FACILITIES MANAGEMENT

RESPIRATORY PROTECTION PROGRAM
# University of North Dakota Facilities Department
## Respiratory Protection Program

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1.0 Introduction

The Facilities Department has developed procedures which follow the Respiratory Protection Program established by the Office of Safety and the Facilities Management department. The procedures outlined in this manual are specific to the work completed by the Facilities Department personnel and are determined by the job description and/or program administrator.

2.0 Purpose

Provide designated employees with procedures and guidelines to protect against inhalation of respirable dusts, toxins, vapors, fumes, and mists.

Provide employees with procedures to clean, store, and maintain respirator equipment.

Establish and identify personnel responsibilities.

3.0 Scope

This program applies to all employees who are required to wear respirators during work operations and during some non-routine or emergency operations. All employees working in these areas and engaged in certain processes or tasks must be enrolled in the Facilities Management respirator program. See Appendix A: Classification of Respiratory Hazards according to their properties.

4.0 Responsibilities

4.1 Office of Safety

- Overseer of the Respirator Program
- Coordinates medical examinations with the Designated Medical Provider and the Facilities Management Human Resources office.
- Coordinates yearly respirator fit tests.

4.2 Program Administrator

The program administrator is responsible for administering the Respiratory Protection Program. Duties of the program administrator include:

- Identifying work areas, processes or tasks that require workers to wear respirators, and evaluating hazards.
- Selection of respiratory protection options.
- Determines appropriate respirator filters for specific job environment.
- Monitoring respirator use to ensure that respirators are used in accordance with their certifications.
- Arranging for and/or conducting training.
- Ensuring proper storage and maintenance of respiratory protection equipment.
- Ensuring qualitative and quantitative fit testing is being conducted.
• Maintaining records required by the program.
• Evaluating the program.
• Updating written program as needed.
• Being aware of tasks requiring the use of respiratory protection.
• Enforcing respirators are properly cleaned, maintained, and stored according to the respiratory protection plan.
• Continually monitoring work areas and operations to identify respiratory hazards.
• Ensuring the availability of appropriate respirators and accessories.

The Program Administrator for the Facilities Department is Larry Zitzow, Director. Mark Johnson, Associate Director, is Program Administrator backup.

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

• Ensuring that employees under their supervision (including new hires) have received appropriate training, fit testing and annual medical evaluation.
• Being aware of tasks requiring the use of respiratory protection.
• Enforcing respirators are properly cleaned, maintained, and stored according to the respiratory protection plan.
• Coordinating with the Program Administrator on how to address respiratory hazards or other concerns regarding the program.

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

• Only wear the respirator for the conditions specified in the “Fit Testing” Form.
• Being aware of tasks requiring the use of respiratory protection.
• Care for and maintain their respirators as instructed, and store them in a clean sanitary location according to the respiratory protection plan.
• Ensuring that defective equipment is returned to the Tool Room for service.
• Inform their supervisor if the respirator no longer fits well and request a new one that fits properly.
• Inform their supervisor or the Program Administrator of any respiratory hazards that they feel are not adequately addressed in the workplace and of any other concerns that they have regarding the program.
• For any malfunction of Powered Air Purifying Respirator (PAPR) (e.g., such as breakthrough, facepiece leakage, or improperly working valve), the respirator wearer should inform his or her supervisor that the respirator no longer functions as intended and obtain a replacement.
5.0 Respirator Selection

5.1 The Program Administrator will identify the respirators to be used on site, based on the hazards to which workers are exposed and in accordance with all Occupational Safety and Health Administration (OSHA) standards. See Appendix B: Respirator Selection Criteria Based on Potential Hazard. The Program Administrator will conduct an initial hazard evaluation for each operation, process, or work area where airborne contaminates may be present in routine operations or during an emergency. The hazard evaluation will include:

5.1.a. Identification and development of a list of hazardous substances used in the workplace, by department, or work process.
5.1.b. Review of work processes to determine where potential exposures to these hazardous substances may occur. This review shall be conducted by surveying the workplace, reviewing process records, and talking with employees and supervisors.

The hazard evaluation may include exposure monitoring to quantify potential hazardous exposures.

5.2 NIOSH Certification
All respirators must be certified by the National Institute for Occupational Safety and Health (NIOSH) and shall be used in accordance with the terms of that certification. Also, all filters, cartridges, and canisters must be labeled with the appropriate NIOSH approval label. The label must not be removed or defaced while it is in use. See Appendix C: Assigned Respirator Protection Factors.

5.3 The program administrator will contact the manufacturer to determine filter type for each individual. The program administrator will inform the Supply department to stock the filter.

6.0 Medical Evaluation (Initial)

Employees who are required to wear respirators, as described in the job description, must pass a medical exam before being permitted to work. Employees are not permitted to wear respirators until a physician has determined they are medically able to do so. Any employee refusing the medical evaluation will not be allowed to work in an area requiring respirator use.

The Office of Safety will provide the scheduling of the medical evaluations for every employee in the respirator program. This medical evaluation may include the following:

- Medical questionnaire
- Medical exam
- Pulmonary function test
- Chest X-ray
- Electrocardiogram

01/12/2015
• Other tests needed for proper evaluation by a physician

Once the employee has received clearance from the Program Administrator, they may proceed with the work.

Medical Questionnaire (Yearly)
The Office of Safety will provide a yearly questionnaire to respirator wearers in the 2-5 year physical criteria (Appendix D). After review, a follow-up fit test will be scheduled. The Office of Safety will schedule the appointment. See Appendix D: Criteria for UND Respiratory Surveillance Physicals and the questionnaire.

Medical Evaluation (Periodic)
The Office of Safety will schedule a medical examination for any employee in the respirator program. The same procedures in the initial medical evaluation will be followed.

Medical Evaluation (Exit)
An exit medical examination will be given to any employee who has been a participant in the respirator program. An exit medical examination will not be required if the employee has been in for a routine medical examination within the last six months. Upon termination of employment, the Facilities Human Resources personnel will inform the Office of Safety and ensure respirator program files are updated.

7.0 Fit Testing

Annual fit testing is required for employees who wear respirators. Employees wearing half-face piece or PAPRs may also be fit tested upon request. See Appendix E: Quantitative Fit Testing.

Employees who are required to wear half-facepiece or PAPRs will be fit tested by the Office of Safety.
• Prior to being allowed to wear any respirator with a tight fitting facepiece
• Annually
• All others, when there are changes in the employee’s physical condition that could affect respiratory fit (e.g. obvious change in body weight, facial scarring, etc.) and review of the questionnaire indicates the need.

Employees will be fit tested with the make, model, and size of respirator that they will actually wear. Employees will be provided with 3M and MSA models and sizes of respirators so that they may find an optimal fit. Fit testing of PAPRs shall be conducted in the negative pressure mode if worn with a tight fitting facepiece.

See Appendix F: Fit Test Information form.
8.0 Training

Employees will be provided training on the use, care, and maintenance of respiratory protection equipment prior to requiring an employee to use a respirator. Employees who voluntarily use a filtering face piece must be provided with the information contained in Appendix G: Training provided will include but is not limited to:

- Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator.
- What the limitations and capabilities of the respirator are.
- How to use the respirator effectively in emergency situations, including situations in which the respirator malfunctions.
- How to inspect, don and remove, use, and check the seals of the respirator.
- What the procedures are for maintenance and storage of the respirator.
- How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.
- The general requirements of the University's Respiratory Protection Manual.

8.1 Refresher training is provided at the annual fit testing or when one of the following situations occurs:
   8.1.a Changes in the workplace or the type of respirator may render previous training obsolete.
   8.1.b Inadequacies in the employee's knowledge or use of the respirator indicate that the employee has not retained the level of understanding or skill required.
   8.1.c Any other situation arises in which retraining appears necessary to ensure safe respirator use is maintained.

9.0 Maintenance

Respirators are to be properly maintained at all times in order to ensure that they function properly and adequately protect the employee. Respirator wearers will inspect and ensure the respirator is working correctly and inform the Tool Room personnel if not all parts are in good working condition. 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.

The checklist for inspecting respirators may be viewed in Appendix H.

10.0 Cleaning and Storage

The Facilities Management employees are responsible for cleaning, repairing, and storing the respirators. Respirators must be bagged and stored in a clean, dry area, and in accordance with the manufacturer’s recommendations. Facilities Management Supervisors oversee the following maintenance procedure.

The respirators shall be cleaned and disinfected at the following intervals:
• Preventive maintenance inspections should be conducted every six (6) months.
• Respirators issued for the exclusive use of an employee shall be cleaned and disinfect after each use.
• Respirators used during an abatement project or such projects lasting over a period of time shall be disinfected as often as necessary to be maintained in a sanitary condition.
• Respirators maintained for emergency use shall be cleaned and disinfected after each use.

All respirators are to be stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals. The Tool Room is available for storage and inspection. It is recommended that a minimum of 24 hours be allowed to properly service the equipment.

The Steam Plant will follow the same procedures as above; however, an employee of the Steam Pant will be trained for cleaning, repairing, and storing the respirators on site.

11.0 Record Keeping

The Office of Safety oversees the respirator program and is the Office of Record for employee training and qualified respirator users. All medical reports are protected by the HIPPA law and maintained by the Designated Medical Provider. Records are kept for 30 years after employee termination.

Facilities Management administers the program. Facilities Management receives the list of qualified employees from the Office of Safety. Facilities Management is the Office of Record for work completed by respirator users.

11.0 Program Evaluation

The Program Administrator will conduct periodic evaluations of the workplace to ensure that the provisions of this program are being implemented. The evaluations will include regular consultations with employees who use respirators and their supervisors, site inspections, air monitoring and a review of records.
CLASSIFICATION OF RESPIRATORY HAZARDS ACCORDING TO THEIR PROPERTIES WHICH INFLUENCE RESPIRATOR SELECTION (taken from ANSI Z88.2-1992)

Gas and Vapor Contaminants

Inert:

Substances that do not react with other substances under most conditions but create a respiratory hazard by displacing air and producing oxygen deficiency (for example: helium, neon, argon).

Acidic:

Substances that are acids or that react with water to produce an acid. In water, they produce positively charged hydrogen ions (H+1) and a pH of less than 7. They taste sour, and many are corrosive to tissues (for example: hydrogen chloride, sulfur dioxide, fluorine, nitrogen dioxide, acetic acid, carbon dioxide, hydrogen sulfide, and hydrogen cyanide).

Alkaline:

Substances that are alkalies or that react with water to produce an alkali. In water, they result in the production of negatively charged hydroxyl ions (OH-1) and a pH greater than 7. They taste bitter, and many are corrosive to tissues (for example: ammonia, amines, phosphine, arsine, and stibine).

Organic:

The compounds of carbon. Examples are saturated hydrocarbons (methane, ethane, butane), unsaturated hydrocarbons (ethylene, acetylene), alcohols (methyl ether, ethyl ether), aldehydes (formaldehyde), ketones (methyl ketone), organic acids (formic acid, acetic acid), halides (chloroform, carbon tetrachloride), amides (formamide, acetamide), nitriles (acetonitrile), isocyanates (toluene diisocyanate), amines (methyamine), epoxies (epoxyethane, propylene oxide), and aromatics (benzene, toluene, xylene).

Organometallic:

Compounds in which metals are chemically bonded to organic groups (for example: ethyl silicate, tetraethyl lead, and organic phosphate).

Hydrides:

Compounds in which hydrogen is chemically bonded to metals and certain other elements (for example: diborane and tetraborane).
Particulate Contaminants

Particles are produced by mechanical means by disintegration processes such as grinding, crushing, drilling, blasting, and spraying or by physiochemical reactions such as combustion, vaporization, distillation, sublimation, calcination, and condensation. Particles are classified as follows:

Dust:

A solid, mechanically produced particle with sizes varying from submicroscopic to visible or macroscopic.

Spray:

A liquid, mechanically produced particle with sizes generally in the visible or macroscopic range.

Fume:

A solid condensation particle of extremely small particle size, generally less than 1 micrometer in diameter.

Mist:

A liquid condensation particle with size ranging from submicroscopic to visible or microscopic.

Fog:

A mist of sufficient concentration to perceptibly obscure vision.

Smoke:

A system which includes the products of combustion, pyrolysis, or chemical reaction of substances in the form of visible and invisible solid and liquid particles and gaseous products in air. Smoke is usually of sufficient concentration to perceptibly obscure vision.
Respirator Selection Criteria Based on Potential Hazard

A. Respirators should be selected on the basis of the hazard(s) the employees will or could be exposed to and the guidance provided in American National Standards Institute (ANSI) Standard Z88.2-1992. Therefore, when selecting a respirator for a given circumstance, the following must be considered:

1. Physical properties of the hazard: Physical properties to be considered include:
   a. Physical state
   b. Particle size
   c. Molecular weight
   d. Vapor pressure

2. Chemical properties of the hazard: Chemical properties include:
   a. Solubility in water and other liquids
   b. Reactivity with other chemicals
   c. Hazardous decomposition products

3. Physiologic effects on the body: Determine the toxicological effects on the body in terms of:
   a. Eye irritation
   b. Skin absorption
   c. Adverse effects (if any) on olfactory sense

4. Actual Concentration of a Toxic Compound: If a measurement has been made, then this is extremely useful information because bounds are established for the degree of protection necessary. This should be used in conjunction with permissible exposure limits to select the correct respirator.

5. Permissible exposure limit (PEL): The permissible exposure limit (time-weighted average or ceiling limit) may be used to establish proper selection. The concentrations and PELs are compared to protection factors assigned to certain types of respirators.

6. Warning properties: If an air-purifying respirator is to be used for protection against gas or vapor contaminants, then there must (with limited exceptions) be suitable warning properties of contaminant breakthrough or respirator malfunction.
   a. Adequate warning properties can be assumed when the odor, taste, or irritation effects of the substance are detectable and persistent at concentrations at or below the PEL.
   b. If the odor or irritation threshold of a substance occurs at concentrations greater than three times the PEL, this substance should be considered to have poor warning properties.
   c. If the odor or irritation threshold is somewhat above the PEL (but not in excess of three times the limit) and there is no ceiling limit, determine whether an undetected exposure in this concentration range could cause serious or irreversible health effects. If not, the substance is considered to have adequate warning properties. In such a situation, it is expected that
environmental concentrations will vary considerably, and warning of respirator failure would, therefore, soon be perceived at contaminant concentrations somewhat above the PEL.

d. It is important to realize that NIOSH approvals for respirators generally do not apply to gases and vapors with poor warning properties except where the device is equipped with an end-of-service life indicator (e.g., carbon monoxide). However, Occupational Safety and Health Administration (OSHA) may permit such a use for specific gas or vapor where approved respirators are not available (e.g., vinyl chloride, acrylonitrile).

B. The nature of the hazardous operation is also a consideration in respirator selection. It is necessary to know the details of operations where respirators are required. These include:

1. Operation or process characteristics.

2. Work area characteristics.

3. Materials used or produced during the process.

4. Worker's duties and actions.

5. Abnormal situations which may necessitate different respirator selection; i.e., upset conditions or emergencies.

C. The length of time a respirator will have to be worn is a factor which must be evaluated. Time is also important during routine use when workers' acceptance and comfort are essential.

D. The respirator protection factor is one of the most important factors and indicates how much protection a respirator provides. To apply an assigned protection factor for a particular type of respirator, one must know both the actual contaminant concentration in the work area and the established time-weighted average concentration. Multiplying the time-weighted average concentration by the respirator protection factor gives the maximum concentration of the contaminant against which the respirator can be used. If the actual concentration is less than the calculated maximum use concentration, then the respirator may be used. Anything such as facial hair or glasses that prevents proper face-to-face piece sealing nullifies application of a respirator protection factor. Appendix B lists respirator protection factors.

E. It is the supervisor's responsibility to inform the Respiratory Protection Program Administrator or designated representative of monitoring needs and process changes that may require additional monitoring. Once it is determined that a respirator is needed, the Respiratory Protection Program Administrator or designated representative in conjunction with the principal investigator and the supervisor will select a type of respirator for that process.
# Respirator Selection Chart

<table>
<thead>
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<th>Hazard</th>
<th>Respirator</th>
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<tr>
<td>Particulate</td>
<td>IDLH: Any SCBA&lt;br&gt;Air-line respirator with auxiliary SCBA or an auto-storage receiver with alarm&lt;br&gt;Air-purifying full-face piece respirator with appropriate filter&lt;br&gt;Not IDLH: Air-purifying, full-face, half-face, or mouth piece respirator with filter pad or cartridge&lt;br&gt;Air-line respirator&lt;br&gt;Air-line abrasive-blasting respirator&lt;br&gt;SCBA</td>
</tr>
<tr>
<td>Combination Gas, Vapor, and Particulate</td>
<td>IDLH: Positive-pressure SCBA&lt;br&gt;Air-line respirator with auxiliary SCBA or an auto-storage receiver with alarm&lt;br&gt;Not IDLH: Air-purifying, full-face, half-face, or mouth piece respirator with chemical cartridge and appropriate filter&lt;br&gt;Air-line respirator&lt;br&gt;SCBA</td>
</tr>
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## Assigned Respirator Protection Factors

<table>
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<th>Type of Respirator</th>
<th>Respirator Style</th>
<th>Respirator Style</th>
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<tbody>
<tr>
<td></td>
<td>Half - Mask ¹</td>
<td>Full - Face Piece</td>
</tr>
<tr>
<td>Air purifying</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td><strong>Respirator Style</strong></td>
<td></td>
</tr>
<tr>
<td>Powered Air Purifying</td>
<td>Half - Mask</td>
<td>Full - Face</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>1000 ²</td>
</tr>
<tr>
<td>Continuous Flow</td>
<td>50</td>
<td>1000</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>1000</td>
</tr>
</tbody>
</table>

Notes:

¹ Includes quarter-mask, disposable half-mask, and half-masks with elastomeric face pieces.

² Protection factors listed are for high-efficiency filters and sorbents (cartridges and canisters). With dust filters, an assigned protection factor of 100 is to be used because of the limitations of the filter.

**NOTE**

Assigned protection factors are not applicable for escape respirators. For combination respirators, e.g., air line respirators equipped with an air-purifying filter, the mode of operation in use will dictate the assigned protection factor applied.
Criteria for UND Respiratory Surveillance Physicals
Altru/UND Office of Safety Collaboration February 2014

Yearly physicals for the following employees:
- Steam Plant
- Landscaping
- Golf Course
- Asbestos
- 55+ years of age
- Smokers age 35+ with previous abnormal exams
- Anyone previous abnormal exam
- History of Asthma or COPD
- History of Cardiac problems (disease, chest pain, stents, surgery), High Blood Pressure
- Any other medical condition that would warrant annual physical exam as deemed necessary by examining physician

Every 2-year physicals for the following employees:
- Healthy individuals age 45-54
- Smokers ages 35-44

Every 5-year physicals for the following employees:
- Healthy individuals age 18-44

Chest x-rays and Auditory Exams can be added upon request of employer for those not already required*.
  - *Asbestos
  - *Steam Plant
MEDICAL SURVEILLANCE Pre-QUESTIONNAIRE

Please Print

Date: _______________________________

Name: _______________________________ Date of Birth: _______________________________

Department: ___________________________ Job Title: _______________________________

Respirator Type: _______________________________

How many days per week is the respirator worn? _______________________________

How many hours per day is the respirator worn? _______________________________

What is the work effort while wearing respirator? _______________________________

Check the type of respirator that you will use (you can check more than one)

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

☐ Other type (for example, half-face-piece or full-face-piece type, or powered – air purifying, supplied – air, self-contained breather apparatus)

Have you worn a respirator: ☐ YES ☐ NO If "YES," what type(s): _______________________________

Do you currently smoke tobacco, or have you smoked in the past month: ☐ YES ☐ NO

If "YES," how much? _______________________________

Have you ever had any type of lung / breathing problems / conditions? ☐YES ☐ NO

Have you ever had any cardiovascular or heart problems? ☐YES ☐ NO

Have you ever had High Blood Pressure? ☐YES ☐ NO

Signature: _______________________________ Date: _______________________________

For UND Office of Safety Use ONLY:

Type of Physical: _______________________________

Physical required this year: ☐ Yes ☐ No

Next physical required: _______________________________ Entered in Database: _______________________________
QUANTITATIVE FIT TESTING

A. Respirator Selection

1. The test subject shall be allowed to select the most comfortable respirator from a large array of various sizes and manufacturers that includes at least three sizes of elastomeric half-face pieces and units of at least two manufacturers. All respirators will be equipped with high-efficiency particulate air (HEPA) filters.

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 assess a "comfortable" respirator. A mirror should be available to assist the subject in evaluating the fit and positioning of the respirator. This may not constitute the formal training on respirator use, only a review.

3. The test subject should understand that he/she is being asked to select the respirator which provides the most comfortable fit. Each respirator represents a different size and shape and, if fit properly, will provide adequate protection.

4. Test subjects hold each face piece up to their faces and eliminate those which are obviously not giving a comfortable fit. Normally, selection will begin with a half-mask, and if a fit cannot be found here, the subject will be asked to go to the full-face piece respirators. A small percentage of users will not be able to wear any half-mask.

5. The more comfortable face pieces are recorded; the most comfortable mask is donned and worn at least five minutes to assess the comfort. Assistance in assessing comfort can be given by discussing the points in No. 6 below. If the test subject is not familiar with using a particular respirator, he/she shall be directed to don the mask several times and to adjust the straps each time, so that he/she becomes adept at setting proper tension on the straps.

6. Assessment of comfort shall include reviewing the following points with the test subject:

a) Chin properly placed
b) Room to talk
c) Positioning of mask on nose
d) Tendency to slip
e) Strap tension
f) Cheeks filled out
g) Fit across nose bridge
h) Self-observation in mirror
i) Room for safety glasses
j) Adequate time for assessment
k) Distance from nose to chin
7. The test subject will conduct the conventional negative and positive pressure fit checks as outlined previously in this manual. Before conducting the negative or positive pressure checks, the subject shall be told to "seat" the mask by rapidly moving the head side-to-side and up and down, taking a few deep breaths.

8. The test subject is now ready for fit testing.

9. After passing the fit test, the test subject shall be questioned again regarding the comfort of the respirator. If it has become uncomfortable, another model of respirator shall be tried.

10. The employee will be given the opportunity to select a different face piece and be retested if, during the first two weeks of on-the-job wear, the chosen face piece becomes unacceptably uncomfortable.

B. Fit Test

1. The test subject shall be allowed to smell a weak concentration of the irritant smoke to familiarize him/herself with its characteristic odor.

2. The test subject will properly don the respirator selected as above and wear it for at least 5 minutes before starting the fit test.

3. The test conductor will review this protocol with the test subject before testing.

4. The test subject shall perform the conventional positive pressure and negative pressure fit checks. Failure of either check shall be cause to select an alternate respirator.

5. Break both ends of a ventilation smoke tube containing stannic oxychloride. Attach a short length of tubing to one end of the smoke tube. Attach the other end of the smoke tube to a low-pressure air pump set to deliver 200 milliliters per minute.

6. Advise the test subject that the smoke can be irritating to the eyes, and instruct them to keep their eyes closed while the test is performed.

7. The test conductor shall direct the stream of irritant smoke from the tube towards the face seal area of the test subject. The conductor shall begin at least 12 inches from the face piece and gradually move to within 1 inch, moving around the whole perimeter of the mask.

8. The following exercises shall be performed while the respirator seal is being challenged by the smoke. Each shall be performed for 1 minute.

   a. Normal breathing.
b. Deep breathing. Be certain breaths are deep and regular, taking cautions so as not to hyperventilate.

c. Turning head from side to side. Be certain movement is complete. Alert the test subjects not to bump the respirator on the shoulders. Have the test subjects inhale when his/her head is at either side.

d. Moving the head up and down. Be certain motions are complete. Alert the test subject not to bump the respirator on the chest. Have the test subject inhale when his/her head is in the fully up position.

e. Talking, slowly and distinctly, so that the test conductor can hear the phrase. Have the subject recite the rainbow passage.

Rainbow Passage: When 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 gold at one end. People look, but no one ever finds it. When a man looks for something beyond reach, his friends say he is looking for the pot of gold at the end of the rainbow.

f. Grimace. Have the test subject grimace by smiling or frowning.

g. Normal breathing.

9. If the irritant smoke produces an involuntary reaction (cough) by the test subject, the test conductor shall stop the test. In this case the test respirator is rejected and another respirator shall be selected.

10. Each test subject passing the smoke test without evidence of a response shall be given a sensitivity check of the smoke from the same tube to determine whether they react to the smoke. Failure to evoke a response shall void the fit test. Another testing agent will be used, such as isoamyl acetate.

11. Steps using the irritant smoke must be performed in a location with exhaust ventilation sufficient to prevent general contamination of the testing area by the test agents.

12. Respirators successfully tested by the protocol may be used in contaminated atmospheres up to ten times the permissible exposure limit. In other words, this protocol may be used to assign protection factors not exceeding ten.
Fit Test Information

NAME (FULL) ___________________________________________ DATE _______________________

RESPIRATOR MAKE (1) ___________________________________________

MODEL ___________________________________________

TYPE:  □ PAPR  □ Half Face Air Purifying  □ Full Face Air Purifying

SIZE:  □ S  □ M  □ L  □ XL

RESPIRATOR MAKE (2) ___________________________________________

MODEL ___________________________________________

TYPE:  □ PAPR  □ Half Face Air Purifying  □ Full Face Air Purifying

SIZE:  □ S  □ M  □ L  □ XL

1. RESULTS

Comfort:  Very comfortable _____  Comfortable _____  Tolerable _____

Uncomfortable _____  Very uncomfortable _____

Satisfactory positive-pressure test:  □ yes  □ no

Satisfactory negative-pressure test:  □ yes  □ no

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Irritant Smoke

Fit

No Fit

2. LIMITATIONS:  □ Beard  □ Denture  □ Glasses  □ None

Explain:

3. TRAINING RECEIVED

□ Respirator selection and proper use  □ Fit test training

□ Proper cleaning training  □ Respirator inspection and care

4. COMMENTS:

NEW HIRE: Respiratory Protection Program Recorded  □ YES  □ NO  □ N/A

Conducted By: ___________________________ Date ___________________________

Employee Signature: ___________________________ Date ___________________________
INFORMATION FOR EMPLOYEES USING RESPIRATORS WHEN NOT REQUIRED

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 regulatory or other agencies. Before voluntarily using a 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 respirator's 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, vapor, 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.
Respirator Inspection Checklist

Inspection items for air-purifying respirators

Face piece for:

- Excessive dirt
- Cracks, tears, holes, or distortion from improper storage
- Inflexibility (stretch and massage to restore flexibility)
- Cracked or badly scratched lenses in full face pieces
- Incorrectly mounted full-face piece lens or broken or missing mounting clips
- Cracked or broken air-purifying element or holder(s), badly worn threads, or missing gasket(s) (if required)

Head straps of the head harness for:

- Breaks or tears
- Loss of elasticity
- Broken or malfunctioning buckles and attachments
- Excessively worn serrations on the head harness which may permit slippage

Inhalation and exhalation valves for:

- Foreign material, such as detergent residue, dust particles, or human hair on valve or valve seat
- Cracks, tears, or distortion in the valve material
- Improper insertion of the valve body in the face piece
- Cracks, breaks, or chips in the valve body, particularly the sealing surface
- Missing or defective valve cover
- Improper installation of the valve in the valve body

Filter elements for:

- Incorrect cartridge or filter for the hazard
- Incorrect installation, loose connections, missing or worn gaskets, or cross threading in the holder
- Expired shelf-life date on cartridge
- Cracks or dents in outside case of filter or cartridge
- Evidence of prior use of sorbent cartridge, indicated by absence of sealing material over inlet