forbes Avenue
Pittsburgh, PA. 15260

Questions or concerns about completing the evaluation form can be addressed to EH&S:

Telephone: (412) 624-9505
E-mail: safety@ehs.pitt.edu
Fax: (412) 624-8524

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**UNIVERSITY OF PITTSBURGH
RESPIRATORY PROTECTION HAZARD ASSESSMENT FORM**

DEPARTMENT NAME	
HAZARD EVALUATION DATE	
LAB PI / SUPERVISOR'S NAME	
NAME OF PROCEDURE REQUIRING RESPIRATOR USE	
EMPLOYEE JOB TITLE / DUTIES	
RESPIRATOR MANUFACTURER & STYLE	
FREQUENCY OF USE	
DURATION OF RESPIRATOR USE (HOW LONG EACH DAY)	
AIR CONTAMINANT EXPOSED TO	
STATE OF MATTER DUST /GAS /VAPOR /MIST /FUME	
TYPE OF CHEMICAL CARTRIDGE OR CANISTER USED	
ANY SKIN, NOSE, THROAT OR EYE IRRITATION EXPERIENCED	
MEASURED AIR CONCENTRATION (IF KNOWN)	
PERMISSIBLE EXPOSURE LIMIT (IF KNOWN)	
RESPIRATOR TRAINING DATE	
FIT TESTING DATE	
MEDICAL EVALUATION DATE	
CLEANING & MAINTENANCE PROGRAM IN EFFECT	
ARE ENGINEERING CONTROLS IN EFFECT	

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Appendix G

Color Coded Respirator Cartridge & Canister Selection

Atmospheric Contaminants	Colors Assigned (1)
Acid gases	White Cartridge & Canister.
Hydrocyanic acid gas	White with 1/2-inch green stripe completely around the canister near the bottom.
Chlorine gas	White with 1/2-inch yellow stripe completely around the canister near the bottom.
Organic vapors	Black Cartridge & Canister.
Ammonia gas	Green Cartridge & Canister.
Acid gases and ammonia gases	Green with 1/2-inch white stripe completely around the canister near the bottom.
Carbon Monoxide	Blue Canister.
Acid gases and organic vapors	Yellow Cartridge & Canister.
Hydrocyanic acid gas and chloropicrin vapor	Yellow with 1/2-inch blue stripe completely around the canister near the bottom.
Acid gases, organic vapors, and ammonia gases	Brown Canister.
Organic vapors & Formaldehyde	Olive Green Cartridge
Radioactive materials, excepting tritium and noble gases	Purple (Magenta) Cartridge & Canister.
P-100 or High Efficiency Particulate Air (HEPA) for toxic dust, fumes & mists	Purple (Magenta) Cartridge & Canister.
Particulates (dusts, fumes, mists, fogs, or smokes) in combination with any of the above gases or vapors	Magenta for particulate plus color as designated above,